A Distributional Analysis of Fiscal Policies in the United States, 2000-2012

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ABSTRACT

This study provides an in-depth discussion of the distribution of U.S. tax and spending policies across various subgroups of the population, mainly income groups, from 2000-2012. The study finds that in calendar year 2012, governments at all levels in the United States redistributed between $1.2 trillion and $2 trillion from the top 40 percent of the income spectrum to the bottom 60 percent, with the actual estimate depending on the assumption made regarding the distribution of government spending. Virtually all of this redistribution comes from the top 20 percent of the income distribution as the fourth quintile (60-80th percentiles) is only slightly negative. Approximately half of the redistribution from the top quintile comes from the top 1 percent, and approximately half of the redistribution to the bottom three quintiles goes to the bottom quintile. This study also provides estimates of redistribution along other dimensions such as age groups and marital status, and performs sensitivity analysis of methodological assumptions pertaining budget deficits and government spending.

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I. Introduction and Overview of Results

A. Introduction

This study addresses the question: How much do governments at all levels (federal, state and local) in the United States redistribute income via fiscal policy? Studies are frequently published focusing on the distribution of income in the United States and the degree of progressivity in the tax system, but rarely is the underlying question of how much governments are actually redistributing addressed. The two are linked because one of the justifications for a progressive tax system is to redistribute income, thereby making the distribution of after-tax income less skewed than the distribution of pre-tax income (Aron-Dine, 2008).

Unfortunately, only looking at the tax side of the fiscal ledger does not tell us how much government is actually redistributing income. The distribution of the spending that those taxes are financing also matters. For example, suppose government had a progressive tax structure, but instead of spending that money on police, defense, and other general functions, all of the revenue collected went to finance bodyguards for rich and famous people. If one only looked at the tax side of the ledger, one would say that the progressive tax system is indeed making the distribution of income more equal compared to its pre-tax distribution. However, when one looks at fiscal policies in their entirety, spending money on programs that only serve the rich would actually mean that fiscal policy is causing income inequality to increase. A tax policy that left the distribution of income unchanged would actually call for the rich to be paying even more in taxes because the government programs in this hypothetical are only serving them.

The basic framework used in this study is to measure income redistribution by comparing the distribution of taxes to the distribution of government spending. Under this metric, for example, if the distribution of government spending is proportional to income, then a flat income tax would be a zero-redistribution baseline; or if the distribution of government spending is proportional to the population, then a head tax would be a zero-redistribution baseline. It follows that any deviation from this zero-redistribution baseline is redistribution to/from that income group.

Estimating the distribution of spending and taxes for the population requires many methodological decisions. These include most notably questions pertaining to the incidence of

taxes and spending programs, what allocators best correspond to those incidence assumptions, and how to treat government budget deficits. These questions are discussed in detail in section II. Before the methodology of this paper is discussed, however, a brief discussion of previous fiscal incidence studies is provided.

B. Previous Literature on Fiscal Incidence

This study falls under the general category of fiscal incidence, which is a type of public finance research that assesses the incidence of both government taxation and spending policies. Tax distribution studies are numerous, especially distributional analysis of federal tax policies. Organizations such as the Congressional Budget Office (CBO), Urban-Brookings Tax Policy Center, Joint Committee on Taxation (JCT), Citizens for Tax Justice, and others regularly release reports analyzing the distribution of tax policies. But fiscal incidence analysis of both spending and tax policies is rather scarce.

More recently, the Census Bureau via its publication "The Effects of Taxes and Transfers on Income and Poverty" (now renamed "Alternative Measures of Income and Poverty") and the Congressional Budget Office (CBO, 2012) have studied how federal taxes and government transfers affect the distribution of income in the United States. Still, no study is done on a regular basis by any U.S. governmental entity analyzing the distribution of federal, state and local taxes, or all government spending. Higher priorities for these institutions and possibly risk aversion towards tackling methodologically controversial topics may be reasons for this.

The fiscal incidence literature comes mostly from academics and think tanks. Initial fiscal incidence studies mostly adopted a cost-of-services approach for allocating government spending. This includes many previous studies done by the Tax Foundation (1967, 1981, 2007), as well as Brennan (1976). The interest in fiscal incidence analysis in the 1970s led to a critique of the cost-of-services approach from Aaron and McGuire (1970) arguing that an approach incorporating individual utility functions is the correct approach. The benefit principle approach is more along the lines of Aaron and McGuire's utility-based approach as opposed to the cost-of-services approach. Two other noteworthy studies in the fiscal incidence were conducted by Gillespie (1980) and Musgrave and Musgrave (1980).

Studies on the issue of fiscal incidence in the 1980s were rarer, although they have returned somewhat recently as expanded computing power has made microdata sources of fiscal incidence analysis more efficient. Organizations such as the World Bank, CBO, and government budgetary agencies in Australia and Great Britain have begun performing benefit incidence analysis of not only taxes but also transfer spending. However, rarely do official studies like these delve into a full-scale analysis of the spending side of the ledger and discuss the incidence of items like national defense and environmental protection, choosing instead to go the risk-averse route and only expand as far as transfer spending.

Various critiques of fiscal incidence research have been made in the literature. Piggott and Whalley (1987) critique studies that ignore the economic surplus from government spending and the deadweight loss effects of taxes. Another common criticism is the uncertainty over how government spending programs should be allocated. Even if one decides methodologically that the benefit principle should be used, how does one estimate each person's benefit from various government services? Various attempts have been made to do so, including Younger (1999), who uses a new unique method to estimate the demand for government services in Ecuador.

Finally, it should be pointed out that many of the same critiques that apply generally to the topic of distributional analysis also apply to fiscal incidence studies. As part of the book Distributional Analysis of Tax Policy (edited by David Bradford), various critiques of distributional analysis are made. Among these are Alan Auerbach's argument that traditional tax distributional analysis ignores the excess burden effects of tax changes, which is similar to the point made by Piggott and Whalley. Michael Graetz also writes a chapter in the book containing a litany of criticisms of distributional analysis. While most of Graetz's methodological issues with distributional analysis are commonly mentioned and are addressed in the methodology section of this paper, one unique criticism made by Graetz is that while the goal of distributional analysis is to actually provide information to real-world policy debates, the methodologies used in distributional analysis (like this paper) are often too academic and difficult for the public to comprehend. (For example, ask a typical person "what is income" and an economist "what is income" and you are likely to get two different answers.)

C. Overview of Results

This study finds that a significant amount of redistribution via fiscal policies takes place in the United States, predominantly at the federal level. However, this study also finds that the degree of redistribution depends heavily on what one assumes about the incidence of major public goods spending such as national defense, as well as how one treats federal budget deficits. Under most scenarios, overall net redistribution is positive for the bottom three quintiles (0-60th percentile) and negative for the top two quintiles (60th-100th percentiles).

Assuming a benefit principle approach to government spending, this study finds that governments all levels redistributed over $1.2 trillion from the top 40 percent of the population to the bottom 60 percent in 2012. Under the cost-of-services approach, that figure jumps to around $2 trillion. Under either approach, virtually all of the redistribution comes from the top 20 percent and very little from the fourth quintile, and approximately half of this redistribution comes from the top 1 percent.

For the top quintile, the fraction of that group's income that was redistributed in 2012 equaled 17.2 percent under the benefit principle approach and 28.0 percent under the cost-of-services approach. Within the top quintile, those numbers are noticeably larger for the top 1 percent of the population: 26.2 percent (benefit principle approach) and 40.8 percent (cost-of-services approach).

For the bottom quintile, under the benefit principle approach, the average family's government spending equaled $22,339. Under the cost-of-services approach, this figure is $33,402. This quintile paid an average $6,331 in total taxes and had an average market income of $9,561, which means that the group's income redistribution was 167 percent of its market income under the benefit principle approach and 283 percent under the cost-of-services approach.

Finally, for the middle quintile, net redistribution is positive under both the benefit principle approach and the cost-of-services approach. Income redistribution to the group equaled 12 percent of the group's market income under the benefit principle approach and 17 percent under the cost-of-services approach. The group's share of income increases from 14 percent of market income to 15.6 percent under the benefit principle approach and 16.4 percent under the cost-of-services approach after redistribution.

It should be noted that these figures assume that deficits are closed by proportionally higher taxes and lower spending. Net redistribution totals to each family are generally larger when deficits are not methodologically "closed." Section II discusses this issue further, while Section III discusses all of the results in more detail, including sensitivity analysis of key assumptions and the trend from 2000-2012.

D. Outline of Study

The remainder of this study is as follows. Section II covers the methodology of the report, discussing topics such as data sources, incidence assumptions, income measures, etc. Section III provides a thorough discussion of the study's estimates of redistribution between income groups. This includes performing sensitivity analysis of key assumptions and a discussion of the trend from 2000-2012. Section IV discusses taxes in detail, while section V does the same for the spending side of the ledger. Section VI provides a supplemental analysis of income redistribution along other dimensions besides income, such as age, education, marital status, etc. Finally, Section VII concludes.

Note that there are many "data dump" tables in the appendix providing data for every year back to 2000.

II. Study Methodology

A. Data Sources, Unit of Analysis, and Income Measure

At its most basic level, this study begins with BEA aggregates of spending, tax and income categories and distributes those to each family in a microdata set. The microdata set is based off a statistical match of the Census Bureau's Current Population Survey (March Supplement) and the IRS Public Use File released by the Statistics of Income (SOI) division of the IRS. The matching method is similar to that used by the CBO and the Urban-Brookings Tax Policy Center (Rohaly, Carasso and Adeel-Saleem, 2005). The matched database is then extrapolated to hit aggregate targets for other years. (These aggregate targets are published descriptive statistics from SOI and the Census Bureau.) Finally, the matched database is supplemented with imputations of wealth and consumption based on cross-tab statistics published by the Federal Reserve (Survey of Consumer Finances) and the Bureau of Labor Statistics (Consumer Expenditures Survey).

The unit of analysis employed in this study is family economic unit, which is simply called "family" (or families) throughout this study. First, each tax return that is not a dependent return qualifies as a family economic unit. Dependent returns' income and taxes are simply added to that of the primary tax return in order to calculate a family's total income and taxes. (The primary tax return is the tax return that is claiming the dependent and thereby receiving a personal exemption for the person.) Second, married filing separate returns are merged together as one family economic unit. Finally, hypothetical tax units that do not file a tax return but would file if the filing threshold was zero are included as family economic units. Although it is called "*family* economic unit," single units are included.

Note that the unit of analysis used in this study is narrower than households, which is often used in distributional analyses (see CBO). Households may contain multiple family economic units, which is most common among younger facets of the population (i.e., post-college yet pre-marriage). Essentially, this study uses the tax code's dependency test for determining who is included together as being one family.

When placing families into income groups, this study ranks families according to their reported market income. Reported market income includes all income from compensation and capital

income sources and excludes government transfers. Retirement benefits are counted as income when received (in retirement), and current employer contributions to retirement plans are excluded. Furthermore, the imputed income earned by families when their portfolio increases in value is excluded. Essentially, reported market income includes adjusted gross income less transfers included in AGI (such as taxable unemployment insurance and Social Security) plus market income sources excluded from AGI, such as employer-provided health insurance and non-taxable interest and retirement benefits.

While reported market income is used to rank families, it should be pointed out that in this study BEA aggregate income amounts are distributed to each family when measuring the total market income for a group. This distinction is most important as it relates to BEA's value for proprietor's income, which includes a rather significant estimate for unreported proprietor income (see BEA NIPA Table 7.15). This unreported income is allocated to each family in the matched database used in this study using a combination of sole proprietor income and partnership income. Also, BEA farm income is positive, while the aggregate reported farm income on tax returns is negative. An adjustment is made for this as well. Overall, in allocating BEA aggregates instead of relying solely on reported income, the goal of this study was to build an apples-to-apples comparison between the BEA government account aggregates used to allocate spending and tax categories in this study and BEA's aggregate income measures.

After ranking families based on market income, this study places families in percentiles. Each percentile contains equal numbers of persons and unequal numbers of families. Under this method, high-income percentiles have fewer families because high-income families tend to be larger than low-income families. This is primarily due to the fact that high-income families are more likely to be married and have children.

For those tables that classify families based on age group, it should be noted that the age of the family is determined by the age of the family's head person. In order to determine marital/elderly status, a family's tax return filing status and the age of the family's head person are used. Cross-tabs by educational attainment, rural/urban status, homeowner/renter status, as well as Buffett Rule effects and income tax nonpayer are also presented in this paper. For a family to be classified as a "college educated" family, at least one of the family's primary taxpayers must have at least a bachelor's degree. Urban/rural status is determined by the CPS variable

GTMETSTA. Homeowner/rental status is determined by the CPS variable *H-TENURE*, although a family that is not the primary family in the household is considered a renter even if the head family is a homeowner. Families are classified as "Buffett Rule" families if the primary tax return in the family has a federal income tax liability less than 30 percent of its adjusted gross income. Finally, a family is considered a non-income tax paying family if the primary tax return in the family has a federal income tax liability of zero (or less if one includes refundable tax credits). It should be noted that a family classified as a non-income tax paying family could still technically have some federal income tax liability if a dependent return filed by a family member has a positive federal income tax liability.

B. Allocating Taxes to Families

Each federal and state and local tax category from BEA NIPA tables is allocated to each family in the matched database. Such an allocation is a two-step process. First, the economic incidence that will be assumed for each tax is determined based on the best available evidence from the economic literature. Second, variable(s) are chosen from the matched database that will best serve as allocators for the tax given the economic incidence assumption chosen. Table 1a lists each of the tax categories and the method of allocation chosen in this study.

Federal Taxes

The allocator chosen for the largest federal revenue source, the federal individual income tax, is simply the simulated federal individual income tax liability for the family. Each tax return's liability is simulated using a microsimulation model of the federal tax law, and that simulated liability amount is used to allocate the entire BEA aggregate amount. This is the same method used by CBO, JCT, and the Tax Policy Center when they perform distributional analysis of the federal individual income tax. That being said, it is not a perfect allocator. Because the federal individual income tax is an amalgamation of taxes on different types of income and subsidies for different types of economic and social behavior, the true incidence of the income tax is not as simple as tax liability. For example, the incidence of the charitable deduction likely goes beyond simply benefiting those who make contributions. Using tax liability is essentially a second-best allocator given the difficulty in determining the true incidence of the entire federal income tax.

For federal payroll taxes (i.e., Social Security and Medicare, or FICA), this study assumes that the entire incidence is borne by the employee, even that portion which is legally remitted by the employer. (In most years, the employer/employee portion is split 50/50.) This assumption too follows the mainstream methodology of organizations such as CBO, JCT, and the Tax Policy Center. Given this incidence assumption, the allocator used to distribute the BEA aggregate amount for payroll taxes is simply the sum of the simulated employee and employer payroll tax for each worker, which are then summed among all workers in each family.

The most controversial tax incidence question at the federal level relates to the corporate income tax. Given the greater openness of our global economy, recent studies have deviated from the seminal Harberger (1961) finding that the corporate income tax (CIT) is borne by owners of capital and instead have shifted towards finding that the corporate income tax is borne, at least in part, by domestic labor. For a review of the literature on the CIT, see Gravelle (2010) for a discussion of general equilibrium CIT studies and Gravelle (2011) for a discussion of empirical studies on the incidence of the corporate income tax. This study distributes the CIT as follows. Fifty percent of the tax is distributed based on capital income, which includes dividends, interest, capital gains, imputed rental income, retirement income, and a fraction of proprietor's income. The other half of the CIT is distributed based on total compensation, which includes wages and salaries, employer-provided health insurance, and a fraction of proprietor's income. Because the CIT represents less than 10 percent of total tax collections (federal plus state and local), changing the incidence assumption to one where capital bears a larger fraction of the CIT does not make a significant difference in the mainline results of this study.

For federal excise taxes, it was assumed that the ultimate end-use consumer bears the burden of each tax. For that portion of the taxed product that is consumed directly by consumers, the tax is allocated based on each family's share of the consumption of that item. For that portion which is consumed by businesses, the tax is allocated based on each family's share of overall consumption of all goods and services in the economy. For federal excise taxes on alcohol and tobacco, the entire tax is allocated based on alcohol or tobacco consumption because these products are consumed almost exclusively by consumers of those products. However, for the federal taxes on air transport and motor fuels, the aggregate amount is split into the two categories (direct to consumers and consumption by businesses). For the "other excise tax"

category, as well as customs and duties, those two tax categories are allocated based on a family's total consumption of all products.

Finally, federal estate and gift taxes were allocated on the basis of simulated federal estate tax liabilities for each family. Wealth was imputed for each record in the matched database, and then a federal estate tax liability was constructed based on that wealth if that family was to die. This implicitly assumes that the tax is borne by the decedent. This method of allocation leads to the federal estate tax being almost exclusively paid by high-income families, as Table 11 shows.

State and Local Taxes

State and local governments collect the bulk of their revenue from three main types of taxes: personal income taxes, sales taxes, and property taxes. Other state and local taxes include corporate income taxes, personal licenses such as those for motor vehicles or hunting/fishing, business licenses such as those for business motor vehicles or liquor licenses, severance taxes, estate and gift taxes, special assessments, and other small taxes.

Like the federal individual income tax, for state and local personal income taxes, the allocator used is simulated individual tax liabilities. Each tax unit's state income tax liability is simulated for each year from 2000 through 2012 using NBER's online *TaxSim* model. Then the state income tax total from BEA is distributed to each family based on the *TaxSim* simulated liabilities. (Technically, state income tax parameters are currently only updated through 2011 in *TaxSim*, and therefore, 2012 liabilities were simulated using 2011 state income tax laws. An adjustment was made, however, to account for California's 2012 notable tax increase.) For local income taxes, only those families residing in an area with a local income tax were allocated local income taxes. This allocation was based on state of residence, Census local tax collections for that state, and the family's wages or adjusted gross income (depending on the state's predominant local tax base).

Like federal excise taxes, state and local sales taxes were assumed to be borne by end-use consumers. For state and local general sales taxes, gasoline sales taxes, alcohol sales taxes, and tobacco sales taxes, each family's direct sales tax paid was simulated by multiplying the state's tax rate on each product by the family's imputed consumption of that item (based on Consumer Expenditures Survey data). The national total of general sales tax collections from BEA was split

into two categories: (1) business-to-business and (2) direct to individuals. That portion of the general sales tax that is collected from business-to-business transactions was distributed to each family based on the family's total consumption of all goods and services. That portion of the general sales tax that is collected from sales that are direct to final consumers was allocated based on the simulated direct general sales tax paid described above. This same procedure to split up the business and individual portion was done for gasoline taxes as well.

The national totals of state and local alcohol sales taxes and tobacco sales taxes were distributed to each family based on simulated alcohol and tobacco taxes paid directly by individuals. (No business-to-business portion is assumed for these two taxes.) For public utilities taxes and insurance receipts taxes, the business portion was allocated on the basis of family total consumption. The direct-to-consumer portion of these taxes was allocated based on Consumer Expenditures Survey data on insurance expenditures.

State and local corporate income taxes were allocated the same as the federal corporate income tax: 50% capital income and 50% compensation. Severance taxes were assumed to be borne by owners of capital and were distributed on the basis of capital income. Business licenses were allocated on the basis of total consumption, under the assumption that such costs are passed forward to consumers.

Arguably the most controversial tax methodology question in this study is how to allocate property taxes. The incidence of the property tax in the economic literature is a largely unsettled one. On one hand is the new view of the property tax (also sometimes referred to as the capital tax view), which states that the property tax has two components: (1) a general tax on all capital and (2) an excise tax differential component for each unit of capital, based on its rate compared to the average rate on all capital (Mieszkowski, 1972; Zodrow and Mieszkowski, 1986). On the other hand is the benefit view of the property tax, which claims that the property tax simply acts as a payment for the benefits that taxpayers receive from local government services. This view is built off the seminal work of Tiebout (1956), and the later work of Oates (1969) and Hamilton (1976). Citing evidence of capitalization in local asset prices (such as homes), Oates and Hamilton argue that because property taxes cause asset prices to fall, this is evidence that the tax is borne by the owner of the asset at the time of the change in the property tax, as the tax increase

is capitalized into lower asset prices. Zodrow and Mieszkowski counter that capitalization does not necessarily imply that the benefit view is correct and the new view incorrect.

In this study, an attempt was made to align with the new view of the property tax. However, data on asset-specific tax rates by locality are not easily available. Given this limitation, the national total of non-personal property taxes is allocated to families as follows. First, the national total is divided into three categories: property taxes paid on commercial (business) property, property taxes paid on rental residential (business) property (e.g., apartment complexes), and property taxes paid on owner-occupied residential property. The initial division of the national property tax total into these three categories is done using the annual "Total State and Local Business Taxes" report released by the Council on State Taxation (COST) and conducted by Ernst & Young LLP. This study has typically found that about half of property taxes are remitted by business.

After dividing the property tax into these three categories, each category is allocated to families on the basis of who is using the taxed property. The commercial property national total is divided further into property taxes paid by corporations and proprietors using Census Bureau Survey of U.S. Businesses data (SUSB). The corporate amount is then distributed to families on the basis of dividends, capital gains income and s-corp income, while the proprietor amount is distributed on the basis of sole proprietor and partnership income. For owner-occupied residential property, this total is allocated to families simply by the amount of real estate taxes paid by each family. (For itemizers, this amount simply comes from Schedule A, and for non-itemizers, the amount reported in the CPS is used.) For rental residential property, this total is allocated on the basis of rent paid with an adjustment made for state-level property tax collections. (Rent paid is imputed using Consumer Expenditures Survey data.)

Non-Tax Revenue Sources

Because spending is financed from all government revenue sources and almost all government spending is included in this study, this study also includes non-tax revenue sources. Non-tax revenue sources are relatively small compared to taxes, but are not totally insignificant. In those cases where non-tax revenues were collected as part of government providing a service to a

customer (i.e., government essentially operating as a business), then the revenue source was allocated based on the estimated consumption of that product.

The federal government collects non-tax revenue from various sources, most notably Federal Reserve net earnings and contributions for supplementary Medicare benefits. Federal Reserve net earnings were distributed to families based on capital income shares, and contributions for supplementary Medicare benefits were distributed based on participation in the Medicare program.

Governments also collect a sizable amount of revenue that BEA classifies as "transfers from persons" and "transfers from business." This includes fines and premiums for insurance provided by government. Transfers from persons were allocated to each family on a per capita basis, while transfers from business were allocated on the basis of capital income.

C. Allocating Spending to Families

Each federal and state and local spending category from BEA NIPA tables is allocated to each family in the matched database. Such an allocation is a two-step process. First, the economic incidence that will be assumed for each spending item is determined. Second, variable(s) are chosen from the matched database that will best serve as allocators for the tax given the economic incidence assumption chosen. Tables 1b and 1c list each of the tax categories and the method of allocation chosen in this study. How one allocates spending programs depends on whether one takes the benefit principle approach or a cost-of-services approach, as is discussed next.

Benefit Principle Approach vs. Cost-of-Services Approach

As discussed in Section II, the economic literature on the topic of fiscal incidence is divided on what approach to take regarding the allocation of government spending. The benefit principle approach takes the view that government spending should be allocated in accordance with the benefit that each family receives from the government spending. In effect, under the benefit principle approach, each family has a willingness to pay for each government program assuming a hypothetical world where each program was perfectly excludable and government was able to

know each family's reservation price. The total aggregate spending amount for that program is then distributed to each family based on its share of the total willingness to pay for all families.

The cost-of-services approach takes the view that government spending should be allocated in accordance with the cost incurred to government for providing that service to the family. For example, suppose it cost government $100 per year to provide fire protection to each family. Under the cost-of-services approach to fiscal incidence, the total amount spent on fire protection should be distributed to each family equally. Even if the high-income family is willing to pay more for the fire protection service than the low-income family, the spending would be distributed equally because the cost of provision is the same.

Essentially, the difference between the benefit principle and the cost-of-services principle is similar to the microeconomic issue of price discrimination with government as the seller. There are generally two reasons why firms charge different prices to different customers. One reason is that some customers are associated with a higher cost of provision than others. (For example, it typically cost a restaurant less to provide an all-you-can buffet to children under 5 than to adults, which is one reason restaurants charge lower prices for children.) The cost-of-services approach assumes government is like a firm that charges each consumer his/her share of the total cost of providing the good or service. (Fixed costs can be assumed distributed according to each consumer's share of the variable costs. Since the marginal cost is often zero for government services beyond a certain threshold, each consumer of government services is assumed to be the first consumer for the purposes of determining that consumer's share of total costs.)

However, another reason that firms with market power charge different prices to different consumers is because they can increase profits by charging higher prices to consumers with a higher willingness-to-pay for the product than consumers with a lower willingness-to-pay. (For example, restaurants often offer discounts to college students because they typically have a lower willingness-to-pay than regular customers due to lower incomes.) The benefit principle assumes government is like a firm that is able to perfectly price discriminate (i.e., knows the reservation prices of each consumer).

Instead of making a definitive judgment about which of these general approaches to government spending is correct, this study takes the transparent approach of presenting results under both

methods. The benefit principle (labeled "Method A" in the tables) and the cost-of-services approach (labeled "Method B" in the tables) are treated equally throughout this entire study. Every time the results under the benefit principle method are presented, the results under the cost-of-services method are also presented, and vice versa. As readers will notice, redistribution estimates are generally greater under the cost-of-services approach than under the benefit principle approach, and this stems from the incidence assumptions used under the two methods. These assumptions are discussed next.

Allocating Public Goods

The most controversial methodological decision faced when conducting this study was how to allocate government spending items that are public goods, such as national defense, public safety, environmental protection, etc. Under the benefit principle, this study assumes that such public goods are allocated on the basis of cash income. In other words, a unitary income elasticity for public goods is assumed. This includes the following public goods: national defense, environmental protection, public health, public safety, culture public goods, and the public good portion of education.

Under the cost-of-services approach, public goods were allocated on a per household basis and/or a per person basis. For national defense and public safety categories, 50 percent of the allocation was done on a per household basis and 50 percent was based on the number of persons in each family. For households with multiple families, each family received a fraction of the per household portion. The justification for using both a per person and per household allocation is that the cost of providing these services is likely both a function of the number of households and the number of persons.

Although classified as transfer spending by BEA, veterans' benefits were classified as a national defense public good in this study. Even though benefits are considered compensation for previous service to government and are thereby not a payment for current economic activity, the incidence of veterans' benefits is likely similar to the incidence of compensation to present-day active duty military. Suppose there were cuts to veterans' benefits; this would also be a reduction in the expected compensation of current active duty military. In treating veterans' benefits as similar to active duty military pay, veterans' benefits were also added to market income. This is

also consistent with the fact that retirement benefits are included as market income in this study at the time of disbursement.

Allocating Other Non-Transfers

Under both the benefit principle approach and the cost-of-services approach, most non-transfers were allocated on the basis of usage of the government service. For example, government spending on transportation was distributed to families on the basis of usage of the specific type of transportation, such as air travel and highway usage. The business usage portion of transportation was allocated to families on the basis of total consumption, under the assumption that businesses are using those roads on behalf of consumers. Business versus personal usage of these products is derived from BEA input-output accounts.

K-12 education spending was considered partially a public good (25%) and partially a private good (75%) being delivered to families. The private good portion of K-12 spending was allocated to families on the basis of the number of children aged 5-18 in the family. (One potential shortfall of this allocator is that families with students enrolled in private schools may be over-allocated public education spending.) The public good portion of education was distributed on the basis of family cash income under the benefit principle approach and on a per person basis under the cost-of-services approach. Higher education was assumed to exclusively flow to enrolled students, thereby providing no public good.

Allocating Transfers

A significant fraction of government spending is in the form of transfer payments to individuals. The bulk of the transfer spending is done at the federal level and participation in most transfer programs is tied to one or more of the following factors: age, income, marital status, disability status, education status, family size, and presence of children.

For most cash transfers, in this study, the aggregate BEA amounts were allocated to each family based on the amount received in cash from government. This is true for categories such as Social Security, SSI, and TANF. This basic assumption was used under both the benefit principle approach and the cost-of-services approach.

For in-kind transfers, the allocation method in some cases differed under the benefit principle approach and the cost-of-services approach, most notably for Medicare and Medicaid. Under the cost-of-services approach, Medicare and Medicaid spending was allocated to families based on the number of family members enrolled in the respective programs. Under the benefit principle approach, however, different methods were used for these two programs. For Medicare, the aggregate spending total was allocated as follows: 35% allocated on the basis of persons enrolled, 35% allocated on the basis of the family's fungible value of Medicare, 20% allocated on the basis of medical industry income under the assumption that providers and owners of capital in the medical industry benefit from Medicare, and 10% allocated as a general public health public good. Medicaid spending is allocated as follows: 25% allocated on the basis of persons enrolled, 25% allocated on the basis of the family's fungible value of Medicaid, and 50% allocated as a general public health public good.

Under both the benefit principle approach and the cost-of-services approach, higher educational assistance transfer payments (such as Pell Grants) were allocated solely to the recipient. The same was true for SNAP benefits (i.e., Food Stamps), public housing transfers, and energy assistance.

Allocating Interest on the Debt

Under both the benefit principle approach and the cost-of-service approach, interest payments on government debt are allocated based on each family's share of total allocated government spending (excluding interest). Interest payments are technically payments made for previous spending and any default would, in the short-term, be borne by bondholders. However, governments failing to make interest payments would also increase the cost of spending going forward. For this reason, it was decided that interest on the debt should be allocated on the basis of total primary government spending.

What about a Public Good from Redistribution Itself?

There are various justifications for why government should redistribute income from certain segments of the population to other segments. One such justification is that redistribution itself has public good components. For example, if income redistribution to low-income families generally reduces crime, promotes social stability or just makes Americans feel better about the

country, then this benefits everyone. And because of the free-rider problem, governments must coerce people to finance redistribution because private charity would under-provide these benefits of redistribution. This study does not take into account such general benefits of redistribution because it largely defeats the purpose of the study, which is to measure redistribution. It raises a circular issue where redistribution really isn't redistribution – so how would one measure redistribution? In summary, this study measures redistribution (narrowly defined) and then leaves it to the reader to decipher whether that is too much or too little from society's perspective.

One could also argue from a Rawlsian perspective (Rawls, 1971) that from behind a veil of ignorance, redistribution using tax and spending policies is not really redistribution ex-ante. Instead, redistribution acts as a type of insurance in case a person is born in unfortunate circumstances (e.g., low productivity, poor parents, sick, disabled, etc.). This Rawlsian view of government would be analogous to saying that an actuarially fair car insurance system is not really redistribution because ex-ante, everyone has the same chance of making a claim. Only ex-post is there redistribution from those not making a claim to those making a claim.

Treatment of Federal Aid to State and Local Governments

Spending that BEA classifies as state and local but which is financed by federal government grants-in-aid was moved to the federal spending category. The reason for this adjustment is to match up the spending with the taxes that are financing the spending. Suppose for example that all state and local spending was financed by the federal government. In such a world, there would be only federal taxes and no state and local taxes. It would then make little sense to compare state and local taxes to state and local spending or federal taxes to federal spending.

This adjustment is most notable for Medicaid. The federal government finances a large share of state Medicaid spending. Therefore, in this study, state Medicaid spending is reduced by the amount of federal grants-in-aid received for Medicaid. One critique of this adjustment is that state and local spending may be fungible, implying that federal government money earmarked for Medicaid is actually being used to increase state and local spending on some other program. The empirical literature shows some degree of fungibility as it relates to federal grants to states, but that most money sent to states actually reaches its intended target with little manipulation by

state and local governments. This is commonly referred to as the flypaper effect. Hines and Thaler (1995) provides a thorough summary of the literature on this issue in a JEP article.

Adjustments for Different Spending Levels by State

Simply allocating national totals of state and local spending to all families nationwide would not account for the fact that some states spend more on government services than others. Coupled with the fact that the income distribution, age distribution, etc. across states are not random, this could lead to an incorrect national distribution of certain state and local spending categories. For example, if high-income states like Connecticut spend more per pupil on education than low-income states like Mississippi, simply allocating the national state and local education spending totals from BEA to families based on each family's number of K-12 students would over-allocate education spending to the poor and under-allocate it to the rich. In order to account for this, this study makes adjustments to many state and local spending categories to account for the greater propensity of some states to spend more on certain spending categories. Continuing with the education example, this would mean that a per-pupil spending weight would be attached to each K-12 student, and this per pupil spending weight would vary by state. It is worth noting that this method is imperfect and due to data limitations does not account for in-state differences in education spending. For example, within states, there may be differences in per-pupil spending between school districts, and because there is likely a non-random distribution of income, age, etc. even within states, this could lead to a slightly incorrect distribution of education spending.

D. Treatment of Government Budget Deficits

In no year does government spending exactly equal government revenue for virtually any governmental unit, whether that is the federal government or a local park district. Governments run surpluses or deficits. In the aggregate, governments in the United States have typically run budget deficits throughout the nation's history. And in the five years since the 2008 financial crisis, the federal government has run rather large deficits.

For this study, the existence of government budget deficits raises a tricky question – how should they be treated for the purposes of measuring redistribution? Recall that the methodological question posed in this question was as follows: *What would a family pay in taxes if its share of*

taxes paid was equal to its share of government spending? Technically, this question could avoid the issue of budget deficits altogether because it is referring to *shares* of government spending. That is, even if government spent $100 and only taxed $50 (thereby running a deficit of $50), one could ask what a person's share of the $50 tax bill would be if the tax share was the same as the person's share of the $100 in spending?

One critique of this approach, however, is that the answer to the hypothetical question posed above should not substantively differ from one that asked the question in reverse: *What would a family receive in government spending if its share of government spending was equal to its share of taxes paid?* Only in a balanced budget world where aggregate taxes equal aggregate spending would these two questions render the same answer.

Because of this seeming inconsistency, this study chooses to close government deficits and do so by "splitting it down the middle." That is, the study assumes that 50 percent of a government deficit is closed by proportionally higher taxes and that 50 percent of a government deficit is closed by proportionally lower spending. Therefore, from the perspective of all families, there is no net redistribution. This is why Table 3a shows zero redistribution under the column "All Families."

If one expands the scope of the question above to include intergenerational redistribution, then adjusting tax and spending levels to "close" the deficit would not be necessary. Supplemental results in this study are presented without making such adjustments, and those are discussed in detail in the next section. Opening up the door to potential intergenerational redistribution would complicate this study enormously. For example, one could argue that the large spending incurred to fight and win World War II is still benefiting Americans today. Should that spending from 1941-1945 be included in this analysis?

It should also be noted that this study excludes spending that BEA classifies as government investment and only includes government spending that falls into one of the following categories: (1) transfers, (2) subsidies, (3) current consumption expenditures, and (4) capital transfers. By excluding what BEA classifies as government investment spending, this study is trying its best to exclude intergenerational spending, even though the reality is that some

spending on transfers, subsidies, current consumption expenditures and capital transfers may have intergenerational incidence.

E. Other Methodological Issues

Non-Fiscal Redistribution

This study only measures the distributional effects of fiscal policies, even though other government policies affect the distribution of income. For example, regulatory policies such as minimum wage laws, occupational licensing, rent controls, insurance market regulations, and others all have distributional effects yet were not included in this study's estimates of redistribution. Also, monetary policy decisions made by the Federal Reserve have distributional effects. For example, monetary policy changes could redistribute wealth between holders of different types of assets, especially if those monetary changes are unexpected.

Surplus and Excess Burden Ignored

As discussed earlier in this section, this study distributes the budgetary amounts of each tax and spending item to families in the population. Given this method, there is no accounting for any social surplus from government programs (i.e., benefits to society from spending in excess of their budgetary amounts). Similarly, on the tax side, there is no accounting for the excess burden of taxes (i.e., costs to society from taxation in excess of their budgetary amounts).

In a perfect world, government would spend additional dollars on a given government service so long as the marginal benefit to society exceeds the marginal cost to society (including total tax burden). This would imply that there would likely exist surpluses from the first dollars spent on the program. Of course, in reality, government is not perfect in terms of deciding what to spend money on, administering the program, and how to raise the money via taxes. But just as surpluses from government spending are ignored in this study, inefficiencies from government spending/taxation are also ignored in this study.

Snapshot vs. Lifetime Analysis

Because much of the federal government's transfer spending is made up of two programs, Social Security and Medicare, and because income somewhat follows a life-cycle, redistribution across

income groups in any given year may overstate the amount of income redistribution over a family's lifetime. Being mindful of this potential shortcoming, this study presents results across income quintiles holding age constant. Furthermore, this study also presents results by income group and age group excluding the major old-age social insurance programs in the United States: Social Security and Medicare spending and payroll taxes.

Table 1a: Tax Categories, Aggregate Amounts (in billions) and Allocation Method					
Tax Category	2000	2004	2008	2012	How Tax is Allocated
Federal Taxes					
Individual Income	995.5	799.2	1,101.3	1,140.0	Simulated federal income tax liability
Payroll	641.7	725.0	870.7	799.0	Simulated payroll tax liability
Corporate Income	194.1	232.2	202.0	293.5	50% Capital Income and 50% Compensation
Alcoholic Beverages	7.3	8.1	8.7	9.3	Estimated alcohol consumption
Tobacco	6.7	7.1	8.0	16.6	Estimated tobacco consumption
Motor Fuels	32.0	33.4	27.4	33.8	Estimated gasoline consumption (individual portion); estimated overall consumption (business portion)
Airport	9.9	12.1	13.7	14.1	Estimated air travel (individual portion); estimated overall consumption (business portion)
Other Excise	10.2	10.4	7.1	8.6	Estimated overall consumption
Tariffs and Duties	21.1	23.3	29.2	33.5	Estimated overall consumption
Estate and Gift	28.1	24.6	28.3	20.4	Simulated estate tax liability
Unemployment Tax	28.2	40.6	38.8	61.1	Simulated unemployment tax
State & Local Taxes					
Individual Income	217.4	224.7	307.7	303.5	State and local income tax liability
Other Personal Taxes	22.0	28.5	31.4	38.4	Estimated personal property tax/cars owned
Corporate Income	35.2	41.7	47.4	48.2	50% Capital Income and 50% Compensation
General Sales	221.4	253.8	301.3	309.7	Estimated taxable consumption (individual portion); estimated overall consumption (buiness portion)
Motor Fuels	30.4	33.9	35.7	39.8	Estimated gasoline consumption (individual portion); estimated overall consumption (business portion)
Alcoholic Beverages	4.1	4.6	5.3	6.1	Estimated alcohol consumption
Tobacco	8.5	12.7	16.5	17.6	Estimated tobacco consumption
Public Utilities	18.0	21.9	28.4	28.8	Estimated utility consumption (individual portion); estimated overall consumption (business portion)
Insurance Receipts	9.8	14.5	15.8	17.3	Estimated insurance consumption (individual portion); estimated overall consumption (business portion)
Other Sales Taxes	24.6	29.3	40.9	56.0	Estimated overall consumption
Property	254.7	326.7	408.3	447.7	Tax on users of capital (business portion = owners of business; residential portion = tenants)
Other Business Taxes	49.8	71.7	92.3	91.0	Estimated motor vehicle licenses (individual portion); estimated overall consumption (business portion)
Estate & Gift Taxes	7.5	5.6	5.8	4.8	Simulated liability (based on wealth)
Source (data): Bureau of Economic Analysis					

Table 1b: Federal Spending Categories, Aggregate Amounts (in billions) and Allocation					
Spending Category	2000	2004	2008	2012	How Spending Is Allocated
Transfers					
Social Security	401.4	485.5	605.5	762.2	Social Security benefits received
Medicare	219.1	304.7	461.6	562.0	Method A: 35% Medicare fungible value, 35% Persons on Medicare; 20% Medical Industry Income; 10% Cash Income (health public good) Method B: Persons on Medicare
Unemployment	20.7	36.4	50.9	80.9	Unemployment benefits received
SNAP	14.6	25.9	37.0	74.9	Fungible value Food Stamps
SSI	30.8	36.1	43.0	51.7	SSI benefits received
Refundable tax credits	27.0	41.9	57.5	86.1	Simulated refundable tax credits
Education	14.5	20.9	27.6	46.5	Education benefits received (higher ed)
Medicaid and other health	119.5	177.8	204.4	254.7	Method A: 25% Medicaid fungible value, 25% Persons on Medicaid; 50% Cash Income (health public good) Method B: Persons on Medicaid
TANF	18.4	18.4	19.3	20.7	TANF benefits received
Other Transfers	35.4	50.5	84.2	64.3	Varies by transfer, although most based on benefits received from government or participation in government program (such as public housing)
Non-Transfers					
General public service	47.6	73.4	100.4	124.6	Distribution of Overall Federal Government Spending
National defense	346.9	521.0	685.8	787.8	Method A: Cash Income Method B: 50% Per Person; 50% Per Household
Public order & safety	26.7	36.8	50.1	58.8	Method A: Cash Income Method B: 50% Per Person; 50% Per Household
Transportation	51.3	71.1	89.6	97.3	Business portion: Total consumption; Individual portion: Consumption of specific type of transportation (such as air travel, highway, etc.)
Other economic affairs	82.5	83.7	158.6	119.0	Agriculture: Part farm income, part food consumption; Natural Resources: Cash income (environmental public good); Energy: Part energy consumption, part total consumption; Others mostly cash income Agriculture: Part farm income, part food consumption; Natural Resources: # Persons (environmental public good); Energy: Part energy consumption, part total consumption; Others mostly cash income
Housing/Comm. services	19.7	29.1	32.9	38.0	Method A: Mostly cash income Method B: Mostly per person
Education	26.3	45.3	49.0	55.3	Higher Ed: # of college students in family; K-12: # of K-12 students in family; Other Ed: Method A -- Cash income (education public good), Method B -- Persons
Other Non-Transfers	102.3	158.8	213.2	261.5	Method A: Mostly cash income Method B: Mostly per person
Interest on Debt	264.0	204.7	272.0	292.8	Overall distribution of all federal government spending
Source (data): Bureau of Economic Analysis					

Table 1c: State & Local Spending Categories, Aggregate Amounts (in billions) and Allocation Method

Spending Category	2000	2004	2008	2012	How Spending Is Allocated
Transfers					
Medicaid	86.2	122.6	148.6	175.9	Method A: 25% Medicaid fungible value, 25% Persons on Medicaid; 50% Cash Income (health public good) Method B: Persons on Medicaid
Education	11.5	17.1	25.1	37.0	# Higher Ed Students
Other Transfers	5.5	9.5	16.5	18.6	Mostly based on participation in programs
Non-Transfers					
General public service	119.9	146.7	178.0	198.2	Distribution of overall S&L government Spending
Public order & safety	160.9	199.4	258.1	282.6	Method A: Cash income Method B: 50% # of persons; 50% per household
Transportation	73.6	87.3	120.1	129.3	Business portion: Total consumption; Individual portion: Consumption of specific type of transportation (such as air travel, highway, etc.)
Other economic affairs	24.1	28.1	34.3	38.2	Agriculture: Part farm income, part food consumption; Natural Resources: Cash income (environmental public good); Energy: Part energy consumption, part total consumption; Others mostly cash income Agriculture: Part farm income, part food consumption; Natural Resources: # Persons (environmental public good); Energy: Part energy consumption, part total consumption; Others mostly cash income
Education	422.6	506.1	639.0	653.0	Method A: Higher Ed: # of college students in family; K-12: # of K-12 students in family (75%), Persons (25%); Other Ed: Per Person (education public good) Method B: Higher Ed: # of college students in family; K-12: # of K-12 students in family (75%), cash income (25%); Other Ed: Cash income (education public good)
Other Non-Transfers	68.0	80.7	109.0	100.4	Method A: Mostly cash income Method B: Mostly per person
Interest on Debt	-7.9	19.0	16.2	40.9	Overall distribution of all S&L government spending

Source (data): Bureau of Economic Analysis

Table 2: Demographic Profile of Income Groups, 2012[1,2]

Item	All Families	Bottom 20%	Second 20%	Middle 20%	Fourth 20%	Top 20%	Top 10%	Top 5%	Top 1%
Reported Market Income Threshold[3]	--	0	17,101	37,065	67,456	119,698	167,328	235,047	564,511
Number of Families (thous.)	151,367	40,132	33,806	30,559	24,905	21,965	10,873	5,476	1,137
Avg. Family Size	2.11	1.56	1.90	2.10	2.58	2.92	2.95	2.93	2.82
Breakdown of Elderly and Marital Status by Income Group:									
% Non-Elderly	85.0%	78.7%	85.2%	86.0%	89.3%	89.9%	88.7%	87.6%	85.6%
% Single	37.5%	56.3%	45.9%	37.8%	20.8%	9.1%	7.9%	7.5%	7.2%
% Married	32.8%	8.0%	16.4%	29.8%	58.8%	77.9%	78.4%	77.8%	76.2%
% Head of Household	14.7%	14.4%	22.9%	18.5%	9.7%	2.9%	2.5%	2.3%	2.3%
% Elderly	15.0%	21.3%	14.8%	14.0%	10.7%	10.1%	11.3%	12.4%	14.4%
% Single/HOH	8.5%	17.3%	8.4%	5.9%	2.9%	2.3%	2.6%	2.7%	2.6%
% Married	6.5%	4.1%	6.4%	8.1%	7.8%	7.7%	8.7%	9.7%	11.8%
Breakdown of Age of Family Head by Income Group:									
% Under 25	11.6%	24.4%	14.9%	6.5%	2.1%	0.9%	0.7%	0.6%	0.2%
% 25-34	19.8%	17.5%	24.9%	24.3%	18.3%	11.3%	8.7%	8.1%	9.2%
% 35-44	21.4%	14.5%	20.2%	22.5%	26.7%	28.0%	27.7%	26.4%	27.3%
% 45-54	19.9%	12.8%	15.3%	20.5%	26.8%	31.2%	32.9%	32.9%	28.7%
% 55-64	12.4%	9.4%	9.9%	12.3%	15.3%	18.5%	18.7%	19.6%	20.2%
% 65-74	7.9%	8.9%	7.3%	8.4%	7.4%	7.1%	8.0%	9.2%	11.7%
% 75+	7.1%	12.4%	7.6%	5.6%	3.3%	3.0%	3.3%	3.2%	2.7%

Notes:

1. Percentiles contain equal numbers of persons. Negative income famillies excluded from bottom quintile but included in totals. Taxes and spending are adjusted proportionally to close government deficits, thereby making spending equal to taxes.
2. Figures throughout this table exclude the approximate 1 million families with negative income. In other tables, negative income families are excluded from the income groups, but are included in the "All Families" column.
3. Market income is a broad definition of income from market sources (excludes transfers) that aggregates to BEA income totals.

Source: Author calculations based on multiple data sources, primarily Census Bureau, IRS and Bureau of Economic Analysis.

III. Study's Findings

Tables 3a and 3b present the main findings of this study by income group. The general findings are not surprising: fiscal policies in the United States tend to redistribute income from high-income families to low-income families. This largely stems from the fact that the distribution of taxes is highly skewed towards high-income families, even though spending is more evenly distributed across the population. Redistribution is greater under the cost-of-services approach than under the benefit principle approach, which should come as no surprise given that most major public goods are allocated on the basis of income under the benefit principle approach and on a per person or per household basis under the cost-of-services approach.

As Table 3b shows, the aggregate amount of redistribution from the top 40 percent to the bottom 60 percent in 2012 is estimated to be $1.2 trillion under the benefit principle approach and $2 trillion under the cost-of-services approach. Under either the benefit principle approach or the cost-of-services approach, about half of that redistribution to the bottom 60 percent goes to the bottom 20 percent. Of the redistribution from the top 40 percent, approximately half comes from the top 1 percent under either the benefit principle approach or the cost-of-services approach. Between 75-80% of the total redistribution is at the federal level.

A. Income Inequality Pre- and Post-Redistribution in 2012

Figure 1 illustrates how fiscal policies affect the distribution of income in the United States. As one can see, there is a great amount of market income inequality between income groups. The top 20 percent of the population actually earns over half of the market income, while the bottom 20 percent earns merely 3.1% of market income. The top 1 percent's share of market income is actually greater than the entire bottom 40 percent's share.

After redistribution, the amount of income inequality between income groups is still significant, but it does have a noticeable drop. Under the benefit principle approach, the bottom 20 percent's share of income increases to 8.3%; under the cost-of-services approach, it increase to 11.8%. The second quintile's income share increases from 8.4% (market income) to 11.4% and 13.4% after redistribution under the benefit principle approach and cost-of-services approach, respectively. For the top quintile, its share of income drops from 55% (market income) to 45.5% and 39.6% after redistribution under the benefit principle approach and the cost-of-service approach,

respectively. The third (middle) and fourth quintile's see a rather small change in their shares of income following redistribution. The middle quintile's share increases from 14% to 15.6% under the benefit principle approach and 16.4% under the cost-of-service approach. The fourth quintile sees a very slight reduction under both approaches: from 20.1% to 19.7% (benefit principle approach) and 19.2% (cost-of-services approach).

As one can see from Table 3a, prior to redistribution, the average family in the top quintile had a market income that was 32 times greater than the average family in the bottom quintile. After redistribution, this figure drops to 10 under the benefit principle and 6 under the cost-of-services approach. For the average family in the top 1 percent, its market income was 208 times that of a family in the bottom quintile. After redistribution, this ratio drops to 57.5 under the benefit principle and 32 under the cost-of-services approach.

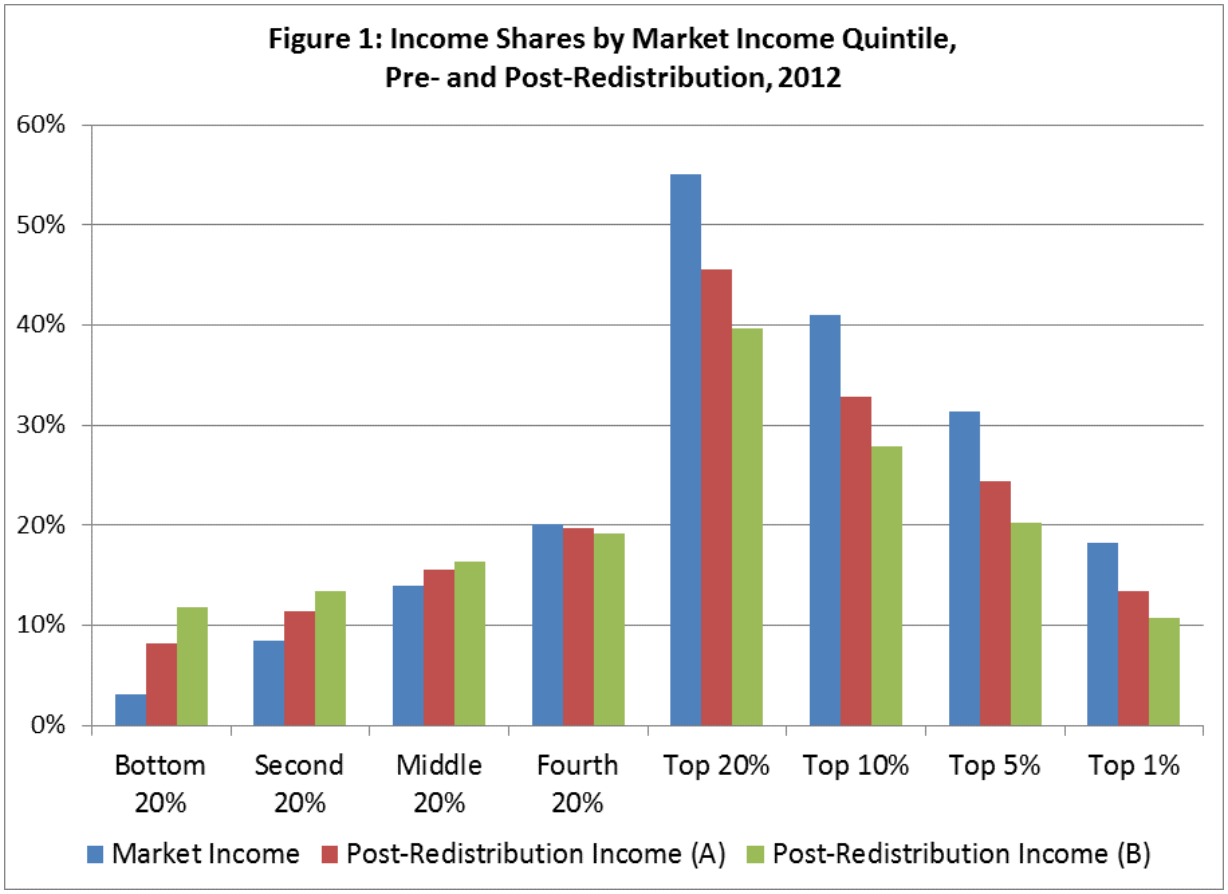


Table 3a: Distributional Analysis of Government Fiscal Policies, 2012[1]

Item	All Families	Bottom 20%	Second 20%	Middle 20%	Fourth 20%	Top 20%	Top 10%	Top 5%	Top 1%
Avg. Market Income[2]	81,602	9,561	31,053	56,884	100,242	311,405	469,228	713,599	1,992,095
(Share)	100%	3.1%	8.4%	14.0%	20.1%	55.0%	41.0%	31.4%	18.2%
Avg. Taxes[3]	31,824	6,331	11,913	20,429	35,325	122,217	189,281	295,210	867,473
Federal	21,293	2,967	6,854	12,848	23,668	86,975	135,420	210,820	608,285
State & Local	10,530	3,365	5,059	7,581	11,657	35,242	53,861	84,390	259,188
Avg. Spending (Method A)[4]	31,824	22,339	22,941	27,125	33,284	68,545	95,857	136,642	345,369
Federal	21,293	16,628	15,729	18,336	21,159	43,230	61,173	87,653	222,564
State & Local	10,530	5,710	7,212	8,789	12,125	25,315	34,684	48,990	122,805
Avg. Spending (Method B)[4]	31,824	33,402	30,052	30,144	31,122	35,141	38,258	41,700	55,078
Federal	21,293	24,125	20,266	20,225	19,579	21,402	23,840	26,479	37,407
State & Local	10,530	9,278	9,786	9,920	11,542	13,739	14,417	15,222	17,671
Avg. Redistribution (A)	0	16,007	11,028	6,695	-2,041	-53,672	-93,424	-158,568	-522,104
Federal	0	13,661	8,875	5,487	-2,509	-43,745	-74,248	-123,168	-385,721
State & Local	0	2,346	2,153	1,208	468	-9,927	-19,177	-35,400	-136,383
Avg. Redistribution (B)	0	27,071	18,139	9,715	-4,204	-87,076	-151,023	-253,510	-812,395
Federal	0	21,158	13,412	7,376	-4,089	-65,573	-111,580	-184,342	-570,878
State & Local	0	5,913	4,726	2,339	-115	-21,503	-39,443	-69,168	-241,517
Ratio: spending to taxes (A)	1.00	3.53	1.93	1.33	0.94	0.56	0.51	0.46	0.40
Federal	1.00	5.60	2.29	1.43	0.89	0.50	0.45	0.42	0.37
State & Local	1.00	1.70	1.43	1.16	1.04	0.72	0.64	0.58	0.47
Ratio: spending to taxes (B)	1.00	5.28	2.52	1.48	0.88	0.29	0.20	0.14	0.06
Federal	1.00	8.13	2.96	1.57	0.83	0.25	0.18	0.13	0.06
State & Local	1.00	2.76	1.93	1.31	0.99	0.39	0.27	0.18	0.07
Income after Redistrib. (A)	81,602	25,568	42,081	63,579	98,201	257,734	375,804	555,031	1,469,991
(Share)	100%	8.3%	11.4%	15.6%	19.7%	45.5%	32.9%	24.4%	13.4%
Income after Redistrib. (B)	81,602	36,632	49,192	66,599	96,038	224,329	318,205	460,090	1,179,700
(Share)	100%	11.8%	13.4%	16.4%	19.2%	39.6%	27.8%	20.3%	10.8%

Notes:

1. Percentiles contain equal numbers of persons. Negative income famillies excluded from bottom quintile but included in totals. Taxes and spending are adjusted proportionally to close government deficits, thereby making spending equal to taxes.
2. Market income is a broad definition of income from market sources (excludes transfers) that aggregates to BEA income totals.
3. Taxes total above includes some non-tax revenue sources. Refundable portion of tax credits are included in spending totals.
4. Method A assumes that most public goods benefit families in proportion to their incomes, while Method B allocates these public goods equally to households or in proportion to their family size (i.e., per person), depending on the spending category.

Source: Author calculations based on multiple data sources, primarily Census Bureau, IRS and Bureau of Economic Analysis.

Table 3b: Distributional Analysis of Government Fiscal Policies (Aggregates), 2012[1]
(All dollar figures in billions)

Item	All Families	Bottom 20%	Second 20%	Middle 20%	Fourth 20%	Top 20%	Top 10%	Top 5%	Top 1%
Aggregate Market Income[2]	12,431.1	383.7	1,049.8	1,738.3	2,496.5	6,840.1	5,102.0	3,907.7	2,265.1
(Share)	100%	3.1%	8.4%	14.0%	20.1%	55.0%	41.0%	31.4%	18.2%
Aggr. Taxes[3]	4,848.0	254.1	402.7	624.3	879.8	2,684.5	2,058.1	1,616.6	986.4
Federal	3,243.8	119.1	231.7	392.6	589.4	1,910.4	1,472.4	1,154.5	691.7
State & Local	1,604.2	135.0	171.0	231.7	290.3	774.1	585.6	462.1	294.7
Aggr. Spending (Method A)[4]	4,848.0	896.5	775.5	828.9	828.9	1,505.6	1,042.3	748.3	392.7
Federal	3,243.8	667.3	531.7	560.3	527.0	949.6	665.1	480.0	253.1
State & Local	1,604.2	229.2	243.8	268.6	302.0	556.1	377.1	268.3	139.6
Aggr. Spending (Method B)[4]	4,848.0	1,340.5	1,015.9	921.2	775.1	771.9	416.0	228.4	62.6
Federal	3,243.8	968.2	685.1	618.1	487.6	470.1	259.2	145.0	42.5
State & Local	1,604.2	372.3	330.8	303.1	287.5	301.8	156.8	83.4	20.1
Aggr. Redistribution (A)	0	642	373	205	-51	-1,179	-1,016	-868	-594
Federal	0	548	300	168	-62	-961	-807	-674	-439
State & Local	0	94	73	37	12	-218	-209	-194	-155
Aggr. Redistribution (B)	0	1,086	613	297	-105	-1,913	-1,642	-1,388	-924
Federal	0	849	453	225	-102	-1,440	-1,213	-1,009	-649
State & Local	0	237	160	71	-3	-472	-429	-379	-275
Ratio: spending to taxes (A)	1.00	3.53	1.93	1.33	0.94	0.56	0.51	0.46	0.40
Federal	1.00	5.60	2.29	1.43	0.89	0.50	0.45	0.42	0.37
State & Local	1.00	1.70	1.43	1.16	1.04	0.72	0.64	0.58	0.47
Ratio: spending to taxes (B)	1.00	5.28	2.52	1.48	0.88	0.29	0.20	0.14	0.06
Federal	1.00	8.13	2.96	1.57	0.83	0.25	0.18	0.13	0.06
State & Local	1.00	2.76	1.93	1.31	0.99	0.39	0.27	0.18	0.07
Income after Redistrib. (A)	12,431	1,026	1,423	1,943	2,446	5,661	4,086	3,039	1,671
(Share)	100%	8.3%	11.4%	15.6%	19.7%	45.5%	32.9%	24.4%	13.4%
Income after Redistrib. (B)	12,431	1,470	1,663	2,035	2,392	4,927	3,460	2,519	1,341
(Share)	100%	11.8%	13.4%	16.4%	19.2%	39.6%	27.8%	20.3%	10.8%

Notes:

1. Percentiles contain equal numbers of persons. Negative income famillies excluded from bottom quintile but included in totals. Taxes and spending are adjusted proportionally to close government deficits, thereby making spending equal to taxes.
2. Market income is a broad definition of income from market sources (excludes transfers) that aggregates to BEA income totals.
3. Taxes total above includes some non-tax revenue sources. Refundable portion of tax credits are included in spending totals.
4. Method A assumes that most public goods benefit families in proportion to their incomes, while Method B allocates these public goods equally to households or in proportion to their family size (i.e., per person), depending on the spending category.

Source: Author calculations based on multiple data sources, primarily Census Bureau, IRS and Bureau of Economic Analysis.

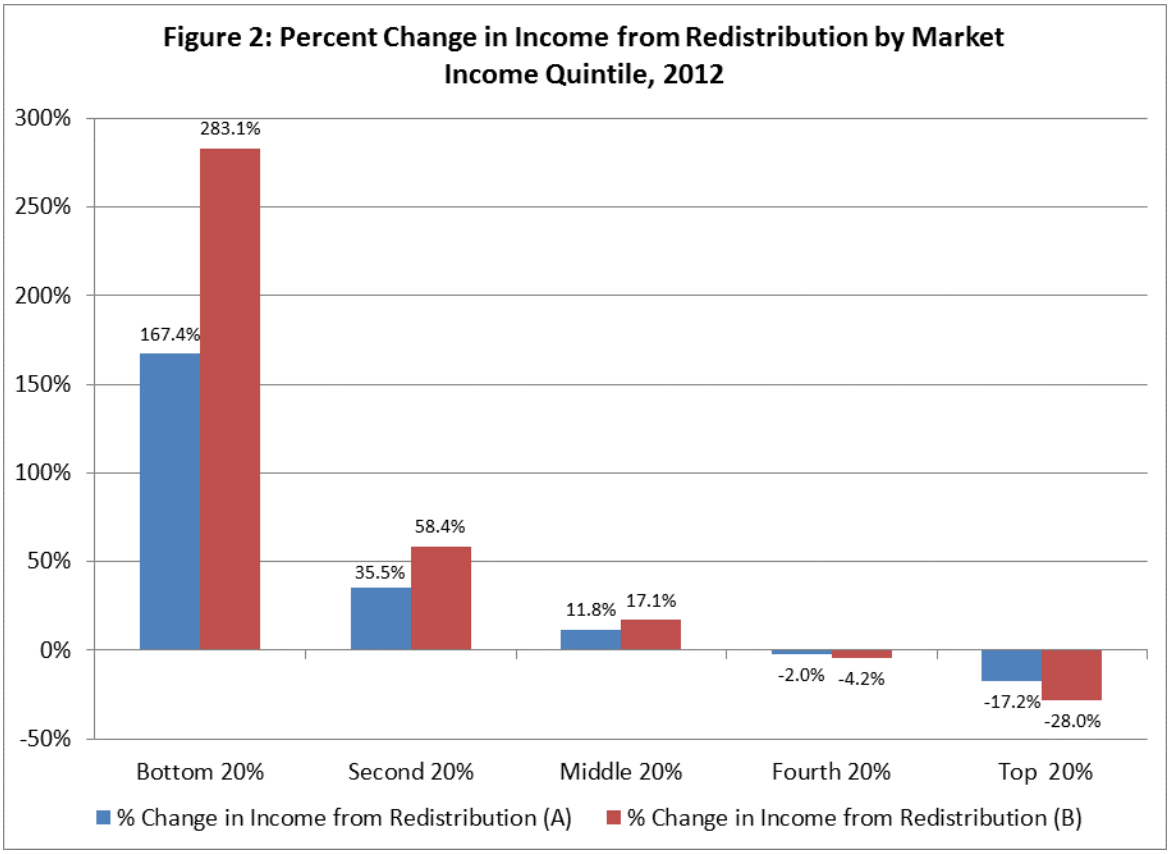
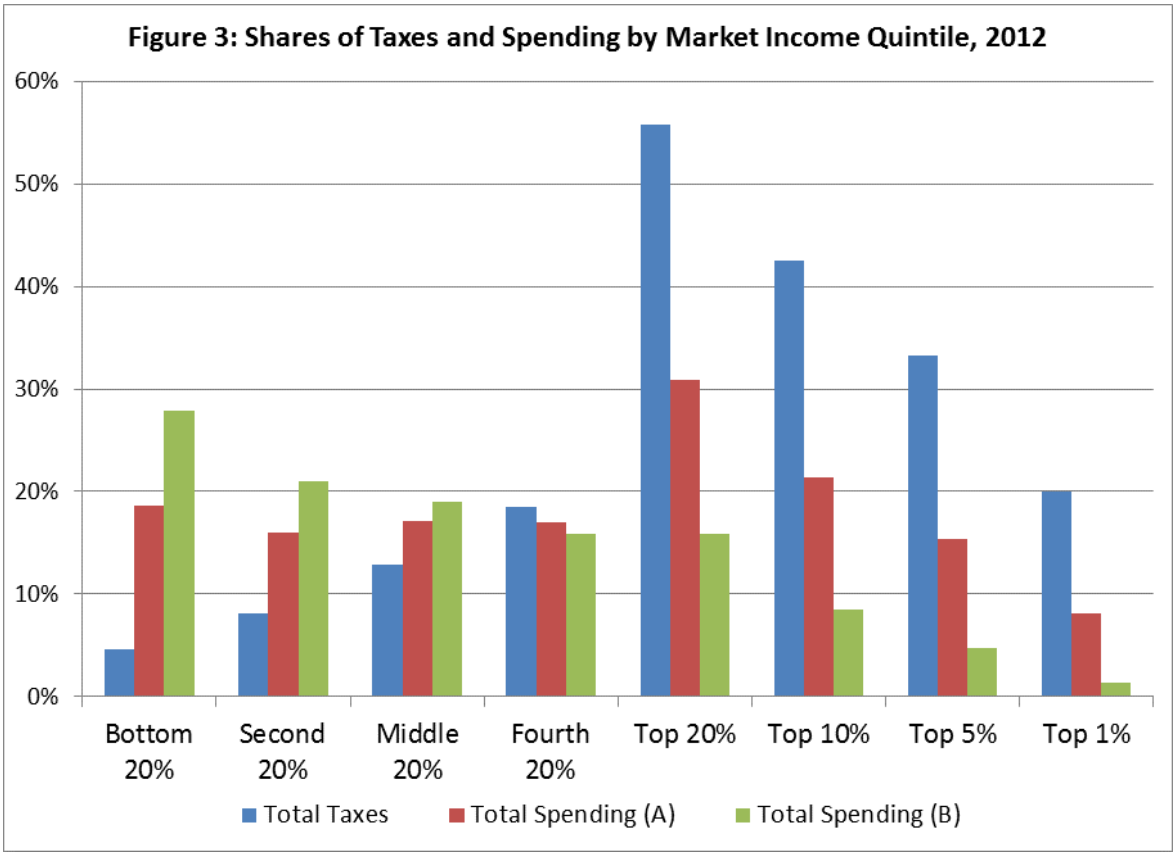


Figure 2 shows the percent change in income from redistribution by market income quintile. For the bottom quintile, its income increases as a result of redistribution by 167% under the benefit principle approach and 283% under the cost-of-services approach. The second quintile also sees a notable increase: 35.5% under the benefit principle approach and 58.4% under the cost-of-services approach. The middle quintile sees a modest increase, while the fourth quintile sees a very small decrease. The top quintile, however, faces a significant decrease in income: 17.2% decrease under the benefit principle approach and a 28% decrease under the cost-of-services approach.

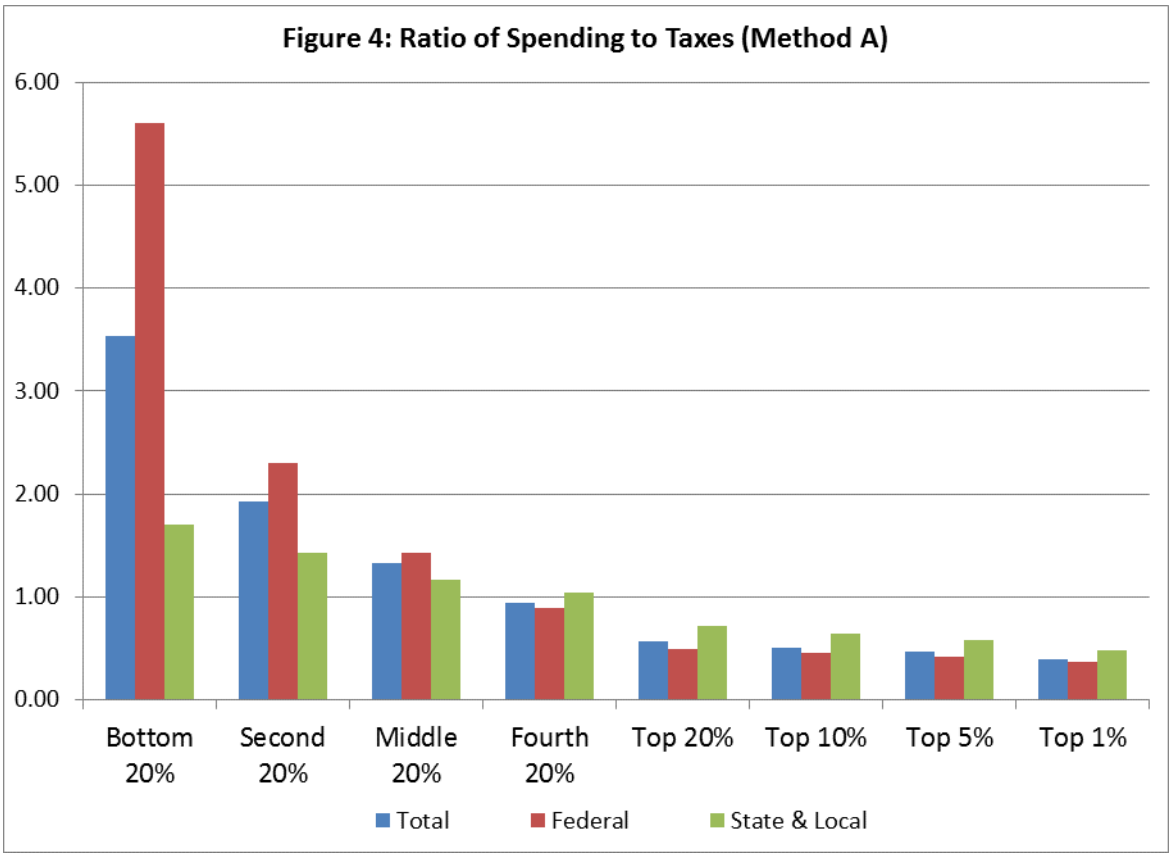
Overall, the results show that even if one assumes that most public goods benefit families in accordance with their income (i.e., benefit principle approach), governments are still redistributing a significant amount of income away from high-income families. However, one can also make the case that market income inequality is rather high in the United States and that income inequality remains high even despite the redistributive effects of fiscal policies.

B. Distribution of Taxes vs. Spending in 2012

The redistribution discussed above exists because the distribution of taxes across income groups differs from the distribution of government spending. This is illustrated in Figure 3. As one can see, the distribution of taxes is highly skewed towards upper-income taxpayers. The top quintile pays approximately 55 percent of combined federal, state and local taxes, while the bottom quintile pays less than 5 percent of total taxes. Spending, on the other hands, is much more evenly distributed than taxes across the quintiles under either the benefit principle approach (A) or the cost-of-services approach (B). Under the benefit principle approach, the first four quintiles each have similar shares of government spending (between 17-19 percent), while the top quintile is an outlier due to its disproportionate share of income, which is used as an allocator for many public goods. Note that although the top quintile has a disproportionate share of the spending under the benefit principle approach, its tax share is still significantly larger than its spending share, which means that it has a net negative redistribution. Under the cost-of-services approach, spending is more greatly skewed to the bottom quintile and falls gradually as one moves up the income spectrum.

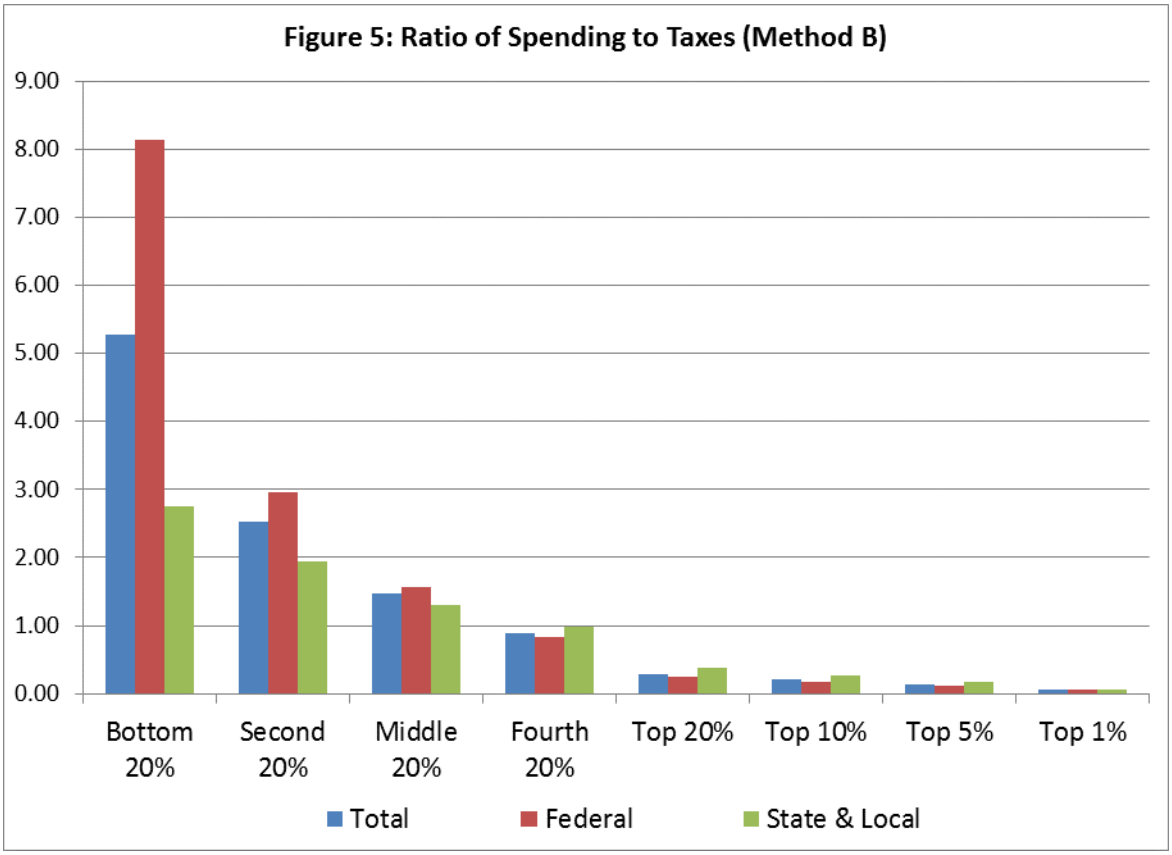


Figures 4 and 5 frame this question of taxes versus spending in a different way by comparing each income group's ratio of spending to taxes under both the benefit principle approach (Figure 4) and the cost-of-services approach (Figure 5). These graphs also show the ratios by level of government: federal and state and local. (These spending-to-tax ratios are also shown in tables throughout this paper, including Table 3a.)



Under the benefit principle approach (Method A) shown in Figure 4, the ratio of total spending to total taxes for families in the bottom quintile is 3.53. The ratio is around 2 for the second quintile and above 1 for the middle quintile. For the fourth quintile and above, the ratio is less than 1, indicating that taxes are greater than spending. For the top 1 percent, the ratio is 0.4. As the table shows, the difference in ratios between high-income families and low-income families is much larger for federal fiscal policy than state and local fiscal policy, which should be expected given that federal tax policies are more progressive than state and local tax policies and given that the federal government is engaged in greater transfer spending than state and local governments. For federal fiscal policy, the ratio of spending to taxes for the bottom quintile was

5.6, yet only 0.5 for the bottom quintile. At the state and local level, these ratios were 1.7 and 0.72 for the bottom and top quintiles, respectively.



Under the cost-of-services approach (Method B) shown in Figure 5, the gap in the ratios between income groups is much greater than under the benefit principle approach. Under the cost-of-services approach, the bottom quintile's ratio of total spending to total taxes is 5.28, while the top quintile's is 0.29. For families in the top 1 percent, this ratio is a miniscule 0.06 under the cost-of-services approach. Like the benefit principle approach, the federal ratios are much larger for low-income families than the state-and-local ratios. The federal ratio for families in the bottom quintile is 8.13, while the state and local ratio is only 2.76. For the middle quintile, the ratio of total spending to total taxes under the cost-of-services approach is 1.48, which is a combination of a 1.57 federal ratio and a 1.31 state-and-local ratio.

Readers should be aware that using the spending-to-tax ratio as a metric for fiscal policy redistribution is somewhat imperfect because a $1 decrease in taxes (the denominator) will change the ratio by a different amount than a $1 increase in spending (the numerator), even

though the net dollar effect on redistribution would be the same. This is especially problematic as the tax amount for low-income families approaches zero, thereby causing the ratio to grow larger and larger. For example, if government reduced spending for low-income families by $50 billion and also reduced their taxes by $40 billion, the ratio of spending-to-taxes would increase despite the fact that net redistribution has actually fallen.

C. Results under Alternative Treatment of Budget Deficits

The results presented above were based on the baseline methodology that proportionally raises taxes and reduces spending in order to close the budget deficit. But it is worth exploring how the results would change if this adjustment was not made. Table 4 presents the results assuming that the deficit is purely redistribution from the future. In other words, under this method, the deficit is purely a free lunch from future generations to today's population.

Allowing for "open" deficits has the overall effect of increasing the net redistribution to all income groups. This means that the amount of redistribution *to* the bottom income groups increases, while the amount of redistribution *from* the top income groups decreases. For the bottom quintile, the average redistribution under the benefit principle was $16,007 when deficits were closed. When the deficits are not closed, this figure increases to $20,000. Under the cost-of-services approach, the differences between those figures are $27,071 and $32,595, respectively. Interestingly, when one does not adjust taxes and spending to close deficits, the fourth quintile as a group (60-80th percentiles) actually goes from being slightly negative to positive under both the benefit principle approach and the cost-of-service approach.

Under the benefit principle approach, the aggregate amount of redistribution from the top quintile decreases from $1.18 trillion under the benefit principle to $596 billion when deficits are no longer closed. Under the cost-of-services approach, the aggregate redistribution estimate falls from $1.91 trillion to $1.43 trillion when deficits are no longer closed. These decreases are because redistribution is flowing from future generations to offset some of the redistribution from high-income group's to low-and-middle income groups.

Figure 2, which shows the percent change in income for each group as a result of redistribution, and Figures 4 and 5, which show the ratio of spending to taxes, would change noticeably if deficits are no longer closed, as seen in Table 4. How the question of open versus closed deficits affects these two redistribution metrics is discussed below in the context of the trend in redistribution from 2000-2012.

D. Trend from 2000-2012

Background of Fiscal Policy from 2000-2012

Over the past 13 years, fiscal policies have undergone many major policy changes in the United States, most notably at the federal level. While the federal government ran budget surpluses at the turn of the century, by the end of the decade, deficits were at record highs as a result of both economic conditions and policies enacted. In 2001 and 2003, a Republican Congress and President George W. Bush enacted sweeping income tax cuts that reduced tax liabilities for almost every tax return. Although these tax cuts were highly controversial, even President Obama agreed to extend all of the tax cuts two years beyond their original expiration date of 2010.

Spending under the Bush Administration increased from 2001-2008. The increase was largely in defense and homeland security spending following the September 11 terrorist attacks. However, three significant non-defense pieces of legislation that affected spending levels were also enacted during the Bush Administration. In 2001, No Child Left Behind went into effect, which substantially increased the federal government's role in K-12 education. In 2004, President Bush signed into law a new prescription drug benefit for seniors, and in 2008, President Bush signed into law the Troubled Asset Relief Program (TARP) in response to the financial crisis.

As President Obama entered office in January 2009, the financial system was mostly stabilized, but the macroeconomy was still in dire straits. In an attempt to stimulate the struggling economy, President Obama and the Democratic Congress enacted the American Recovery and Reinvestment Act of 2009 (ARRA). This economic stimulus legislation included large short-term increases in spending and temporary tax cuts. These tax cuts included a Making Work Pay Credit, which later morphed into a two-year payroll tax reduction, as well as expanded child tax

credits, EITC, and education tax credits. The spending in ARRA included significant increases in aid to state and local governments, higher education subsidies, and transportation and other infrastructure spending. In 2010, President Obama and the Democratic Congress also enacted what is arguably the most significant piece of legislation in decades: the Patient Protection and Affordable Care Act (PPACA), also known as "Obamacare." Readers should note that very little of PPACA is included in the results of this study as the major tax increases in PPACA did not go into effect until 2013 and the major coverage provisions do not take effect until 2014. For a distributional estimate of PPACA, see Prante and Fleenor (2010).

At the state and local level, cyclical forces largely shaped the past 12 years. The housing boom helped property taxes grow at above-normal rates during the early part of the decade, while other taxes grew mostly with the economy. State and local spending on health care grew faster than GDP, while education and other spending grew at about the same rate as GDP. State deficits increased during the recession of 2008-2009, although not nearly as rapidly as the federal deficit as most states are constrained to some extent by balanced budget laws.

Redistribution from 2000-2012

Tables 5-8 and Figures 6a-9 show how redistribution has changed from 2000 through 2012. Table 5 provides a breakdown of market income, total taxes, and total spending for four years: 2000, 2004, 2008 and 2012. Table 6 is identical to Table 5 except Table 6 does not close the budget deficit. Tables 7 and 8 are similar to Table 5 but are restricted to just federal fiscal policies (Table 7) or state and local fiscal policies (Table 8). Figures 6a-6e present a timeline of redistribution as a percentage of market income for each quintile for the period 2000-2012. Figures 7a-7e present a timeline of the ratio of spending to taxes for each quintile. Each of the ten figures contains four timelines: (1) benefit principle with closed deficit, (2) benefit principle with "open" deficit, (3) cost-of-services approach with closed deficit, and (4) cost-of-services approach with "open" deficit. It is especially important to consider both the open/closed deficit scenarios when comparing the time period of 2000 through 2012 because of the massive differences in budget deficits in the time period. In 2000, governments in the United States actually ran a surplus, and then by the end of the decade were running the largest deficits since WWII. (Readers should note that the appendix of this study contains multiple tables that break down market income, spending, and taxes for every year from 2000 through 2012 under both the

benefit principle approach and cost-of-services approach, as well under both closed deficits and "open" deficits.) Figures 8 and 9 present the ratios of spending to taxes for all quintiles in one graph.

The data show that when deficits are closed, redistribution from the top income quintile (as a percentage of its market income) has increased slightly since 2000, while redistribution to the bottom quintile has decreased noticeably. This decrease for the bottom quintile is mostly due to changes in federal fiscal policy, which includes an increase in the share of total federal taxes. On the other hand, redistribution to the second quintile (20-40th percentiles) has increased noticeably as federal transfers (most notably refundable tax credits) have increased sharply for this group since 2000. The middle quintile and the fourth quintile are mostly unchanged since 2000 under the deficits closed scenario.

When deficits are not closed, thereby allowing for redistribution to "flow from the future," redistribution to the bottom quintile is largely unchanged over the 12-year period. However, one can see that redistribution to the second and third quintiles has skyrocketed since 2000 when deficits are not closed. And at the top of the income spectrum, net redistribution for the fourth quintile actually turns positive when one does not close the deficit, and redistribution from the top quintile is significantly lower.

Readers will notice that Figures 6a-7e show a sharp uptick in 2008 under the "deficit open" scenario. This is due to the run-up in the federal budget deficit upon the onset of the financial crisis. When deficits are closed, there is no sharp uptick. As Table 6 shows, the ratio of spending to taxes for all families in 2012 under the open deficits scenario is 1.32 compared to 0.93 in 2000 and 1.14 in 2004, thereby implying a significant run-up in deficits.

Table 4: Distributional Analysis of Government Fiscal Policies Assuming Deficit is Purely Redistribution from Future, 2012[1]

Item	All Families	Bottom 20%	Second 20%	Middle 20%	Fourth 20%	Top 20%	Top 10%	Top 5%	Top 1%
Avg. Market Income[2]	81,602	9,561	31,053	56,884	100,242	311,405	469,228	713,599	1,992,095
(Share)	100%	3.1%	8.4%	14.0%	20.1%	55.0%	41.0%	31.4%	18.2%
Avg. Taxes[3]	27,456	5,640	10,434	17,740	30,473	104,716	162,076	252,834	744,519
Federal	17,385	2,422	5,596	10,490	19,324	71,011	110,565	172,126	496,640
State & Local	10,071	3,218	4,839	7,250	11,149	33,704	51,510	80,707	247,879
Avg. Spending (Method A)[4]	36,192	25,640	26,143	30,873	37,697	77,585	108,598	154,868	391,577
Federal	25,202	19,680	18,616	21,701	25,043	51,164	72,400	103,741	263,413
State & Local	10,990	5,960	7,527	9,172	12,654	26,420	36,197	51,127	128,164
Avg. Spending (Method B)[4]	36,192	38,235	34,198	34,289	35,219	39,669	43,263	47,225	62,715
Federal	25,202	28,553	23,986	23,937	23,173	25,330	28,216	31,339	44,273
State & Local	10,990	9,682	10,213	10,352	12,046	14,339	15,047	15,886	18,442
Avg. Redistribution (A)	8,735	20,000	15,708	13,133	7,224	-27,131	-53,478	-97,966	-352,942
Federal	7,816	17,258	13,020	11,211	5,719	-19,847	-38,165	-68,386	-233,226
State & Local	919	2,742	2,688	1,922	1,506	-7,284	-15,313	-29,580	-119,715
Avg. Redistribution (B)	8,735	32,595	23,764	16,549	4,746	-65,047	-118,813	-205,609	-681,803
Federal	7,816	26,130	18,390	13,447	3,849	-45,682	-82,349	-140,787	-452,367
State & Local	919	6,465	5,374	3,102	897	-19,366	-36,464	-64,822	-229,437
Ratio: spending to taxes (A)	1.32	4.55	2.51	1.74	1.24	0.74	0.67	0.61	0.53
Federal	1.45	8.12	3.33	2.07	1.30	0.72	0.65	0.60	0.53
State & Local	1.09	1.85	1.56	1.27	1.14	0.78	0.70	0.63	0.52
Ratio: spending to taxes (B)	1.32	6.78	3.28	1.93	1.16	0.38	0.27	0.19	0.08
Federal	1.45	11.79	4.29	2.28	1.20	0.36	0.26	0.18	0.09
State & Local	1.09	3.01	2.11	1.43	1.08	0.43	0.29	0.20	0.07
Income after Redistrib. (A)	90,338	29,560	46,761	70,017	107,466	284,274	415,750	615,633	1,639,154
(Share)	100%	8.6%	11.5%	15.5%	19.4%	45.4%	32.8%	24.5%	13.5%
Income after Redistrib. (B)	90,338	42,156	54,817	73,433	104,988	246,358	350,415	507,990	1,310,292
(Share)	100%	12.3%	13.5%	16.3%	19.0%	39.3%	27.7%	20.2%	10.8%

Notes:

1. Percentiles contain equal numbers of persons. Negative income famillies excluded from bottom quintile but included in totals. Unlike other tables in this study, no adjustment to taxes and spending to close the deficit is made in this table.
2. Market income is a broad definition of income from market sources (excludes transfers) that aggregates to BEA income totals.
3. Taxes total above includes some non-tax revenue sources. Refundable portion of tax credits are included in spending totals.
4. Method A assumes that most public goods benefit families in proportion to their incomes, while Method B allocates these public goods equally to households or in proportion to their family size (i.e., per person), depending on the spending category.

Source: Author calculations based on multiple data sources, primarily Census Bureau, IRS and Bureau of Economic Analysis.

Table 5: Distributional Analysis of Government Fiscal Policies, 2000-2012[1]

Item	All Families	Bottom 20%	Second 20%	Middle 20%	Fourth 20%	Top 20%	Top 10%	Top 5%	Top 1%
Avg. Market Income[2]									
2000	62,226	5,484	23,457	44,382	76,628	239,650	364,826	563,071	1,614,839
2004	68,830	6,513	26,799	50,321	86,697	260,886	391,872	595,732	1,652,606
2008	78,803	8,742	30,351	56,109	96,670	299,651	453,276	691,248	1,912,348
2012	81,602	9,561	31,053	56,884	100,242	311,405	469,228	713,599	1,992,095
Avg. Taxes[3]									
2000	21,511	3,571	7,790	14,134	24,093	83,923	131,272	208,395	634,980
2004	24,371	4,550	9,616	16,889	28,145	91,249	140,404	218,601	640,285
2008	30,045	5,717	11,198	19,648	33,356	115,250	179,399	281,269	829,544
2012	31,824	6,331	11,913	20,429	35,325	122,217	189,281	295,210	867,473
Avg. Spending (Method A)[4]									
2000	21,511	15,091	14,485	18,758	22,821	47,040	65,890	95,760	247,962
2004	24,371	16,922	17,163	21,208	25,807	52,818	73,747	106,098	267,715
2008	30,045	19,926	21,552	25,844	31,849	66,266	92,910	133,697	335,814
2012	31,824	22,339	22,941	27,125	33,284	68,545	95,857	136,642	345,369
Avg. Spending (Method B)[4]									
2000	21,511	22,263	19,465	20,868	21,550	24,278	26,166	28,951	37,518
2004	24,371	25,458	22,848	23,411	23,907	26,777	28,860	31,655	40,640
2008	30,045	30,478	28,224	28,622	29,878	34,609	37,883	42,387	58,366
2012	31,824	33,402	30,052	30,144	31,122	35,141	38,258	41,700	55,078
Ratio: spending to taxes (A)									
2000	1.00	4.23	1.86	1.33	0.95	0.56	0.50	0.46	0.39
2004	1.00	3.72	1.78	1.26	0.92	0.58	0.53	0.49	0.42
2008	1.00	3.49	1.92	1.32	0.95	0.57	0.52	0.48	0.40
2012	1.00	3.53	1.93	1.33	0.94	0.56	0.51	0.46	0.40
Ratio: spending to taxes (B)									
2000	1.00	6.23	2.50	1.48	0.89	0.29	0.20	0.14	0.06
2004	1.00	5.59	2.38	1.39	0.85	0.29	0.21	0.14	0.06
2008	1.00	5.33	2.52	1.46	0.90	0.30	0.21	0.15	0.07
2012	1.00	5.28	2.52	1.48	0.88	0.29	0.20	0.14	0.06
Income after Redistrib. (A)									
2000	62,226	17,003	30,152	49,007	75,355	202,767	299,444	450,436	1,227,821
2004	68,830	18,884	34,346	54,640	84,359	222,454	325,215	483,229	1,280,036
2008	78,803	22,952	40,704	62,305	95,162	250,667	366,787	543,675	1,418,619
2012	81,602	25,568	42,081	63,579	98,201	257,734	375,804	555,031	1,469,991
Income after Redistrib. (B)									
2000	62,226	24,175	35,132	51,116	74,085	180,005	259,719	383,626	1,017,376
2004	68,830	27,421	40,031	56,844	82,459	196,414	280,328	408,785	1,052,961
2008	78,803	33,503	47,376	65,083	93,192	219,010	311,760	452,365	1,141,171
2012	81,602	36,632	49,192	66,599	96,038	224,329	318,205	460,090	1,179,700

Notes:

1. Percentiles contain equal numbers of persons. Negative income famillies excluded from bottom quintile but included in totals. Taxes and spending are adjusted proportionally to close government deficits, thereby making spending equal to taxes.
2. Market income is a broad definition of income from market sources (excludes transfers) that aggregates to BEA income totals.
3. Taxes total above includes some non-tax revenue sources. Refundable portion of tax credits are included in spending totals.
4. Method A assumes that most public goods benefit families in proportion to their incomes, while Method B allocates these public goods equally to households or in proportion to their family size (i.e., per person), depending on the spending category.

Source: Author calculations based on multiple data sources, primarily Census Bureau, IRS and Bureau of Economic Analysis.

Table 6: Distributional Analysis of Government Fiscal Policies, 2000-2012, Assuming Deficit is Purely Redistribution from Future, 2012[1]

Item	All Families	Bottom 20%	Second 20%	Middle 20%	Fourth 20%	Top 20%	Top 10%	Top 5%	Top 1%
Avg. Market Income[2]									
2000	62,226	5,484	23,457	44,382	76,628	239,650	364,826	563,071	1,614,839
2004	68,830	6,513	26,799	50,321	86,697	260,886	391,872	595,732	1,652,606
2008	78,803	8,742	30,351	56,109	96,670	299,651	453,276	691,248	1,912,348
2012	81,602	9,561	31,053	56,884	100,242	311,405	469,228	713,599	1,992,095
Avg. Taxes[3]									
2000	22,309	3,671	8,053	14,642	24,991	87,152	136,338	216,445	659,509
2004	22,803	4,352	9,071	15,842	26,304	85,064	130,880	203,820	597,511
2008	27,165	5,301	10,223	17,823	30,127	103,760	161,505	253,318	748,364
2012	27,456	5,640	10,434	17,740	30,473	104,716	162,076	252,834	744,519
Avg. Spending (Method A)[4]									
2000	20,714	14,496	13,945	18,055	21,998	45,352	63,511	92,280	238,929
2004	25,939	18,126	18,286	22,578	27,387	56,056	78,327	112,765	284,653
2008	32,924	21,960	23,655	28,346	34,804	72,417	101,611	146,308	367,655
2012	36,192	25,640	26,143	30,873	37,697	77,585	108,598	154,868	391,577
Avg. Spending (Method B)[4]									
2000	20,714	21,401	18,742	20,087	20,777	23,427	25,243	27,911	36,137
2004	25,939	27,224	24,333	24,919	25,354	28,338	30,567	33,581	43,236
2008	32,924	33,539	30,954	31,382	32,630	37,746	41,373	46,396	64,250
2012	36,192	38,235	34,198	34,289	35,219	39,669	43,263	47,225	62,715
Ratio: spending to taxes (A)									
2000	0.93	3.95	1.73	1.23	0.88	0.52	0.47	0.43	0.36
2004	1.14	4.16	2.02	1.43	1.04	0.66	0.60	0.55	0.48
2008	1.21	4.14	2.31	1.59	1.16	0.70	0.63	0.58	0.49
2012	1.32	4.55	2.51	1.74	1.24	0.74	0.67	0.61	0.53
Ratio: spending to taxes (B)									
2000	0.93	5.83	2.33	1.37	0.83	0.27	0.19	0.13	0.05
2004	1.14	6.26	2.68	1.57	0.96	0.33	0.23	0.16	0.07
2008	1.21	6.33	3.03	1.76	1.08	0.36	0.26	0.18	0.09
2012	1.32	6.78	3.28	1.93	1.16	0.38	0.27	0.19	0.08
Income after Redistrib. (A)									
2000	60,631	16,308	29,349	47,795	73,634	197,850	291,999	438,906	1,194,258
2004	71,966	20,287	36,014	57,058	87,780	231,877	339,319	504,677	1,339,748
2008	84,562	25,401	43,782	66,631	101,347	268,308	393,381	584,238	1,531,639
2012	90,338	29,560	46,761	70,017	107,466	284,274	415,750	615,633	1,639,154
Income after Redistrib. (B)									
2000	60,631	23,214	34,146	49,827	72,413	175,926	253,730	374,538	991,466
2004	71,966	29,385	42,062	59,398	85,746	204,159	291,558	425,493	1,098,331
2008	84,562	36,980	51,082	69,667	99,173	233,636	333,144	484,325	1,228,235
2012	90,338	42,156	54,817	73,433	104,988	246,358	350,415	507,990	1,310,292

Notes:

1. Percentiles contain equal numbers of persons. Negative income famillies excluded from bottom quintile but included in totals.
2. Market income is a broad definition of income from market sources (excludes transfers) that aggregates to BEA income totals.
3. Taxes total above includes some non-tax revenue sources. Refundable portion of tax credits are included in spending totals.
4. Method A assumes that most public goods benefit families in proportion to their incomes, while Method B allocates these public goods equally to households or in proportion to their family size (i.e., per person), depending on the spending category.

Source: Author calculations based on multiple data sources, primarily Census Bureau, IRS and Bureau of Economic Analysis.

Table 7: Distributional Analysis of Federal Government Fiscal Policies, 2000-2012[1]

Item	All Families	Bottom 20%	Second 20%	Middle 20%	Fourth 20%	Top 20%	Top 10%	Top 5%	Top 1%
Avg. Market Income[2]									
2000	62,226	5,484	23,457	44,382	76,628	239,650	364,826	563,071	1,614,839
2004	68,830	6,513	26,799	50,321	86,697	260,886	391,872	595,732	1,652,606
2008	78,803	8,742	30,351	56,109	96,670	299,651	453,276	691,248	1,912,348
2012	81,602	9,561	31,053	56,884	100,242	311,405	469,228	713,599	1,992,095
Avg. Taxes[3]									
2000	14,345	1,342	4,349	8,927	16,233	59,737	93,939	149,360	455,184
2004	15,790	1,807	5,345	10,465	18,598	62,920	96,910	150,313	433,991
2008	19,702	2,484	6,405	12,326	22,182	79,811	124,306	193,914	559,920
2012	21,293	2,967	6,854	12,848	23,668	86,975	135,420	210,820	608,285
Avg. Spending (Method A)[4]									
2000	14,345	11,212	9,755	12,769	14,474	29,591	41,901	61,640	160,267
2004	15,790	12,364	11,340	13,810	15,745	32,288	45,795	66,827	170,022
2008	19,702	14,248	14,488	17,183	19,958	41,540	58,977	85,731	216,904
2012	21,293	16,628	15,729	18,336	21,159	43,230	61,173	87,653	222,564
Avg. Spending (Method B)[4]									
2000	14,345	16,018	13,020	14,143	13,541	14,606	15,942	18,216	24,704
2004	15,790	18,048	14,995	15,186	14,390	15,392	16,890	19,183	26,108
2008	19,702	21,320	18,748	18,928	18,524	20,970	23,502	27,283	41,038
2012	21,293	24,125	20,266	20,225	19,579	21,402	23,840	26,479	37,407
Ratio: spending to taxes (A)									
2000	1.00	8.36	2.24	1.43	0.89	0.50	0.45	0.41	0.35
2004	1.00	6.84	2.12	1.32	0.85	0.51	0.47	0.44	0.39
2008	1.00	5.74	2.26	1.39	0.90	0.52	0.47	0.44	0.39
2012	1.00	5.60	2.29	1.43	0.89	0.50	0.45	0.42	0.37
Ratio: spending to taxes (B)									
2000	1.00	11.94	2.99	1.58	0.83	0.24	0.17	0.12	0.05
2004	1.00	9.99	2.81	1.45	0.77	0.24	0.17	0.13	0.06
2008	1.00	8.58	2.93	1.54	0.84	0.26	0.19	0.14	0.07
2012	1.00	8.13	2.96	1.57	0.83	0.25	0.18	0.13	0.06
Income after Redistrib. (A)									
2000	62,226	15,355	28,863	48,224	74,869	209,504	312,787	475,351	1,319,922
2004	68,830	17,070	32,795	53,666	83,844	230,254	340,757	512,246	1,388,636
2008	78,803	20,506	38,434	60,965	94,446	261,380	387,947	583,065	1,569,333
2012	81,602	23,222	39,928	62,371	97,733	267,660	394,981	590,431	1,606,374
Income after Redistrib. (B)									
2000	62,226	20,161	32,128	49,598	73,935	194,519	286,829	431,927	1,184,359
2004	68,830	22,754	36,449	55,042	82,489	213,357	311,852	464,602	1,244,723
2008	78,803	27,578	42,695	62,711	93,012	240,810	352,472	524,617	1,393,466
2012	81,602	30,719	44,465	64,260	96,153	245,832	357,648	529,258	1,421,217

Notes:

1. Percentiles contain equal numbers of persons. Negative income famillies excluded from bottom quintile but included in totals. Taxes and spending are adjusted proportionally to close government deficits, thereby making spending equal to taxes.
2. Market income is a broad definition of income from market sources (excludes transfers) that aggregates to BEA income totals.
3. Taxes total above includes some non-tax revenue sources. Refundable portion of tax credits are included in spending totals.
4. Method A assumes that most public goods benefit families in proportion to their incomes, while Method B allocates these public goods equally to households or in proportion to their family size (i.e., per person), depending on the spending category.

Source: Author calculations based on multiple data sources, primarily Census Bureau, IRS and Bureau of Economic Analysis.

Table 8: Distributional Analysis of State & Local Government Fiscal Policies, 2000-2012[1]

Item	All Families	Bottom 20%	Second 20%	Middle 20%	Fourth 20%	Top 20%	Top 10%	Top 5%	Top 1%
Avg. Market Income[2]									
2000	62,226	5,484	23,457	44,382	76,628	239,650	364,826	563,071	1,614,839
2004	68,830	6,513	26,799	50,321	86,697	260,886	391,872	595,732	1,652,606
2008	78,803	8,742	30,351	56,109	96,670	299,651	453,276	691,248	1,912,348
2012	81,602	9,561	31,053	56,884	100,242	311,405	469,228	713,599	1,992,095
Avg. Taxes[3]									
2000	7,167	2,230	3,442	5,207	7,860	24,186	37,333	59,035	179,797
2004	8,581	2,743	4,271	6,424	9,546	28,329	43,494	68,288	206,293
2008	10,343	3,232	4,794	7,321	11,174	35,440	55,093	87,356	269,624
2012	10,530	3,365	5,059	7,581	11,657	35,242	53,861	84,390	259,188
Avg. Spending (Method A)[4]									
2000	7,167	3,878	4,730	5,990	8,346	17,449	23,990	34,121	87,696
2004	8,581	4,557	5,823	7,398	10,062	20,529	27,952	39,271	97,693
2008	10,343	5,678	7,064	8,661	11,890	24,726	33,933	47,966	118,910
2012	10,530	5,710	7,212	8,789	12,125	25,315	34,684	48,990	122,805
Avg. Spending (Method B)[4]									
2000	7,167	6,245	6,445	6,725	8,010	9,672	10,223	10,734	12,814
2004	8,581	7,410	7,853	8,225	9,516	11,385	11,970	12,472	14,532
2008	10,343	9,158	9,475	9,693	11,354	13,639	14,380	15,103	17,329
2012	10,530	9,278	9,786	9,920	11,542	13,739	14,417	15,222	17,671
Ratio: spending to taxes (A)									
2000	1.00	1.74	1.37	1.15	1.06	0.72	0.64	0.58	0.49
2004	1.00	1.66	1.36	1.15	1.05	0.72	0.64	0.58	0.47
2008	1.00	1.76	1.47	1.18	1.06	0.70	0.62	0.55	0.44
2012	1.00	1.70	1.43	1.16	1.04	0.72	0.64	0.58	0.47
Ratio: spending to taxes (B)									
2000	1.00	2.80	1.87	1.29	1.02	0.40	0.27	0.18	0.07
2004	1.00	2.70	1.84	1.28	1.00	0.40	0.28	0.18	0.07
2008	1.00	2.83	1.98	1.32	1.02	0.38	0.26	0.17	0.06
2012	1.00	2.76	1.93	1.31	0.99	0.39	0.27	0.18	0.07
Income after Redistrib. (A)									
2000	62,226	7,132	24,745	45,165	77,114	232,913	351,482	538,156	1,522,738
2004	68,830	8,327	28,350	51,296	87,212	253,086	376,330	566,715	1,544,005
2008	78,803	11,188	32,621	57,449	97,386	288,937	432,116	651,858	1,761,634
2012	81,602	11,906	33,206	58,091	100,710	301,479	450,052	678,199	1,855,712
Income after Redistrib. (B)									
2000	62,226	9,499	26,461	45,900	76,778	225,136	337,716	514,770	1,447,856
2004	68,830	11,179	30,380	52,123	86,666	243,942	360,348	539,915	1,460,844
2008	78,803	14,668	35,032	58,481	96,850	277,851	412,563	618,996	1,660,053
2012	81,602	15,474	35,779	59,222	100,127	289,903	429,785	644,431	1,750,578

Notes:

1. Percentiles contain equal numbers of persons. Negative income famillies excluded from bottom quintile but included in totals. Taxes and spending are adjusted proportionally to close government deficits, thereby making spending equal to taxes.
2. Market income is a broad definition of income from market sources (excludes transfers) that aggregates to BEA income totals.
3. Taxes total above includes some non-tax revenue sources. Refundable portion of tax credits are included in spending totals.
4. Method A assumes that most public goods benefit families in proportion to their incomes, while Method B allocates these public goods equally to households or in proportion to their family size (i.e., per person), depending on the spending category.

Source: Author calculations based on multiple data sources, primarily Census Bureau, IRS and Bureau of Economic Analysis.

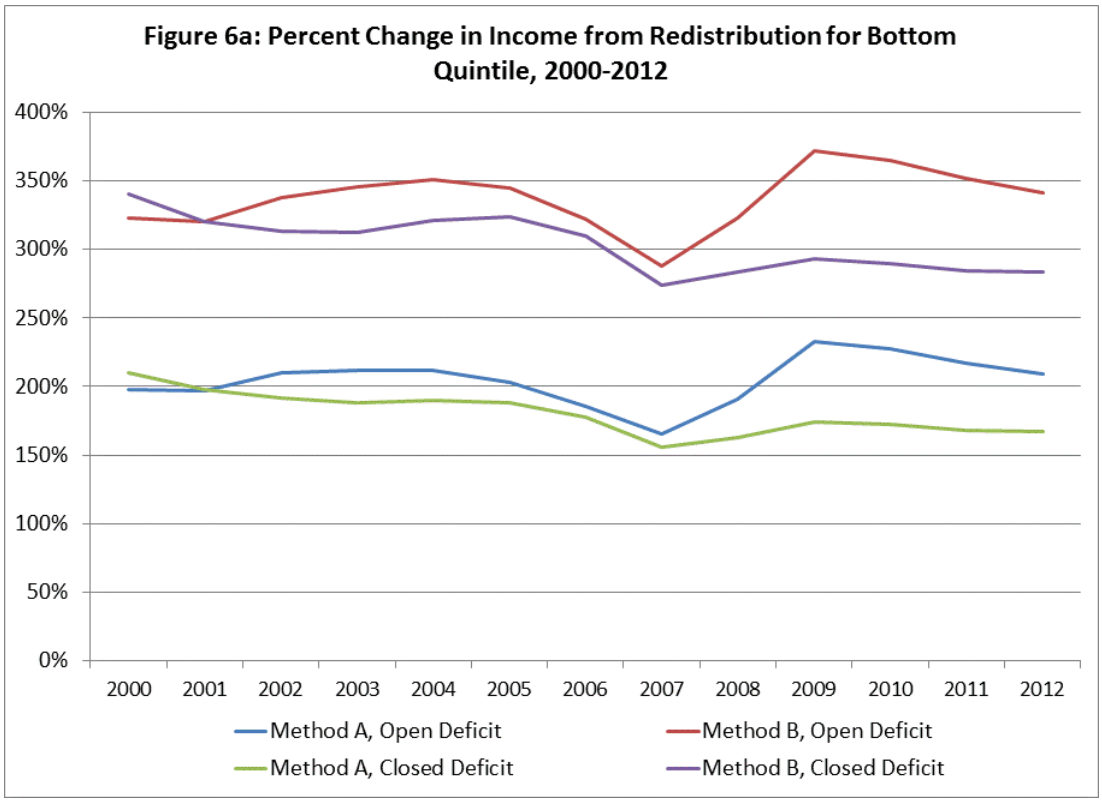


Figure 6a: Percent Change in Income from Redistribution for Bottom Quintile, 2000-2012
400%
350%
300%
250%
200%
150%
100%
50%
0%
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
Method A, Open Deficit
Method B, Open Deficit
Method A, Closed Deficit
Method B, Closed Deficit

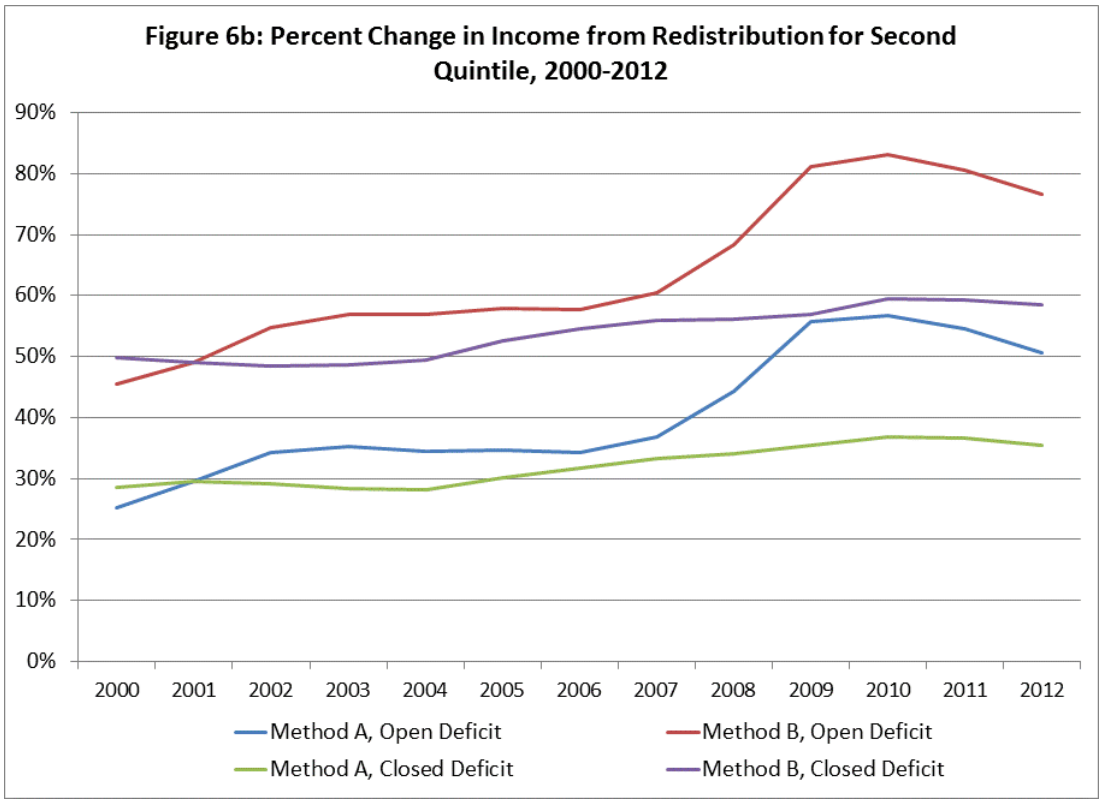


Figure 6b: Percent Change in Income from Redistribution for Second Quintile, 2000-2012
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
Method A, Open Deficit
Method B, Open Deficit
Method A, Closed Deficit
Method B, Closed Deficit

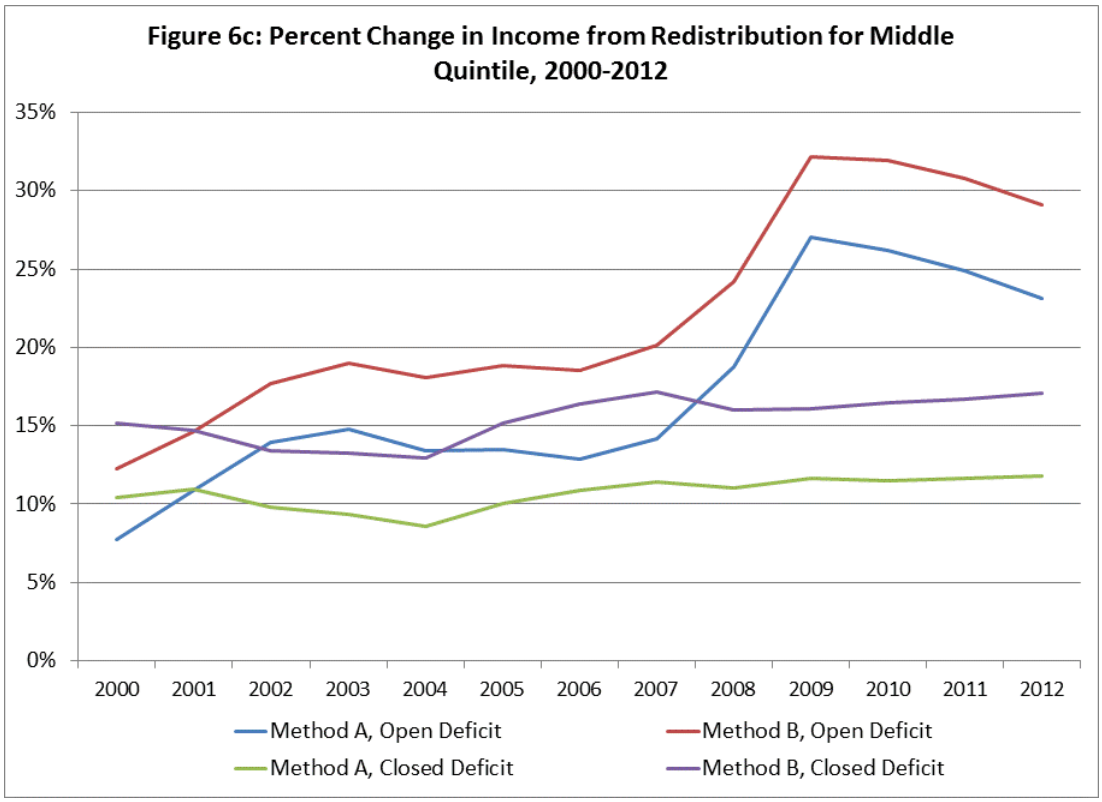


Figure 6c: Percent Change in Income from Redistribution for Middle Quintile, 2000-2012
35%
30%
25%
20%
15%
10%
5%
0%
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
Method A, Open Deficit
Method B, Open Deficit
Method A, Closed Deficit
Method B, Closed Deficit

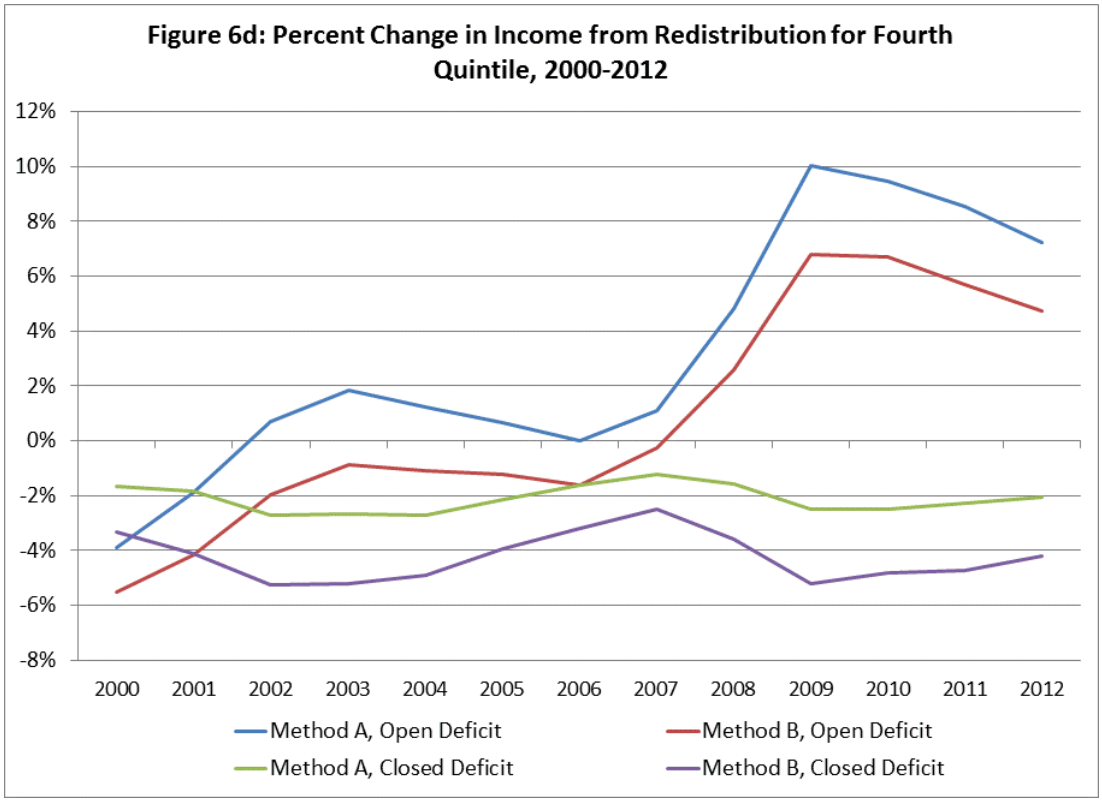


Figure 6d: Percent Change in Income from Redistribution for Fourth Quintile, 2000-2012
12%
10%
8%
6%
4%
2%
0%
-2%
-4%
-6%
-8%
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
Method A, Open Deficit
Method B, Open Deficit
Method A, Closed Deficit
Method B, Closed Deficit

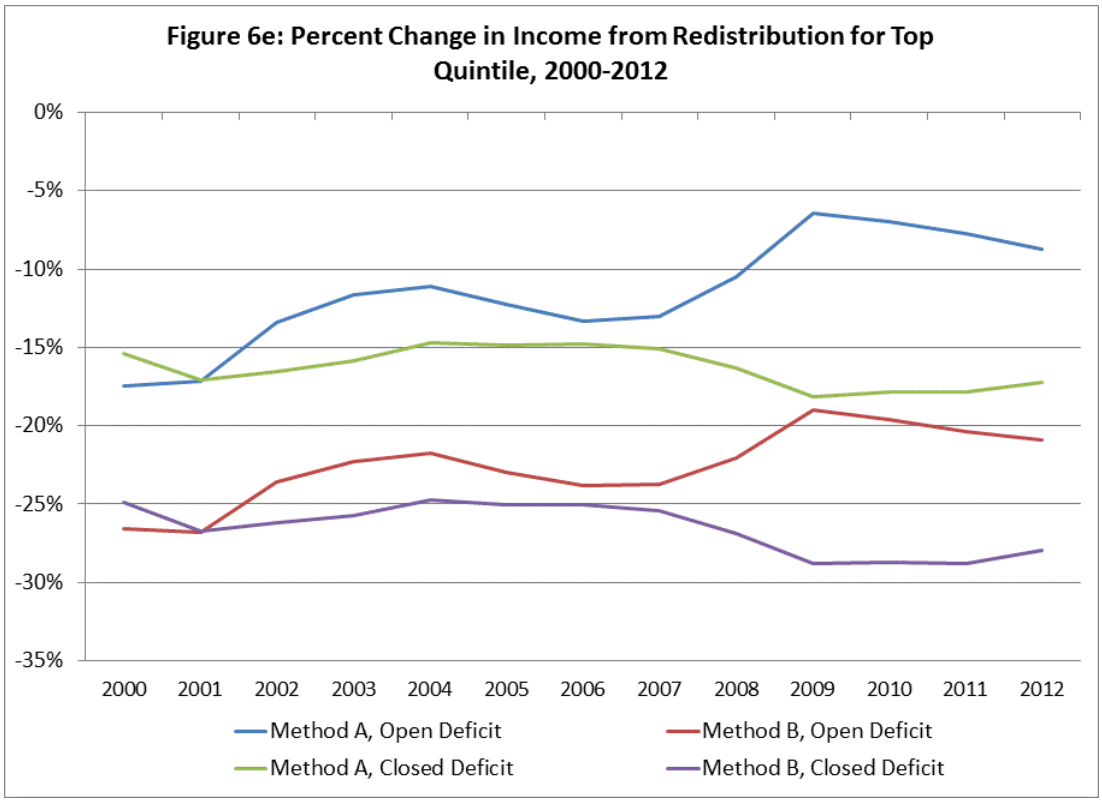


Figure 6e: Percent Change in Income from Redistribution for Top Quintile, 2000-2012
0%
-5%
-10%
-15%
-20%
-25%
-30%
-35%
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
Method A, Open Deficit
Method B, Open Deficit
Method A, Closed Deficit
Method B, Closed Deficit

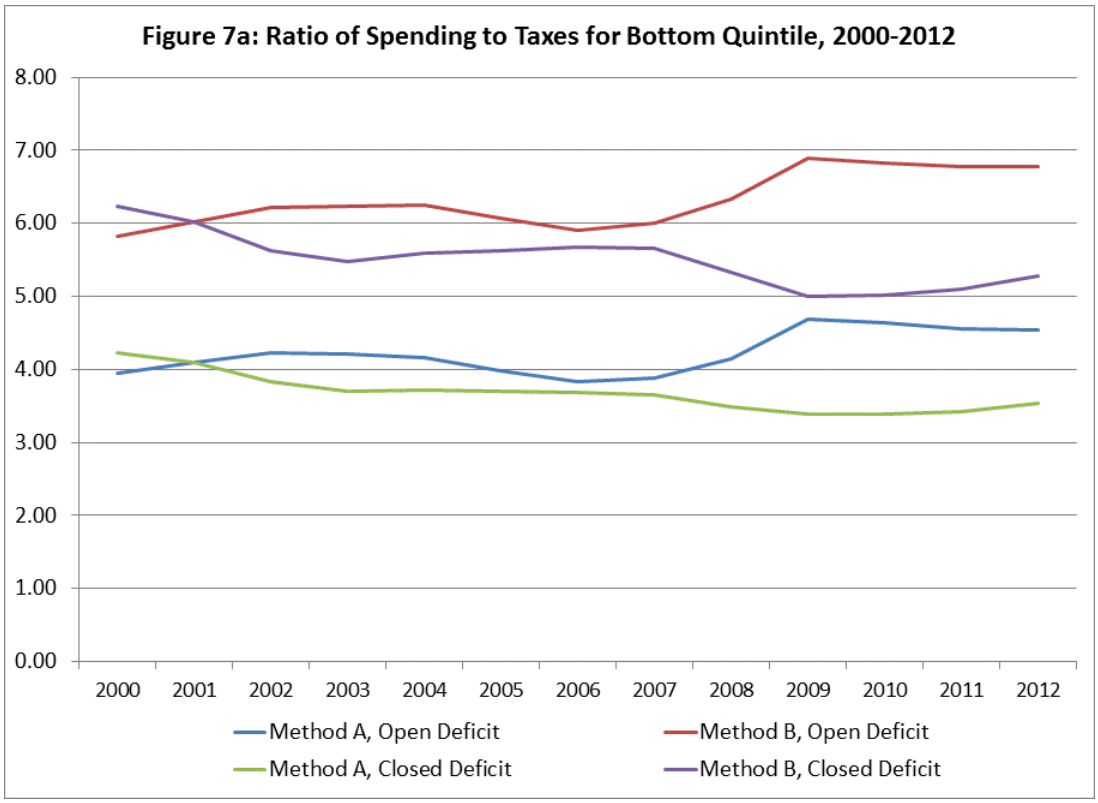


Figure 7a: Ratio of Spending to Taxes for Bottom Quintile, 2000-2012
8.00
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
Method A, Open Deficit
Method B, Open Deficit
Method A, Closed Deficit
Method B, Closed Deficit

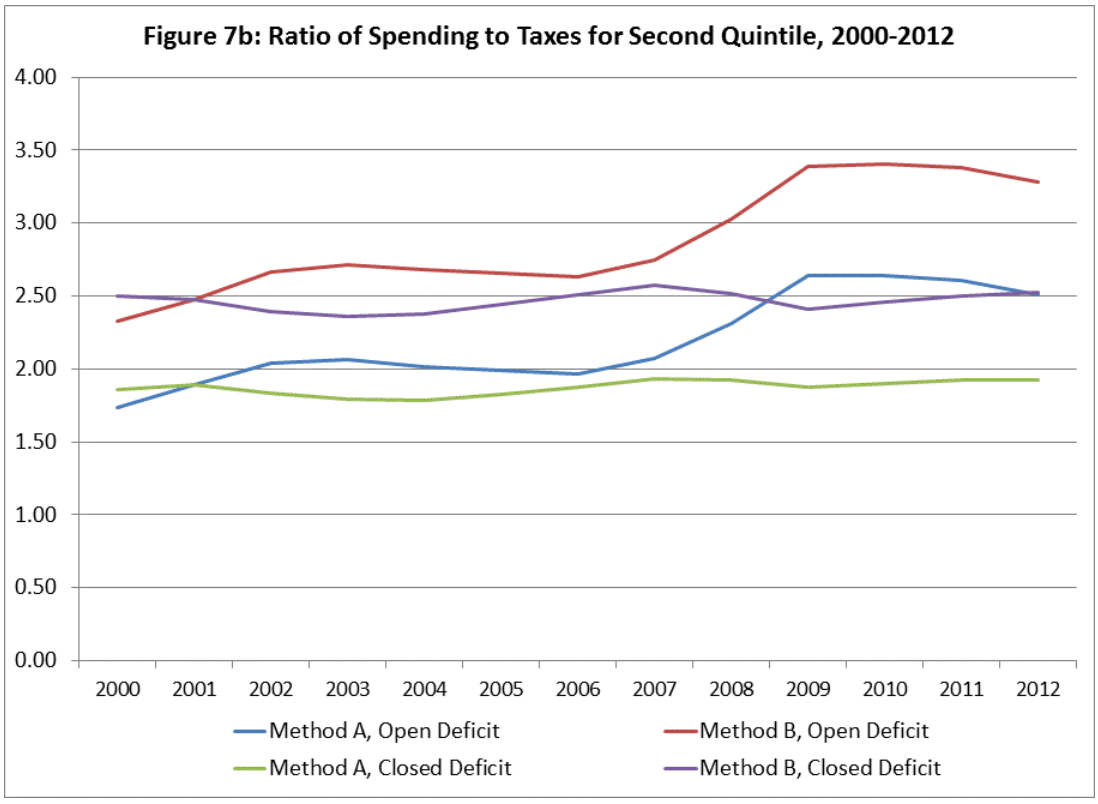


Figure 7b: Ratio of Spending to Taxes for Second Quintile, 2000-2012
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012
Method A, Open Deficit
Method B, Open Deficit
Method A, Closed Deficit
Method B, Closed Deficit

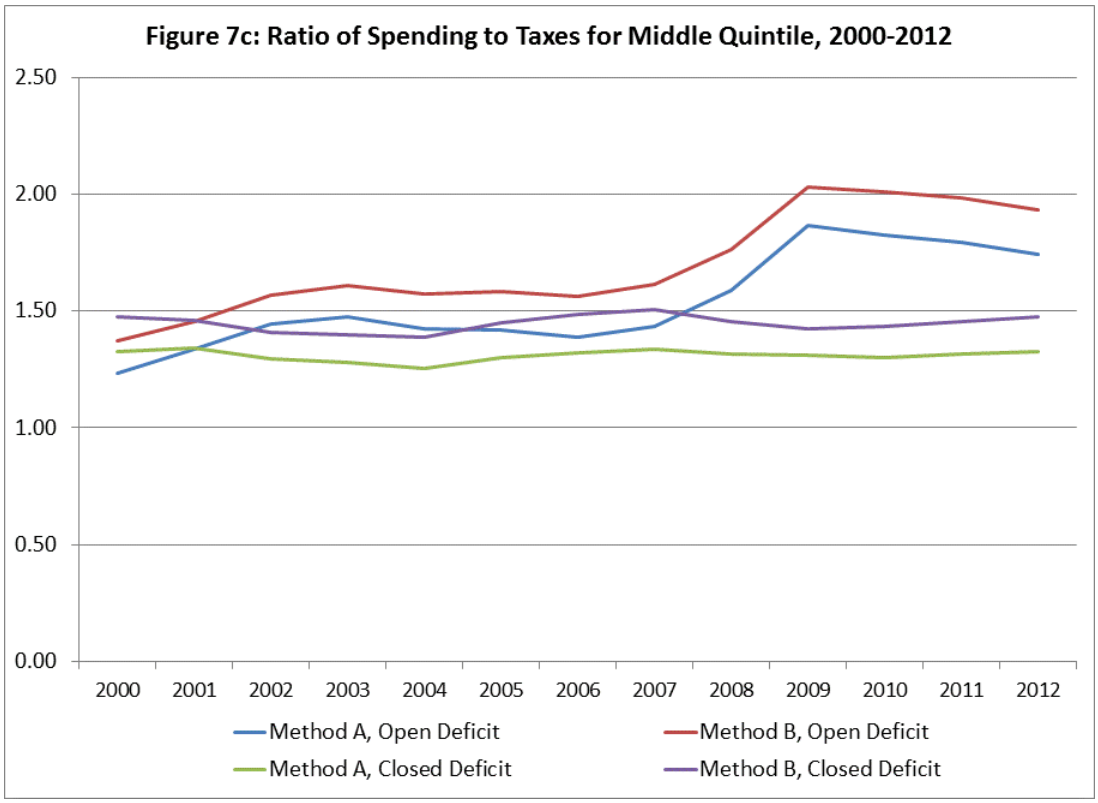


Figure 7c: Ratio of Spending to Taxes for Middle Quintile, 2000-2012
2.50
2.00
1.50
1.00
0.50
0.00
2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012
Method A, Open Deficit
Method B, Open Deficit
Method A, Closed Deficit
Method B, Closed Deficit

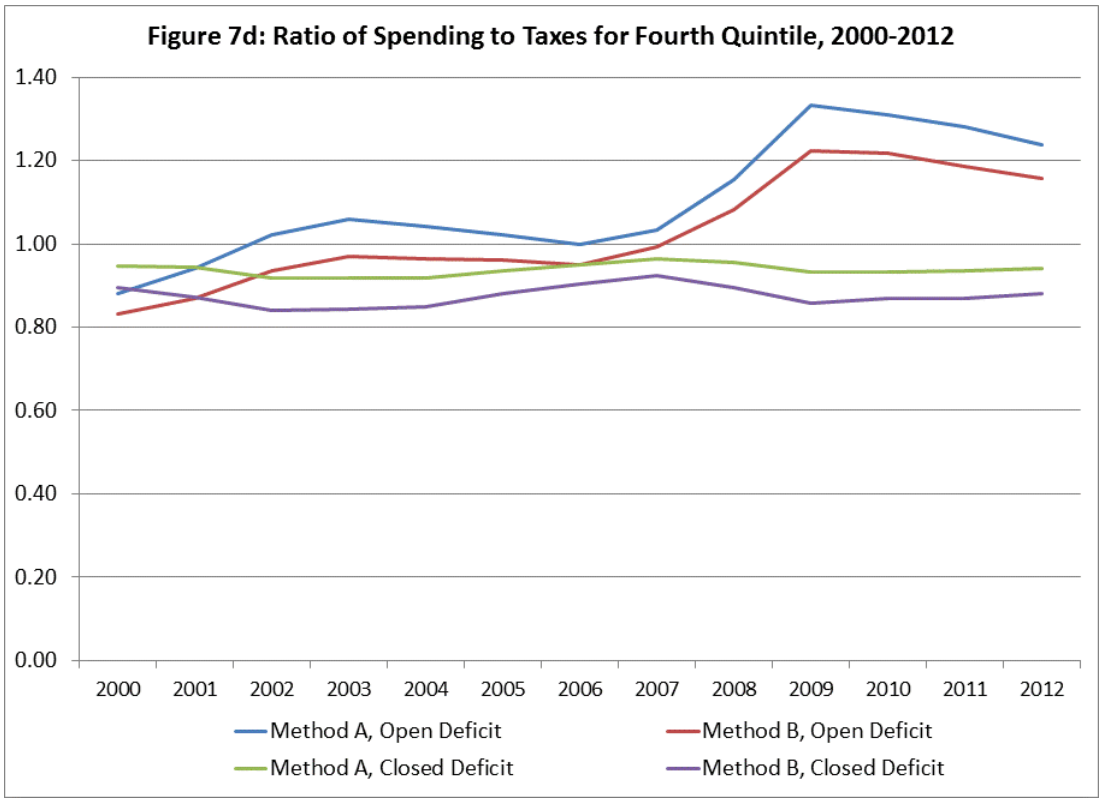


Figure 7d: Ratio of Spending to Taxes for Fourth Quintile, 2000-2012
1.40
1.20
1.00
0.80
0.60
0.40
0.20
0.00
2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012
Method A, Open Deficit
Method B, Open Deficit
Method A, Closed Deficit
Method B, Closed Deficit

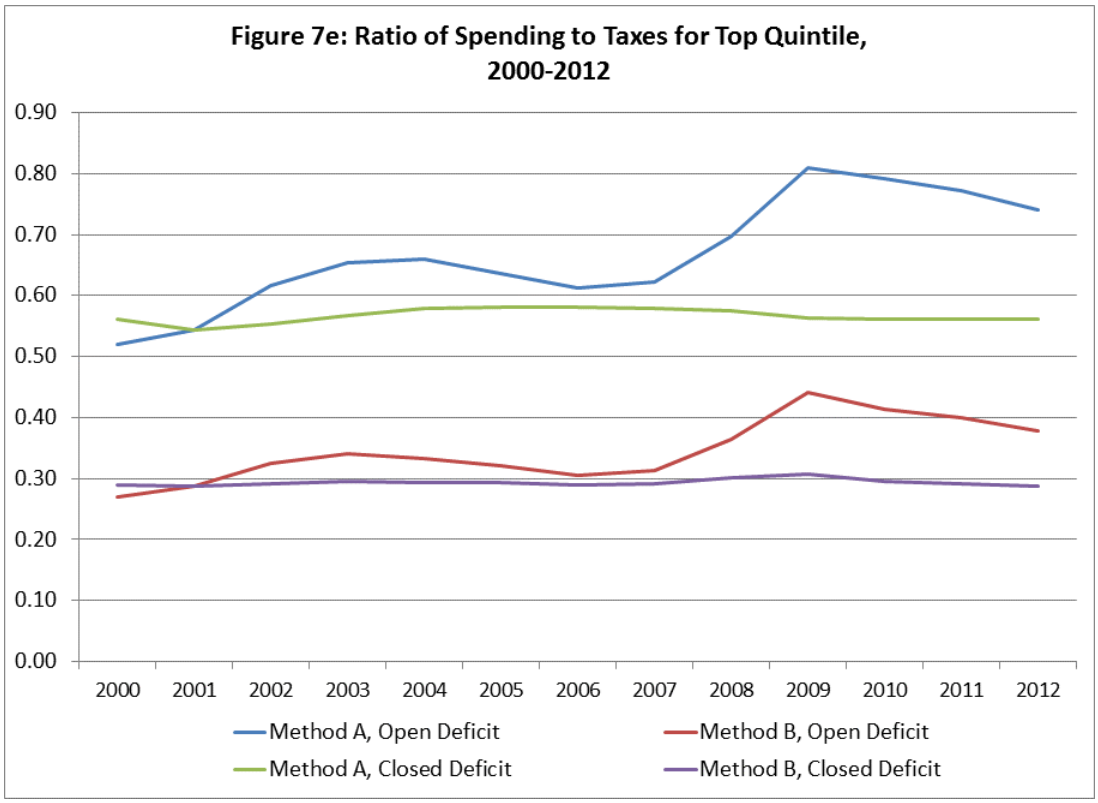


Figure 7e: Ratio of Spending to Taxes for Top Quintile, 2000-2012
0.90
0.80
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00
2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012
Method A, Open Deficit
Method B, Open Deficit
Method A, Closed Deficit
Method B, Closed Deficit

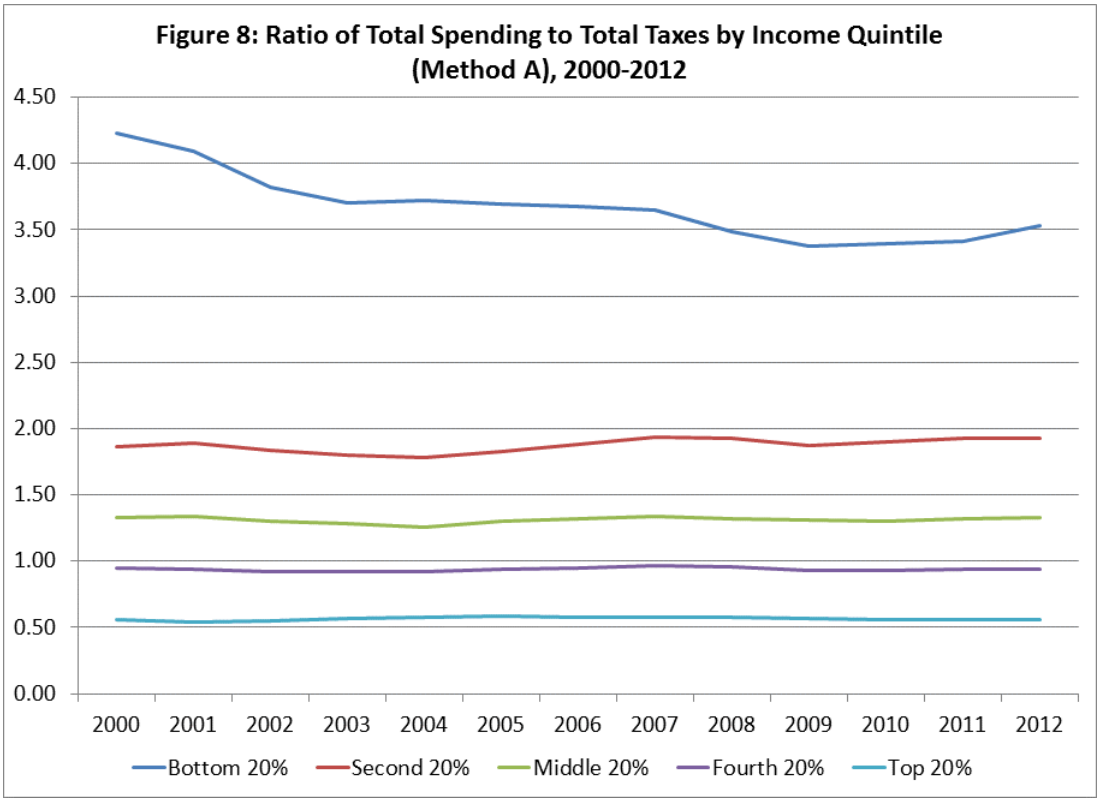


Figure 8: Ratio of Total Spending to Total Taxes by Income Quintile (Method A), 2000-2012
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012
Bottom 20%
Second 20%
Middle 20%
Fourth 20%
Top 20%

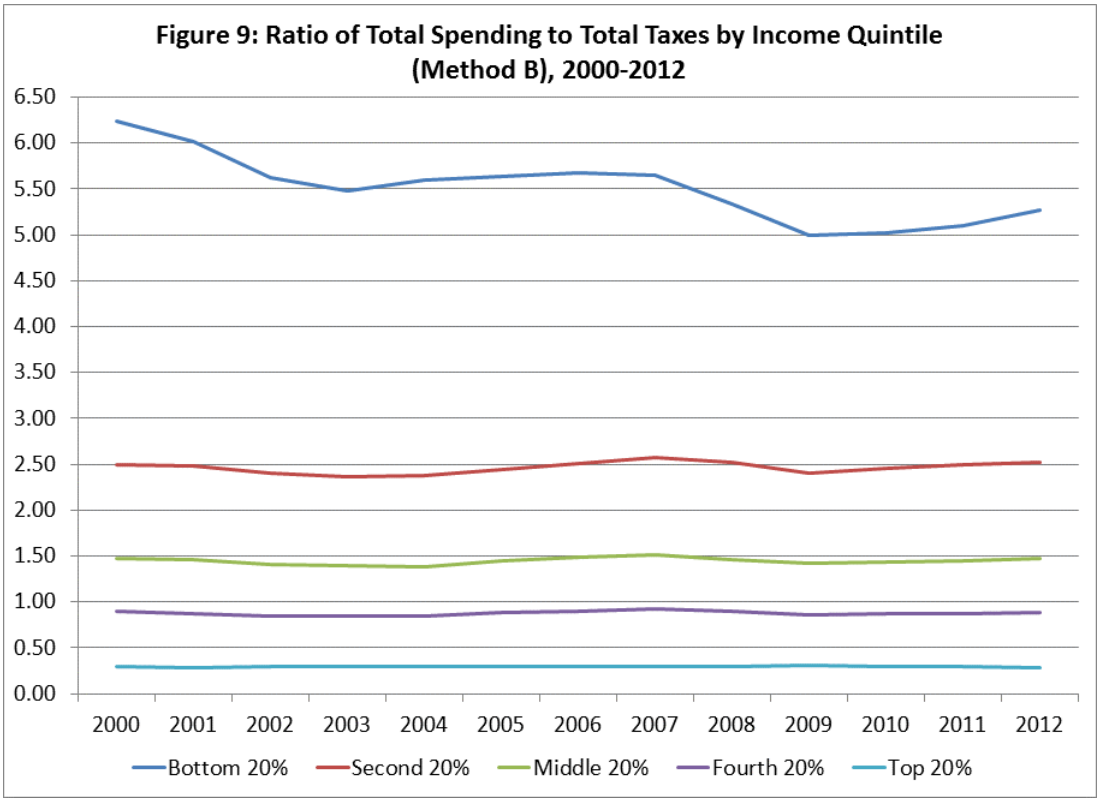


Figure 9: Ratio of Total Spending to Total Taxes by Income Quintile (Method B), 2000-2012
6.50
6.00
5.50
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012
Bottom 20%
Second 20%
Middle 20%
Fourth 20%
Top 20%

IV. Distribution of Taxes

This section discusses the distribution of taxes in the United States. Overall, the tax system in the United States is progressive. That is, not only do high-income families pay more in mere dollar amounts than low-income families (see Table 9), high-income families pay a higher percentage of their income in taxes than low-income families (see Table 10). This necessarily implies that the tax shares for high-income groups exceed their income shares, while the tax shares of low-income groups are less than their income shares (see Table 11). Federal taxes, in total, are more progressive than state and local taxes due primarily to the significance of the federal individual income tax, which is highly progressive. State and local taxes are regressive at the low-to-middle end of the income spectrum, but are slightly progressive at the high end. The degree of progressivity of state and local taxes depends greatly on the incidence of the property tax, which is unsettled in the public finance literature (see Section II).

Readers should be aware that the comprehensive income concept used in this section and in Section V differs from the market income concept used elsewhere in the study. Families are still placed in percentiles based on market income in order to be consistent with the rest of the study, but tax rates are calculated as a percentage of comprehensive income. Comprehensive income equals market income plus government cash transfers and the market value of in-kind government transfers. Comprehensive income is used instead of market income because taxes can be paid out of income from more sources than just market income. This is also consistent with standard distributional analysis of tax policies.

Readers should also note that federal refundable tax credits, such as the Earned Income Tax Credit, are generally classified as spending programs in this study and not as reductions in taxes. BEA and OMB classify the refundable portion of these tax credits as outlays (like this study does). Other organizations' distributional analyses often include these credits as negative taxes since they are administered by the IRS via the federal income tax. In the interest of full disclosure, tables in this section provide supplemental information showing the results with refundable tax credits included as negative taxes.

Finally, readers should know that the total tax amounts included in this section differ from those elsewhere in the study because they do not include either non-tax revenues or the so-called

"deficit tax." Recall that in estimating redistribution, this study includes non-tax revenues and proportionally increases every family's taxes in order to close half of the government's deficit. (Reductions in spending account for the other half.) The tables in this section are instead focused only on taxes paid and are therefore designed to be comparable to standard tax distribution studies. In the interest of full disclosure, however, the tables in this section do include supplemental lines showing the non-tax revenue amounts and the deficit tax amount so that readers can reconcile the difference between the taxes total in this section and the total taxes amounts in Section III.

Table 9: Distributional Analysis of Taxes: Average Tax per Family, by Type of Tax, 2012[1]

Item	All Families	Bottom 20%	Second 20%	Middle 20%	Fourth 20%	Top 20%	Top 10%	Top 5%	Top 1%
Avg. Income[2]	92,511	22,305	41,461	68,237	110,084	320,427	479,257	723,893	2,005,287
Avg. Taxes (Total)[3]	25,199	4,466	9,145	16,174	28,493	97,540	150,087	232,718	675,241
Avg. Federal Taxes	15,951	1,612	4,761	9,498	18,114	66,530	103,022	159,418	452,762
Individual Income	7,484	125	807	2,648	6,381	39,432	66,549	109,497	336,466
Payroll	5,245	632	2,366	4,516	8,168	15,971	19,154	22,503	33,268
Corporate Income	1,926	232	673	1,174	2,033	8,075	13,102	21,306	67,859
Alcoholic Beverages	61	29	34	61	87	136	158	188	214
Tobacco	109	100	117	126	123	75	56	62	65
Motor Fuels	222	124	169	226	297	393	421	502	638
Airport	92	34	49	70	109	278	378	519	1,091
Other Excise	57	30	39	52	73	121	144	182	285
Tariffs and Duties	220	118	151	203	283	468	560	708	1,108
Estate and Gift	134	0	0	1	2	913	1,824	3,286	11,156
Unemployment Tax	401	187	356	420	558	669	675	665	610
Avg. State & Local Taxes	9,248	2,854	4,383	6,677	10,378	31,010	47,066	73,300	222,478
Individual Income	1,992	32	302	913	2,054	9,678	15,767	25,323	80,444
Other Personal Taxes	252	125	182	234	332	529	625	741	1,141
Corporate Income	316	38	111	193	334	1,326	2,152	3,499	11,145
General Sales	2,033	926	1,251	1,834	2,724	4,767	5,778	7,496	13,092
Motor Fuels	261	144	192	258	347	493	549	666	918
Alcoholic Beverages	40	19	23	41	56	88	101	119	134
Tobacco	115	104	120	133	132	85	65	71	79
Public Utilities	189	112	144	184	241	349	399	488	677
Insurance Receipts	114	46	64	95	146	303	389	497	782
Other Sales Taxes	368	196	252	340	473	781	936	1,182	1,851
Property	2,939	845	1,384	1,960	2,836	10,779	17,598	29,104	100,770
Other business taxes	597	265	360	493	701	1,616	2,292	3,420	9,271
Estate and Gift	32	0	0	0	1	216	415	694	2,173
Refundable tax credits[4]	565	670	1,298	451	50	5	5	5	15
Fed. tax less refund. credits	15,386	942	3,463	9,047	18,064	66,525	103,017	159,413	452,747
Total tax less refund. credits	24,634	3,796	7,847	15,724	28,442	97,534	150,083	232,713	675,226
Federal non-tax receipts	1,434	810	834	992	1,210	4,482	7,544	12,709	43,878
S&L non-tax receipts	823	364	455	574	771	2,695	4,445	7,408	25,401
Federal deficit "tax"[5]	3,908	545	1,258	2,358	4,344	15,964	24,855	38,694	111,646
S&L deficit "tax"[5]	459	147	221	331	509	1,538	2,350	3,682	11,309

Notes:

1. Percentiles contain equal numbers of persons. Negative income famillies excluded from bottom quintile but included in totals.
2. Income measure in table above is comprehensive income, which includes market income plus fungible value of government transfers. It differs from the market income metric used in other tables and is designed to better reflect ability to pay taxes.
3. Taxes total excludes non-tax revenues sources and the deficit tax that is included in other tables. Excludes refundable credits.
4. Refundable tax credits not included in totals as they are classified as spending and are shown for illustrative purposes only.
5. Deficit tax" is the addition to taxes in the primary tables in order to "close" the deficit.

Source: Author calculations based on multiple data sources, primarily Census Bureau, IRS and Bureau of Economic Analysis.

Table 10: Distributional Analysis of Taxes: Tax as Percentage of Income, by Type of Tax, 2012[1]

Item	All Families	Bottom 20%	Second 20%	Middle 20%	Fourth 20%	Top 20%	Top 10%	Top 5%	Top 1%
Avg. Income[2]	92,511	22,305	41,461	68,237	110,084	320,427	479,257	723,893	2,005,287
Taxes (Total)[3]	27.2%	20.0%	22.1%	23.7%	25.9%	30.4%	31.3%	32.1%	33.7%
Federal Taxes	17.2%	7.2%	11.5%	13.9%	16.5%	20.8%	21.5%	22.0%	22.6%
Individual Income	8.1%	0.6%	1.9%	3.9%	5.8%	12.3%	13.9%	15.1%	16.8%
Payroll	5.7%	2.8%	5.7%	6.6%	7.4%	5.0%	4.0%	3.1%	1.7%
Corporate Income	2.1%	1.0%	1.6%	1.7%	1.8%	2.5%	2.7%	2.9%	3.4%
Alcoholic Beverages	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%
Tobacco	0.1%	0.4%	0.3%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%
Motor Fuels	0.2%	0.6%	0.4%	0.3%	0.3%	0.1%	0.1%	0.1%	0.0%
Airport	0.1%	0.2%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Other Excise	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%
Tariffs and Duties	0.2%	0.5%	0.4%	0.3%	0.3%	0.1%	0.1%	0.1%	0.1%
Estate and Gift	0.1%	0.0%	0.0%	0.0%	0.0%	0.3%	0.4%	0.5%	0.6%
Unemployment Tax	0.4%	0.8%	0.9%	0.6%	0.5%	0.2%	0.1%	0.1%	0.0%
State & Local Taxes	10.0%	12.8%	10.6%	9.8%	9.4%	9.7%	9.8%	10.1%	11.1%
Individual Income	2.2%	0.1%	0.7%	1.3%	1.9%	3.0%	3.3%	3.5%	4.0%
Other Personal Taxes	0.3%	0.6%	0.4%	0.3%	0.3%	0.2%	0.1%	0.1%	0.1%
Corporate Income	0.3%	0.2%	0.3%	0.3%	0.3%	0.4%	0.4%	0.5%	0.6%
General Sales	2.2%	4.2%	3.0%	2.7%	2.5%	1.5%	1.2%	1.0%	0.7%
Motor Fuels	0.3%	0.6%	0.5%	0.4%	0.3%	0.2%	0.1%	0.1%	0.0%
Alcoholic Beverages	0.0%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%
Tobacco	0.1%	0.5%	0.3%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%
Public Utilities	0.2%	0.5%	0.3%	0.3%	0.2%	0.1%	0.1%	0.1%	0.0%
Insurance Receipts	0.1%	0.2%	0.2%	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%
Other Sales Taxes	0.4%	0.9%	0.6%	0.5%	0.4%	0.2%	0.2%	0.2%	0.1%
Property	3.2%	3.8%	3.3%	2.9%	2.6%	3.4%	3.7%	4.0%	5.0%
Other business taxes	0.6%	1.2%	0.9%	0.7%	0.6%	0.5%	0.5%	0.5%	0.5%
Estate and Gift	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%
Refundable tax credits[4]	0.6%	3.0%	3.1%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%
Fed. tax less refund. credits	16.6%	4.2%	8.4%	13.3%	16.4%	20.8%	21.5%	22.0%	22.6%
Total tax less refund. credits	26.6%	17.0%	18.9%	23.0%	25.8%	30.4%	31.3%	32.1%	33.7%
Federal non-tax receipts	1.6%	3.6%	2.0%	1.5%	1.1%	1.4%	1.6%	1.8%	2.2%
S&L non-tax receipts	0.9%	1.6%	1.1%	0.8%	0.7%	0.8%	0.9%	1.0%	1.3%
Federal deficit "tax"[5]	4.2%	2.4%	3.0%	3.5%	3.9%	5.0%	5.2%	5.3%	5.6%
S&L deficit "tax"[5]	0.5%	0.7%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.6%

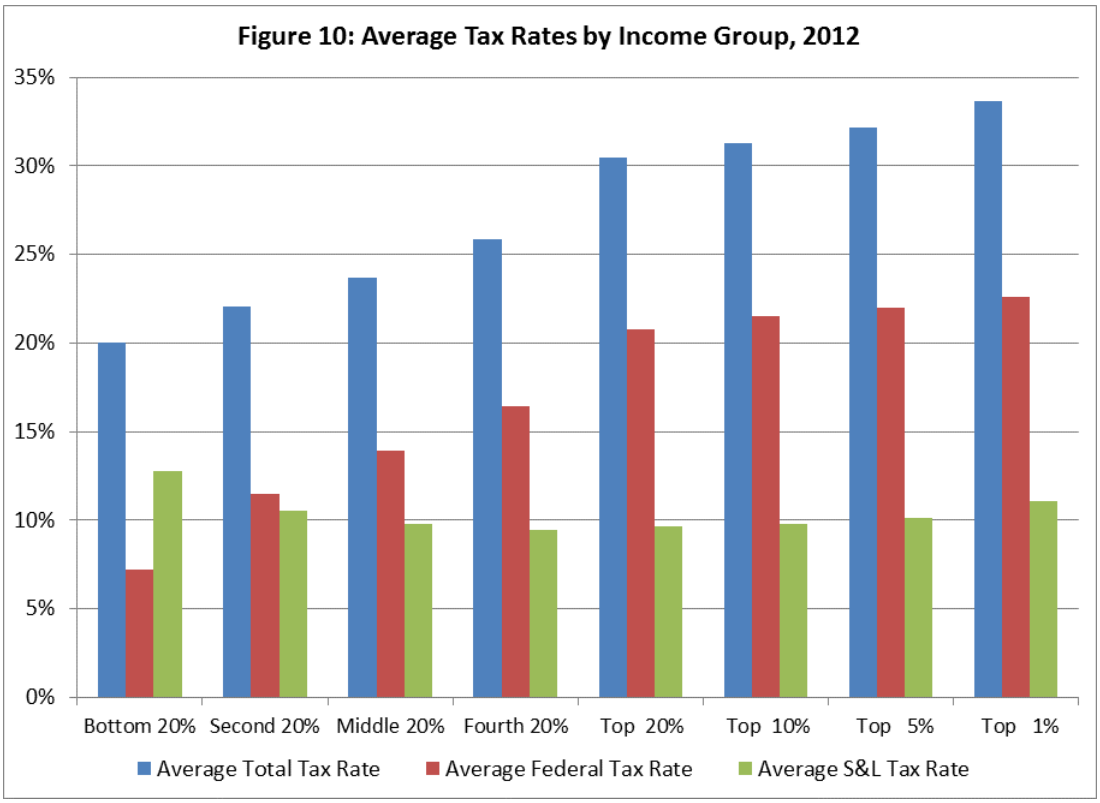
Notes:

1. Percentiles contain equal numbers of persons. Negative income famillies excluded from bottom quintile but included in totals.
2. Income measure in table above is comprehensive income, which includes market income plus fungible value of government transfers. It differs from the market income metric used in other tables and is designed to better reflect ability to pay taxes.
3. Taxes total excludes non-tax revenues sources and the deficit tax that is included in other tables. Excludes refundable credits.
4. Refundable tax credits not included in totals as they are classified as spending and are shown for illustrative purposes only.
5. Deficit tax" is the addition to taxes in the primary tables in order to "close" the deficit.

Source: Author calculations based on multiple data sources, primarily Census Bureau, IRS and Bureau of Economic Analysis.

A. Average Tax Rates by Income Group

As Tables 9 and 10 and Figure 10 show, in 2012, the bottom market income quintile paid approximately 20% of its comprehensive income in total taxes to federal, state and local governments. This percentage gradually increases as one climbs the income ladder. The middle quintile's overall average tax rate in 2012 was 23.7%, while the top quintile's average tax rate was 30.4%. Within the top quintile, one can see that the top 1 percent has the highest average tax rate (33.7%). If one includes refundable tax credits as negative taxes, then the bottom quintile's overall tax rate falls from 20% to 17%, while the second and third (middle) quintile's overall tax rates fall to 18.9% and 23.0%, respectively.



This overall progressivity is primarily due to the progressivity of federal taxes and the federal individual income tax in particular. The federal individual income tax accounts for nearly 30% of all tax collections in the United States and is highly progressive. If one includes refundable tax credits as negative taxes, the bottom two quintiles actually have a negative federal individual income tax. Even excluding refundable credits as Table 8 does, the bottom quintile's average federal individual income tax rate is miniscule at 0.6%, while the second quintile's is a mere

1.9%. The top quintile's average federal individual income tax rate is 12.3%, and the top 1% has a rate of 16.8%.

While the federal individual income tax is highly progressive, federal payroll taxes are both progressive and regressive across different parts of the income spectrum. At low-and-middle income levels, the payroll tax is progressive because in this range, lower income groups are more likely to have a large fraction of their comprehensive income in transfers and not in compensation subject to the payroll tax. At the high end of the income spectrum, however, the payroll tax is highly regressive. While the middle quintile pays 6.6% of its comprehensive income in payroll taxes, the top 20% only pays 5.5% of its comprehensive income in payroll taxes and the top 1% a mere 1.7%. This regressivity in the payroll tax at the high end is for two reasons: (1) high-income families are more likely to have a larger share of their income derived from capital income such as capital gains, dividends, and interest, which are not subject to payroll taxes[1], and (2) only the first $110,100 in earnings (per worker) is subject to Social Security taxation due to the payroll tax cap (2012 level).

As Table 10 shows, the corporate income tax is a rather progressive tax, even under the assumption that half of the tax is borne by workers in the form of reduced compensation. This progressivity is largely due to the fact that capital income, which is assumed to be the allocator for half of the corporate income tax, is highly skewed to high-income families. Finally, most other federal taxes, with the exception of the federal estate tax, are regressive. These other taxes are mostly consumption taxes on products such as alcohol and gasoline or a more broad set of items as it relates to customs and duties. As discussed elsewhere, consumption taxes tend to be regressive.

In total, the nation pays approximately 17.2% of its comprehensive income in federal taxes, but federal taxes are highly skewed towards the top of the income spectrum. Families in the top quintile pay an average federal tax rate of 20.8%, which is nearly three times that of the bottom quintile's rate of 7.2%. The middle quintile's rate is also well below average at 13.9%.

[1] Beginning in 2013, a 3.8 percent Medicare tax will apply to capital gains, dividends, interest, and other "unearned income" earned by high-income tax returns ($200,000+ singles or $250,000+ married), as was enacted in PPACA.

While federal taxes are progressive, this study finds that state and local taxes are generally regressive, although the regressivity is not continuous across the entire income spectrum. That is, average state and local tax rates fall as one goes from the bottom quintile to the fourth quintile, but then rise again as one includes the top quintile and the very top of the income spectrum within the top quintile. This latter effect is due to the fact that state and local income taxes are quite progressive and because property tax burdens are largely a function of capital income, both of which significantly affect the very top of the income spectrum.

State and local governments collect the bulk of their tax revenue from three main categories: income taxes, sales taxes, and property taxes. Like the federal income tax, state and local individual income taxes are progressive for two main reasons: (1) many income sources that disproportionately flow to low-income earners, such as government transfers, are exempt from taxation, and (2) most states have a progressive rate structure for their income tax.[2] The bottom quintile's average state and local income tax rate in 2012 was 0.1%, while the top quintile's rate was 3.0% (4.0% for the top 1%).

State and local sales taxes were higher than state and local income taxes for all income quintiles except the top quintile. The bottom quintile paid about 7% of its comprehensive income in sales taxes (general plus selective), while the middle quintile paid over 4% of its comprehensive income in sales taxes. For the top quintile, this figure was just over 2% and for the top 1 percent, less than 1% of comprehensive income. State and local sales taxes are regressive because personal consumption as a percentage of income tends to be greater as one moves down the income spectrum.

Under the primary assumptions made regarding the property tax, the tax is regressive across the first four quintiles, but it turns more progressive towards the top end of the income spectrum. This is due to the fact that high-income families tend to have a large share of capital income, which is responsible for allocating a large fraction of business property taxes. It is regressive at low-and-middle income levels because housing expenditures generally tend to decline as a share of income as one moves up the income spectrum.

[2] Furthering the national progressivity is the fact that many high-income states like California and New York have some of the most progressive state income taxes.

B. Tax Shares by Income Group

The results presented in Table 11 and Figure 11 tell pretty much the same story as that seen when looking at average tax rates: high-income earners generally pay a larger fraction of their income in taxes than low-income earners pay. Table 11 shows the top quintile as paying 55.8% of all taxes in the United States in 2012, despite only earning 50% of the income. And this is consistent with the top quintile's average tax rate being above the national average. Within the top quintile, the top 1 percent's share of the total taxes paid is 20%, while its share of comprehensive income equals 16.2%. At the bottom of the income spectrum, the bottom quintile's share of the total taxes paid is 4.7% despite having 6.4% of the nation's comprehensive income. Overall, the comprehensive income share is greater than the total tax share for each of the first four quintiles, which is why the average tax rate for the top quintile is the only quintile above the national average, as seen in Table 10 and discussed earlier.

As one would expect, federal taxes paid are more skewed towards the top of the income spectrum than state-and-local taxes paid. The top income quintile paid 60.1% of federal taxes in 2012, but only 48.3% of all state-and-local taxes. The bottom quintile, on the other hand, paid only 2.7% of federal taxes in 2012, yet paid 8.1% of state-and-local taxes. With the exception of estate and gift taxes, the federal individual income tax is the most skewed tax, with the top quintile paying 76% of the taxes. State and local individual taxes are the second most skewed major tax with the top quintile paying 70% of the taxes. The most regressive tax category in 2012 was sales taxes on tobacco. The bottom quintile paid nearly 25% of tobacco taxes, while the top quintile paid only 10%. Among the major tax categories (i.e., excluding taxes that are relatively minor in the aggregate such as tobacco taxes), sales taxes are the most regressive. In 2012, the bottom quintile paid 12% of state and local general sales taxes despite making only 6.4% of comprehensive income, while the top quintile paid only 33.8% of general sales taxes despite taking home half of the nation's comprehensive income.

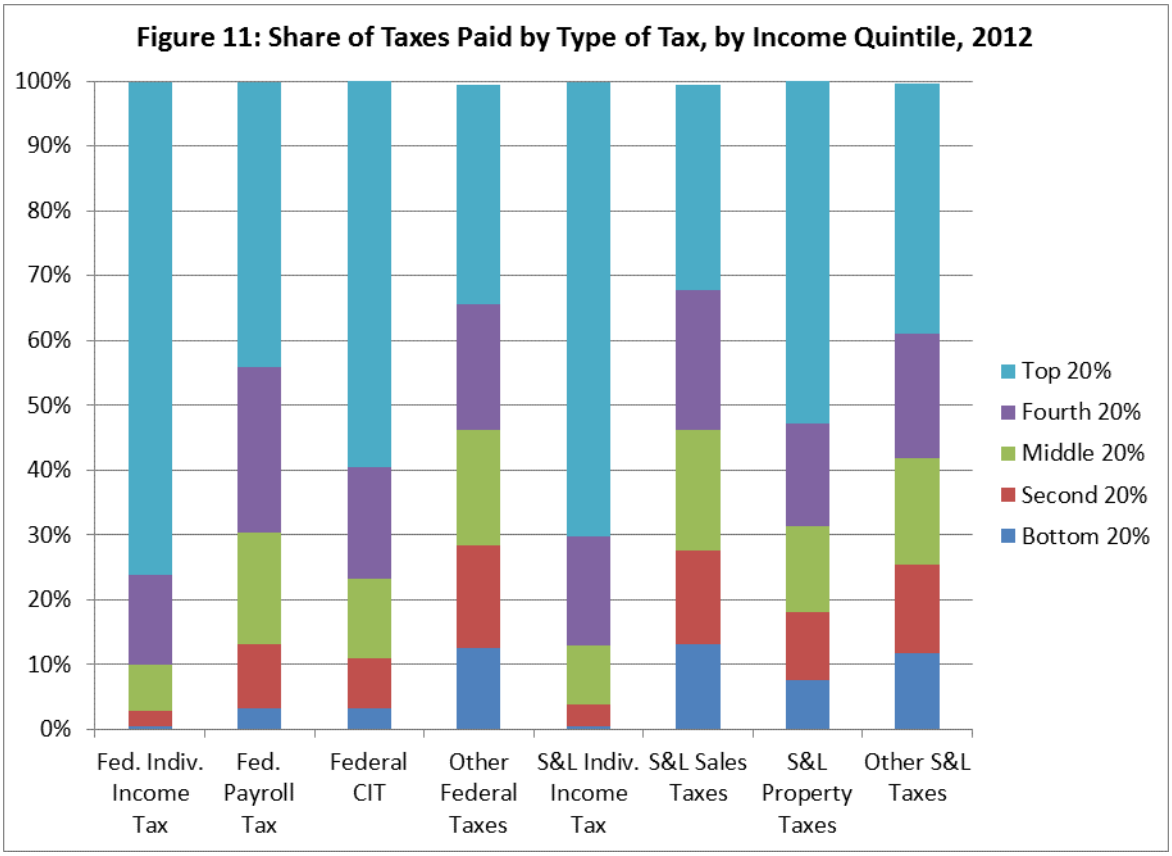
Table 11: Distributional Analysis of Taxes: Tax Shares by Income Group, by Type of Tax, 2012[1]

Item	All Families	Bottom 20%	Second 20%	Middle 20%	Fourth 20%	Top 20%	Top 10%	Top 5%	Top 1%
Income[2]	100%	6.4%	9.9%	14.8%	19.5%	49.9%	37.0%	28.1%	16.2%
Taxes (Total)[3]	100%	4.7%	8.1%	12.9%	18.5%	55.8%	42.5%	33.2%	20.0%
Federal Taxes	100%	2.7%	6.6%	11.9%	18.6%	60.1%	46.1%	35.9%	21.2%
Individual Income	100%	0.4%	2.4%	7.1%	13.9%	76.0%	63.5%	52.6%	33.6%
Payroll	100%	3.2%	10.0%	17.3%	25.5%	43.9%	26.1%	15.4%	4.7%
Corporate Income	100%	3.2%	7.8%	12.2%	17.3%	60.4%	48.5%	39.8%	26.3%
Alcoholic Beverages	100%	12.2%	12.4%	20.0%	23.1%	31.9%	18.4%	11.0%	2.6%
Tobacco	100%	24.2%	23.7%	23.2%	18.4%	9.9%	3.7%	2.0%	0.4%
Motor Fuels	100%	14.7%	16.9%	20.4%	21.9%	25.6%	13.5%	8.1%	2.1%
Airport	100%	9.8%	11.9%	15.3%	19.3%	43.5%	29.2%	20.2%	8.8%
Other Excise	100%	14.1%	15.2%	18.5%	21.0%	30.6%	18.2%	11.6%	3.8%
Tariffs and Duties	100%	14.1%	15.2%	18.5%	21.0%	30.6%	18.2%	11.6%	3.8%
Estate and Gift	100%	0.0%	0.0%	0.1%	0.3%	98.4%	97.3%	88.3%	62.2%
Unemployment Tax	100%	12.3%	19.7%	21.0%	22.8%	24.1%	12.0%	6.0%	1.1%
State & Local Taxes	100%	8.1%	10.5%	14.5%	18.3%	48.3%	36.3%	28.5%	18.0%
Individual Income	100%	0.4%	3.4%	9.2%	16.9%	70.0%	56.5%	45.7%	30.1%
Other Personal Taxes	100%	13.1%	16.0%	18.6%	21.6%	30.3%	17.7%	10.6%	3.4%
Corporate Income	100%	3.2%	7.8%	12.2%	17.3%	60.4%	48.5%	39.8%	26.3%
General Sales	100%	12.0%	13.7%	18.1%	21.9%	33.8%	20.3%	13.3%	4.8%
Motor Fuels	100%	14.5%	16.3%	19.8%	21.7%	27.2%	15.0%	9.2%	2.6%
Alcoholic Beverages	100%	12.5%	12.6%	20.3%	22.6%	31.5%	18.0%	10.7%	2.5%
Tobacco	100%	23.8%	23.2%	23.1%	18.7%	10.6%	4.0%	2.2%	0.5%
Public Utilities	100%	15.6%	16.9%	19.5%	20.8%	26.6%	15.0%	9.3%	2.7%
Insurance Receipts	100%	10.8%	12.4%	16.7%	21.1%	38.5%	24.4%	15.7%	5.1%
Other Sales Taxes	100%	14.1%	15.2%	18.5%	21.0%	30.6%	18.2%	11.6%	3.8%
Property	100%	7.6%	10.5%	13.4%	15.8%	52.9%	42.7%	35.6%	25.6%
Other business taxes	100%	11.7%	13.4%	16.6%	19.2%	39.0%	27.4%	20.6%	11.6%
Estate and Gift	100%	0.1%	0.0%	0.2%	0.7%	98.0%	93.3%	78.6%	51.1%
Refundable tax credits[4]	100%	31.2%	51.0%	16.0%	1.4%	0.1%	0.1%	0.0%	0.0%
Fed. tax less refund. credits	100%	1.6%	5.0%	11.8%	19.2%	62.3%	47.8%	37.2%	22.0%
Total tax less refund. credits	100%	4.1%	7.1%	12.8%	18.9%	57.1%	43.5%	34.0%	20.5%
Federal non-tax receipts	100%	14.9%	12.9%	13.9%	13.8%	45.1%	37.5%	31.8%	22.8%
S&L non-tax receipts	100%	11.7%	12.3%	14.0%	15.3%	47.2%	38.6%	32.4%	23.0%
Federal deficit "tax"[5]	100%	3.7%	7.1%	12.1%	18.2%	58.9%	45.4%	35.6%	21.3%
S&L deficit "tax"[5]	100%	8.4%	10.7%	14.4%	18.1%	48.3%	36.5%	28.8%	18.4%

Notes:

1. Percentiles contain equal numbers of persons. Negative income famillies excluded from bottom quintile but included in totals.
2. Income measure in table above is comprehensive income, which includes market income plus fungible value of government transfers. It differs from the market income metric used in other tables and is designed to better reflect ability to pay taxes.
3. Taxes total excludes non-tax revenues sources and the deficit tax that is included in other tables. Excludes refundable credits.
4. Refundable tax credits not included in totals as they are classified as spending and are shown for illustrative purposes only. e.g., The bottom 20% receives 31.2% of the refundable portion of federal income tax credits.
5. Deficit tax" is the addition to taxes in the primary tables in order to "close" the deficit.

Source: Author calculations based on multiple data sources, primarily Census Bureau, IRS and Bureau of Economic Analysis.

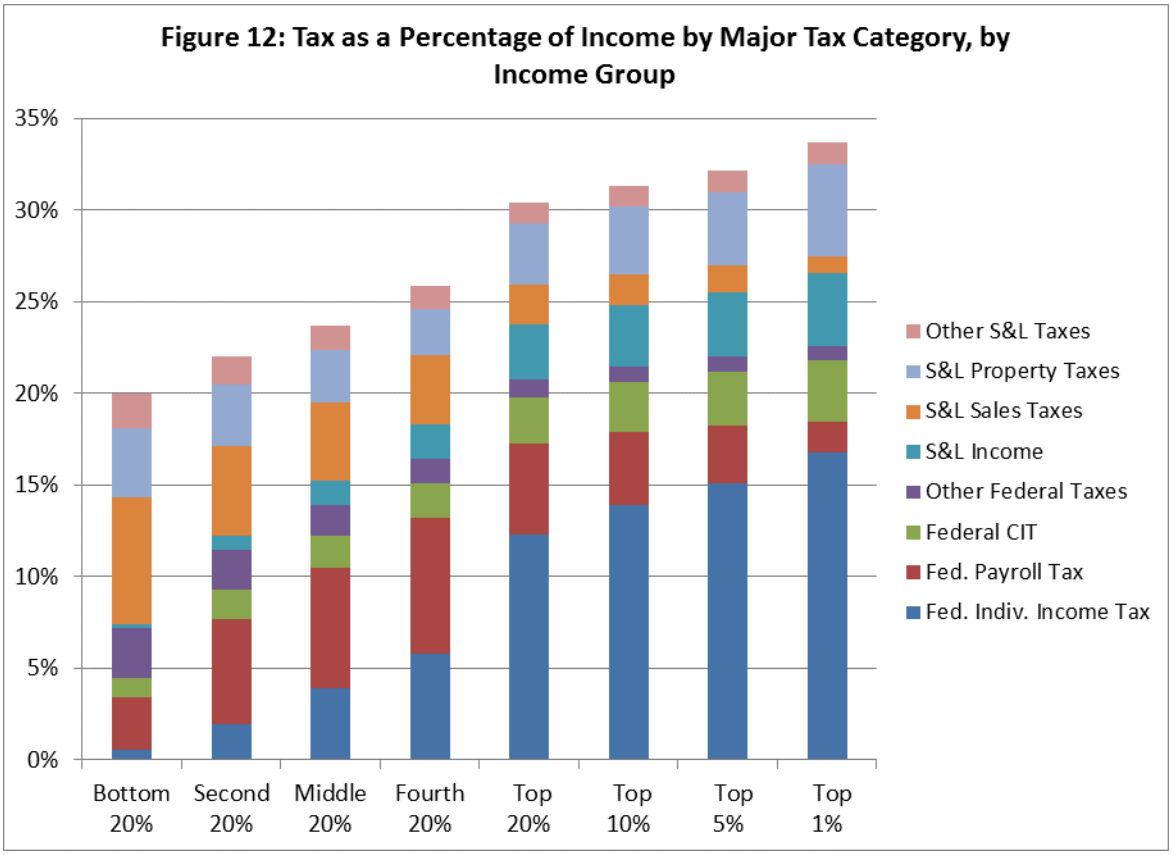


C. Relative Importance of Taxes by Income Group

Table 12 and Figure 12 present the distribution of taxes in a unique way. Instead of only comparing the burdens across income groups, Table 12 and Figure 12 contrast which taxes are most burdensome for each income group. For example, one can see from Table 12 that the federal individual income tax is a relatively minor tax for the bottom two quintiles, even excluding refundable tax credits. In fact, if one includes refundable credits, refundable credits would reduce the bottom quintile's total tax burden by 15% and the second quintile's by 14.2%, far more than offsetting the groups' individual income tax liabilities.

On the other hand, state and local sales taxes and property taxes make up a significant portion of the tax burden for these low-income groups, while at the federal level, payroll taxes are the biggest burden on low-income groups. Combining federal excise taxes and state and local sales taxes (both general and selective), sales taxes are responsible for about 45% of the tax burden for

the bottom quintile, yet are responsible for only 8.5% of the tax burden for the top quintile and a mere 3.1% for the top 1 percent of the population.



While sales taxes are the most burdensome tax category for low-income groups, at the top of the income spectrum, sales taxes are relatively minor, as income taxes make up the bulk of taxes paid. For the top quintile, federal, state and local individual income taxes are responsible for half of this group's taxes paid. For the top 1 percent, that figure is nearly 62%. Compare that to the bottom quintile where individual income taxes account for merely 3.5% of total taxes paid. In fact, even excluding refundable credits, the bottom quintile pays more in tobacco taxes than income taxes.

For the middle quintile, federal payroll taxes (27.9% of total taxes paid) are greater than federal and state and local income taxes combined (22.0%). Sales taxes (federal, state and local) are similar in magnitude to income taxes, making up 22.4% of total taxes paid. Property taxes make up 12.1% of this group's tax burden, while the remaining 15% is split evenly between corporate income taxes and other taxes.

Table 12: Distributional Analysis of Taxes: Relative Importance of Each Tax for Each Income Group, by Type of Tax, 2012[1]

Item	All Families	Bottom 20%	Second 20%	Middle 20%	Fourth 20%	Top 20%	Top 10%	Top 5%	Top 1%
Avg. Income[2]	92,511	22,305	41,461	68,237	110,084	320,427	479,257	723,893	2,005,287
Taxes (Total)[3]	100%	100%	100%	100%	100%	100%	100%	100%	100%
Federal Taxes	63.3%	36.1%	52.1%	58.7%	63.6%	68.2%	68.6%	68.5%	67.1%
Individual Income	29.7%	2.8%	8.8%	16.4%	22.4%	40.4%	44.3%	47.1%	49.8%
Payroll	20.8%	14.2%	25.9%	27.9%	28.7%	16.4%	12.8%	9.7%	4.9%
Corporate Income	7.6%	5.2%	7.4%	7.3%	7.1%	8.3%	8.7%	9.2%	10.0%
Alcoholic Beverages	0.2%	0.6%	0.4%	0.4%	0.3%	0.1%	0.1%	0.1%	0.0%
Tobacco	0.4%	2.2%	1.3%	0.8%	0.4%	0.1%	0.0%	0.0%	0.0%
Motor Fuels	0.9%	2.8%	1.8%	1.4%	1.0%	0.4%	0.3%	0.2%	0.1%
Airport	0.4%	0.8%	0.5%	0.4%	0.4%	0.3%	0.3%	0.2%	0.2%
Other Excise	0.2%	0.7%	0.4%	0.3%	0.3%	0.1%	0.1%	0.1%	0.0%
Tariffs and Duties	0.9%	2.6%	1.6%	1.3%	1.0%	0.5%	0.4%	0.3%	0.2%
Estate and Gift	0.5%	0.0%	0.0%	0.0%	0.0%	0.9%	1.2%	1.4%	1.7%
Unemployment Tax	1.6%	4.2%	3.9%	2.6%	2.0%	0.7%	0.4%	0.3%	0.1%
State & Local Taxes	36.7%	63.9%	47.9%	41.3%	36.4%	31.8%	31.4%	31.5%	32.9%
Individual Income	7.9%	0.7%	3.3%	5.6%	7.2%	9.9%	10.5%	10.9%	11.9%
Other Personal Taxes	1.0%	2.8%	2.0%	1.4%	1.2%	0.5%	0.4%	0.3%	0.2%
Corporate Income	1.3%	0.9%	1.2%	1.2%	1.2%	1.4%	1.4%	1.5%	1.7%
General Sales	8.1%	20.7%	13.7%	11.3%	9.6%	4.9%	3.8%	3.2%	1.9%
Motor Fuels	1.0%	3.2%	2.1%	1.6%	1.2%	0.5%	0.4%	0.3%	0.1%
Alcoholic Beverages	0.2%	0.4%	0.3%	0.3%	0.2%	0.1%	0.1%	0.1%	0.0%
Tobacco	0.5%	2.3%	1.3%	0.8%	0.5%	0.1%	0.0%	0.0%	0.0%
Public Utilities	0.8%	2.5%	1.6%	1.1%	0.8%	0.4%	0.3%	0.2%	0.1%
Insurance Receipts	0.5%	1.0%	0.7%	0.6%	0.5%	0.3%	0.3%	0.2%	0.1%
Other Sales Taxes	1.5%	4.4%	2.8%	2.1%	1.7%	0.8%	0.6%	0.5%	0.3%
Property	11.7%	18.9%	15.1%	12.1%	10.0%	11.1%	11.7%	12.5%	14.9%
Other business taxes	2.4%	5.9%	3.9%	3.0%	2.5%	1.7%	1.5%	1.5%	1.4%
Estate and Gift	0.1%	0.0%	0.0%	0.0%	0.0%	0.2%	0.3%	0.3%	0.3%
Refundable tax credits[4]	-2.2%	-15.0%	-14.2%	-2.8%	-0.2%	0.0%	0.0%	0.0%	0.0%

Notes:

1. Percentiles contain equal numbers of persons. Negative income famillies excluded from bottom quintile but included in totals. Taxes and spending are adjusted proportionally to close government deficits, thereby making spending equal to taxes.
2. Income measure in table above is comprehensive income, which includes market income plus fungible value of government transfers. It differs from the market income metric used in other tables and is designed to better reflect ability to pay taxes.
3. Taxes total excludes non-tax revenues sources and the deficit tax that is included in other tables. Excludes refundable credits.
4. Refundable tax credits not included in totals as they are classified as spending and are shown for illustrative purposes only. e.g., A value of -15%, for the bottom 20% means that 15% of this group's total taxes would be reduced by refundable credits.

Source: Author calculations based on multiple data sources, primarily Census Bureau, IRS and Bureau of Economic Analysis.

D. Trend in Taxes from 2000-2012

Figures 13a, 13b, 14a, 14b, and 15, along with Table 13 provide a look at how the distribution of taxes changed between 2000 and 2012. One can see that overall tax rates generally declined from 2000 through 2012. This decline was primarily due to the myriad federal tax cuts enacted during the time period. As Table 13 shows, in 2000, the average total tax rate for all families was 30.8%, and it fell to 27.2% in 2012. Each income group in the table saw decreases in their overall tax rates. Federal tax rates decreased for every income group, while state and local tax rates increased overall for every income group except for the bottom income quintile.

For the top 1 percent, there was a significant decline in the group's federal individual income tax rate between 2000 and 2012, falling from 21.9% to 16.8%. State and local taxes as a percentage of income increased by nearly 1 percentage point for this income group. The top 1 percent's share of taxes fell between 2000 and 2012 from 21.8% to 20.0%. In that time period, the group's total share of comprehensive income fell from 17.4% to 16.2%. The ratio of the group's total tax share to income share fell slightly during this time period, which would support the claim that taxes (overall) in the United States became slightly less progressive between 2000 and 2012. Note that this excludes refundable tax credits, as they are classified as spending in this analysis. If one includes refundable tax credits as negative taxes, the top 1 percent's share of overall taxes in 2000 and 2012 increases to 22.0% and 20.5% respectively. Under this method, the ratio of the top 1 percent's tax share to income share stayed almost exactly the same from 2000 through 2012.

Figures 13a and 13b track the trend in overall tax rates by income group between 2000 and 2012. Figure 13a presents the results excluding refundable tax credits, while Figure 13b subtracts refundable tax credits from each group's total taxes. The figures show generally that tax rates fell from 2000-2012 with the biggest declines for high-income groups occurring between 2000 and 2004, which corresponds to the timing of the large Bush tax cuts. Figures 14a and 14b restrict the analysis to federal taxes, while Figure 15 restricts the analysis to state and local taxes. Interestingly in Figure 15, one can see a high degree of volatility in the tax rates for the top 1 percent and the bottom 20 percent with the top 1 percent's rate increasing and the bottom 20 percent's rate decreasing between 2006 and 2009. Much of the decline at the bottom end of the income spectrum is a decline in the group's general sales taxes paid. Nationally, state and local

general sales tax collections fell by $14 billion (in nominal terms), while property taxes increased in that same time period by $60 billion. Because property taxes are disproportionately borne by owners of capital and because of the large reduction in capital gains income for the top 1 percent in 2009, there is a significant increase in that group's total state and local tax rate in 2009. The decline in general sales tax collections would have a small effect on the state and local tax rate of the top 1 percent because of that group's small average propensity to consume.

Table 13: Distributional Analysis of Taxes, 2000-2012[1]

Item	All Families	Bottom 20%	Second 20%	Middle 20%	Fourth 20%	Top 20%	Top 10%	Top 5%	Top 1%
Tax as % of Income[2]									
Total Tax[3]									
2000	30.8%	23.1%	25.4%	26.9%	29.0%	34.1%	35.2%	36.3%	38.6%
2004	27.9%	21.8%	24.1%	25.3%	26.8%	30.3%	31.2%	31.9%	33.7%
2008	28.7%	21.7%	22.8%	24.9%	27.1%	32.0%	33.1%	34.0%	36.3%
2012	27.2%	20.0%	22.1%	23.7%	25.9%	30.4%	31.3%	32.1%	33.7%
Federal Tax									
2000	21.1%	8.3%	14.6%	17.5%	20.1%	24.9%	25.8%	26.6%	28.4%
2004	17.9%	7.5%	13.0%	15.5%	17.6%	20.8%	21.4%	21.8%	22.8%
2008	18.2%	7.5%	12.2%	15.0%	17.5%	21.7%	22.4%	23.0%	24.0%
2012	17.2%	7.2%	11.5%	13.9%	16.5%	20.8%	21.5%	22.0%	22.6%
Federal Income Tax									
2000	10.7%	0.7%	3.1%	5.6%	7.7%	15.5%	17.4%	19.1%	21.9%
2004	7.5%	0.4%	1.9%	3.8%	5.3%	11.3%	12.8%	14.1%	16.2%
2008	8.6%	0.6%	2.2%	4.3%	6.0%	13.0%	14.8%	16.2%	18.5%
2012	8.1%	0.6%	1.9%	3.9%	5.8%	12.3%	13.9%	15.1%	16.8%
State & Local Tax									
2000	9.7%	14.8%	10.8%	9.4%	8.9%	9.2%	9.4%	9.6%	10.2%
2004	10.0%	14.3%	11.0%	9.8%	9.3%	9.6%	9.8%	10.1%	11.0%
2008	10.4%	14.3%	10.6%	9.9%	9.6%	10.3%	10.6%	11.0%	12.3%
2012	10.0%	12.8%	10.6%	9.8%	9.4%	9.7%	9.8%	10.1%	11.1%
Shares of Tax									
Total Tax Share[3]									
2000	100%	3.8%	7.8%	12.9%	18.4%	57.0%	44.1%	35.0%	21.8%
2004	100%	4.4%	8.5%	13.7%	19.1%	54.3%	41.3%	32.3%	19.4%
2008	100%	4.3%	8.0%	13.1%	18.5%	55.9%	42.8%	33.8%	20.5%
2012	100%	4.7%	8.1%	12.9%	18.5%	55.8%	42.5%	33.2%	20.0%
Federal Tax Share									
2000	100%	2.0%	6.5%	12.3%	18.6%	60.6%	47.1%	37.5%	23.3%
2004	100%	2.3%	7.1%	13.0%	19.4%	58.0%	44.2%	34.5%	20.4%
2008	100%	2.3%	6.7%	12.4%	18.8%	59.6%	45.7%	35.9%	21.3%
2012	100%	2.7%	6.6%	11.9%	18.6%	60.1%	46.1%	35.9%	21.2%
Federal Income Tax Share									
2000	100%	0.3%	2.7%	7.9%	14.0%	75.0%	63.1%	53.2%	35.7%
2004	100%	0.3%	2.5%	7.7%	14.0%	75.3%	63.6%	53.5%	34.8%
2008	100%	0.4%	2.6%	7.5%	13.7%	75.7%	63.8%	53.7%	34.9%
2012	100%	0.4%	2.4%	7.1%	13.9%	76.0%	63.5%	52.6%	33.6%
State & Local Tax Share									
2000	100%	7.9%	10.5%	14.4%	18.0%	49.2%	37.5%	29.6%	18.4%
2004	100%	8.0%	10.8%	14.8%	18.4%	47.8%	36.2%	28.5%	17.6%
2008	100%	7.8%	10.1%	14.3%	18.0%	49.5%	37.8%	30.1%	19.1%
2012	100%	8.1%	10.5%	14.5%	18.3%	48.3%	36.3%	28.5%	18.0%

Notes:

1. Percentiles contain equal numbers of persons. Negative income famillies excluded from bottom quintile but included in totals.
2. Income measure in table above is comprehensive income, which includes market income plus fungible value of government transfers. It differs from the market income metric used in other tables and is designed to better reflect ability to pay taxes.
3. Taxes total excludes non-tax revenues sources and the deficit tax that is included in other tables. Excludes refundable credits.

Source: Author calculations based on multiple data sources, primarily Census Bureau, IRS and Bureau of Economic Analysis.

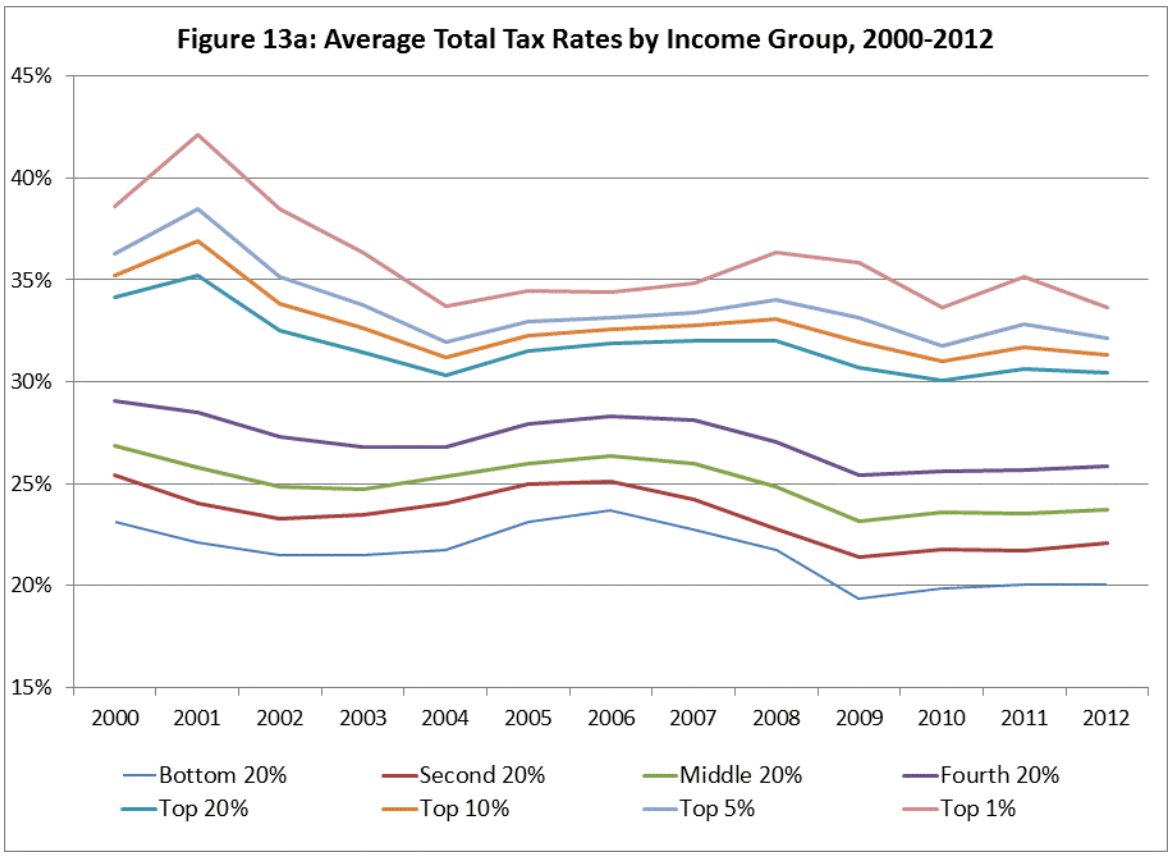


Figure 13a: Average Total Tax Rates by Income Group, 2000-2012
45%
40%
35%
30%
25%
20%
15%
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
Bottom 20%
Second 20%
Middle 20%
Fourth 20%
Top 20%
Top 10%
Top 5%
Top 1%

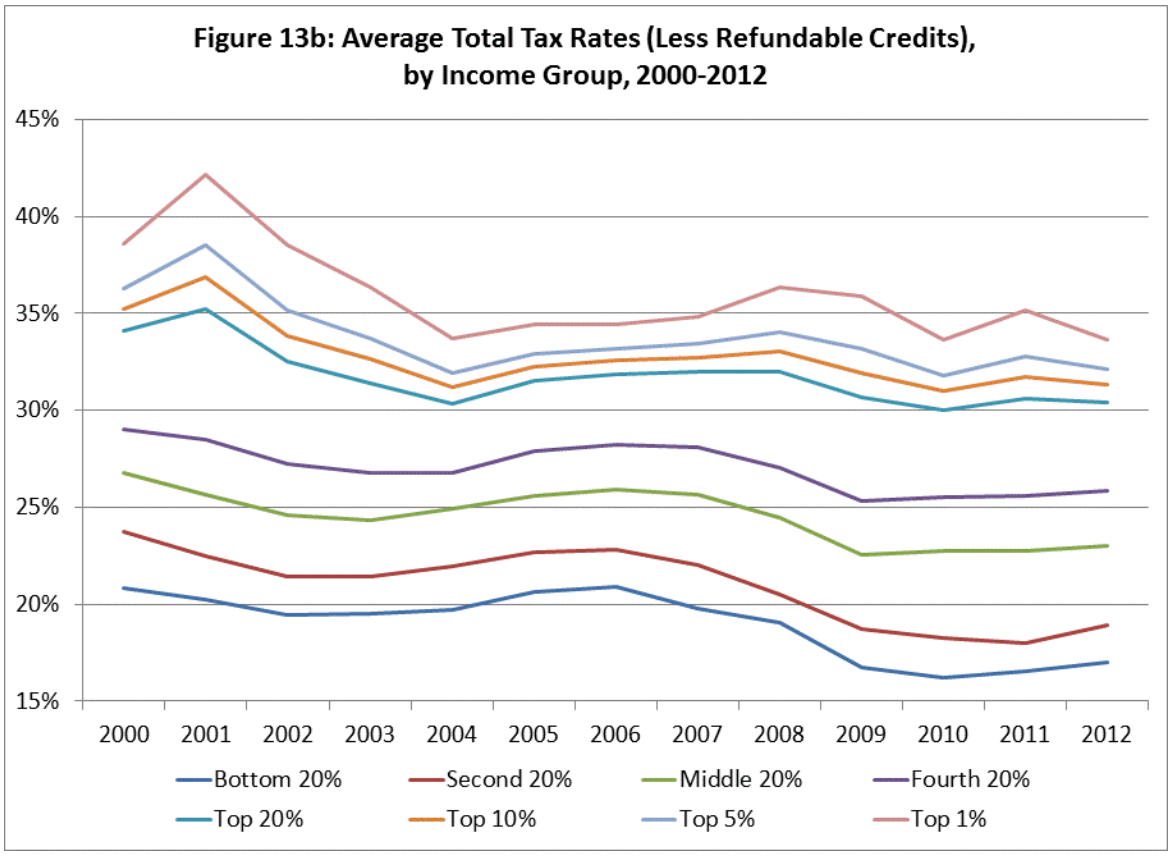


Figure 13b: Average Total Tax Rates (Less Refundable Credits), by Income Group, 2000-2012
45%
40%
35%
30%
25%
20%
15%
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
Bottom 20%
Second 20%
Middle 20%
Fourth 20%
Top 20%
Top 10%
Top 5%
Top 1%

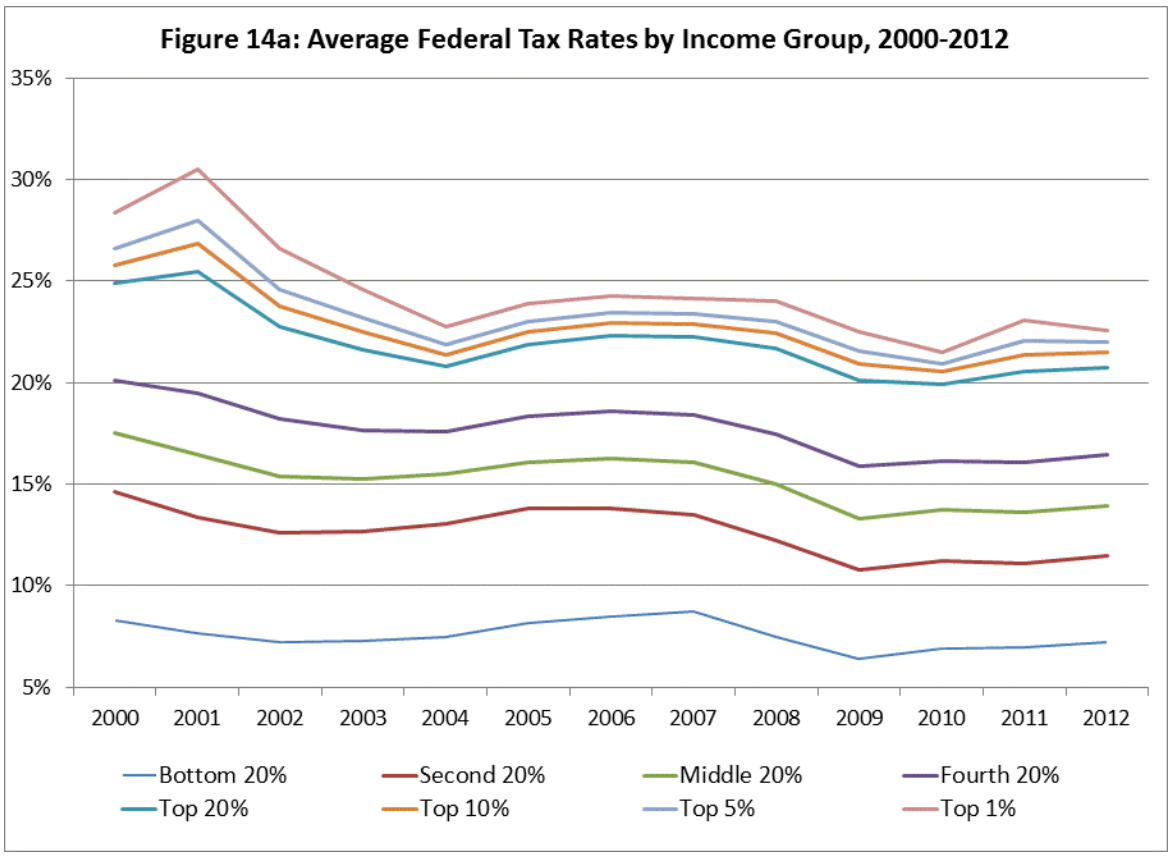


Figure 14a: Average Federal Tax Rates by Income Group, 2000-2012
35%
30%
25%
20%
15%
10%
5%
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
Bottom 20%
Second 20%
Middle 20%
Fourth 20%
Top 20%
Top 10%
Top 5%
Top 1%

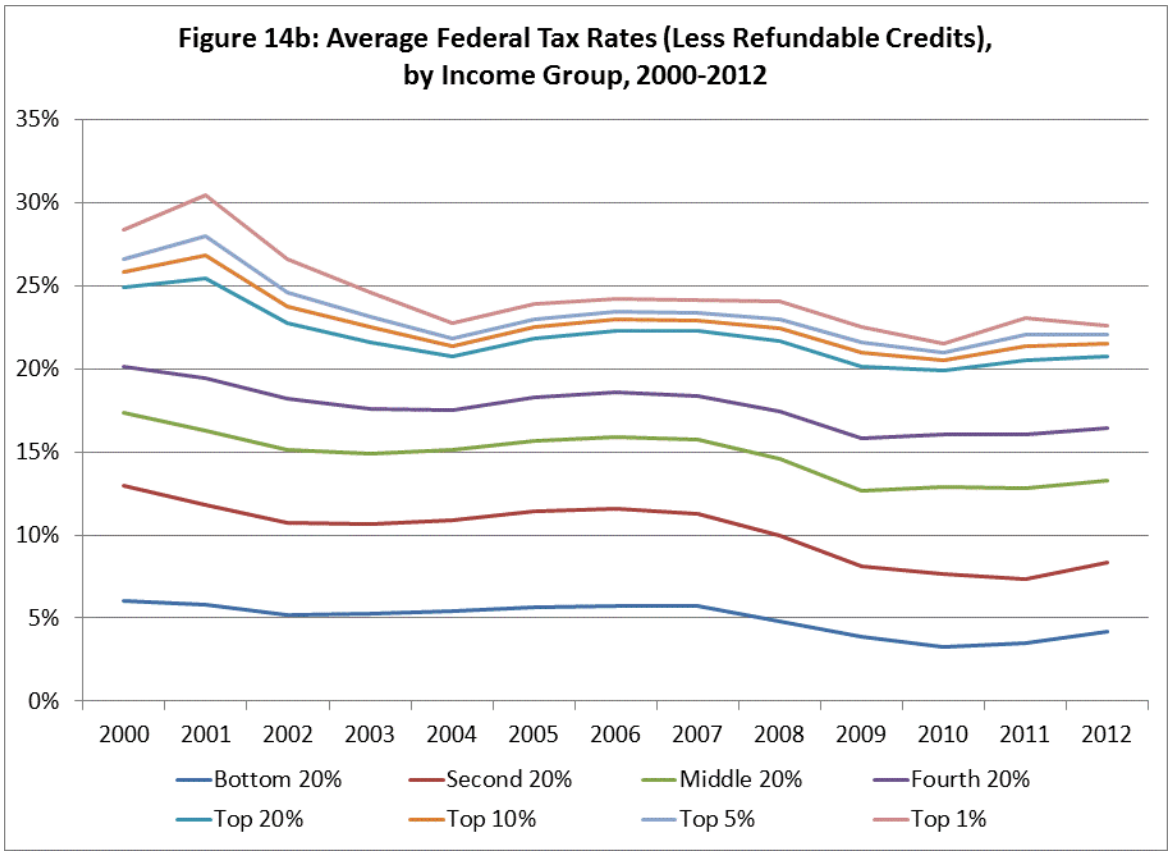


Figure 14b: Average Federal Tax Rates (Less Refundable Credits), by Income Group, 2000-2012
35%
30%
25%
20%
15%
10%
5%
0%
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
Bottom 20%
Second 20%
Middle 20%
Fourth 20%
Top 20%
Top 10%
Top 5%
Top 1%

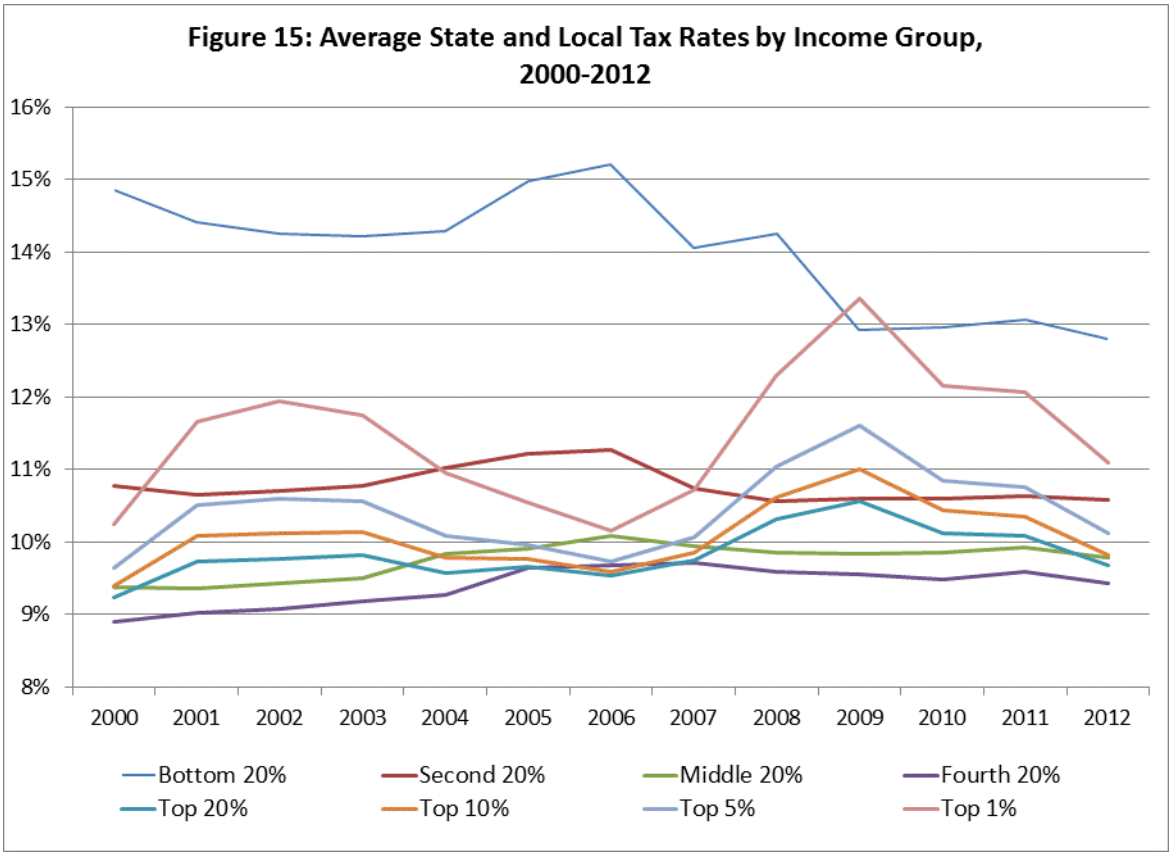


Figure 15: Average State and Local Tax Rates by Income Group, 2000-2012
16%
15%
14%
13%
12%
11%
10%
9%
8%
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
Bottom 20%
Second 20%
Middle 20%
Fourth 20%
Top 20%
Top 10%
Top 5%
Top 1%

V. Distribution of Government Spending

This section delves into the distribution of different categories of government spending across income groups. While the previous section showed that high-income families pay significantly more in taxes than low-and-middle income families, this section shows that spending is more evenly distributed across income groups, although the distribution depends on what methodological approach one takes – the benefit principle approach or the cost-of-services approach. This section presents results under both methodological approaches.

A. Average Spending Levels per Family

Tables 14a and 14b present average government spending for families across income groups. Table 14a presents the results under the benefit principle approach. As one can see, under the benefit principle approach, the spending levels for high-income families are significantly higher than low-and-middle income families. Transfer spending is higher for high-income families because of the assumed public health good from Medicaid, as well as the assumption that a fraction of Medicare spending benefits providers in the health care sector. Social Security payments are higher for high-income families because high-income families have more adults per family than low-and-middle income families. Most other transfer spending categories provide a very small benefit for high-income families as these programs are means-tested and the benefits are assumed to flow solely to recipient.

Under the benefit principle approach, non-transfer spending disproportionately flows to high-income families even more so than transfer spending. Because most of the spending programs are public goods allocated on the basis of cash income under the benefit principle approach, the distribution of spending in Table 14a shows the top 1 percent's average federal non-transfer spending as being 50 times greater than that of the bottom quintile. National defense is the main driver of this. At the state and local level, public safety spending is allocated the same as national defense: cash income, which is why high-income families have larger averages than others. Also, education spending is higher for high-income families due primarily to the public good component of education that is assumed under the benefit principle approach.

Overall, under the benefit principle approach, average spending values tend to increase as one moves up the income ladder. The average spending for a family in the top quintile is twice that

of fourth quintile and three times the spending for the bottom quintile. The top 1 percent's spending is even more skewed under the benefit principle approach; the total average spending for a family in the top 1 percent is 15-times greater than the average spending for a family in the bottom quintile.

Table 14b presents the results under the cost-of-services approach, and the results are dramatically different. Under the cost-of-services approach, government spending is mostly flat across the five quintiles, except for the top 1 percent where a greater number of persons per family increases the amount of government spending allocated to it. Recall that under the cost-of-services approach, half of the spending on public goods like national defense is allocated equally to all households and half of the spending amount is allocated based on the number of persons in the family. Under the cost-of-services approach, transfer spending disproportionately flows to the bottom quintile, including spending on Medicaid which differs noticeably from the benefit principle approach. That's because under the cost-of-services approach there is no assumed public health benefit from Medicaid that is distributed to all families.

There are some non-transfers that are not pure public goods but are instead quasi-private goods where excludability could theoretically exist. For example, fire protection and use of roads, trains, airports, etc., are all provided by government but could theoretically be provided by the private sector like most other goods. Spending on these programs are allocated on the basis of use by the "consumer." Spending on highway transportation is allocated to families based on an estimate of each family's road usage along with each family's imputed portion of the business usage of the roads. (Businesses use the roads as an input into producing goods and services that ultimately flow to final consumers.)

Overall, under the cost-of-services approach, the top quintile has an average federal spending value of $25,330, while the bottom quintile has a value of $28,553. At the state and local level, these figures are $14,339 and $9,682, respectively. There is very little variation across the five quintiles. However, at the very top of the income spectrum, the average values are somewhat higher: $44,273 (federal) and $18,442 (state and local) due primarily to a greater number of persons per family.

Table 14a: Distributional Analysis of Government Spending: Average Spending per Family, by Type of Spending, 2012 (Method A)[1]

Item	All Families	Bottom 20%	Second 20%	Middle 20%	Fourth 20%	Top 20%	Top 10%	Top 5%	Top 1%
Avg. Income[2]	92,511	22,305	41,461	68,237	110,084	320,427	479,257	723,893	2,005,287
Avg. Spending (Total)[3]	36,192	25,640	26,143	30,873	37,697	77,585	108,598	154,868	391,577
Avg. Federal Spending	25,202	19,680	18,616	21,701	25,043	51,164	72,400	103,741	263,413
Transfers	13,155	14,674	12,005	12,341	11,387	15,508	20,056	25,774	52,531
Social Security	5,003	5,837	3,955	5,285	4,809	5,016	5,908	6,583	9,343
Medicare	3,689	2,915	3,183	3,611	3,671	6,108	8,177	10,830	22,299
Unemployment	531	566	591	522	573	349	324	326	257
SNAP	492	1,201	540	185	65	18	9	10	19
SSI	339	890	219	135	104	61	52	63	23
Refundable tax credits	565	670	1,298	451	50	5	5	5	15
Education	306	414	258	246	254	310	382	285	275
Medicaid & other health	1,672	1,465	1,443	1,325	1,408	3,220	4,676	6,988	19,006
TANF	136	319	132	78	30	3	1	2	3
Other Transfers	422	397	383	502	423	418	522	683	1,292
Non-Transfers	10,125	3,623	5,236	7,720	11,698	31,498	46,434	69,441	188,720
General public service	818	584	584	698	836	1,776	2,523	3,639	9,457
National defense	5,172	1,026	2,129	3,713	6,214	18,492	27,729	41,977	116,530
Public order & safety	386	77	159	277	464	1,380	2,070	3,134	8,699
Transportation	639	301	409	558	787	1,566	2,026	2,750	5,699
Other economic affairs	781	212	425	643	969	2,402	3,519	5,251	13,815
Housing/Comm. services	250	422	204	114	105	369	614	1,027	3,531
Education	363	180	271	325	449	802	1,038	1,390	3,186
Other Non-Transfers	1,716	821	1,055	1,391	1,875	4,710	6,915	10,275	27,803
Interest on Debt	1,922	1,383	1,376	1,640	1,957	4,158	5,911	8,525	22,163
Avg. State & Local Spending	10,990	5,960	7,527	9,172	12,654	26,420	36,197	51,127	128,164
Transfers	1,519	1,544	1,365	1,219	1,242	2,454	3,380	4,824	12,344
Medicaid & other health	1,155	1,035	1,071	960	932	2,048	2,959	4,413	11,996
Education	243	225	197	205	271	360	366	341	253
Other Transfers	122	283	97	53	40	46	55	70	95
Non-Transfers	9,202	4,283	5,985	7,733	11,100	23,284	31,870	44,952	112,353
General public services	1,301	646	862	1,077	1,511	3,282	4,545	6,485	16,720
Public order & safety	1,855	373	774	1,350	2,256	6,553	9,779	14,698	40,041
Transportation	849	434	596	804	1,094	1,798	2,244	3,083	6,774
Other economic affairs	251	45	121	197	312	854	1,289	1,951	5,293
Education	4,287	2,377	3,237	3,824	5,255	9,016	11,396	14,840	33,098
Other Non-Transfers	659	407	395	480	673	1,781	2,617	3,895	10,428
Interest on Debt	268	133	177	221	312	682	947	1,351	3,466
Addendum:									
Federal grants to S&L govt.	3,571	2,761	2,744	2,873	3,384	7,594	10,932	16,117	43,006
Transfers	1,981	2,037	1,722	1,552	1,579	3,360	4,848	7,215	19,467
Non-Transfers	1,590	724	1,022	1,321	1,805	4,234	6,084	8,901	23,539

Notes:

1. Percentiles contain equal numbers of persons. Negative income famillies excluded from bottom quintile but included in totals.
2. Income measure in table above is comprehensive income, which includes market income plus fungible value of government transfers. It differs from the market income metric used in other tables and is designed to better reflect ability to pay taxes.
3. Spending total excludes the implict reduction that is included in other tables to close government deficits.

Source: Author calculations based on multiple data sources, primarily Census Bureau, IRS and Bureau of Economic Analysis.

Table 14b: Distributional Analysis of Government Spending: Average Spending per Family, by Type of Spending, 2012 (Method B)[1]

Item	All Families	Bottom 20%	Second 20%	Middle 20%	Fourth 20%	Top 20%	Top 10%	Top 5%	Top 1%
Avg. Income[2]	92,511	22,305	41,461	68,237	110,084	320,427	479,257	723,893	2,005,287
Avg. Spending (Total)[3]	36,192	38,235	34,198	34,289	35,219	39,669	43,263	47,225	62,715
Avg. Federal Spending	25,202	28,553	23,986	23,937	23,173	25,330	28,216	31,339	44,273
Transfers	13,155	18,207	13,096	12,249	9,893	9,138	10,338	11,190	14,153
Social Security	5,003	5,837	3,955	5,285	4,809	5,016	5,908	6,583	9,343
Medicare	3,689	4,945	3,604	3,581	2,925	2,617	2,896	3,040	3,072
Unemployment	531	566	591	522	573	349	324	326	257
SNAP	492	1,201	540	185	65	18	9	10	19
SSI	339	890	219	135	104	61	52	63	23
Refundable tax credits	565	670	1,298	451	50	5	5	5	15
Education	306	419	262	249	254	292	350	230	100
Medicaid & other health	1,672	2,958	2,103	1,257	659	388	324	337	307
TANF	136	319	132	78	30	3	1	2	3
Other Transfers	422	404	390	506	423	389	470	595	1,013
Non-Transfers	10,125	8,219	9,061	9,851	11,468	14,231	15,735	17,824	27,090
General public service	818	900	778	782	775	840	917	994	1,290
National defense	5,172	4,189	4,793	5,204	6,014	6,573	6,631	6,613	6,469
Public order & safety	386	313	358	388	449	491	495	494	483
Transportation	639	324	430	583	814	1,420	1,703	2,124	3,136
Other economic affairs	781	423	615	755	983	1,536	1,940	2,552	5,179
Housing/Comm. services	250	422	204	114	105	369	614	1,027	3,531
Education	363	250	334	361	452	520	528	526	481
Other Non-Transfers	1,716	1,398	1,548	1,664	1,877	2,481	2,907	3,495	6,520
Interest on Debt	1,922	2,126	1,829	1,837	1,812	1,961	2,143	2,325	3,030
Avg. State & Local Spending	10,990	9,682	10,213	10,352	12,046	14,339	15,047	15,886	18,442
Transfers	1,519	2,485	1,782	1,175	770	668	636	631	554
Medicaid & other health	1,155	1,976	1,488	917	460	262	215	220	207
Education	243	225	197	205	271	360	366	341	253
Other Transfers	122	283	97	53	40	46	55	70	95
Non-Transfers	9,202	6,967	8,184	8,924	10,976	13,310	14,031	14,856	17,433
General public services	1,301	1,123	1,205	1,235	1,447	1,710	1,785	1,869	2,123
Public order & safety	1,855	1,484	1,710	1,871	2,167	2,393	2,428	2,422	2,371
Transportation	849	468	627	840	1,135	1,580	1,759	2,143	2,934
Other economic affairs	251	94	165	221	312	661	940	1,362	3,456
Education	4,287	3,037	3,826	4,170	5,309	6,318	6,469	6,412	5,924
Other Non-Transfers	659	761	653	586	606	648	650	647	624
Interest on Debt	268	230	246	254	299	361	380	399	456
Addendum:									
Federal grants to S&L govt.	3,571	4,790	3,885	3,076	2,652	2,615	2,705	2,895	3,655
Transfers	1,981	3,530	2,382	1,484	831	528	497	565	768
Non-Transfers	1,590	1,260	1,503	1,593	1,821	2,087	2,208	2,330	2,887

Notes:

1. Percentiles contain equal numbers of persons. Negative income famillies excluded from bottom quintile but included in totals.
2. Income measure in table above is comprehensive income, which includes market income plus fungible value of government transfers. It differs from the market income metric used in other tables and is designed to better reflect ability to pay taxes.
3. Spending total excludes the implict reduction that is included in other tables to close government deficits.

Source: Author calculations based on multiple data sources, primarily Census Bureau, IRS and Bureau of Economic Analysis.

B. Spending as a Percentage of Comprehensive Income

Although high-income families have greater levels of government spending in pure dollar amounts, spending as a percentage of comprehensive income is far smaller for high-income families than for low-income families. This is shown in Tables 15a and 15b and Figures 16a and 16b. Under either the benefit principle approach (Table 15a and Figure 16a) or the cost-of-services approach (Table 15b and Figure 16b), the bottom quintile's spending as a percentage of its comprehensive income actually exceeds 100%. For the bottom quintile, total federal spending equals 88% of income under the benefit principle approach and 128% under the cost-of-services approach. At the state and local level, these figures are 27% and 43%, respectively.

At the top of the income spectrum, the results are significantly different between the two approaches. For the top 1%, under the benefit principle approach, total spending is about 20% of that group's income. However, under the cost-of-services approach, total spending is merely 3% of comprehensive income. For the top quintile, these figures are somewhat higher at 24% (benefit principle) and 12% (cost-of-services). For the middle quintile, total spending as a percentage of comprehensive income hovers around 50% under either approach.

Overall, these results show that spending is highly progressive (in the traditional sense of the term as reflecting "pro-poor" policies) when expressed as a percentage of income. High-income families receive far less as a percentage of their income in spending than do lower-and-middle-income families. This is what one would expect given that spending is not always legally tied to income, but when it is, government spending is typically higher for low-income families. Combined with the results from the previous section on taxes, one can see that both taxes and spending in the United States are progressive across income groups, and both support government redistribution from high-income families to low-and-middle-income families.

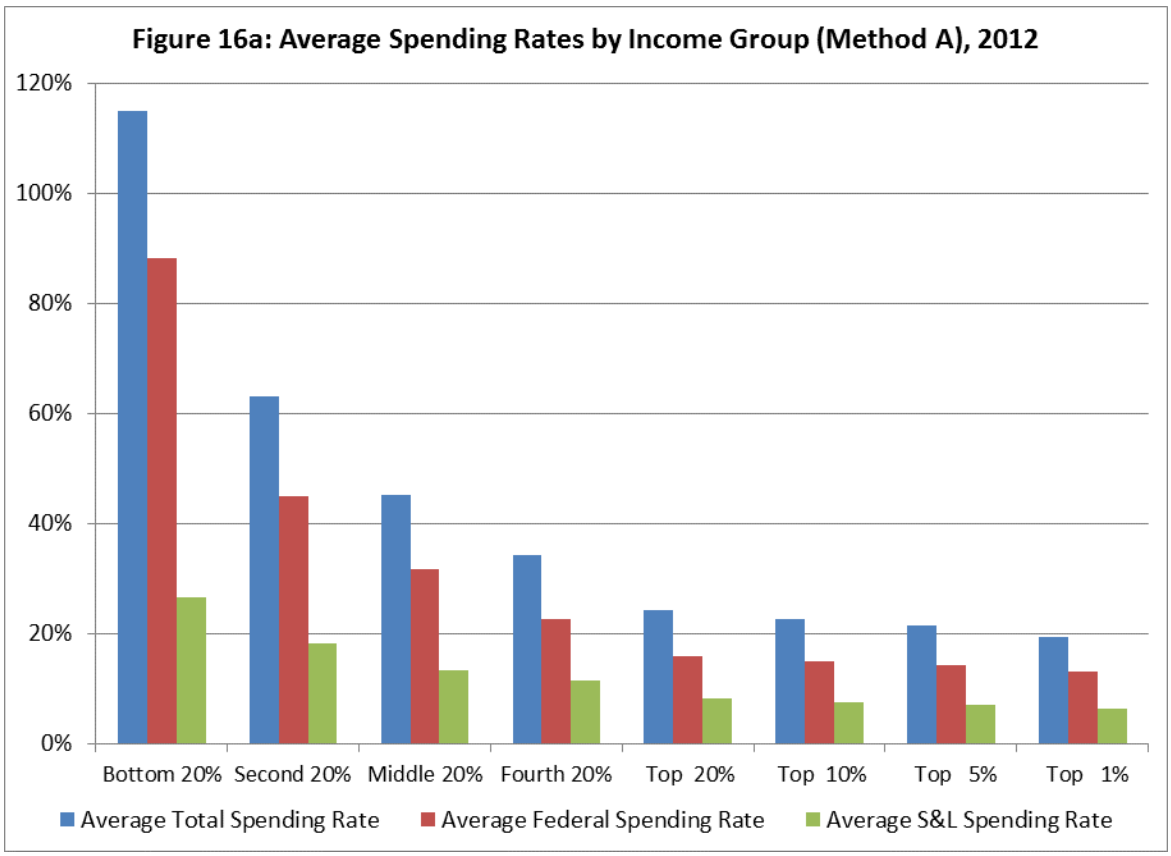


Figure 16a: Average Spending Rates by Income Group (Method A), 2012
120%
100%
80%
60%
40%
20%
0%
Bottom 20%
Second 20%
Middle 20%
Fourth 20%
Top 20%
Top 10%
Top 5%
Top 1%
Average Total Spending Rate
Average Federal Spending Rate
Average S&L Spending Rate

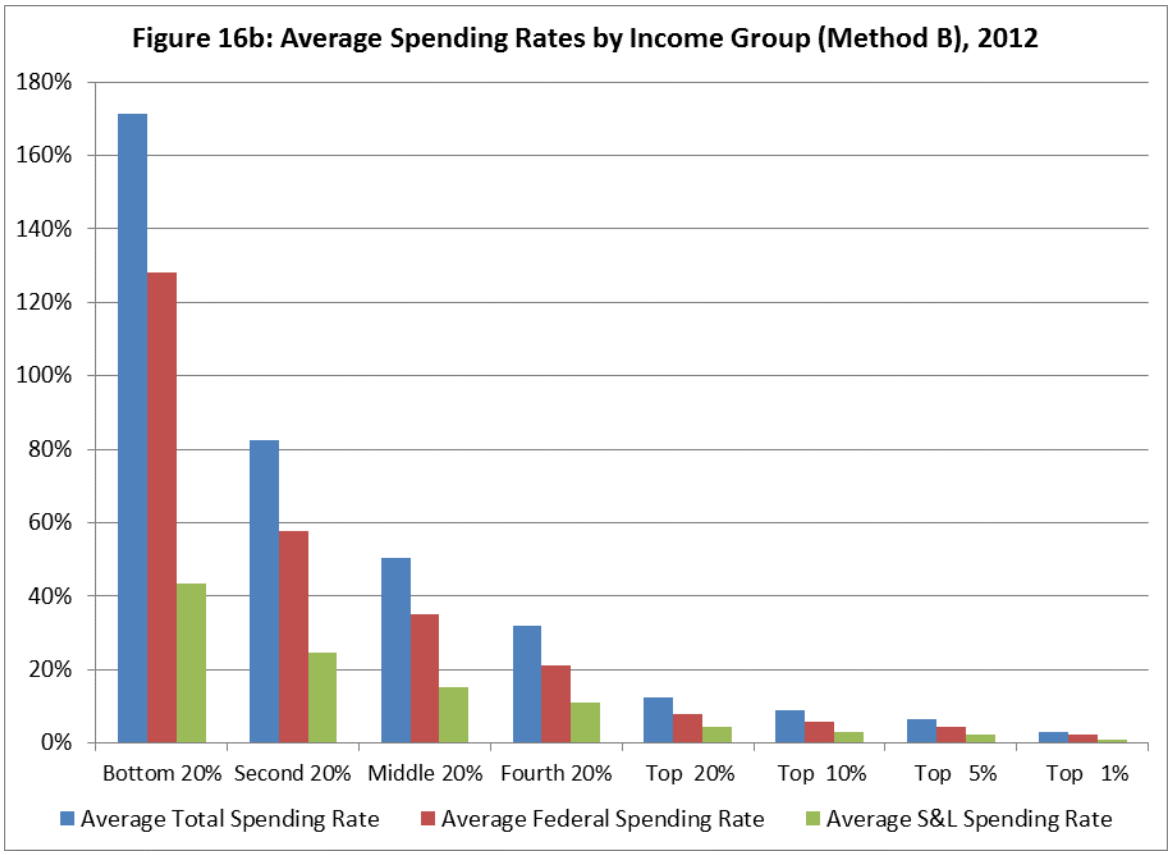


Figure 16b: Average Spending Rates by Income Group (Method B), 2012
180%
160%
140%
120%
100%
80%
60%
40%
20%
0%
Bottom 20%
Second 20%
Middle 20%
Fourth 20%
Top 20%
Top 10%
Top 5%
Top 1%
Average Total Spending Rate
Average Federal Spending Rate
Average S&L Spending Rate

Table 15a: Distributional Analysis of Government Spending: Spending as a Percentage of Income, by Type of Spending, 2012 (Method A)[1]

Item	All Families	Bottom 20%	Second 20%	Middle 20%	Fourth 20%	Top 20%	Top 10%	Top 5%	Top 1%
Avg. Income[2]	92,511	22,305	41,461	68,237	110,084	320,427	479,257	723,893	2,005,287
Spending (Total)[3]	39.1%	115.0%	63.1%	45.2%	34.2%	24.2%	22.7%	21.4%	19.5%
Federal Spending	27.2%	88.2%	44.9%	31.8%	22.7%	16.0%	15.1%	14.3%	13.1%
Transfers	14.2%	65.8%	29.0%	18.1%	10.3%	4.8%	4.2%	3.6%	2.6%
Social Security	5.4%	26.2%	9.5%	7.7%	4.4%	1.6%	1.2%	0.9%	0.5%
Medicare	4.0%	13.1%	7.7%	5.3%	3.3%	1.9%	1.7%	1.5%	1.1%
Unemployment	0.6%	2.5%	1.4%	0.8%	0.5%	0.1%	0.1%	0.0%	0.0%
SNAP	0.5%	5.4%	1.3%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%
SSI	0.4%	4.0%	0.5%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%
Refundable tax credits	0.6%	3.0%	3.1%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%
Education	0.3%	1.9%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%
Medicaid & other health	1.8%	6.6%	3.5%	1.9%	1.3%	1.0%	1.0%	1.0%	0.9%
TANF	0.1%	1.4%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Other Transfers	0.5%	1.8%	0.9%	0.7%	0.4%	0.1%	0.1%	0.1%	0.1%
Non-Transfers	10.9%	16.2%	12.6%	11.3%	10.6%	9.8%	9.7%	9.6%	9.4%
General public service	0.9%	2.6%	1.4%	1.0%	0.8%	0.6%	0.5%	0.5%	0.5%
National defense	5.6%	4.6%	5.1%	5.4%	5.6%	5.8%	5.8%	5.8%	5.8%
Public order & safety	0.4%	0.3%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%
Transportation	0.7%	1.3%	1.0%	0.8%	0.7%	0.5%	0.4%	0.4%	0.3%
Other economic affairs	0.8%	0.9%	1.0%	0.9%	0.9%	0.7%	0.7%	0.7%	0.7%
Housing/Comm. services	0.3%	1.9%	0.5%	0.2%	0.1%	0.1%	0.1%	0.1%	0.2%
Education	0.4%	0.8%	0.7%	0.5%	0.4%	0.3%	0.2%	0.2%	0.2%
Other Non-Transfers	1.9%	3.7%	2.5%	2.0%	1.7%	1.5%	1.4%	1.4%	1.4%
Interest on Debt	2.1%	6.2%	3.3%	2.4%	1.8%	1.3%	1.2%	1.2%	1.1%
State & Local Spending	11.9%	26.7%	18.2%	13.4%	11.5%	8.2%	7.6%	7.1%	6.4%
Transfers	1.6%	6.9%	3.3%	1.8%	1.1%	0.8%	0.7%	0.7%	0.6%
Medicaid & other health	1.2%	4.6%	2.6%	1.4%	0.8%	0.6%	0.6%	0.6%	0.6%
Education	0.3%	1.0%	0.5%	0.3%	0.2%	0.1%	0.1%	0.0%	0.0%
Other Transfers	0.1%	1.3%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Non-Transfers	9.9%	19.2%	14.4%	11.3%	10.1%	7.3%	6.6%	6.2%	5.6%
General public services	1.4%	2.9%	2.1%	1.6%	1.4%	1.0%	0.9%	0.9%	0.8%
Public order & safety	2.0%	1.7%	1.9%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Transportation	0.9%	1.9%	1.4%	1.2%	1.0%	0.6%	0.5%	0.4%	0.3%
Other economic affairs	0.3%	0.2%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%
Education	4.6%	10.7%	7.8%	5.6%	4.8%	2.8%	2.4%	2.0%	1.7%
Other Non-Transfers	0.7%	1.8%	1.0%	0.7%	0.6%	0.6%	0.5%	0.5%	0.5%
Interest on Debt	0.3%	0.6%	0.4%	0.3%	0.3%	0.2%	0.2%	0.2%	0.2%
Addendum:									
Federal grants to S&L govt.	3.9%	12.4%	6.6%	4.2%	3.1%	2.4%	2.3%	2.2%	2.1%
Transfers	2.1%	9.1%	4.2%	2.3%	1.4%	1.0%	1.0%	1.0%	1.0%
Non-Transfers	1.7%	3.2%	2.5%	1.9%	1.6%	1.3%	1.3%	1.2%	1.2%

Notes:

1. Percentiles contain equal numbers of persons. Negative income famillies excluded from bottom quintile but included in totals.
2. Income measure in table above is comprehensive income, which includes market income plus fungible value of government transfers. It differs from the market income metric used in other tables and is designed to better reflect ability to pay taxes.
3. Spending total excludes the implict reduction that is included in other tables to close government deficits.

Source: Author calculations based on multiple data sources, primarily Census Bureau, IRS and Bureau of Economic Analysis.

Table 15b: Distributional Analysis of Government Spending: Spending as a Percentage of Income, by Type of Spending, 2012 (Method B)

Item	All Families	Bottom 20%	Second 20%	Middle 20%	Fourth 20%	Top 20%	Top 10%	Top 5%	Top 1%
Avg. Income[2]	92,511	22,305	41,461	68,237	110,084	320,427	479,257	723,893	2,005,287
Spending (Total)	39.1%	171.4%	82.5%	50.3%	32.0%	12.4%	9.0%	6.5%	3.1%
Federal Spending	27.2%	128.0%	57.9%	35.1%	21.1%	7.9%	5.9%	4.3%	2.2%
Transfers	14.2%	81.6%	31.6%	18.0%	9.0%	2.9%	2.2%	1.5%	0.7%
Social Security	5.4%	26.2%	9.5%	7.7%	4.4%	1.6%	1.2%	0.9%	0.5%
Medicare	4.0%	22.2%	8.7%	5.2%	2.7%	0.8%	0.6%	0.4%	0.2%
Unemployment	0.6%	2.5%	1.4%	0.8%	0.5%	0.1%	0.1%	0.0%	0.0%
SNAP	0.5%	5.4%	1.3%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%
SSI	0.4%	4.0%	0.5%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%
Refundable tax credits	0.6%	3.0%	3.1%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%
Education	0.3%	1.9%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%
Medicaid & other health	1.8%	13.3%	5.1%	1.8%	0.6%	0.1%	0.1%	0.0%	0.0%
TANF	0.1%	1.4%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Other Transfers	0.5%	1.8%	0.9%	0.7%	0.4%	0.1%	0.1%	0.1%	0.1%
Non-Transfers	10.9%	36.9%	21.9%	14.4%	10.4%	4.4%	3.3%	2.5%	1.4%
General public service	0.9%	4.0%	1.9%	1.1%	0.7%	0.3%	0.2%	0.1%	0.1%
National defense	5.6%	18.8%	11.6%	7.6%	5.5%	2.1%	1.4%	0.9%	0.3%
Public order & safety	0.4%	1.4%	0.9%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%
Transportation	0.7%	1.5%	1.0%	0.9%	0.7%	0.4%	0.4%	0.3%	0.2%
Other economic affairs	0.8%	1.9%	1.5%	1.1%	0.9%	0.5%	0.4%	0.4%	0.3%
Housing/Comm. services	0.3%	1.9%	0.5%	0.2%	0.1%	0.1%	0.1%	0.1%	0.2%
Education	0.4%	1.1%	0.8%	0.5%	0.4%	0.2%	0.1%	0.1%	0.0%
Other Non-Transfers	1.9%	6.3%	3.7%	2.4%	1.7%	0.8%	0.6%	0.5%	0.3%
Interest on Debt	2.1%	9.5%	4.4%	2.7%	1.6%	0.6%	0.4%	0.3%	0.2%
State & Local Spending	11.9%	43.4%	24.6%	15.2%	10.9%	4.5%	3.1%	2.2%	0.9%
Transfers	1.6%	11.1%	4.3%	1.7%	0.7%	0.2%	0.1%	0.1%	0.0%
Medicaid & other health	1.2%	8.9%	3.6%	1.3%	0.4%	0.1%	0.0%	0.0%	0.0%
Education	0.3%	1.0%	0.5%	0.3%	0.2%	0.1%	0.1%	0.0%	0.0%
Other Transfers	0.1%	1.3%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Non-Transfers	9.9%	31.2%	19.7%	13.1%	10.0%	4.2%	2.9%	2.1%	0.9%
General public services	1.4%	5.0%	2.9%	1.8%	1.3%	0.5%	0.4%	0.3%	0.1%
Public order & safety	2.0%	6.7%	4.1%	2.7%	2.0%	0.7%	0.5%	0.3%	0.1%
Transportation	0.9%	2.1%	1.5%	1.2%	1.0%	0.5%	0.4%	0.3%	0.1%
Other economic affairs	0.3%	0.4%	0.4%	0.3%	0.3%	0.2%	0.2%	0.2%	0.2%
Education	4.6%	13.6%	9.2%	6.1%	4.8%	2.0%	1.3%	0.9%	0.3%
Other Non-Transfers	0.7%	3.4%	1.6%	0.9%	0.6%	0.2%	0.1%	0.1%	0.0%
Interest on Debt	0.3%	1.0%	0.6%	0.4%	0.3%	0.1%	0.1%	0.1%	0.0%
Addendum:									
Federal grants to S&L govt.	3.9%	21.5%	9.4%	4.5%	2.4%	0.8%	0.6%	0.4%	0.2%
Transfers	2.1%	15.8%	5.7%	2.2%	0.8%	0.2%	0.1%	0.1%	0.0%
Non-Transfers	1.7%	5.6%	3.6%	2.3%	1.7%	0.7%	0.5%	0.3%	0.1%

Notes:

1. Percentiles contain equal numbers of persons. Negative income famillies excluded from bottom quintile but included in totals.
2. Income measure in table above is comprehensive income, which includes market income plus fungible value of government transfers. It differs from the market income metric used in other tables and is designed to better reflect ability to pay taxes.
3. Spending total excludes the implict reduction that is included in other tables to close government deficits.

Source: Author calculations based on multiple data sources, primarily Census Bureau, IRS and Bureau of Economic Analysis.

C. Shares of Government Spending by Income Group

Tables 16a and 16b and Figures 17a and 17b present the shares of government spending by type across income groups. They indicate that transfer spending flows disproportionately to low-income families, while non-transfers flow disproportionately to high-income families. The magnitude of these proportions depends on what methodological approach is used (i.e., benefit principle or cost-of-services). National defense is dramatically different under the two approaches as one can see by comparing Figure 17a to Figure 17b. Under the benefit principle approach, nearly 52% of defense spending goes to families in the top quintile, while under the cost-of-services approach, that figure is around 18%. With the exception of Medicare and Medicaid, the distribution of transfer spending does not dramatically change between the two methodological approaches.

The distribution of Social Security spending is disproportionately skewed towards the bottom quintile, but Social Security is not nearly as skewed towards the bottom as most other transfer programs. SSI, SNAP and TANF are highly skewed to the bottom quintile, while refundable tax credits and unemployment benefits are skewed to the bottom two quintiles (not just the bottom quintile). Recall that Medicare and Medicaid spending are distributed differently under the two methodological approaches. Under the benefit principle approach, approximately one-quarter of Medicare and Medicaid spending goes to the top quintile. Under the cost-of-services approach, only 3.3% of Medicaid spending goes to the top quintile and 10.2% of Medicare spending.

Non-transfer spending tends to be evenly distributed under the cost-of-services approach but rather skewed towards the top of the income spectrum under the benefit principle approach. Around 45% of federal non-transfer spending and 37% of state and local non-transfer spending goes to the top quintile under the benefit principle approach. Under the cost-of-services approach, those figures are around 20% for both federal and state and local.

Overall, the top quintile's share of total spending is nearly double under the benefit principle approach compared to the cost-of-services approach. For the top 1 percent, the differences are even more dramatic. Under the benefit principle approach, 8.1% of spending flows to the top 1 percent; under the cost-of-services approach, that figure is merely 1.3%. For the middle quintile, its share of total spending is slightly higher under the cost-of-services approach than the benefit

principle approach (19.0% vs. 17.1%). The bottom quintile's share of total spending is 18.7% under the benefit principle approach and 27.8% under the cost-of-services approach.

D. Relative Importance of Different Categories of Government Spending

Tables 17a and 17b and Figures 18a and 18b illustrate the relative importance of various spending programs to each income group. Transfers make up a large fraction of the spending received by families in the bottom end of the income spectrum, while non-transfers make up the bulk of the spending flowing to high-income families. Federal spending is relatively more important than state-and-local spending for the bottom quintile (compared to the national average), while the top two quintiles are below the national average in terms of federal spending as a percentage of total spending.

For all families, 36.3% of spending is federal transfers, 4.2% is state and local transfers, 28% of spending is federal non-transfers, and 25.4% is state-and-local non-transfers. Interest on the debt makes up 6% of spending. Under the benefit principle approach, federal transfers make up 57.2% of spending for the bottom quintile and state-and-local transfers 6.0%. For the top quintile, federal transfers make up 20% of spending and state-and-local transfers 3.2% under the benefit principle. Under the cost-of-services approach, non-transfer spending increases in relative importance for the bottom quintile, while it decreases in importance for the top quintile. For the middle quintile, the relative importance of most categories are similar under both methodological approaches. For the middle quintile, between 36-40% of spending comes from federal transfers and around 25% of spending comes from federal non-transfers. Approximately 30% of total spending for the middle quintile is state and local.

Table 16a: Distributional Analysis of Government Spending: Spending Shares by Income Group, by Type of Spending, 2012 (Method A)[1]

Item	All Families	Bottom 20%	Second 20%	Middle 20%	Fourth 20%	Top 20%	Top 10%	Top 5%	Top 1%
Income Share[2]	100%	6.4%	9.9%	14.8%	19.5%	49.9%	37.0%	28.1%	16.2%
Spending (Total)[3]	100%	18.7%	16.0%	17.1%	17.0%	30.9%	21.4%	15.4%	8.1%
Federal Spending	100%	20.6%	16.4%	17.3%	16.2%	29.3%	20.5%	14.8%	7.8%
Transfers	100%	29.4%	20.3%	18.8%	14.2%	17.0%	10.9%	7.0%	3.0%
Social Security	100%	30.7%	17.5%	21.2%	15.7%	14.5%	8.4%	4.7%	1.4%
Medicare	100%	20.8%	19.1%	19.6%	16.3%	23.9%	15.8%	10.6%	4.5%
Unemployment	100%	28.1%	24.7%	19.7%	17.6%	9.5%	4.4%	2.2%	0.4%
SNAP	100%	64.3%	24.4%	7.5%	2.2%	0.5%	0.1%	0.1%	0.0%
SSI	100%	69.1%	14.3%	8.0%	5.0%	2.6%	1.1%	0.7%	0.1%
Refundable tax credits	100%	31.2%	51.0%	16.0%	1.4%	0.1%	0.1%	0.0%	0.0%
Education	100%	35.7%	18.8%	16.2%	13.6%	14.6%	8.9%	3.4%	0.7%
Medicaid & other health	100%	23.1%	19.1%	15.9%	13.8%	27.8%	20.0%	15.0%	8.5%
TANF	100%	61.9%	21.6%	11.6%	3.7%	0.3%	0.1%	0.0%	0.0%
Other Transfers	100%	24.8%	20.2%	23.9%	16.4%	14.3%	8.8%	5.8%	2.3%
Non-Transfers	100%	9.4%	11.5%	15.3%	18.9%	44.9%	32.7%	24.7%	13.9%
General public service	100%	18.8%	15.9%	17.1%	16.7%	31.3%	22.0%	16.0%	8.6%
National defense	100%	5.2%	9.1%	14.4%	19.6%	51.6%	38.3%	29.2%	16.8%
Public order & safety	100%	5.2%	9.1%	14.4%	19.6%	51.6%	38.3%	29.2%	16.8%
Transportation	100%	12.4%	14.2%	17.5%	20.1%	35.3%	22.6%	15.5%	6.7%
Other economic affairs	100%	7.1%	12.1%	16.5%	20.3%	44.3%	32.1%	24.2%	13.2%
Housing/Comm. services	100%	44.6%	18.1%	9.1%	6.9%	21.3%	17.5%	14.8%	10.6%
Education	100%	13.0%	16.6%	18.0%	20.2%	31.9%	20.4%	13.8%	6.6%
Other Non-Transfers	100%	12.6%	13.6%	16.3%	17.9%	39.6%	28.8%	21.5%	12.1%
Interest on Debt	100%	19.0%	15.9%	17.1%	16.6%	31.2%	21.9%	15.9%	8.6%
State & Local Spending	100%	14.3%	15.2%	16.7%	18.8%	34.7%	23.5%	16.7%	8.7%
Transfers	100%	26.8%	19.9%	16.1%	13.4%	23.3%	15.9%	11.4%	6.1%
Medicaid & other health	100%	23.6%	20.6%	16.7%	13.2%	25.6%	18.3%	13.7%	7.8%
Education	100%	24.4%	18.0%	17.0%	18.2%	21.4%	10.7%	5.0%	0.8%
Other Transfers	100%	61.2%	17.6%	8.7%	5.3%	5.4%	3.2%	2.1%	0.6%
Non-Transfers	100%	12.3%	14.4%	16.9%	19.7%	36.5%	24.7%	17.6%	9.1%
General public services	100%	13.1%	14.7%	16.6%	19.0%	36.4%	24.9%	17.9%	9.6%
Public order & safety	100%	5.3%	9.3%	14.6%	19.9%	50.9%	37.6%	28.5%	16.1%
Transportation	100%	13.5%	15.6%	19.0%	21.1%	30.5%	18.9%	13.1%	6.0%
Other economic affairs	100%	4.8%	10.7%	15.8%	20.3%	49.1%	36.7%	28.0%	15.8%
Education	100%	14.6%	16.8%	17.9%	20.0%	30.3%	19.0%	12.4%	5.8%
Other Non-Transfers	100%	16.3%	13.3%	14.6%	16.7%	38.9%	28.3%	21.2%	11.8%
Interest on Debt	100%	13.0%	14.6%	16.5%	19.0%	36.6%	25.2%	18.1%	9.6%
Addendum:									
Federal grants to S&L govt.	100%	20.4%	17.1%	16.1%	15.5%	30.7%	21.9%	16.2%	9.0%
Transfers	100%	27.1%	19.3%	15.7%	13.0%	24.5%	17.5%	13.1%	7.3%
Non-Transfers	100%	12.0%	14.3%	16.7%	18.6%	38.4%	27.3%	20.1%	11.0%

Notes:

1. Percentiles contain equal numbers of persons. Negative income famillies excluded from bottom quintile but included in totals.
2. Income measure in table above is comprehensive income, which includes market income plus fungible value of government transfers. It differs from the market income metric used in other tables and is designed to better reflect ability to pay taxes.
3. Spending totals exclude the implict reduction that is included in other tables to close government deficits.

Source: Author calculations based on multiple data sources, primarily Census Bureau, IRS and Bureau of Economic Analysis.

Table 16b: Distributional Analysis of Government Spending: Spending Shares by Income Group, by Type of Spending, 2012 (Method B)[1]

Item	All Families	Bottom 20%	Second 20%	Middle 20%	Fourth 20%	Top 20%	Top 10%	Top 5%	Top 1%
Income Share[2]	100%	6.4%	9.9%	14.8%	19.5%	49.9%	37.0%	28.1%	16.2%
Spending (Total)[3]	100%	27.8%	21.0%	19.0%	15.9%	15.8%	8.5%	4.7%	1.3%
Federal Spending	100%	29.8%	21.1%	19.1%	15.0%	14.5%	8.0%	4.5%	1.3%
Transfers	100%	36.5%	22.1%	18.7%	12.3%	10.0%	5.6%	3.1%	0.8%
Social Security	100%	30.7%	17.5%	21.2%	15.7%	14.5%	8.4%	4.7%	1.4%
Medicare	100%	35.3%	21.7%	19.5%	13.0%	10.2%	5.6%	3.0%	0.6%
Unemployment	100%	28.1%	24.7%	19.7%	17.6%	9.5%	4.4%	2.2%	0.4%
SNAP	100%	64.3%	24.4%	7.5%	2.2%	0.5%	0.1%	0.1%	0.0%
SSI	100%	69.1%	14.3%	8.0%	5.0%	2.6%	1.1%	0.7%	0.1%
Refundable tax credits	100%	31.2%	51.0%	16.0%	1.4%	0.1%	0.1%	0.0%	0.0%
Education	100%	36.1%	19.1%	16.3%	13.6%	13.8%	8.2%	2.7%	0.2%
Medicaid & other health	100%	46.6%	27.9%	15.1%	6.4%	3.3%	1.4%	0.7%	0.1%
TANF	100%	61.9%	21.6%	11.6%	3.7%	0.3%	0.1%	0.0%	0.0%
Other Transfers	100%	25.3%	20.5%	24.0%	16.4%	13.3%	8.0%	5.1%	1.8%
Non-Transfers	100%	21.4%	19.9%	19.5%	18.5%	20.3%	11.1%	6.3%	2.0%
General public service	100%	29.0%	21.1%	19.2%	15.5%	14.8%	8.0%	4.4%	1.2%
National defense	100%	21.3%	20.6%	20.2%	19.0%	18.3%	9.2%	4.6%	0.9%
Public order & safety	100%	21.3%	20.6%	20.2%	19.0%	18.3%	9.2%	4.6%	0.9%
Transportation	100%	13.4%	15.0%	18.3%	20.8%	32.1%	19.0%	12.0%	3.7%
Other economic affairs	100%	14.3%	17.5%	19.4%	20.6%	28.4%	17.7%	11.7%	4.9%
Housing/Comm. services	100%	44.6%	18.1%	9.1%	6.9%	21.3%	17.5%	14.8%	10.6%
Education	100%	18.1%	20.4%	20.0%	20.4%	20.7%	10.4%	5.2%	1.0%
Other Non-Transfers	100%	21.5%	20.0%	19.5%	17.9%	20.8%	12.1%	7.3%	2.8%
Interest on Debt	100%	29.1%	21.1%	19.2%	15.4%	14.7%	8.0%	4.3%	1.2%
State & Local Spending	100%	23.2%	20.6%	18.9%	17.9%	18.8%	9.8%	5.2%	1.3%
Transfers	100%	43.1%	26.0%	15.5%	8.3%	6.3%	3.0%	1.5%	0.3%
Medicaid & other health	100%	45.1%	28.6%	15.9%	6.5%	3.3%	1.3%	0.7%	0.1%
Education	100%	24.4%	18.0%	17.0%	18.2%	21.4%	10.7%	5.0%	0.8%
Other Transfers	100%	61.2%	17.6%	8.7%	5.3%	5.4%	3.2%	2.1%	0.6%
Non-Transfers	100%	19.9%	19.7%	19.5%	19.5%	20.9%	10.9%	5.8%	1.4%
General public services	100%	22.7%	20.5%	19.0%	18.2%	19.0%	9.8%	5.2%	1.2%
Public order & safety	100%	21.1%	20.4%	20.2%	19.1%	18.6%	9.3%	4.7%	1.0%
Transportation	100%	14.5%	16.4%	19.9%	21.9%	26.8%	14.8%	9.1%	2.6%
Other economic affairs	100%	9.9%	14.6%	17.7%	20.3%	38.0%	26.8%	19.5%	10.3%
Education	100%	18.7%	19.8%	19.5%	20.2%	21.3%	10.8%	5.4%	1.0%
Other Non-Transfers	100%	30.4%	22.0%	17.8%	15.0%	14.2%	7.0%	3.5%	0.7%
Interest on Debt	100%	22.6%	20.4%	18.9%	18.2%	19.4%	10.1%	5.3%	1.3%
Addendum:									
Federal grants to S&L govt.	100%	35.3%	24.1%	17.3%	12.1%	10.6%	5.4%	2.9%	0.8%
Transfers	100%	46.9%	26.7%	15.0%	6.9%	3.8%	1.8%	1.0%	0.3%
Non-Transfers	100%	20.9%	21.0%	20.1%	18.7%	18.9%	9.9%	5.3%	1.4%

Notes:
1. Percentiles contain equal numbers of persons. Negative income famillies excluded from bottom quintile but included in totals.
2. Income measure in table above is comprehensive income, which includes market income plus fungible value of government transfers. It differs from the market income metric used in other tables and is designed to better reflect ability to pay taxes.
3. Spending totals exclude the implict reduction that is included in other tables to close government deficits.

Source: Author calculations based on multiple data sources, primarily Census Bureau, IRS and Bureau of Economic Analysis.

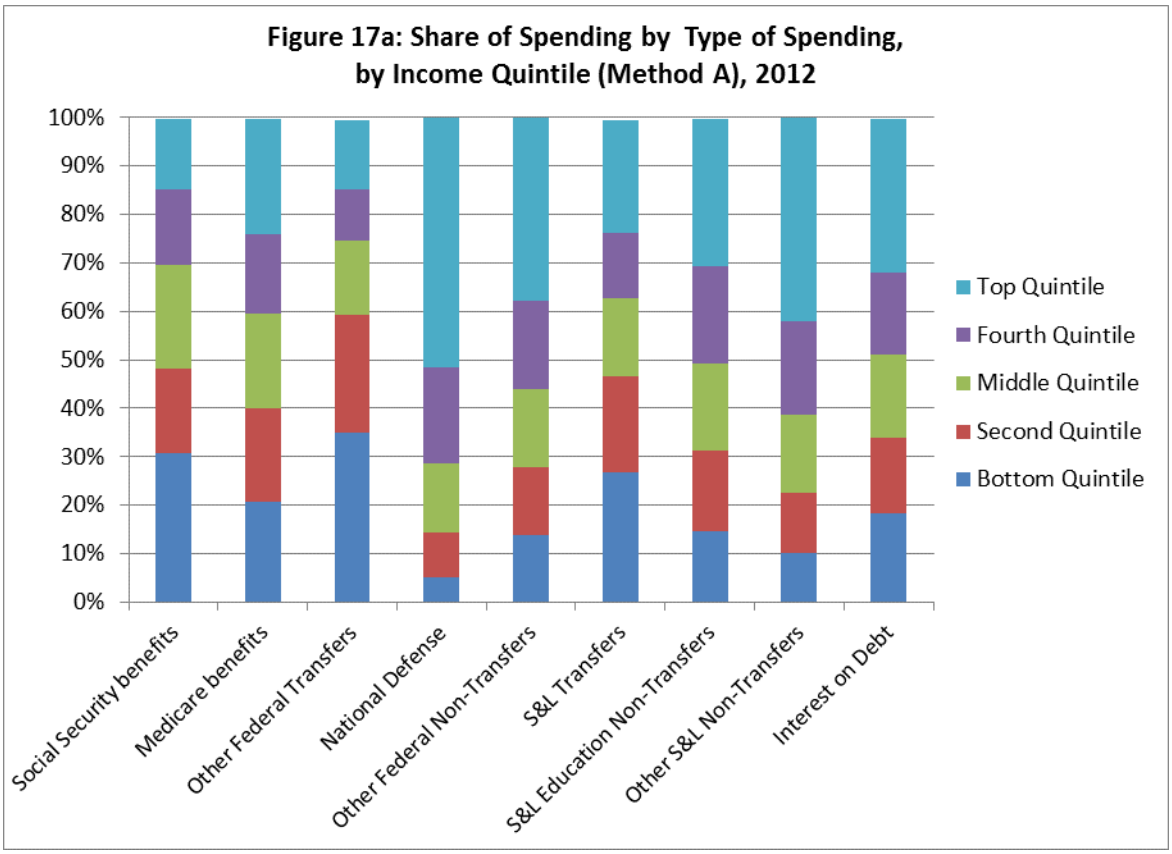


Figure 17a: Share of Spending by Type of Spending, by Income Quintile (Method A), 2012
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Top Quintile
Fourth Quintile
Middle Quintile
Second Quintile
Bottom Quintile
Social Security benefits
Medicare benefits
Other Federal Transfers
National Defense
Other Federal Non-Transfers
S&L Transfers
S&L Education Non-Transfers
Other S&L Non-Transfers
Interest on Debt

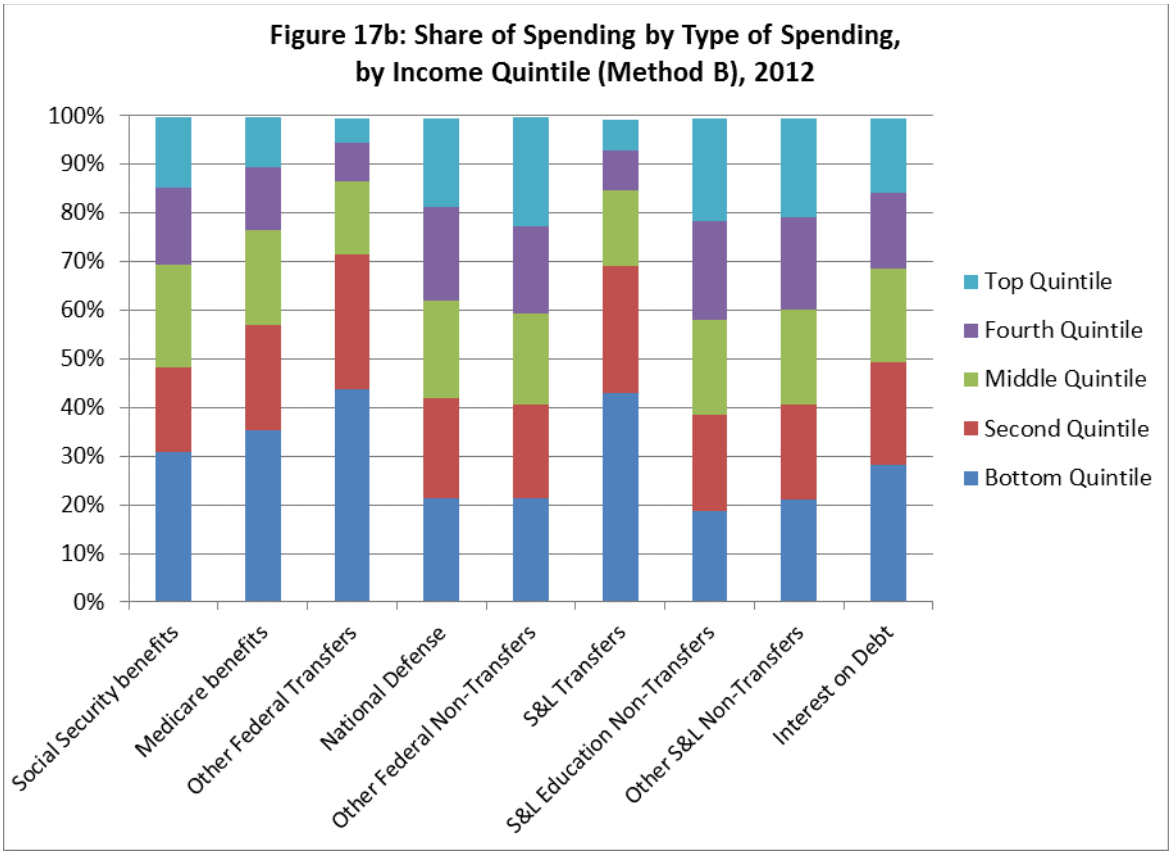


Figure 17b: Share of Spending by Type of Spending, by Income Quintile (Method B), 2012
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Top Quintile
Fourth Quintile
Middle Quintile
Second Quintile
Bottom Quintile
Social Security benefits
Medicare benefits
Other Federal Transfers
National Defense
Other Federal Non-Transfers
S&L Transfers
S&L Education Non-Transfers
Other S&L Non-Transfers
Interest on Debt

Table 17a: Distributional Analysis of Government Spending: Relative Importance of Each Spending Item for Each Income Group, by Type of Spending, 2012 (Method A)[1]

Item	All Families	Bottom 20%	Second 20%	Middle 20%	Fourth 20%	Top 20%	Top 10%	Top 5%	Top 1%
Avg. Income[2]	92,511	22,305	41,461	68,237	110,084	320,427	479,257	723,893	2,005,287
Spending (Total)[3]	100%	100%	100%	100%	100%	100%	100%	100%	100%
Federal Spending	69.6%	76.8%	71.2%	70.3%	66.4%	65.9%	66.7%	67.0%	67.3%
Transfers	36.3%	57.2%	45.9%	40.0%	30.2%	20.0%	18.5%	16.6%	13.4%
Social Security	13.8%	22.8%	15.1%	17.1%	12.8%	6.5%	5.4%	4.3%	2.4%
Medicare	10.2%	11.4%	12.2%	11.7%	9.7%	7.9%	7.5%	7.0%	5.7%
Unemployment	1.5%	2.2%	2.3%	1.7%	1.5%	0.4%	0.3%	0.2%	0.1%
SNAP	1.4%	4.7%	2.1%	0.6%	0.2%	0.0%	0.0%	0.0%	0.0%
SSI	0.9%	3.5%	0.8%	0.4%	0.3%	0.1%	0.0%	0.0%	0.0%
Refundable tax credits	1.6%	2.6%	5.0%	1.5%	0.1%	0.0%	0.0%	0.0%	0.0%
Education	0.8%	1.6%	1.0%	0.8%	0.7%	0.4%	0.4%	0.2%	0.1%
Medicaid & other health	4.6%	5.7%	5.5%	4.3%	3.7%	4.2%	4.3%	4.5%	4.9%
TANF	0.4%	1.2%	0.5%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%
Other Transfers	1.2%	1.5%	1.5%	1.6%	1.1%	0.5%	0.5%	0.4%	0.3%
Non-Transfers	28.0%	14.1%	20.0%	25.0%	31.0%	40.6%	42.8%	44.8%	48.2%
General public service	2.3%	2.3%	2.2%	2.3%	2.2%	2.3%	2.3%	2.3%	2.4%
National defense	14.3%	4.0%	8.1%	12.0%	16.5%	23.8%	25.5%	27.1%	29.8%
Public order & safety	1.1%	0.3%	0.6%	0.9%	1.2%	1.8%	1.9%	2.0%	2.2%
Transportation	1.8%	1.2%	1.6%	1.8%	2.1%	2.0%	1.9%	1.8%	1.5%
Other economic affairs	2.2%	0.8%	1.6%	2.1%	2.6%	3.1%	3.2%	3.4%	3.5%
Housing/Comm. services	0.7%	1.6%	0.8%	0.4%	0.3%	0.5%	0.6%	0.7%	0.9%
Education	1.0%	0.7%	1.0%	1.1%	1.2%	1.0%	1.0%	0.9%	0.8%
Other Non-Transfers	4.7%	3.2%	4.0%	4.5%	5.0%	6.1%	6.4%	6.6%	7.1%
Interest on Debt	5.3%	5.4%	5.3%	5.3%	5.2%	5.4%	5.4%	5.5%	5.7%
State & Local Spending	30.4%	23.2%	28.8%	29.7%	33.6%	34.1%	33.3%	33.0%	32.7%
Transfers	4.2%	6.0%	5.2%	3.9%	3.3%	3.2%	3.1%	3.1%	3.2%
Medicaid & other health	3.2%	4.0%	4.1%	3.1%	2.5%	2.6%	2.7%	2.8%	3.1%
Education	0.7%	0.9%	0.8%	0.7%	0.7%	0.5%	0.3%	0.2%	0.1%
Other Transfers	0.3%	1.1%	0.4%	0.2%	0.1%	0.1%	0.1%	0.0%	0.0%
Non-Transfers	25.4%	16.7%	22.9%	25.0%	29.4%	30.0%	29.3%	29.0%	28.7%
General public services	3.6%	2.5%	3.3%	3.5%	4.0%	4.2%	4.2%	4.2%	4.3%
Public order & safety	5.1%	1.5%	3.0%	4.4%	6.0%	8.4%	9.0%	9.5%	10.2%
Transportation	2.3%	1.7%	2.3%	2.6%	2.9%	2.3%	2.1%	2.0%	1.7%
Other economic affairs	0.7%	0.2%	0.5%	0.6%	0.8%	1.1%	1.2%	1.3%	1.4%
Education	11.8%	9.3%	12.4%	12.4%	13.9%	11.6%	10.5%	9.6%	8.5%
Other Non-Transfers	1.8%	1.6%	1.5%	1.6%	1.8%	2.3%	2.4%	2.5%	2.7%
Interest on Debt	0.7%	0.5%	0.7%	0.7%	0.8%	0.9%	0.9%	0.9%	0.9%

Notes:

1. Percentiles contain equal numbers of persons. Negative income famillies excluded from bottom quintile but included in totals.
2. Income measure in table above is comprehensive income, which includes market income plus fungible value of government transfers. It differs from the market income metric used in other tables and is designed to better reflect ability to pay taxes.
3. Spending totals exclude the implict reduction that is included in other tables to close government deficits.

Source: Author calculations based on multiple data sources, primarily Census Bureau, IRS and Bureau of Economic Analysis.

Table 17b: Distributional Analysis of Government Spending: Relative Importance of Each Spending Item for Each Income Group, by Type of Spending, 2012 (Method B)[1]

Item	All Families	Bottom 20%	Second 20%	Middle 20%	Fourth 20%	Top 20%	Top 10%	Top 5%	Top 1%
Avg. Income[2]	92,511	22,305	41,461	68,237	110,084	320,427	479,257	723,893	2,005,287
Spending (Total)[3]	100%	100%	100%	100%	100%	100%	100%	100%	100%
Federal Spending	69.6%	74.7%	70.1%	69.8%	65.8%	63.9%	65.2%	66.4%	70.6%
Transfers	36.3%	47.6%	38.3%	35.7%	28.1%	23.0%	23.9%	23.7%	22.6%
Social Security	13.8%	15.3%	11.6%	15.4%	13.7%	12.6%	13.7%	13.9%	14.9%
Medicare	10.2%	12.9%	10.5%	10.4%	8.3%	6.6%	6.7%	6.4%	4.9%
Unemployment	1.5%	1.5%	1.7%	1.5%	1.6%	0.9%	0.7%	0.7%	0.4%
SNAP	1.4%	3.1%	1.6%	0.5%	0.2%	0.0%	0.0%	0.0%	0.0%
SSI	0.9%	2.3%	0.6%	0.4%	0.3%	0.2%	0.1%	0.1%	0.0%
Refundable tax credits	1.6%	1.8%	3.8%	1.3%	0.1%	0.0%	0.0%	0.0%	0.0%
Education	0.8%	1.1%	0.8%	0.7%	0.7%	0.7%	0.8%	0.5%	0.2%
Medicaid & other health	4.6%	7.7%	6.1%	3.7%	1.9%	1.0%	0.7%	0.7%	0.5%
TANF	0.4%	0.8%	0.4%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%
Other Transfers	1.2%	1.1%	1.1%	1.5%	1.2%	1.0%	1.1%	1.3%	1.6%
Non-Transfers	28.0%	21.5%	26.5%	28.7%	32.6%	35.9%	36.4%	37.7%	43.2%
General public service	2.3%	2.4%	2.3%	2.3%	2.2%	2.1%	2.1%	2.1%	2.1%
National defense	14.3%	11.0%	14.0%	15.2%	17.1%	16.6%	15.3%	14.0%	10.3%
Public order & safety	1.1%	0.8%	1.0%	1.1%	1.3%	1.2%	1.1%	1.0%	0.8%
Transportation	1.8%	0.8%	1.3%	1.7%	2.3%	3.6%	3.9%	4.5%	5.0%
Other economic affairs	2.2%	1.1%	1.8%	2.2%	2.8%	3.9%	4.5%	5.4%	8.3%
Housing/Comm. services	0.7%	1.1%	0.6%	0.3%	0.3%	0.9%	1.4%	2.2%	5.6%
Education	1.0%	0.7%	1.0%	1.1%	1.3%	1.3%	1.2%	1.1%	0.8%
Other Non-Transfers	4.7%	3.7%	4.5%	4.9%	5.3%	6.3%	6.7%	7.4%	10.4%
Interest on Debt	5.3%	5.6%	5.3%	5.4%	5.1%	4.9%	5.0%	4.9%	4.8%
State & Local Spending	30.4%	25.3%	29.9%	30.2%	34.2%	36.1%	34.8%	33.6%	29.4%
Transfers	4.2%	6.5%	5.2%	3.4%	2.2%	1.7%	1.5%	1.3%	0.9%
Medicaid & other health	3.2%	5.2%	4.4%	2.7%	1.3%	0.7%	0.5%	0.5%	0.3%
Education	0.7%	0.6%	0.6%	0.6%	0.8%	0.9%	0.8%	0.7%	0.4%
Other Transfers	0.3%	0.7%	0.3%	0.2%	0.1%	0.1%	0.1%	0.1%	0.2%
Non-Transfers	25.4%	18.2%	23.9%	26.0%	31.2%	33.6%	32.4%	31.5%	27.8%
General public services	3.6%	2.9%	3.5%	3.6%	4.1%	4.3%	4.1%	4.0%	3.4%
Public order & safety	5.1%	3.9%	5.0%	5.5%	6.2%	6.0%	5.6%	5.1%	3.8%
Transportation	2.3%	1.2%	1.8%	2.5%	3.2%	4.0%	4.1%	4.5%	4.7%
Other economic affairs	0.7%	0.2%	0.5%	0.6%	0.9%	1.7%	2.2%	2.9%	5.5%
Education	11.8%	7.9%	11.2%	12.2%	15.1%	15.9%	15.0%	13.6%	9.4%
Other Non-Transfers	1.8%	2.0%	1.9%	1.7%	1.7%	1.6%	1.5%	1.4%	1.0%
Interest on Debt	0.7%	0.6%	0.7%	0.7%	0.9%	0.9%	0.9%	0.8%	0.7%

Notes:

1. Percentiles contain equal numbers of persons. Negative income famillies excluded from bottom quintile but included in totals. Taxes and spending are adjusted proportionally to close government deficits, thereby making spending equal to taxes.
2. Income measure in table above is comprehensive income, which includes market income plus fungible value of government transfers. It differs from the market income metric used in other tables and is designed to better reflect ability to pay taxes.
3. Spending totals exclude the implict reduction that is included in other tables to close government deficits.

Source: Author calculations based on multiple data sources, primarily Census Bureau, IRS and Bureau of Economic Analysis.

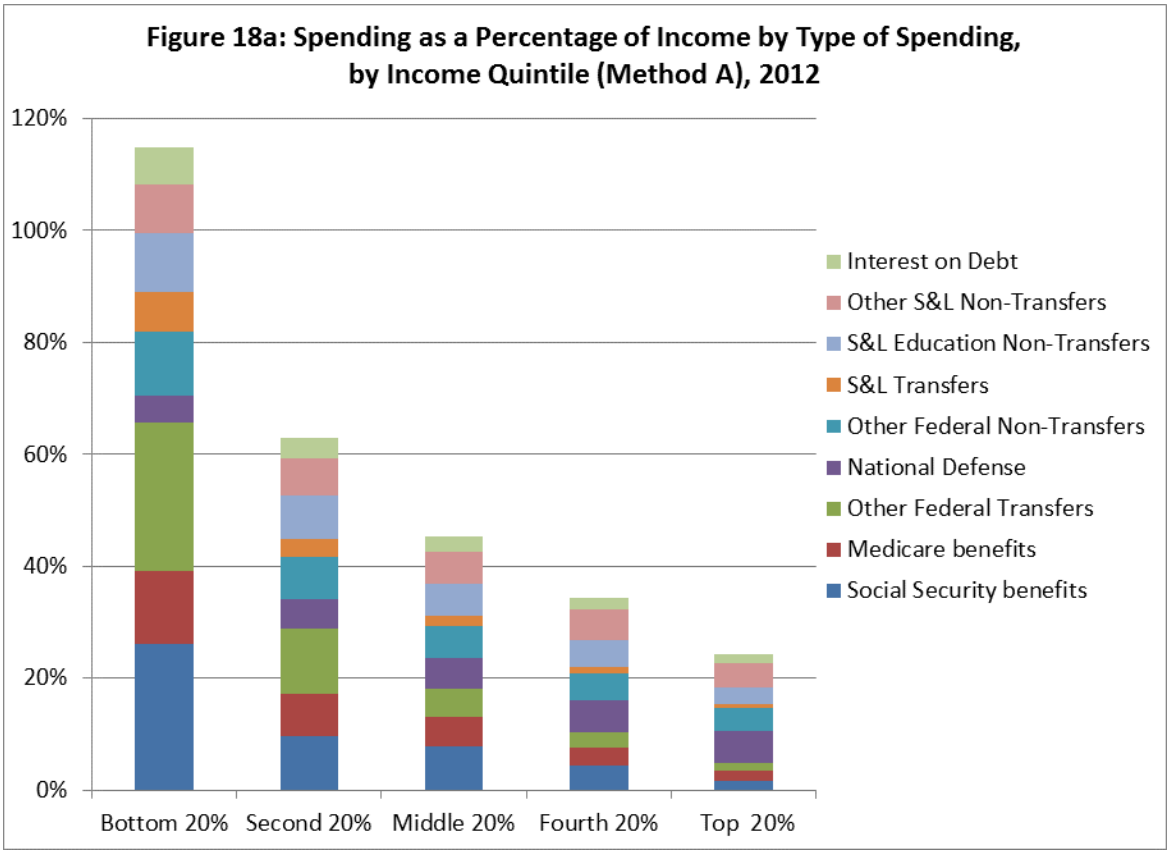


Figure 18a: Spending as a Percentage of Income by Type of Spending, by Income Quintile (Method A), 2012
120%
100%
80%
60%
40%
20%
0%
Bottom 20%
Second 20%
Middle 20%
Fourth 20%
Top 20%
Interest on Debt
Other S&L Non-Transfers
S&L Education Non-Transfers
S&L Transfers
Other Federal Non-Transfers
National Defense
Other Federal Transfers
Medicare benefits
Social Security benefits

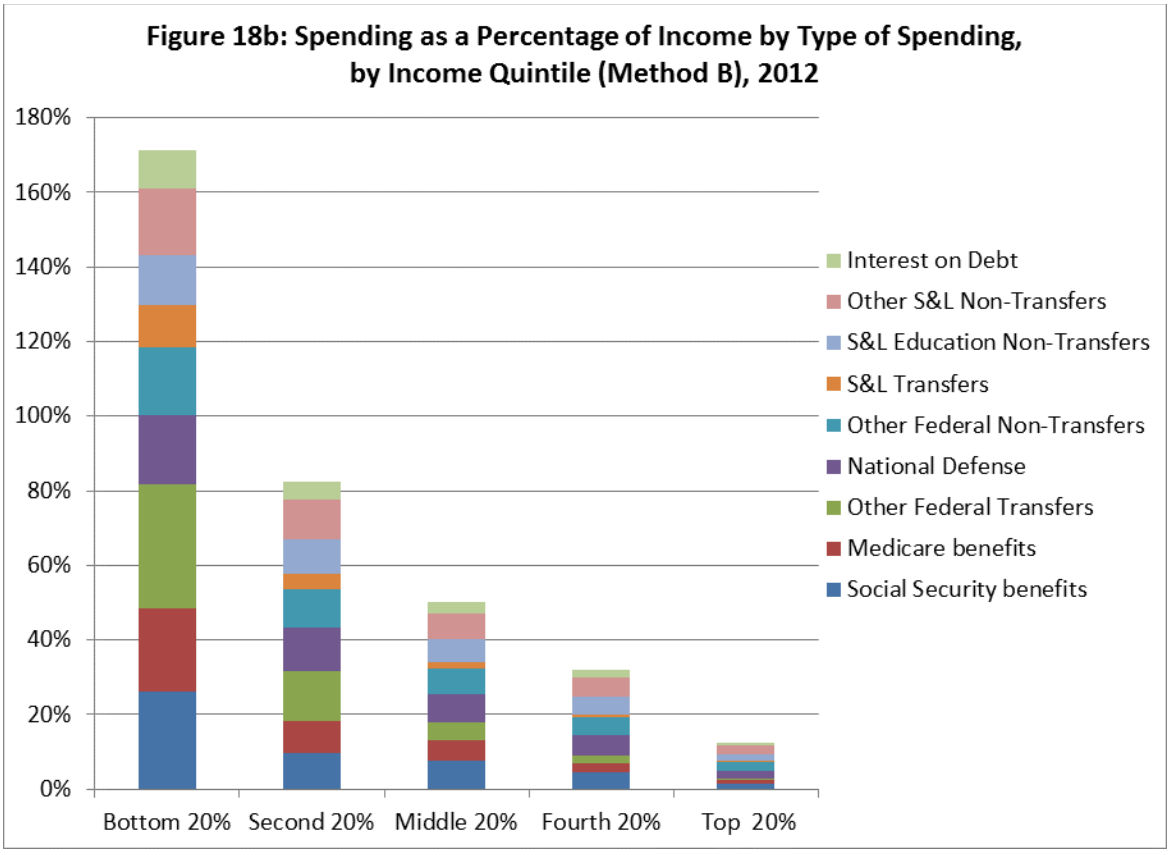


Figure 18b: Spending as a Percentage of Income by Type of Spending, by Income Quintile (Method B), 2012
180%
160%
140%
120%
100%
80%
60%
40%
20%
0%
Bottom 20%
Second 20%
Middle 20%
Fourth 20%
Top 20%
Interest on Debt
Other S&L Non-Transfers
S&L Education Non-Transfers
S&L Transfers
Other Federal Non-Transfers
National Defense
Other Federal Transfers
Medicare benefits
Social Security benefits

E. Trend of Distribution of Spending from 2000-2012

Between 2000 and 2012, aggregate federal government spending increased at a rate that was significantly faster than market incomes, while aggregate state and local government spending only increased marginally faster than market incomes. As Tables 18a and 18b indicate, total spending as a percentage of comprehensive income increased for all income groups from 2000-2012. Federal transfer spending was the fastest growing major spending category. Overall, total spending steadily increased from 2000 to 2007 and then jumped between 2007 and 2009 following the financial crisis.

Between 2000 and 2012, the second market income quintile saw its share of spending increase the most among all income groups. This is true under both the benefit principle approach and the cost-of-services approach. The biggest increase for this group was in the federal transfers category, which includes refundable credits. Refundable credits were one of the fastest growing spending categories between 2000 and 2012. The increase in the share of spending for the second quintile was accompanied by a decrease in the share for the top three quintiles, most notably for the top quintile. Interestingly, the share of federal non-transfer spending increased for the top quintile between 2000 and 2012, due in large part to a sharp increase in defense and homeland security spending. However, the increased spending flowing to the bottom income groups from higher transfers more than offset this increase in non-transfer spending for the top of the income spectrum.

Figures 19a and 19b illustrate how total spending has changed by income group from 2000-2012 under both the benefit principle approach (19a) and the cost-of-services approach (19b). Figures 20a and 20b present a time trend of federal spending only and Figures 21a and 21b for only state and local spending. For most income groups, the trend shown in Figures 19a-20b is the same story as described above: steady increase from 2000 to 2007 and then a jump following the financial crisis as the federal government increased spending under ARRA. The bottom market income quintile does not see its spending rate (spending as a percentage of income) increase as much from 2000 to 2007 as other income groups because its comprehensive income increased relatively quickly over that time period.

One will notice that the state and local spending trend presented in Figures 21a and 21b differs from the federal trend, especially post-2007. Following the financial crisis, state and local own-source spending declined as governments tried to balance their budgets in the wake of declining revenues. The federal government did step in to aid state and local governments under ARRA, but such spending is classified as federal spending in this study.

Table 18a: Distributional Analysis of Spending, 2000-2012 (Method A)[1,4]

Item	All Families	Bottom 20%	Second 20%	Middle 20%	Fourth 20%	Top 20%	Top 10%	Top 5%	Top 1%
Spending as % of Income[2]									
Total Spending									
2000	30.3%	110.7%	48.5%	35.4%	26.9%	18.6%	17.2%	16.2%	14.7%
2004	34.0%	114.2%	54.2%	38.9%	29.5%	21.0%	19.7%	18.7%	17.1%
2008	37.4%	114.2%	59.7%	43.0%	33.2%	23.6%	22.0%	20.9%	19.1%
2012	39.1%	115.0%	63.1%	45.2%	34.2%	24.2%	22.7%	21.4%	19.5%
Federal Transfers									
2000	9.6%	58.0%	19.1%	12.7%	7.0%	3.1%	2.6%	2.3%	1.7%
2004	11.2%	62.7%	22.6%	14.0%	7.7%	3.6%	3.1%	2.8%	2.1%
2008	12.4%	60.8%	25.8%	16.0%	9.2%	4.2%	3.6%	3.1%	2.3%
2012	14.2%	65.8%	29.0%	18.1%	10.3%	4.8%	4.2%	3.6%	2.6%
Federal Non-Transfers[3]									
2000	10.4%	23.5%	13.2%	11.2%	9.8%	8.4%	8.2%	8.0%	7.7%
2004	11.4%	22.4%	14.1%	12.0%	10.9%	9.6%	9.5%	9.3%	9.1%
2008	12.9%	23.1%	15.6%	13.5%	12.3%	11.1%	10.9%	10.7%	10.5%
2012	13.0%	22.4%	15.9%	13.7%	12.4%	11.1%	10.9%	10.8%	10.5%
S&L Spending									
2000	10.3%	29.1%	16.2%	11.6%	10.0%	7.0%	6.4%	5.9%	5.3%
2004	11.4%	29.0%	17.4%	12.9%	11.0%	7.8%	7.1%	6.6%	5.9%
2008	12.1%	30.3%	18.3%	13.5%	11.6%	8.3%	7.6%	7.0%	6.4%
2012	11.9%	26.7%	18.2%	13.4%	11.5%	8.2%	7.6%	7.1%	6.4%
Shares of Spending									
Total Spending									
2000	100%	18.7%	15.1%	17.3%	17.3%	31.5%	21.8%	15.9%	8.4%
2004	100%	18.8%	15.6%	17.3%	17.2%	30.9%	21.4%	15.6%	8.1%
2008	100%	17.4%	16.0%	17.3%	17.4%	31.6%	21.9%	15.9%	8.3%
2012	100%	18.7%	16.0%	17.1%	17.0%	30.9%	21.4%	15.4%	8.1%
Federal Transfers									
2000	100%	30.8%	18.7%	19.5%	14.1%	16.7%	10.5%	7.1%	3.0%
2004	100%	31.3%	19.8%	18.8%	13.6%	16.1%	10.4%	7.1%	3.0%
2008	100%	27.8%	20.8%	19.4%	14.5%	17.1%	10.8%	7.2%	3.0%
2012	100%	29.4%	20.3%	18.8%	14.2%	17.0%	10.9%	7.0%	3.0%
Federal Non-Transfers[3]									
2000	100%	11.6%	12.0%	16.0%	18.5%	41.8%	30.4%	23.0%	13.0%
2004	100%	11.0%	12.1%	15.9%	18.8%	42.2%	30.6%	23.0%	12.7%
2008	100%	10.2%	12.2%	15.8%	18.8%	43.0%	31.3%	23.6%	13.1%
2012	100%	10.9%	12.2%	15.6%	18.5%	42.7%	31.0%	23.3%	13.1%
S&L Spending									
2000	100%	14.4%	14.8%	16.6%	18.9%	35.0%	23.8%	17.0%	9.0%
2004	100%	14.3%	15.1%	17.1%	19.1%	34.2%	23.1%	16.4%	8.4%
2008	100%	14.3%	15.2%	16.9%	18.9%	34.4%	23.3%	16.6%	8.5%
2012	100%	14.3%	15.2%	16.7%	18.8%	34.7%	23.5%	16.7%	8.7%

Notes:

1. Percentiles contain equal numbers of persons. Negative income famillies excluded from bottom quintile but included in totals.
2. Income measure in table above is comprehensive income, which includes market income plus fungible value of government transfers. It differs from the market income metric used in other tables and is designed to better reflect ability to pay taxes.
3. Includes interest on debt.
4. Spending total excludes the implict reduction that is included in other tables to close government deficits.

Table 18b: Distributional Analysis of Spending, 2000-2012 (Method B)[1,4]

Item	All Families	Bottom 20%	Second 20%	Middle 20%	Fourth 20%	Top 20%	Top 10%	Top 5%	Top 1%
Spending as % of Income[2]									
Total Spending									
2000	30.3%	163.3%	65.2%	39.4%	25.4%	9.6%	6.8%	4.9%	2.2%
2004	34.0%	171.4%	72.1%	43.0%	27.3%	10.6%	7.7%	5.6%	2.6%
2008	37.4%	174.4%	78.1%	47.6%	31.1%	12.3%	9.0%	6.6%	3.3%
2012	39.1%	171.4%	82.5%	50.2%	32.0%	12.4%	9.0%	6.5%	3.1%
Federal Transfers									
2000	9.6%	69.0%	21.4%	12.8%	6.2%	1.9%	1.4%	1.0%	0.5%
2004	11.2%	76.8%	25.2%	13.9%	6.5%	2.0%	1.5%	1.2%	0.6%
2008	12.4%	76.3%	28.2%	15.9%	8.0%	2.5%	1.8%	1.4%	0.6%
2012	14.2%	81.6%	31.6%	18.0%	9.0%	2.9%	2.2%	1.5%	0.7%
Federal Non-Transfers[3]									
2000	10.4%	47.4%	21.7%	13.6%	9.5%	3.8%	2.8%	2.0%	1.0%
2004	11.4%	47.5%	23.4%	14.8%	10.4%	4.3%	3.1%	2.3%	1.2%
2008	12.9%	49.2%	25.4%	16.6%	12.0%	5.2%	4.0%	3.1%	1.8%
2012	13.0%	46.4%	26.3%	17.1%	12.1%	5.1%	3.7%	2.8%	1.5%
S&L Spending									
2000	10.3%	46.9%	22.1%	13.0%	9.6%	3.9%	2.7%	1.9%	0.8%
2004	11.4%	47.2%	23.5%	14.3%	10.4%	4.3%	3.0%	2.1%	0.9%
2008	12.1%	48.9%	24.6%	15.1%	11.1%	4.6%	3.2%	2.2%	0.9%
2012	11.9%	43.4%	24.6%	15.2%	10.9%	4.5%	3.1%	2.2%	0.9%
Shares of Spending									
Total Spending									
2000	100%	27.6%	20.3%	19.3%	16.3%	16.3%	8.7%	4.8%	1.3%
2004	100%	28.2%	20.8%	19.0%	15.9%	15.6%	8.4%	4.6%	1.2%
2008	100%	26.5%	20.9%	19.2%	16.3%	16.5%	8.9%	5.0%	1.4%
2012	100%	27.8%	21.0%	19.0%	15.9%	15.8%	8.5%	4.7%	1.3%
Federal Transfers									
2000	100%	36.6%	20.9%	19.7%	12.5%	10.0%	5.4%	3.2%	0.8%
2004	100%	38.4%	22.1%	18.7%	11.6%	9.0%	5.0%	3.0%	0.8%
2008	100%	34.9%	22.7%	19.3%	12.6%	10.0%	5.4%	3.1%	0.8%
2012	100%	36.5%	22.1%	18.7%	12.3%	10.0%	5.6%	3.1%	0.8%
Federal Non-Transfers[3]									
2000	100%	23.4%	19.8%	19.6%	18.0%	18.9%	10.2%	5.8%	1.7%
2004	100%	23.2%	20.1%	19.5%	18.1%	18.8%	10.1%	5.7%	1.6%
2008	100%	21.7%	19.8%	19.4%	18.2%	20.4%	11.4%	6.7%	2.3%
2012	100%	22.6%	20.1%	19.5%	18.0%	19.4%	10.6%	6.0%	1.9%
S&L Spending									
2000	100%	23.2%	20.1%	18.7%	18.2%	19.4%	10.2%	5.3%	1.3%
2004	100%	23.2%	20.3%	19.0%	18.1%	19.0%	9.9%	5.2%	1.2%
2008	100%	23.1%	20.4%	18.9%	18.0%	19.0%	9.9%	5.2%	1.2%
2012	100%	23.2%	20.6%	18.9%	17.9%	18.8%	9.8%	5.2%	1.3%

Notes:

1. Percentiles contain equal numbers of persons. Negative income famillies excluded from bottom quintile but included in totals.
2. Income measure in table above is comprehensive income, which includes market income plus fungible value of government transfers. It differs from the market income metric used in other tables and is designed to better reflect ability to pay taxes.
3. Includes interest on debt.
4. Spending totals exclude the implict reduction that is included in other tables to close government deficits.

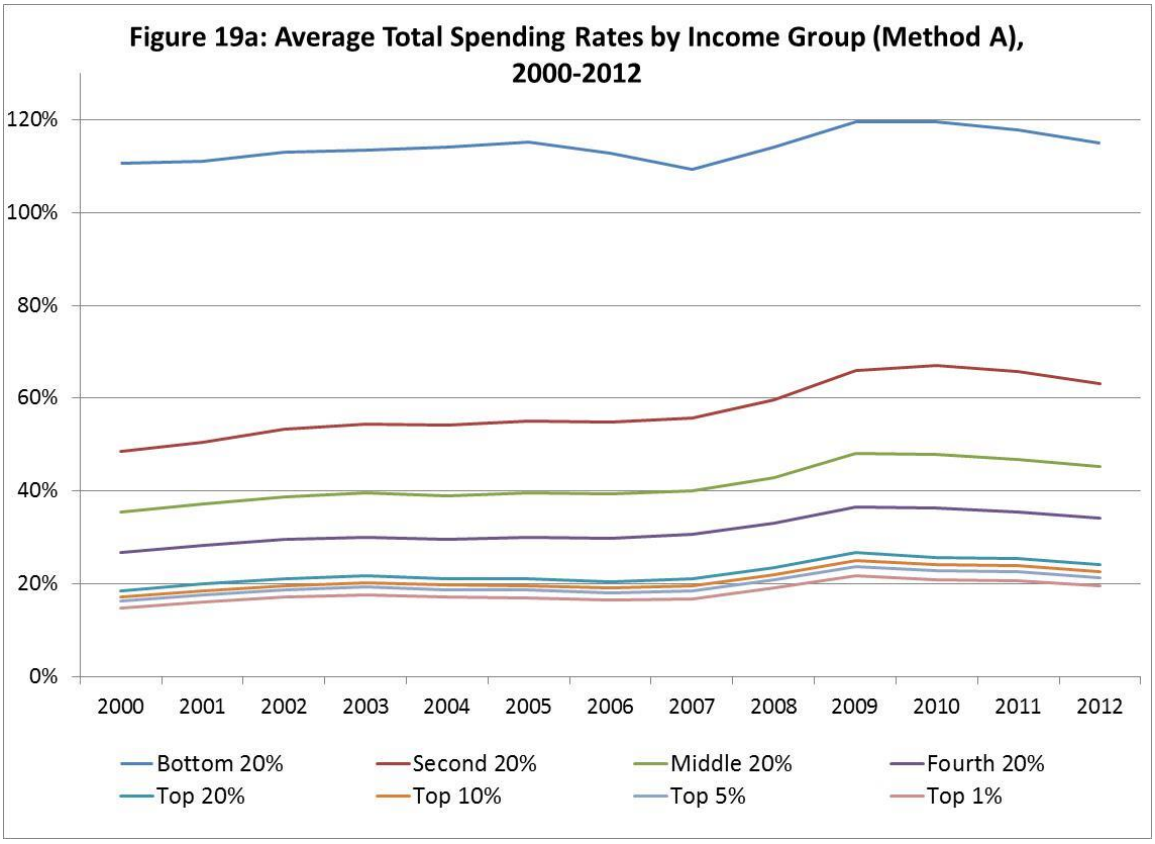


Figure 19a: Average Total Spending Rates by Income Group (Method A), 2000-2012
120%
100%
80%
60%
40%
20%
0%
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
Bottom 20%
Second 20%
Middle 20%
Fourth 20%
Top 20%
Top 10%
Top 5%
Top 1%

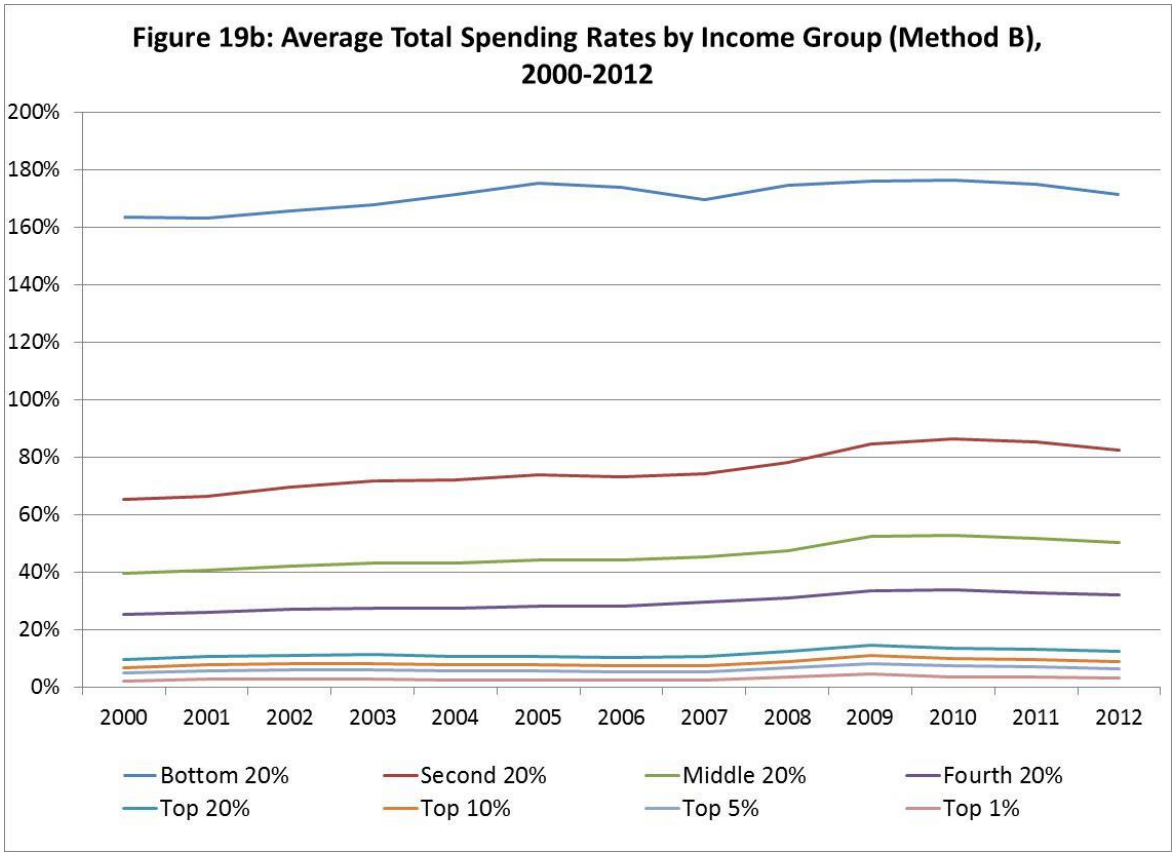


Figure 19b: Average Total Spending Rates by Income Group (Method B), 2000-2012
200%
180%
160%
140%
120%
100%
80%
60%
40%
20%
0%
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
Bottom 20%
Second 20%
Middle 20%
Fourth 20%
Top 20%
Top 10%
Top 5%
Top 1%

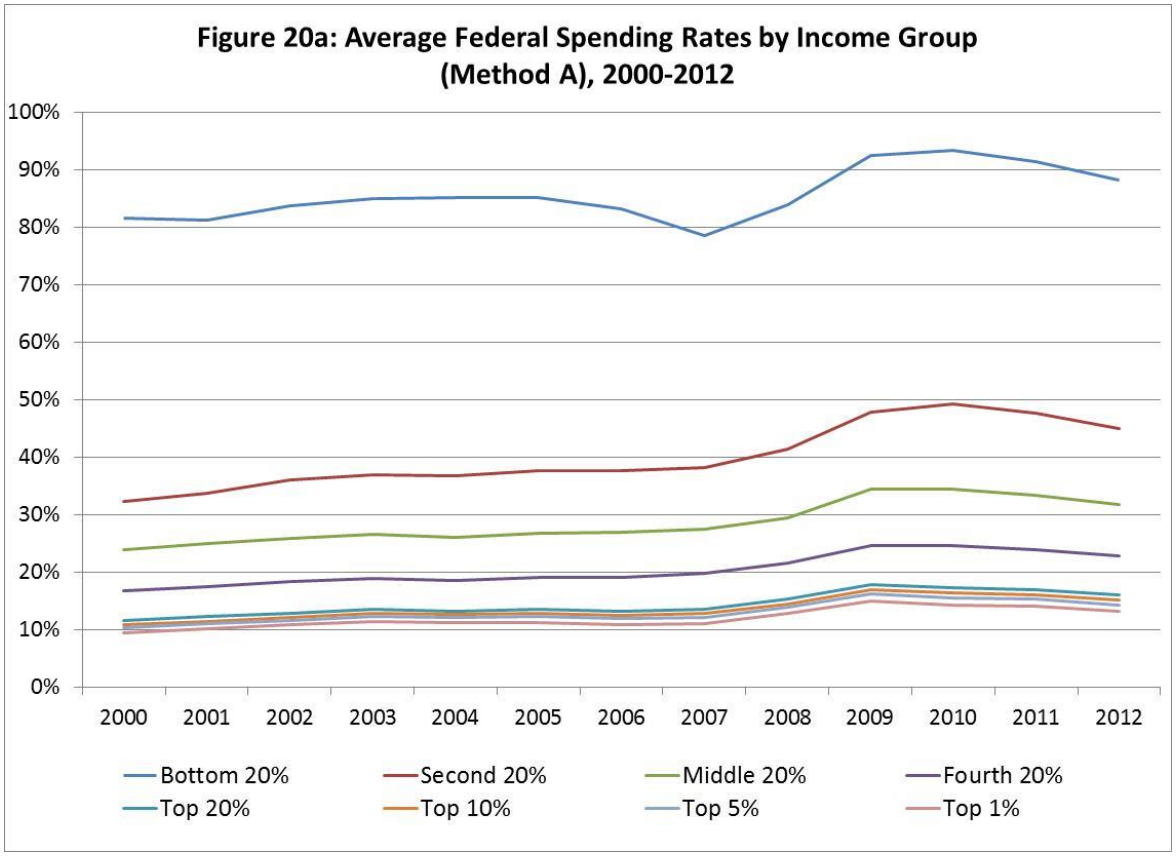


Figure 20a: Average Federal Spending Rates by Income Group (Method A), 2000-2012
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
Bottom 20%
Second 20%
Middle 20%
Fourth 20%
Top 20%
Top 10%
Top 5%
Top 1%

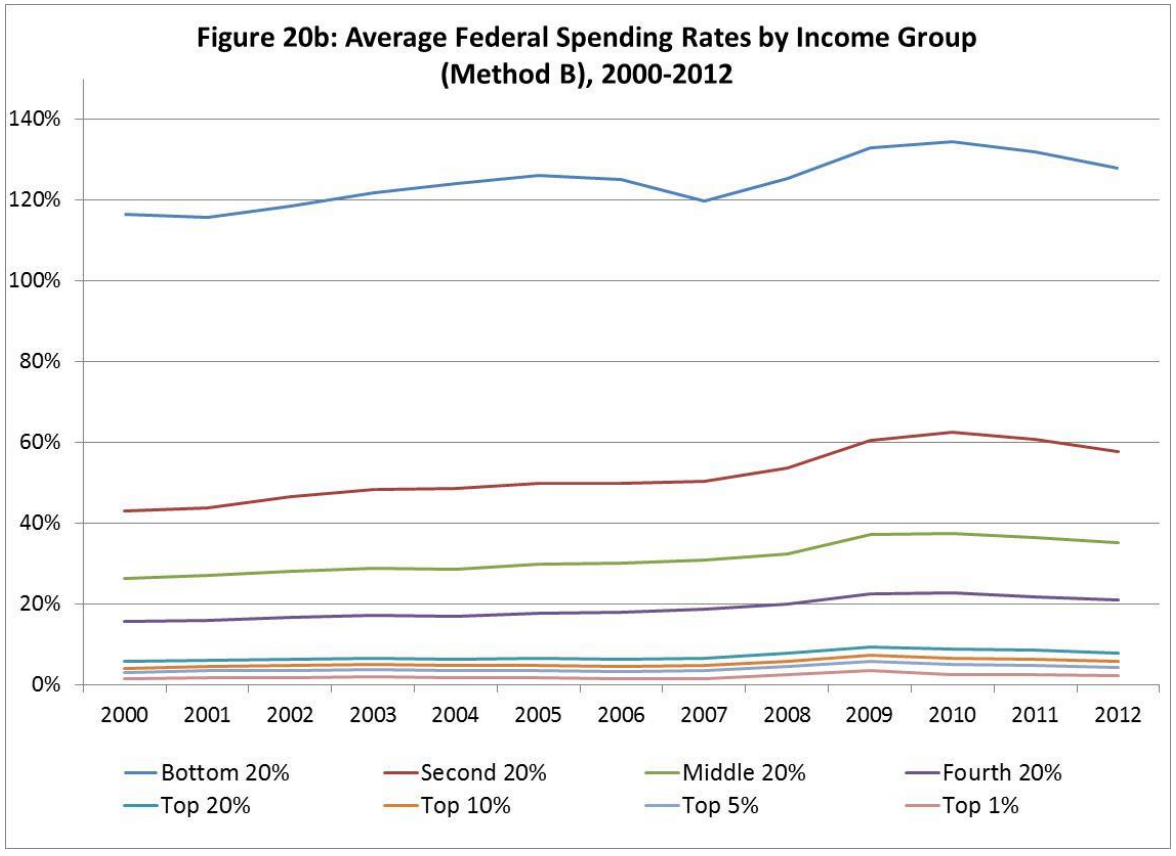


Figure 20b: Average Federal Spending Rates by Income Group (Method B), 2000-2012
140%
120%
100%
80%
60%
40%
20%
0%
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
Bottom 20%
Second 20%
Middle 20%
Fourth 20%
Top 20%
Top 10%
Top 5%
Top 1%

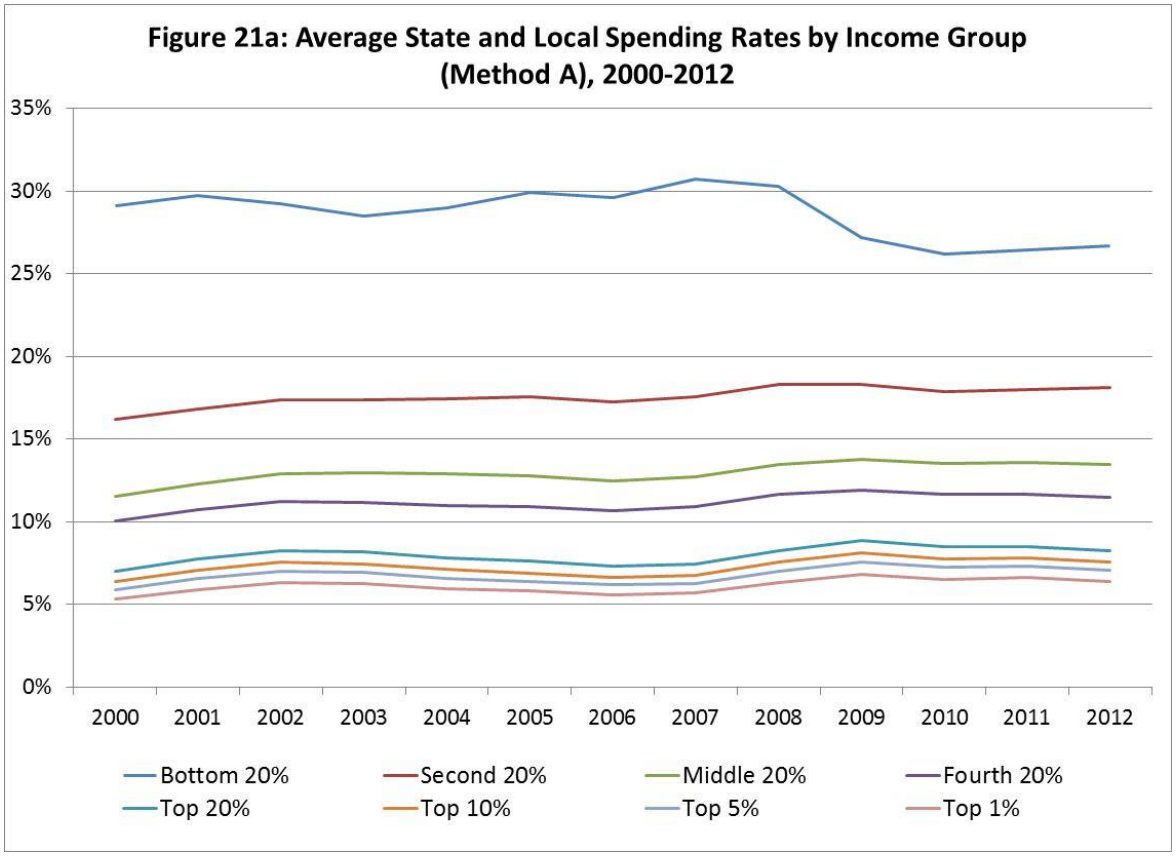


Figure 21a: Average State and Local Spending Rates by Income Group (Method A), 2000-2012
35%
30%
25%
20%
15%
10%
5%
0%
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
Bottom 20%
Second 20%
Middle 20%
Fourth 20%
Top 20%
Top 10%
Top 5%
Top 1%

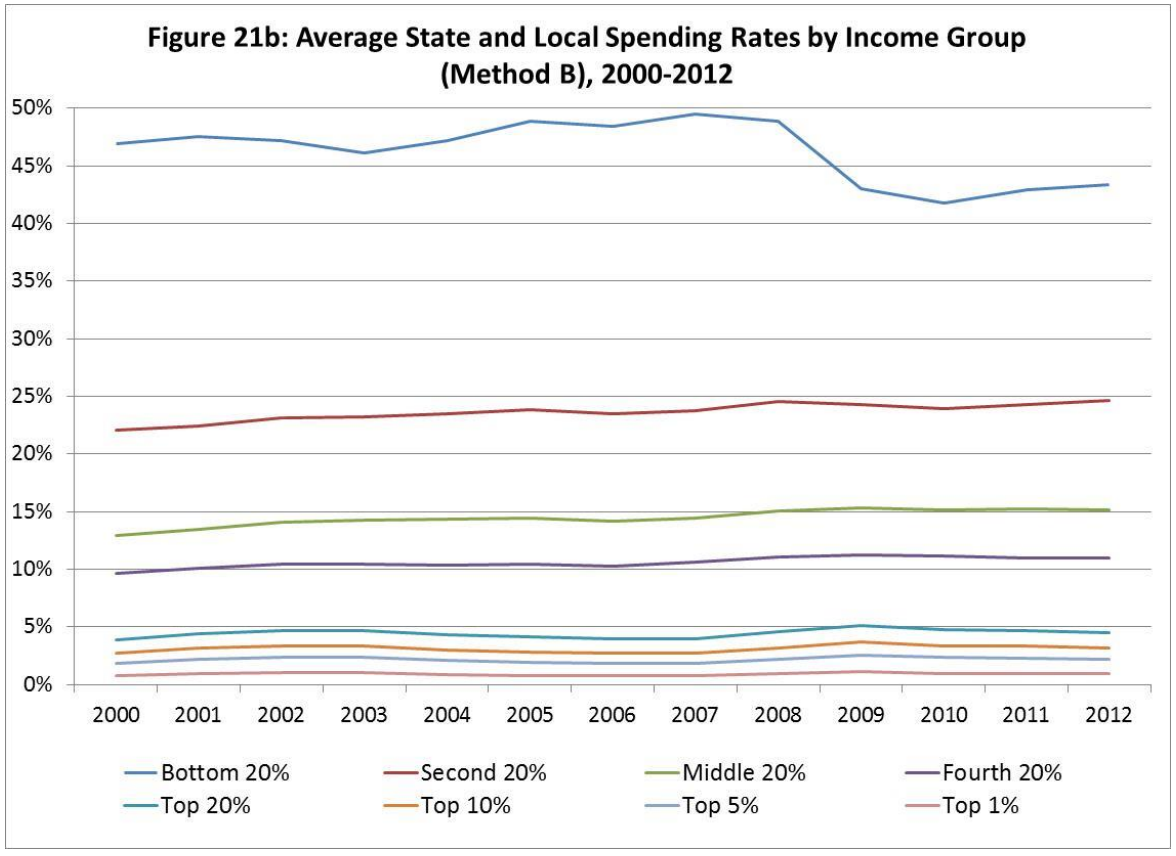


Figure 21b: Average State and Local Spending Rates by Income Group (Method B), 2000-2012
50%
45%
40%
35%
30%
25%
20%
15%
10%
5%
0%
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
Bottom 20%
Second 20%
Middle 20%
Fourth 20%
Top 20%
Top 10%
Top 5%
Top 1%

VI. Distributional Analysis by Age and Other Demographics

While the bulk of this study is focused on the distribution of U.S. fiscal policies across income groups, this section discusses the distribution of U.S. fiscal policies along other dimensions besides income groups. Specifically, this section analyses the distribution of fiscal policies across age groups, marital status, education status, housing tenure (i.e., renter/owner), geography (urban/rural), and others. Rarely are distributional analyses done outside of focusing on income groups. Finally, this section also discusses how the results change when the two major social insurance programs in the United States (Medicare and Social Security) are excluded, along with the payroll taxes that finance them.

A. Distributional Analysis by Age Group

Results by age group are presented in Tables 19-22 and Figures 22-25. As expected, the results show that net redistribution is greatest for elderly families. This is primarily due to Social Security and Medicare spending. Elderly families' net redistribution in 2012 is estimated at just over $30,000. When one does not close government deficits, that figure is over $40,000. For elderly families, their ratio of federal spending to federal taxes exceeds 2, but at the state-and-local level is actually significantly less than 1. The latter is likely due to the fact that elderly people are not allocated much education spending combined with the fact that states collect a significant portion of their revenue from sales and property taxes that disproportionately affect elderly families.

At the other end of the age distribution, net redistribution is also positive. As a group, families whose head person is less than 25 years of age have a net positive redistribution under both methodological approaches. Under the benefit principle approach, these young families have an average net redistribution of $5,193; under the cost-of-services approach, that figure is $10,404. Families in the prime earning age of 45-54 have the most significant negative net redistribution. Under the benefit principle, the average net redistribution for a family aged 45-54 was -$11,071 in 2012; under the cost-of-services approach, that figure is -$16,299.

Table 21 shows the trend in redistribution across age groups from 2000-2012. Overall, average redistribution (as a percentage of market income) for elderly families increased slightly between 2000 and 2012 under both the benefit principle approach and the cost-of-services approach. In

the aggregate, however, redistribution to elderly families increased significantly due to the aging of the population. (Simply put, more families were elderly.) Redistribution also increased for the youngest age groups, which is due to various factors, including greater education tax credits and greater unemployment benefits.

Table 22 presents the results across both age groups and market income quintiles. This table allows for analysis between income groups within each age group, thereby allowing readers to somewhat isolate inter-generational redistribution. The correlation between income and age group can be seen by simply looking at the number of families within each income group-age group combination. A disproportionate number of elderly families are in the bottom quintile, which would imply that some of the redistribution to the bottom quintile shown throughout this paper results simply from age-based transfers like Social Security and Medicare. However, despite this correlation between age and income, Table 22 does show that even within each age group, there are still significant differences in market incomes, taxes, and spending between families in different income groups. In other words, redistribution between income quintiles exists even holding age constant.

Holding income quintile constant, one can see that younger families actually have smaller redistribution estimates than middle-aged and elderly families. This is because younger families have fewer persons per family and thereby smaller spending levels. Overall, one can see that holding income constant, the amount of net redistribution for non-elderly age groups tends to be lower than that for elderly age groups. And one can also see the extent to which the overall average for an income group is affected by the elderly population. This effect of elderly redistribution on each quintile's average is greatest for the bottom quintiles. The effect is relatively small, however, for the top two quintiles because elderly families make up a relatively small fraction of families in those two quintiles. (Elderly families make up 21% of families in the bottom quintile but only 10% of families in the fourth or fifth quintile.)

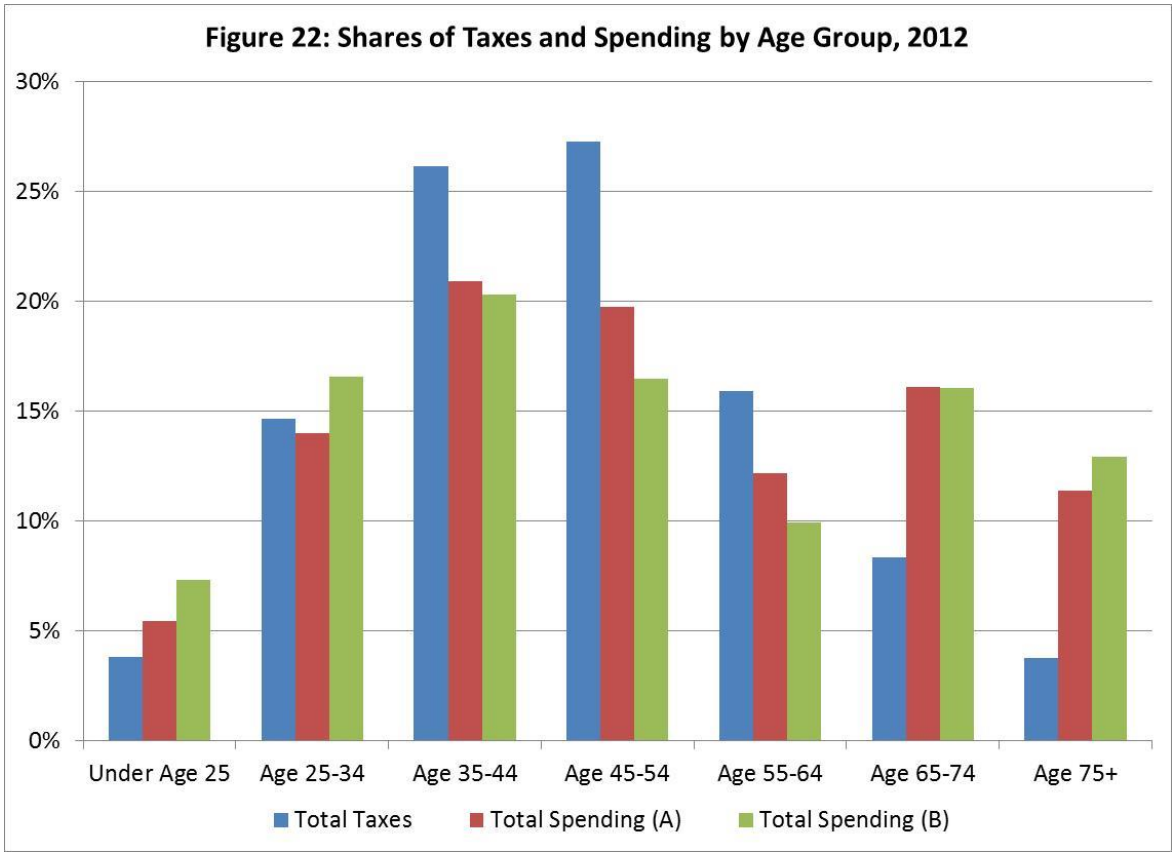


Figure 22: Shares of Taxes and Spending by Age Group, 2012
30%
25%
20%
15%
10%
5%
0%
Under Age 25
Age 25-34
Age 35-44
Age 45-54
Age 55-64
Age 65-74
Age 75+
Total Taxes
Total Spending (A)
Total Spending (B)

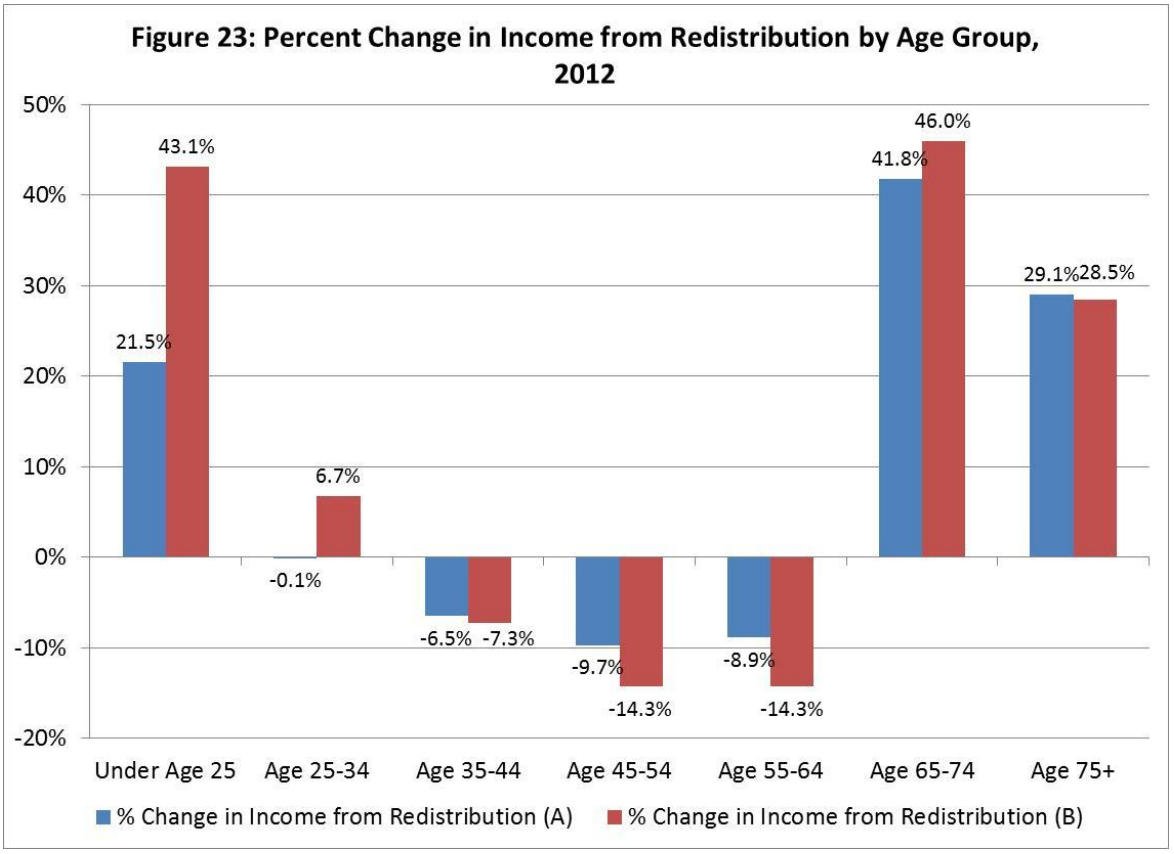


Figure 23: Percent Change in Income from Redistribution by Age Group, 2012
50%
40%
30%
20%
10%
0%
-10%
-20%
43.1%
21.5%
6.7%
-0.1%
-6.5%
-7.3%
-9.7%
-14.3%
-8.9%
-14.3%
46.0%
41.8%
29.1%
28.5%
Under Age 25
Age 25-34
Age 35-44
Age 45-54
Age 55-64
Age 65-74
Age 75+
% Change in Income from Redistribution (A)
% Change in Income from Redistribution (B)

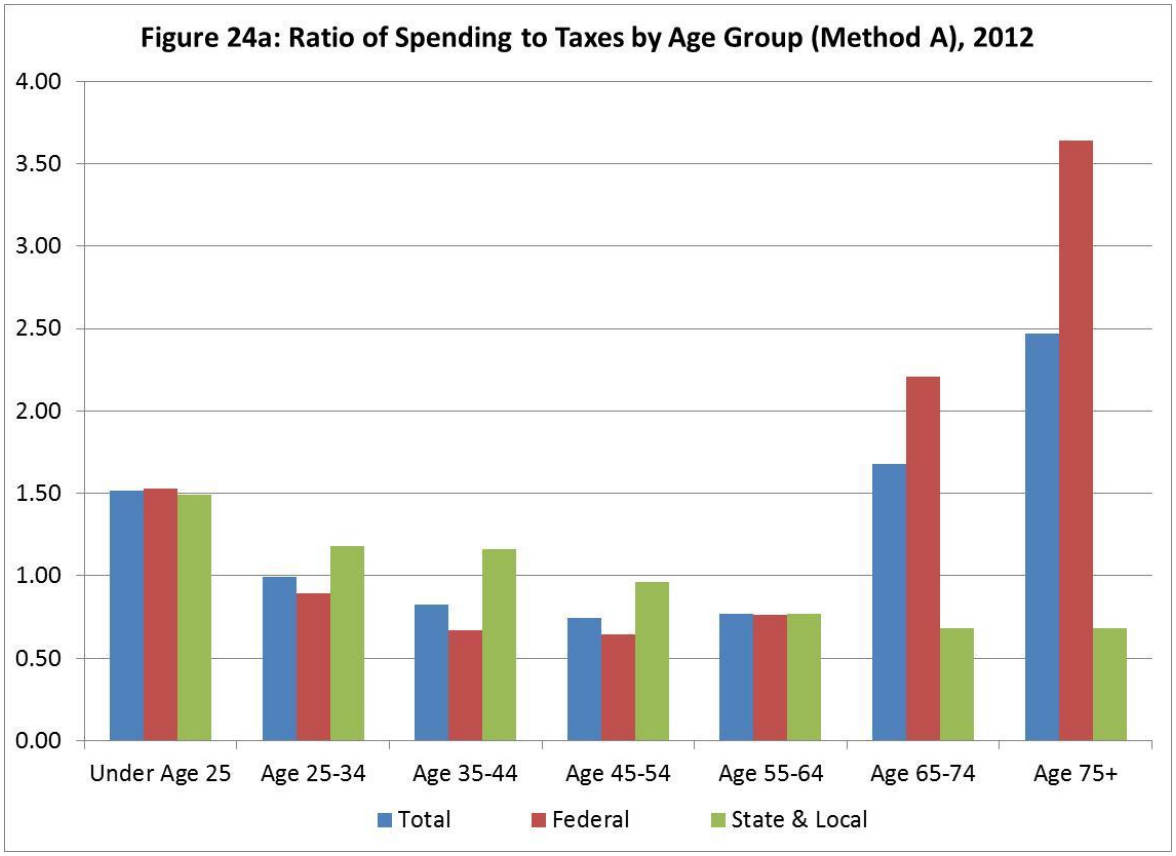


Figure 24a: Ratio of Spending to Taxes by Age Group (Method A), 2012
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
Under Age 25
Age 25-34
Age 35-44
Age 45-54
Age 55-64
Age 65-74
Age 75+
Total
Federal
State & Local

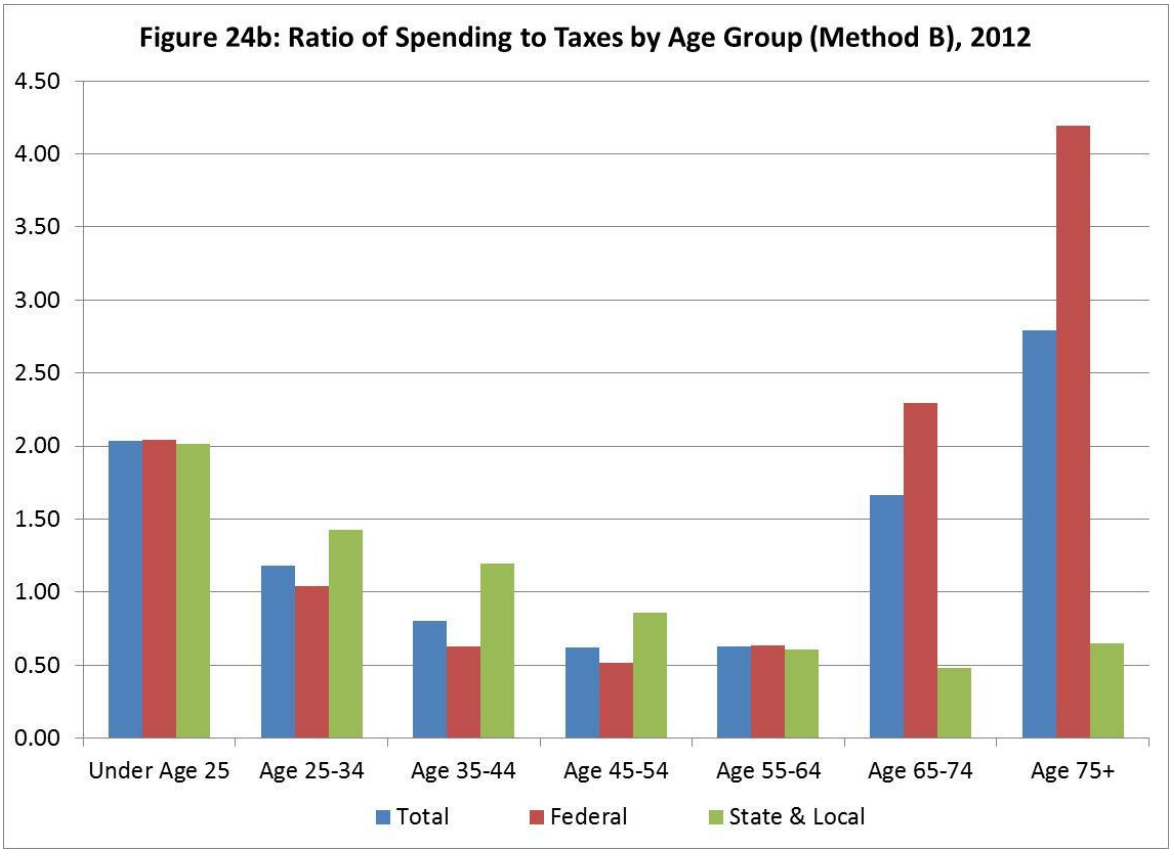


Figure 24b: Ratio of Spending to Taxes by Age Group (Method B), 2012
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
Under Age 25
Age 25-34
Age 35-44
Age 45-54
Age 55-64
Age 65-74
Age 75+
Total
Federal
State & Local

Table 19: Distributional Analysis of Government Fiscal Policies by Age Group, 2012[1]

Item	All Families	Under Age 25	Age 25-34	Age 35-44	Age 45-54	Age 55-64	Age 65+	Age 65-74	Age 75+
Avg. Market Income[2]	81,602	24,135	61,635	102,339	113,948	106,490	66,143	88,232	41,423
(Share)	100%	3.4%	14.8%	26.6%	27.6%	16.1%	12.1%	8.5%	3.6%
Avg. Taxes[3]	31,824	10,081	23,026	38,415	43,136	40,812	29,620	37,951	20,296
Federal	21,293	5,879	14,779	26,230	29,636	28,216	18,839	24,702	12,277
State & Local	10,530	4,202	8,247	12,184	13,500	12,597	10,781	13,249	8,019
Avg. Spending (Method A)[4]	31,824	15,274	22,949	31,769	32,064	31,327	57,254	63,599	50,153
Federal	21,293	9,007	13,219	17,611	19,035	21,623	49,926	54,598	44,698
State & Local	10,530	6,267	9,730	14,158	13,029	9,704	7,328	9,001	5,455
Avg. Spending (Method B)[4]	31,824	20,489	27,174	30,927	26,837	25,575	60,068	63,078	56,700
Federal	21,293	12,023	15,421	16,405	15,200	17,945	54,238	56,671	51,515
State & Local	10,530	8,466	11,753	14,522	11,637	7,630	5,830	6,407	5,185
Avg. Redistribution (A)	0	5,193	-78	-6,646	-11,071	-9,485	27,634	25,648	29,857
Federal	0	3,129	-1,560	-8,620	-10,601	-6,592	31,087	29,896	32,421
State & Local	0	2,064	1,483	1,974	-470	-2,893	-3,453	-4,248	-2,564
Avg. Redistribution (B)	0	10,408	4,147	-7,488	-16,299	-15,237	30,448	25,127	36,404
Federal	0	6,144	642	-9,826	-14,436	-10,271	35,399	31,968	39,238
State & Local	0	4,263	3,506	2,338	-1,863	-4,967	-4,950	-6,842	-2,834
Ratio: spending to taxes (A)	1.00	1.52	1.00	0.83	0.74	0.77	1.93	1.68	2.47
Federal	1.00	1.53	0.89	0.67	0.64	0.77	2.65	2.21	3.64
State & Local	1.00	1.49	1.18	1.16	0.97	0.77	0.68	0.68	0.68
Ratio: spending to taxes (B)	1.00	2.03	1.18	0.81	0.62	0.63	2.03	1.66	2.79
Federal	1.00	2.05	1.04	0.63	0.51	0.64	2.88	2.29	4.20
State & Local	1.00	2.01	1.43	1.19	0.86	0.61	0.54	0.48	0.65
Income after Redistrib. (A)	81,602	29,328	61,557	95,693	102,877	97,004	93,777	113,880	71,280
(Share)	100%	4.1%	14.8%	24.9%	24.9%	14.7%	17.1%	11.0%	6.1%
Income after Redistrib. (B)	81,602	34,543	65,782	94,851	97,649	91,252	96,592	113,359	77,827
(Share)	100%	4.9%	15.8%	24.7%	23.6%	13.8%	17.7%	10.9%	6.7%

Notes:

1. Families classifed by age of family head. Negative income famillies excluded from subgroups but included in totals. Taxes and spending are adjusted proportionally to close government deficits, thereby making spending equal to taxes.
2. Market income is a broad definition of income from market sources (excludes transfers) that aggregates to BEA income totals.
3. Taxes total above includes some non-tax revenue sources. Refundable portion of tax credits are included in spending totals.
4. Method A assumes that most public goods benefit families in proportion to their incomes, while Method B allocates these public goods equally to households or in proportion to their family size (i.e., per person), depending on the spending category.

Source: Author calculations based on multiple data sources, primarily Census Bureau, IRS and Bureau of Economic Analysis.

Table 20: Distributional Analysis of Government Fiscal Policies by Age, Assuming Deficit is Purely Redistribution from Future, 2012[1]

Item	All Families	Under Age 25	Age 25-34	Age 35-44	Age 45-54	Age 55-64	Age 65+	Age 65-74	Age 75+
Avg. Market Income[2]	81,602	24,135	61,635	102,339	113,948	106,490	66,143	88,232	41,423
(Share)	100%	3.4%	14.8%	26.6%	27.6%	16.1%	12.1%	8.5%	3.6%
Avg. Taxes[3]	27,456	8,819	19,954	33,069	37,107	35,084	25,692	32,839	17,693
Federal	17,385	4,800	12,067	21,416	24,197	23,037	15,381	20,168	10,024
State & Local	10,071	4,019	7,887	11,653	12,911	12,047	10,310	12,671	7,669
Avg. Spending (Method A)[4]	36,192	17,201	25,799	35,619	36,126	35,719	66,737	74,013	58,595
Federal	25,202	10,661	15,645	20,843	22,529	25,592	59,090	64,619	52,902
State & Local	10,990	6,540	10,154	14,776	13,598	10,127	7,647	9,394	5,693
Avg. Spending (Method B)[4]	36,192	23,065	30,517	34,572	30,135	29,202	70,277	73,759	66,381
Federal	25,202	14,230	18,251	19,416	17,990	21,239	64,193	67,072	60,970
State & Local	10,990	8,835	12,265	15,156	12,145	7,963	6,085	6,687	5,411
Avg. Redistribution (A)	8,735	8,382	5,846	2,550	-981	635	41,045	41,173	40,902
Federal	7,816	5,861	3,578	-573	-1,668	2,555	43,709	44,450	42,878
State & Local	919	2,521	2,267	3,123	687	-1,920	-2,663	-3,277	-1,976
Avg. Redistribution (B)	8,735	14,246	10,563	1,503	-6,973	-5,883	44,586	40,920	48,688
Federal	7,816	9,430	6,185	-2,000	-6,206	-1,798	48,811	46,904	50,946
State & Local	919	4,816	4,378	3,503	-766	-4,084	-4,226	-5,984	-2,258
Ratio: spending to taxes (A)	1.32	1.95	1.29	1.08	0.97	1.02	2.60	2.25	3.31
Federal	1.45	2.22	1.30	0.97	0.93	1.11	3.84	3.20	5.28
State & Local	1.09	1.63	1.29	1.27	1.05	0.84	0.74	0.74	0.74
Ratio: spending to taxes (B)	1.32	2.62	1.53	1.05	0.81	0.83	2.74	2.25	3.75
Federal	1.45	2.96	1.51	0.91	0.74	0.92	4.17	3.33	6.08
State & Local	1.09	2.20	1.56	1.30	0.94	0.66	0.59	0.53	0.71
Income after Redistrib. (A)	90,338	32,517	67,481	104,889	112,967	107,125	107,189	129,406	82,325
(Share)	100%	4.1%	14.7%	24.7%	24.7%	14.6%	17.7%	11.3%	6.4%
Income after Redistrib. (B)	90,338	38,382	72,198	103,842	106,975	100,607	110,729	129,152	90,111
(Share)	100%	4.9%	15.7%	24.4%	23.4%	13.7%	18.3%	11.3%	7.0%

Notes:

1. Families classifed by age of family head. Negative income famillies excluded from subgroups but included in totals. Unlike other tables in this study, no adjustment to taxes and spending to close the deficit is made in this table.
2. Market income is a broad definition of income from market sources (excludes transfers) that aggregates to BEA income totals.
3. Taxes total above includes some non-tax revenue sources. Refundable portion of tax credits are included in spending totals.
4. Method A assumes that most public goods benefit families in proportion to their incomes, while Method B allocates these public goods equally to households or in proportion to their family size (i.e., per person), depending on the spending category.

Source: Author calculations based on multiple data sources, primarily Census Bureau, IRS and Bureau of Economic Analysis.

Table 21: Distributional Analysis of Government Fiscal Policies by Age Group, 2000-2012[1]

Item	All Families	Under Age 25	Age 25-34	Age 35-44	Age 45-54	Age 55-64	Age 65+	Age 65-74	Age 75+
Avg. Market Income[2]									
2000	62,226	19,237	50,709	81,366	89,857	80,787	45,362	60,210	29,793
2004	68,830	21,419	55,818	88,919	97,510	88,917	49,701	67,048	31,664
2008	78,803	23,817	60,569	98,763	110,825	103,652	61,571	82,002	38,458
2012	81,602	24,135	61,635	102,339	113,948	106,490	66,143	88,232	41,423
Avg. Taxes[3]									
2000	21,511	7,068	16,754	27,209	30,441	27,603	17,401	22,743	11,800
2004	24,371	8,410	19,153	30,156	33,554	31,251	19,790	25,829	13,510
2008	30,045	9,637	21,990	36,248	41,173	38,931	26,450	34,204	17,676
2012	31,824	10,081	23,026	38,415	43,136	40,812	29,620	37,951	20,296
Avg. Spending (Method A)[4]									
2000	21,511	10,193	16,066	22,459	22,358	20,990	33,121	36,933	29,125
2004	24,371	11,708	18,576	25,721	25,411	23,949	37,838	42,326	33,171
2008	30,045	14,090	22,010	30,849	31,013	29,637	49,639	55,436	43,080
2012	31,824	15,274	22,949	31,769	32,064	31,327	57,254	63,599	50,153
Avg. Spending (Method B)[4]									
2000	21,511	13,777	18,803	21,691	18,542	17,223	34,960	36,954	32,870
2004	24,371	15,828	21,756	24,911	21,186	19,573	40,040	42,221	37,772
2008	30,045	19,077	25,897	30,035	25,939	24,102	52,575	55,355	49,431
2012	31,824	20,489	27,174	30,927	26,837	25,575	60,068	63,078	56,700
Ratio: spending to taxes (A)									
2000	1.00	1.44	0.96	0.83	0.73	0.76	1.90	1.62	2.47
2004	1.00	1.39	0.97	0.85	0.76	0.77	1.91	1.64	2.46
2008	1.00	1.46	1.00	0.85	0.75	0.76	1.88	1.62	2.44
2012	1.00	1.52	1.00	0.83	0.74	0.77	1.93	1.68	2.47
Ratio: spending to taxes (B)									
2000	1.00	1.95	1.12	0.80	0.61	0.62	2.01	1.62	2.79
2004	1.00	1.88	1.14	0.83	0.63	0.63	2.02	1.63	2.80
2008	1.00	1.98	1.18	0.83	0.63	0.62	1.99	1.62	2.80
2012	1.00	2.03	1.18	0.81	0.62	0.63	2.03	1.66	2.79
Income after Redistrib. (A)									
2000	62,226	22,363	50,021	76,616	81,774	74,174	61,082	74,399	47,118
2004	68,830	24,717	55,240	84,484	89,367	81,616	67,749	83,545	51,326
2008	78,803	28,270	60,589	93,364	100,666	94,357	84,760	103,233	63,861
2012	81,602	29,328	61,557	95,693	102,877	97,004	93,777	113,880	71,280
Income after Redistrib. (B)									
2000	62,226	25,947	52,758	75,847	77,957	70,408	62,921	74,420	50,863
2004	68,830	28,837	58,421	83,674	85,142	77,240	69,951	83,440	55,926
2008	78,803	33,257	64,476	92,550	95,592	88,823	87,697	103,152	70,212
2012	81,602	34,543	65,782	94,851	97,649	91,252	96,592	113,359	77,827

Notes:

1. Families classifed by age of family head. Negative income famillies excluded from subgroups but included in totals. Taxes and spending are adjusted proportionally to close government deficits, thereby making spending equal to taxes.
2. Market income is a broad definition of income from market sources (excludes transfers) that aggregates to BEA income totals.
3. Taxes total above includes some non-tax revenue sources. Refundable portion of tax credits are included in spending totals.
4. Method A assumes that most public goods benefit families in proportion to their incomes, while Method B allocates these public goods equally to households or in proportion to their family size (i.e., per person), depending on the spending category.

Source: Author calculations based on multiple data sources, primarily Census Bureau, IRS and Bureau of Economic Analysis.

Table 22: Distributional Analysis of Government Fiscal Policies by Age Group and Income Quintile, 2012[1]

Item	All Families	Under Age 25	Age 25-34	Age 35-44	Age 45-54	Age 55-64	Age 65+	Age 65-74	Age 75+
Number of Families (thous)									
Bottom 20%	40,132	9,783	7,015	5,833	5,151	3,788	8,561	3,587	4,975
Second 20%	33,806	5,037	8,419	6,824	5,161	3,360	5,004	2,452	2,552
Third 20%	30,559	1,976	7,423	6,888	6,253	3,746	4,274	2,570	1,704
Fourth 20%	24,905	527	4,564	6,644	6,680	3,823	2,667	1,835	832
Top 20%	21,965	195	2,490	6,153	6,857	4,061	2,209	1,553	657
Avg. Market Income[2]									
Bottom 20%	9,561	8,123	11,890	12,262	10,863	9,679	6,619	6,998	6,347
Second 20%	31,053	28,572	30,915	33,287	33,883	31,947	27,216	28,369	26,109
Third 20%	56,884	53,545	55,952	58,583	59,147	58,249	52,799	53,222	52,160
Fourth 20%	100,242	96,347	99,230	101,356	102,050	101,131	94,163	95,014	92,285
Top 20%	311,405	219,262	253,718	314,370	313,206	308,009	376,956	420,377	274,320
Avg. Taxes[3]									
Bottom 20%	6,331	4,798	6,654	6,942	6,667	6,835	6,979	7,139	6,864
Second 20%	11,913	10,623	11,393	12,070	11,795	12,068	13,890	14,014	13,771
Third 20%	20,429	20,182	19,537	19,711	19,921	20,530	23,906	23,455	24,586
Fourth 20%	35,325	37,097	34,481	34,019	34,799	35,770	40,354	39,805	41,565
Top 20%	122,217	85,646	97,906	123,158	123,408	119,744	151,077	168,744	109,317
Avg. Spending (Method A)[4]									
Bottom 20%	22,339	14,414	19,746	21,413	19,264	21,583	36,333	36,254	36,390
Second 20%	22,941	13,911	19,293	22,323	18,537	18,136	46,780	48,732	44,904
Third 20%	27,125	17,656	19,393	23,185	21,512	22,074	63,918	64,522	63,007
Fourth 20%	33,284	24,362	25,721	29,605	28,508	28,566	75,881	75,928	75,778
Top 20%	68,545	44,914	49,857	64,011	64,947	62,465	126,668	134,149	108,985
Avg. Spending (Method B)[4]									
Bottom 20%	33,402	21,797	33,370	33,940	28,865	31,225	50,017	50,640	49,568
Second 20%	30,052	18,402	27,377	31,005	24,583	23,216	55,208	57,234	53,261
Third 20%	30,144	19,213	22,920	27,721	23,811	22,998	67,179	67,564	66,599
Fourth 20%	31,122	20,632	24,580	29,464	25,554	23,710	73,085	73,149	72,943
Top 20%	35,141	21,327	26,464	33,153	31,019	26,389	80,558	81,711	77,831
Income Redistribution (A)									
Bottom 20%	16,007	9,616	13,092	14,471	12,597	14,748	29,354	29,115	29,526
Second 20%	11,028	3,288	7,900	10,253	6,742	6,068	32,890	34,718	31,134
Third 20%	6,695	-2,526	-144	3,474	1,591	1,543	40,012	41,067	38,421
Fourth 20%	-2,041	-12,736	-8,760	-4,414	-6,291	-7,204	35,528	36,124	34,213
Top 20%	-53,672	-40,731	-48,049	-59,147	-58,461	-57,280	-24,409	-34,595	-332
Income Redistribution (B)									
Bottom 20%	27,071	16,999	26,716	26,999	22,198	24,391	43,038	43,501	42,703
Second 20%	18,139	7,779	15,984	18,934	12,788	11,148	41,318	43,220	39,490
Third 20%	9,715	-969	3,384	8,010	3,890	2,468	43,274	44,109	42,013
Fourth 20%	-4,204	-16,465	-9,901	-4,555	-9,245	-12,059	32,731	33,344	31,378
Top 20%	-87,076	-64,319	-71,442	-90,005	-92,389	-93,356	-70,519	-87,032	-31,485

Notes:

1. Families classifed by age of family head. Negative income famillies excluded from subgroups but included in totals. Taxes and spending are adjusted proportionally to close government deficits, thereby making spending equal to taxes.
2. Market income is a broad definition of income from market sources (excludes transfers) that aggregates to BEA income totals.
3. Taxes total above includes some non-tax revenue sources. Refundable portion of tax credits are included in spending totals.
4. Method A assumes that most public goods benefit families in proportion to their incomes, while Method B allocates these public goods equally to households or in proportion to their family size (i.e., per person), depending on the spending category.

Source: Author calculations based on multiple data sources, primarily Census Bureau, IRS and Bureau of Economic Analysis.

B. Distributional Analysis by Marital Status

Tables 23 and 24 present a distributional analysis of fiscal policies by marital status and elderly status. The results in Table 23 show that non-elderly married families earn the greatest amount of market income, pay the most in taxes, and have a significant net negative redistribution. While the amount of taxes paid by families with and without children is the same, the level of spending is noticeably different between these families. Obviously, families with children will have a greater amount of education spending. One can see the importance of education spending to families with children by the fact that the ratio of spending to taxes at the state and local level is greater than 1. Education spending makes up a large fraction of state and local spending. Families with children also tend to have a greater number of persons generally, which leads to more spending being allocated to them, especially under the cost-of-services approach.

As a group, non-elderly head of household families, which includes single-parent families, have a net positive redistribution. Prior to redistribution, the average market income for this group in 2012 was $47,401. This group's share of market (pre-redistribution) income is 8.5%. After redistribution, this group's average income is $58,036 (benefit principle approach) and $67,394 (cost-of-services approach). This represents after-redistribution income shares of 10.4% (benefit principle approach) and 12.0% (cost-of-services approach).

Single families, overall, have a net redistribution that is extremely close to zero. This implies that the group's ratio of spending to taxes is close to 1. Also, the group's share of market income is similar to its post-redistribution income share. Singles, as a group, have very small net redistribution estimates at both the federal and state and local levels.

Table 24 breaks down the distribution of taxes and spending across both marital status and income quintiles. This allows one to analyze redistribution between income quintiles holding marital/elderly status constant. Among elderly families (single or married), only the top quintile had a negative net redistribution amount. However, among non-elderly single families, even the middle quintile had a net negative redistribution. The main reason for this is the low spending amounts for the singles group. This makes sense because non-elderly singles with no dependents tend to not be eligible for many government transfer programs and have little K-12 education spending allocated to them.

Among nonelderly married families without children, families in the top two overall market income quintiles have a net negative redistribution as a group. On the other hand, nonelderly married families with children in the fourth market income quintile, as a group, have a net positive redistribution figure. Holding income quintile constant, the net redistribution figures are noticeably higher for nonelderly married families with children than nonelderly married families without children. Also noteworthy is that, holding income quintile constant, the net redistribution figures for nonelderly married families with children are higher than for nonelderly head of household families (i.e., single parents).

Table 23: Distributional Analysis of Government Fiscal Policies by Filing Status/Elderly Status, 2012[1]

Item	All Families	Non-Elderly Single	Non-Elderly Married (No children)	Non-Elderly Married (Children)	Non-Elderly Head of Household	Elderly Single or HOH	Elderly Married
Avg. Market Income[2]	81,602	41,401	150,803	154,864	47,401	36,032	105,200
(Share)	100%	18.9%	25.2%	36.0%	8.5%	3.7%	8.4%
Avg. Taxes[3]	31,824	16,832	57,639	56,787	17,131	17,382	45,493
Federal	21,293	10,955	40,259	39,007	10,408	10,296	29,920
State & Local	10,530	5,877	17,380	17,781	6,723	7,087	15,573
Avg. Spending (Method A)[4]	31,824	15,513	36,053	44,636	27,766	41,514	77,670
Federal	21,293	10,195	24,440	23,585	15,056	36,533	67,299
State & Local	10,530	5,318	11,613	21,051	12,710	4,981	10,371
Avg. Spending (Method B)[4]	31,824	16,458	24,389	41,369	37,124	47,182	76,782
Federal	21,293	10,618	16,903	20,457	20,367	42,300	69,721
State & Local	10,530	5,840	7,487	20,913	16,756	4,882	7,060
Avg. Redistribution (A)	0	-1,320	-21,586	-12,152	10,634	24,132	32,177
Federal	0	-760	-15,819	-15,421	4,647	26,237	37,379
State & Local	0	-559	-5,767	3,270	5,987	-2,105	-5,202
Avg. Redistribution (B)	0	-374	-33,250	-15,418	19,992	29,800	31,289
Federal	0	-338	-23,357	-18,550	9,959	32,005	39,801
State & Local	0	-37	-9,893	3,132	10,033	-2,204	-8,512
Ratio: spending to taxes (A)	1.00	0.92	0.63	0.79	1.62	2.39	1.71
Federal	1.00	0.93	0.61	0.60	1.45	3.55	2.25
State & Local	1.00	0.90	0.67	1.18	1.89	0.70	0.67
Ratio: spending to taxes (B)	1.00	0.98	0.42	0.73	2.17	2.71	1.69
Federal	1.00	0.97	0.42	0.52	1.96	4.11	2.33
State & Local	1.00	0.99	0.43	1.18	2.49	0.69	0.45
Income after Redistrib. (A)	81,602	40,082	129,217	142,713	58,036	60,163	137,377
(Share)	100%	18.3%	21.6%	33.1%	10.4%	6.2%	10.9%
Income after Redistrib. (B)	81,602	41,027	117,553	139,447	67,394	65,832	136,489
(Share)	100%	18.8%	19.6%	32.4%	12.0%	6.8%	10.9%

Notes:

1. Elderly status determined by age of family head. Negative income famillies excluded from subgroups but included in totals. Taxes and spending are adjusted proportionally to close government deficits, thereby making spending equal to taxes.
2. Market income is a broad definition of income from market sources (excludes transfers) that aggregates to BEA income totals.
3. Taxes total above includes some non-tax revenue sources. Refundable portion of tax credits are included in spending totals.
4. Method A assumes that most public goods benefit families in proportion to their incomes, while Method B allocates these public goods equally to households or in proportion to their family size (i.e., per person), depending on the spending category.

Source: Author calculations based on multiple data sources, primarily Census Bureau, IRS and Bureau of Economic Analysis.

Table 24: Distributional Analysis of Government Fiscal Policies by Filing Status/Elderly Status and Income Quintile, 2012[1]

Item	All Families	Non-Elderly Single	Non-Elderly Married (No children)	Non-Elderly Married (Children)	Non-Elderly Head of Household	Elderly Single or HOH	Elderly Married
Number of Families (thous.)							
Bottom 20%	40,132	22,595	1,567	1,646	5,763	6,933	1,628
Second 20%	33,806	15,516	2,229	3,318	7,738	2,850	2,154
Third 20%	30,559	11,538	3,841	5,256	5,650	1,813	2,461
Fourth 20%	24,905	5,172	6,171	8,481	2,414	717	1,950
Top 20%	21,965	2,001	6,946	10,170	639	514	1,695
Avg. Market Income[2]							
Bottom 20%	9,561	8,603	12,739	17,076	14,673	6,141	8,658
Second 20%	31,053	30,058	34,606	39,435	30,911	26,451	28,230
Third 20%	56,884	55,193	61,206	62,962	54,834	53,829	52,040
Fourth 20%	100,242	96,209	103,352	103,877	94,875	94,978	93,863
Top 20%	311,405	278,576	310,945	304,838	297,070	347,307	385,947
Avg. Taxes[3]							
Bottom 20%	6,331	5,458	8,605	9,698	7,215	6,271	9,992
Second 20%	11,913	11,253	13,182	14,050	10,676	12,859	15,253
Third 20%	20,429	20,606	20,806	19,744	17,819	23,427	24,259
Fourth 20%	35,325	37,136	35,725	33,058	32,833	40,416	40,331
Top 20%	122,217	114,317	122,807	117,283	119,281	138,867	154,780
Avg. Spending (Method A)[4]							
Bottom 20%	22,339	14,906	23,562	33,726	27,104	32,725	51,694
Second 20%	22,941	11,703	19,422	34,397	26,159	39,492	56,420
Third 20%	27,125	13,810	22,601	31,841	25,169	51,850	72,811
Fourth 20%	33,284	20,143	26,571	33,418	31,069	62,593	80,765
Top 20%	68,545	49,762	60,072	65,708	63,641	105,407	133,116
Avg. Spending (Method B)[4]							
Bottom 20%	33,402	21,737	35,506	60,001	46,288	44,894	71,829
Second 20%	30,052	13,662	25,885	53,405	37,832	45,304	68,308
Third 20%	30,144	11,925	24,317	43,414	30,953	52,047	78,330
Fourth 20%	31,122	12,692	21,943	36,306	29,490	55,395	79,585
Top 20%	35,141	14,402	23,615	37,592	29,304	59,858	86,835
Income Redistribution (A)							
Bottom 20%	16,007	9,448	14,957	24,029	19,889	26,454	41,702
Second 20%	11,028	450	6,240	20,346	15,484	26,633	41,167
Third 20%	6,695	-6,796	1,795	12,097	7,350	28,423	48,552
Fourth 20%	-2,041	-16,993	-9,154	360	-1,765	22,176	40,434
Top 20%	-53,672	-64,555	-62,734	-51,575	-55,639	-33,460	-21,664
Income Redistribution (B)							
Bottom 20%	27,071	16,279	26,901	50,303	39,072	38,622	61,837
Second 20%	18,139	2,409	12,703	39,355	27,157	32,445	53,055
Third 20%	9,715	-8,681	3,511	23,669	13,133	28,620	54,071
Fourth 20%	-4,204	-24,444	-13,782	3,248	-3,343	14,979	39,254
Top 20%	-87,076	-99,915	-99,192	-79,691	-89,976	-79,009	-67,945

Notes:

1. Elderly status determined by age of family head. Negative income famillies excluded from bottom quintile.
   Taxes and spending are adjusted proportionally to close government deficits, thereby making spending equal to taxes.
2. Market income is a broad definition of income from market sources (excludes transfers) that aggregates to BEA income totals.
3. Taxes total above includes some non-tax revenue sources. Refundable portion of tax credits are included in spending totals.
4. Method A assumes that most public goods benefit families in proportion to their incomes, while Method B allocates these public goods equally to households or in proportion to their family size (i.e., per person), depending on the spending category.

Source: Author calculations based on multiple data sources, primarily Census Bureau, IRS and Bureau of Economic Analysis.

C. Distributional Analysis by Educational Status

The first two columns of Table 25 break out the distribution of taxes and spending by college degree status. Families with a college degree earned an average market income of $154,815 in 2012, while families without a college degree earned an average market income of $51,757. Not surprisingly, this significant income gap implies that there are also dramatic differences in how much these families pay in taxes and receive in government spending. The average college-educated family pays approximately three times as much in taxes than the average non-college educated family. On the spending side, college educated families actually have a higher spending level than non-college educated families under the benefit principle. (The reasons for this are discussed in the previous section.) Under the cost-of-services approach, the spending levels are roughly the same. Overall, these differences in taxes and spending imply that there is a significant amount of redistribution from college-educated families to non-college educated families.

This study estimates that in 2012, $806 billion was redistributed from families with a college degree to those without a college degree under the benefit principle approach, and $1.3 trillion was redistributed between the two groups under the cost-of-services approach. Prior to redistribution, college-educated families earned approximately 56.5% of the market income compared to the non-college educated families 44.1%. After redistribution, the split essentially becomes 50-50 under the benefit principle approach and 46%-55% under the cost-of-services approach. (These share figures do not add up to 100% due to the presence of negative income families, which are excluded from the tables throughout this study.)

D. Distributional Analysis by Housing Tenure

It probably comes as no surprise that, in the aggregate, homeowners redistribute to renters. This is primarily because income is highly correlated with homeownership. As Table 25 shows, the average market income of a family that is a homeowner is $118,544, while the average market income of a renting family is $40,032. Spending levels are higher for homeowners than renters under both the benefit principle approach and the cost-of-services approach. However, families who own their own home pay nearly three times more in taxes than renting families. Overall, this

study estimates that the aggregate amount of income redistribution from renters to homeowners was $374.7 billion in 2012 under the benefit principle approach and $712.8 billion under the cost-of-services approach. This amounts to approximately 4.0% of the market income of homeowners being redistributed to renters under the benefit principle approach and 7.5% under the cost-of-services approach.

E. Distributional Analysis by Urban vs. Rural Status

Similar to housing tenure, there is also an income gap between urban and rural families. In 2012, this study estimates that urban families had market incomes that were about 35% higher than rural families. This income gap means that there is likely to be redistribution from urban families to urban families, on net. Average spending levels are fairly even between urban and rural families under both the benefit principle approach and the cost-of-service approach. However, urban families pay about $9,000 more in taxes than rural families.

Overall, in the aggregate, urban families redistributed approximately $180 billion to rural families in 2012 under the benefit principle approach and $278 billion under the cost-of-services approach. This amounts to approximately 1.65% of the market income of urban families being redistributed to rural families under the benefit principle approach and 1.75% under the cost-of-services approach. In summary, there is not a significant amount of redistribution from urban to rural families, despite the fact that urban families have market incomes that are about 35% more than rural families. Adjusting for incomes, there is more redistribution from homeowners to renters than from urban to rural.

F. Fiscal Profile of Families with Zero Federal Income Tax Liability

Much attention has been paid in recent years to the growing number of tax returns with zero (or negative) federal individual income tax liability. The growth of refundable tax credits along with the Bush tax cuts creating a new 10% bracket, increasing the standard deduction for joint filers, and doubling of the child tax credit has led to an increase in the percentage of tax returns that have no income tax liability. This issue has become a talking point among some who are concerned that this increasing number of "nonpayers" is unhealthy for a democracy. Critiques of

the "nonpayers" concept cite the fact that these families pay other taxes, including federal payroll taxes and state and local taxes. The last column in Table 25 provides a fiscal profile of these families. Note that families are classified as having zero federal individual income tax liability if all of the primary tax return(s) in the family do not have a positive liability. (Technically, one of these families could have a positive income tax liability if a dependent return in the family has a positive liability.)

Table 25 shows that these 60 million "nonpayer" families have a positive net redistribution under both the benefit principle approach and cost-of-services approach. Prior to redistribution, these 60 million families earned 11.3% of the nation's income. However, after redistribution, that figure increases to 19.5% under the benefit principle and 25.1% under the cost-of-services approach. Overall, redistribution increases the incomes of these families by a factor of between 73% and 129%, depending upon the methodological approach chosen. In the aggregate, the amount of redistribution to this group of families is $1 trillion under the benefit principle approach and $1.7 trillion under the cost-of-services approach.

Despite the net positive redistribution to these families with zero income tax liability, these so-called "nonpayers" do pay other taxes. Including the deficit tax, these families paid nearly $10,000 in taxes in 2012, which was split about 50-50 between federal and state and local taxes. Although not shown in Table 25, even if one excludes the "deficit tax" and non-tax revenue sources, these families still paid over $7,000 in taxes in 2012 ($3,000 in federal taxes and $4,000 in state and local taxes). Federal payroll, state and local property taxes, and state and local sales taxes were the biggest taxes paid by families who have no federal individual income tax liability.

G. Fiscal Profile of Buffett Rule Families

Much attention has also been paid in recent years to the fact that preferential rates for capital gains and dividends can cause the individual income tax rate for some high-income taxpayers to actually exceed that of middle-income taxpayers. If one adds payroll taxes, the likelihood of this supposed inequity increases. Financial guru Warren Buffett, who derives a significant fraction of his income from capital gains, frequently argues that his secretary pays a higher tax rate than he does. This campaign by Buffett has caught on, and a "Buffett Rule" was actually proposed in

President Obama's latest budget. This proposal would require all tax returns with incomes over $1 million to pay at least a 30% tax rate. Therefore, this study identifies all families with a primary tax return with adjusted gross income exceeding $1 million that is currently not paying at least a 30% tax rate as "Buffett Rule" families.

There are only 309,000 "Buffett Rule" families nationwide. They have an average income of around $4 million. Despite making up only 0.2% of all families, this group earns 10% of the nation's market income. The average redistribution per family from this group is $1.1 million under the benefit principle approach and $1.7 million under the cost-of-services approach. Approximately 29% of this group's market income is redistributed to non-Buffett Rule families under the benefit principle approach. Under the cost-of-services approach, this figure is 43%.

Table 25: Distributional Analysis of Government Fiscal Policies by Selected Groups, 2012[1]

Item	Families with College Degree	Families with No College Degree	Homeowners	Renters	Urban Families	Rural Families	Buffett Rule Families	Families with Zero Federal Income Tax
Number of Families (thous.)	45,354	106,012	82,138	69,229	126,112	25,255	309	60,032
Avg. Market Income[2]	154,815	51,757	118,544	40,032	86,357	64,054	4,006,805	23,304
(Share)	56.5%	44.1%	78.3%	22.3%	87.6%	13.0%	10.0%	11.3%
Avg. Taxes[3]	60,209	19,948	45,444	16,073	33,513	24,511	1,814,949	9,712
Federal	42,065	12,597	30,912	10,172	22,535	15,889	1,175,118	4,878
State & Local	18,143	7,351	14,532	5,901	10,978	8,622	639,831	4,834
Avg. Spending (Method A)[4]	42,428	27,461	40,761	21,486	32,084	31,253	668,571	26,802
Federal	27,909	18,584	27,616	13,977	21,367	21,430	428,026	18,064
State & Local	14,519	8,877	13,145	7,509	10,717	9,823	240,545	8,738
Avg. Spending (Method B)[4]	30,993	32,250	36,512	26,370	31,307	34,702	72,594	38,366
Federal	20,346	21,755	25,093	16,871	20,804	23,970	50,586	25,599
State & Local	10,647	10,495	11,419	9,499	10,502	10,733	22,008	12,767
Avg. Redistribution (A)	-17,781	7,514	-4,683	5,413	-1,429	6,742	-1,146,379	17,090
Federal	-14,156	5,987	-3,296	3,805	-1,168	5,541	-747,092	13,186
State & Local	-3,625	1,527	-1,386	1,608	-261	1,201	-399,287	3,904
Avg. Redistribution (B)	-29,216	12,302	-8,932	10,297	-2,206	10,191	-1,742,356	28,654
Federal	-21,720	9,158	-5,820	6,699	-1,731	8,081	-1,124,532	20,721
State & Local	-7,496	3,144	-3,113	3,597	-475	2,110	-617,824	7,933
Ratio: spending to taxes (A)	0.70	1.38	0.90	1.34	0.96	1.28	0.37	2.76
Federal	0.66	1.48	0.89	1.37	0.95	1.35	0.36	3.70
State & Local	0.80	1.21	0.90	1.27	0.98	1.14	0.38	1.81
Ratio: spending to taxes (B)	0.51	1.62	0.80	1.64	0.93	1.42	0.04	3.95
Federal	0.48	1.73	0.81	1.66	0.92	1.51	0.04	5.25
State & Local	0.59	1.43	0.79	1.61	0.96	1.24	0.03	2.64
Income after Redistrib. (A)	137,034	59,270	113,861	45,445	84,928	70,796	2,860,427	40,394
(Share)	50.0%	50.5%	75.2%	25.3%	86.2%	14.4%	7.1%	19.5%
Income after Redistrib. (B)	125,599	64,059	109,612	50,329	84,151	74,245	2,264,450	51,958
(Share)	45.8%	54.6%	72.4%	28.0%	85.4%	15.1%	5.6%	25.1%

Notes:

1. Negative income famillies excluded from figures in table.
   Taxes and spending are adjusted proportionally to close government deficits, thereby making spending equal to taxes.
2. Market income is a broad definition of income from market sources (excludes transfers) that aggregates to BEA income totals.
3. Taxes total above includes some non-tax revenue sources. Refundable portion of tax credits are included in spending totals.
4. Method A assumes that most public goods benefit families in proportion to their incomes, while Method B allocates these public goods equally to households or in proportion to their family size (i.e., per person), depending on the spending category.

Source: Author calculations based on multiple data sources, primarily Census Bureau, IRS and Bureau of Economic Analysis.

H. Distributional Analysis Excluding Social Security and Medicare Spending and Payroll Taxes

Because Social Security and Medicare payments are received primarily when retired while payroll taxes are paid during earning years, one could argue that estimates of redistribution in any single year may be overstated because of the existence of these programs when compared to lifetime redistribution. (This is similar to the life cycle of income/redistribution discussed above.) This section addresses this concern by presenting results by income group and by age group excluding spending on Social Security and Medicare and excluding payroll taxes.

Table 26 presents the results by income group excluding Social Security and Medicare spending and payroll taxes. As the table shows, the amount of taxes paid by low-and-middle income groups falls by a sizable amount when payroll taxes are excluded. As Figure 12 above showed, payroll taxes are one of the biggest taxes paid by income groups outside the top quintile. However, spending declines by an even greater amount for the bottom quintile when Social Security and Medicare are excluded. Overall, the average net amount of redistribution to families in the bottom quintile falls by about $9,000 under both approaches when one excludes Social Security and Medicare spending and payroll taxes. And while the bottom quintile's share of post-redistribution income was 8.3% (benefit principle approach) and 11.8% (cost-of-services approach) when all spending and taxes are included, when one excludes Medicare and Social Security spending and payroll taxes, this group's post-redistribution income shares are noticeably lower: 6.2% (benefit principle approach) and 9.3% (cost-of-services approach). In summary, the existence of these social insurance programs has a significant effect on the incomes of those at the bottom of the income ladder.

The effects of excluding Social Security and Medicare spending and payroll taxes does affect all of the other income groups, but none as nearly as much as the bottom market income quintile. In the aggregate, when these exclusions are made, the total amount of redistribution from the top quintile falls from $1.18 trillion to $881 billion under the benefit principle approach and from $1.91 trillion to $1.57 trillion under the cost-of-services approach. The reduction in income redistribution is between 18% and 25%.

Table 27 shows, as one would expect, that excluding Social Security and Medicare spending (along with payroll taxes) has the greatest impact on the elderly populations. While earlier tables

and figures showed elderly families to be large beneficiaries of redistribution, when one excludes Social Security and Medicare spending, the net amount of redistribution to the elderly actually becomes negative. Eliminating payroll taxes has little effect on the 65+ population. The effect on non-elderly groups is almost exclusively from the reduction in payroll taxes, which is greatest for those in prime earning periods – aged 35-54 – when people are most likely to be working and earning high salaries.

Table 26: Distributional Analysis of Government Fiscal Policies Excluding Social Security and Medicare Taxes and Spending, 2012[1]

Item	All Families	Bottom 20%	Second 20%	Middle 20%	Fourth 20%	Top 20%	Top 10%	Top 5%	Top 1%
Avg. Market Income[2]	81,602	9,561	31,053	56,884	100,242	311,405	469,228	713,599	1,992,095
(Share)	100%	3.1%	8.4%	14.0%	20.1%	55.0%	41.0%	31.4%	18.2%
Avg. Taxes[3]	24,656	4,972	8,534	14,341	24,687	100,806	162,905	263,058	813,194
Federal	14,126	1,607	3,475	6,760	13,030	65,563	109,045	178,668	554,006
State & Local	10,530	3,365	5,059	7,581	11,657	35,242	53,861	84,390	259,188
Avg. Spending (Method A)[4]	24,656	14,709	16,912	19,508	26,330	60,702	86,452	126,005	331,411
Federal	14,126	8,999	9,700	10,719	14,205	35,387	51,768	77,015	208,606
State & Local	10,530	5,710	7,212	8,789	12,125	25,315	34,684	48,990	122,805
Avg. Spending (Method B)[4]	24,656	24,330	23,969	22,715	24,799	29,036	31,121	33,890	45,055
Federal	14,126	15,052	14,183	12,796	13,257	15,296	16,704	18,669	27,383
State & Local	10,530	9,278	9,786	9,920	11,542	13,739	14,417	15,222	17,671
Avg. Redistribution (A)	0	9,737	8,377	5,166	1,643	-40,103	-76,453	-137,054	-481,783
Federal	0	7,391	6,225	3,959	1,175	-30,176	-57,277	-101,654	-345,401
State & Local	0	2,346	2,153	1,208	468	-9,927	-19,177	-35,400	-136,383
Avg. Redistribution (B)	0	19,358	15,435	8,374	112	-71,770	-131,784	-229,168	-768,140
Federal	0	13,445	10,708	6,035	227	-50,267	-92,341	-160,000	-526,623
State & Local	0	5,913	4,726	2,339	-115	-21,503	-39,443	-69,168	-241,517
Ratio: spending to taxes (A)	1.00	2.96	1.98	1.36	1.07	0.60	0.53	0.48	0.41
Federal	1.00	5.60	2.79	1.59	1.09	0.54	0.47	0.43	0.38
State & Local	1.00	1.70	1.43	1.16	1.04	0.72	0.64	0.58	0.47
Ratio: spending to taxes (B)	1.00	4.89	2.81	1.58	1.00	0.29	0.19	0.13	0.06
Federal	1.00	9.36	4.08	1.89	1.02	0.23	0.15	0.10	0.05
State & Local	1.00	2.76	1.93	1.31	0.99	0.39	0.27	0.18	0.07
Income after Redistrib. (A)	81,602	19,298	39,430	62,050	101,885	271,302	392,775	576,545	1,510,312
(Share)	100%	6.2%	10.7%	15.3%	20.4%	47.9%	34.4%	25.4%	13.8%
Income after Redistrib. (B)	81,602	28,918	46,488	65,258	100,354	239,635	337,445	484,431	1,223,955
(Share)	100%	9.3%	12.6%	16.0%	20.1%	42.3%	29.5%	21.3%	11.2%

Notes:

1. Percentiles contain equal numbers of persons. Negative income famillies excluded from bottom quintile but included in totals. Social Security and Medicare spending zeroed out; Payroll taxes and supplementary Medicare contributions zeroed out. Taxes and spending are adjusted proportionally to close government deficits, thereby making spending equal to taxes.
2. Market income is a broad definition of income from market sources (excludes transfers) that aggregates to BEA income totals.
3. Taxes total above includes some non-tax revenue sources. Refundable portion of tax credits are included in spending totals.
4. Method A assumes that most public goods benefit families in proportion to their incomes, while Method B allocates these public goods equally to households or in proportion to their family size (i.e., per person), depending on the spending category.

Source: Author calculations based on multiple data sources, primarily Census Bureau, IRS and Bureau of Economic Analysis.

Table 27: Distributional Analysis of Government Fiscal Policies by Age Group Excluding Social Security and Medicare Taxes and Spending, 2012[1]

Item	All Families	Under Age 25	Age 25-34	Age 35-44	Age 45-54	Age 55-64	Age 65+	Age 65-74	Age 75+
Avg. Market Income[2]	81,602	24,135	61,635	102,339	113,948	106,490	66,143	88,232	41,423
(Share)	100%	3.4%	14.8%	26.6%	27.6%	16.1%	12.1%	8.5%	3.6%
Avg. Taxes[3]	24,656	7,394	16,861	29,445	33,350	31,795	25,017	32,579	16,554
Federal	14,126	3,191	8,614	17,261	19,850	19,198	14,236	19,330	8,535
State & Local	10,530	4,202	8,247	12,184	13,500	12,597	10,781	13,249	8,019
Avg. Spending (Method A)[4]	24,656	14,856	22,188	30,326	29,557	25,279	21,049	25,364	16,220
Federal	14,126	8,590	12,458	16,167	16,528	15,575	13,721	16,362	10,765
State & Local	10,530	6,267	9,730	14,158	13,029	9,704	7,328	9,001	5,455
Avg. Spending (Method B)[4]	24,656	20,814	27,437	30,896	25,783	20,028	17,588	18,878	16,144
Federal	14,126	12,348	15,685	16,373	14,146	12,398	11,757	12,470	10,960
State & Local	10,530	8,466	11,753	14,522	11,637	7,630	5,830	6,407	5,185
Avg. Redistribution (A)	0	7,463	5,328	880	-3,793	-6,516	-3,968	-7,215	-334
Federal	0	5,398	3,845	-1,094	-3,322	-3,623	-515	-2,968	2,230
State & Local	0	2,064	1,483	1,974	-470	-2,893	-3,453	-4,248	-2,564
Avg. Redistribution (B)	0	13,420	10,577	1,450	-7,567	-11,767	-7,429	-13,701	-409
Federal	0	9,157	7,071	-888	-5,704	-6,800	-2,479	-6,860	2,425
State & Local	0	4,263	3,506	2,338	-1,863	-4,967	-4,950	-6,842	-2,834
Ratio: spending to taxes (A)	1.00	2.01	1.32	1.03	0.89	0.80	0.84	0.78	0.98
Federal	1.00	2.69	1.45	0.94	0.83	0.81	0.96	0.85	1.26
State & Local	1.00	1.49	1.18	1.16	0.97	0.77	0.68	0.68	0.68
Ratio: spending to taxes (B)	1.00	2.82	1.63	1.05	0.77	0.63	0.70	0.58	0.98
Federal	1.00	3.87	1.82	0.95	0.71	0.65	0.83	0.65	1.28
State & Local	1.00	2.01	1.43	1.19	0.86	0.61	0.54	0.48	0.65
Income after Redistrib. (A)	81,602	31,598	66,963	103,219	110,155	99,973	62,175	81,017	41,089
(Share)	100%	4.5%	16.1%	26.9%	26.7%	15.1%	11.4%	7.8%	3.5%
Income after Redistrib. (B)	81,602	37,556	72,212	103,789	106,381	94,723	58,714	74,531	41,014
(Share)	100%	5.3%	17.4%	27.0%	25.8%	14.3%	10.7%	7.2%	3.5%

Notes:

1. Families classifed by age of family head. Negative income famillies excluded from subgroups but included in totals. Social Security and Medicare spending zeroed out; Payroll taxes and supplementary Medicare contributions zeroed out. Taxes and spending are adjusted proportionally to close government deficits, thereby making spending equal to taxes.
2. Market income is a broad definition of income from market sources (excludes transfers) that aggregates to BEA income totals.
3. Taxes total above includes some non-tax revenue sources. Refundable portion of tax credits are included in spending totals.
4. Method A assumes that most public goods benefit families in proportion to their incomes, while Method B allocates these public goods equally to households or in proportion to their family size (i.e., per person), depending on the spending category.

Source: Author calculations based on multiple data sources, primarily Census Bureau, IRS and Bureau of Economic Analysis.

VII. Conclusion

This study provided an in-depth discussion of the distribution of U.S. tax and spending policies across various subgroups of the population, most notably income groups, from 2000-2012. The study concluded that governments in the United States mostly redistribute from the top 20 percent of the income distribution to the bottom 60 percent. The fourth quintile (60-80th percentiles) essentially nets out at zero redistribution. Approximately half of the redistribution from the top quintile comes from the top 1 percent, and approximately half of the redistribution to the bottom three quintiles goes to the bottom quintile.

The amount of redistribution between these income groups depends on what one assumes about the distribution of government spending. Under the benefit principle approach, which distributes spending in accordance with an estimate of each family's willingness to pay for a government spending program, this study concluded that the amount of redistribution from the top 20 percent to the bottom 60 percent was $1.18 trillion in 2012. Under the cost-of-services approach, which distributes spending to each family based on each family's cost of providing the service and thereby distributes spending more evenly than the benefit principle approach, the aggregate amount of redistribution from the top 20 percent to the bottom 60 percent was $1.91 trillion in 2012.

The primary results presented in this study assumed a methodological adjustment to close budget deficits by proportionally increasing taxes and decreasing spending. When budget deficits are instead treated as redistribution from the future, net redistribution to each group increases. Although budget deficits increased from 2000 to 2007, the effect of this methodological decision is most significant from 2008-2012 when federal budget deficits climbed sharply following the financial crisis and ensuing recession. Therefore, comparisons of how redistribution has changed from 2000 through 2012 should keep this methodological issue of how to treat budget deficits in mind.

Finally, this study also presented results along other dimensions besides income groups. The study showed that a significant amount of redistribution occurs between the elderly and non-elderly. This study also showed, however, that when Social Security and Medicare are excluded, the net redistribution to the elderly is actually negative. Along the dimension of marital status,

net redistribution among non-elderly married couples is highly negative, mostly due to the fact that marital status is highly correlated with income. Similarly, there is net redistribution from the college educated to the non-college educated, from homeowners to renters, and from urban families to rural families, due mostly to the correlation between these demographics and income.

Appendix A

Table A-1: Distributional Analysis of Market Income, 2000-2012[1]

Item	All Families	Bottom 20%	Second 20%	Middle 20%	Fourth 20%	Top 20%	Top 10%	Top 5%	Top 1%
Number of Families (thous.)									
2000	136,772	36,484	30,626	27,215	22,241	19,669	9,738	4,884	1,002
2001	137,431	36,591	30,792	27,407	22,378	19,663	9,680	4,851	988
2002	137,884	36,707	30,788	27,413	22,543	19,724	9,722	4,869	987
2003	138,428	37,151	30,762	27,348	22,658	19,773	9,760	4,898	1,002
2004	140,270	37,680	31,122	27,800	22,855	20,081	9,953	5,020	1,033
2005	140,950	37,529	31,511	27,933	22,967	20,286	10,056	5,112	1,057
2006	142,740	37,418	31,765	28,489	23,465	20,693	10,246	5,196	1,072
2007	144,030	37,510	32,065	28,980	23,671	20,990	10,411	5,267	1,090
2008	145,408	37,880	32,402	29,288	23,908	20,897	10,309	5,205	1,078
2009	145,236	37,809	32,205	29,198	24,173	20,770	10,220	5,139	1,064
2010	146,964	38,428	32,554	29,634	24,316	21,037	10,378	5,235	1,082
2011	149,610	39,336	33,141	30,055	24,648	21,437	10,606	5,343	1,108
2012	152,338	40,132	33,806	30,559	24,905	21,965	10,873	5,476	1,137
Avg. Market Income[2]									
2000	62,226	5,484	23,457	44,382	76,628	239,650	364,826	563,071	1,614,839
2001	61,323	5,961	24,589	46,141	78,731	226,891	337,247	506,342	1,374,063
2002	61,294	6,097	24,990	46,670	79,653	224,297	330,069	490,432	1,298,069
2003	63,844	6,272	25,777	48,194	82,695	235,796	348,023	520,073	1,393,004
2004	68,830	6,513	26,799	50,321	86,697	260,886	391,872	595,732	1,652,606
2005	74,076	7,000	27,729	52,190	90,032	287,066	438,212	673,719	1,923,107
2006	78,613	7,690	28,888	53,938	93,020	306,864	472,816	733,949	2,123,139
2007	81,813	8,981	30,310	55,559	95,125	317,986	491,468	767,545	2,239,881
2008	78,803	8,742	30,351	56,109	96,670	299,651	453,276	691,248	1,912,348
2009	73,131	8,416	29,141	53,789	93,573	270,710	399,496	595,570	1,559,217
2010	76,367	8,915	29,739	54,437	94,996	288,588	432,634	655,943	1,795,700
2011	78,381	9,276	30,541	55,801	97,918	295,629	441,186	665,832	1,803,362
2012	81,602	9,561	31,053	56,884	100,242	311,405	469,228	713,599	1,992,095
Share Market Income									
2000	100%	2.4%	8.4%	14.2%	20.0%	55.4%	41.7%	32.3%	19.0%
2001	100%	2.6%	9.0%	15.0%	20.9%	52.9%	38.7%	29.1%	16.1%
2002	100%	2.6%	9.1%	15.1%	21.2%	52.3%	38.0%	28.3%	15.2%
2003	100%	2.6%	9.0%	14.9%	21.2%	52.8%	38.4%	28.8%	15.8%
2004	100%	2.5%	8.6%	14.5%	20.5%	54.3%	40.4%	31.0%	17.7%
2005	100%	2.5%	8.4%	14.0%	19.8%	55.8%	42.2%	33.0%	19.5%
2006	100%	2.6%	8.2%	13.7%	19.5%	56.6%	43.2%	34.0%	20.3%
2007	100%	2.9%	8.2%	13.7%	19.1%	56.6%	43.4%	34.3%	20.7%
2008	100%	2.9%	8.6%	14.3%	20.2%	54.6%	40.8%	31.4%	18.0%
2009	100%	3.0%	8.8%	14.8%	21.3%	52.9%	38.4%	28.8%	15.6%
2010	100%	3.1%	8.6%	14.4%	20.6%	54.1%	40.0%	30.6%	17.3%
2011	100%	3.1%	8.6%	14.3%	20.6%	54.0%	39.9%	30.3%	17.0%
2012	100%	3.1%	8.4%	14.0%	20.1%	55.0%	41.0%	31.4%	18.2%

Notes:
1. Percentiles contain equal numbers of persons. Negative income famillies excluded from bottom quintile but included in totals.
2. Market income is a broad definition of income from market sources (excludes transfers) that aggregates to BEA income totals.
Source: Author calculations based on multiple data sources, primarily Census Bureau, IRS and Bureau of Economic Analysis.

Table A-2: Distributional Analysis of Taxes Paid, 2000-2012[1]

Item	All Families	Bottom 20%	Second 20%	Middle 20%	Fourth 20%	Top 20%	Top 10%	Top 5%	Top 1%
Avg. Taxes (Total)[2]									
2000	21,511	3,571	7,790	14,134	24,093	83,923	131,272	208,395	634,980
2001	22,111	3,813	8,175	14,805	25,280	85,088	131,917	206,480	612,034
2002	22,263	4,138	8,672	15,388	26,122	82,969	126,502	195,109	564,445
2003	23,181	4,375	9,172	16,120	27,206	86,168	131,536	203,219	585,949
2004	24,371	4,550	9,616	16,889	28,145	91,249	140,404	218,601	640,285
2005	26,585	4,892	10,103	17,624	29,765	101,885	158,722	249,202	743,246
2006	28,058	5,102	10,444	18,224	30,663	108,301	169,970	268,509	805,901
2007	29,427	5,282	10,791	18,803	31,666	114,189	179,955	286,420	870,687
2008	30,045	5,717	11,198	19,648	33,356	115,250	179,399	281,269	829,544
2009	30,192	6,170	11,807	20,304	34,461	112,644	172,425	266,182	751,701
2010	31,165	6,435	12,160	20,652	35,020	117,445	181,151	281,794	818,026
2011	31,556	6,445	12,071	20,596	35,350	120,064	185,227	288,477	838,245
2012	31,824	6,331	11,913	20,429	35,325	122,217	189,281	295,210	867,473
Avg. Federal Taxes									
2000	14,345	1,342	4,349	8,927	16,233	59,737	93,939	149,360	455,184
2001	14,573	1,417	4,445	9,185	16,824	60,231	93,848	146,897	433,040
2002	14,453	1,565	4,710	9,488	17,297	57,717	88,119	135,382	386,781
2003	15,049	1,712	5,080	10,035	18,028	59,626	91,168	140,232	398,255
2004	15,790	1,807	5,345	10,465	18,598	62,920	96,910	150,313	433,991
2005	17,397	1,984	5,699	11,012	19,644	70,917	111,009	174,229	515,743
2006	18,504	2,116	5,896	11,376	20,311	76,051	120,030	189,750	567,147
2007	19,378	2,317	6,167	11,768	20,899	79,540	125,906	200,102	601,734
2008	19,702	2,484	6,405	12,326	22,182	79,811	124,306	193,914	559,920
2009	20,122	2,934	6,894	12,942	23,316	79,185	121,095	185,603	509,293
2010	20,996	3,125	7,204	13,301	23,883	83,445	128,778	199,286	564,509
2011	21,150	3,077	7,027	13,053	23,799	85,378	132,284	205,528	586,109
2012	21,293	2,967	6,854	12,848	23,668	86,975	135,420	210,820	608,285
Avg. S&L Taxes									
2000	7,167	2,230	3,442	5,207	7,860	24,186	37,333	59,035	179,797
2001	7,538	2,397	3,730	5,619	8,456	24,856	38,069	59,584	178,994
2002	7,811	2,573	3,962	5,900	8,825	25,252	38,383	59,727	177,663
2003	8,132	2,663	4,091	6,085	9,178	26,542	40,369	62,987	187,694
2004	8,581	2,743	4,271	6,424	9,546	28,329	43,494	68,288	206,293
2005	9,188	2,907	4,404	6,612	10,121	30,968	47,712	74,973	227,503
2006	9,554	2,986	4,548	6,848	10,352	32,250	49,940	78,759	238,754
2007	10,049	2,965	4,624	7,034	10,768	34,648	54,049	86,318	268,952
2008	10,343	3,232	4,794	7,321	11,174	35,440	55,093	87,356	269,624
2009	10,070	3,236	4,913	7,362	11,145	33,460	51,330	80,579	242,408
2010	10,169	3,310	4,956	7,351	11,137	33,999	52,373	82,508	253,517
2011	10,406	3,368	5,043	7,543	11,551	34,687	52,944	82,949	252,136
2012	10,530	3,365	5,059	7,581	11,657	35,242	53,861	84,390	259,188

Notes:

1. Percentiles contain equal numbers of persons. Negative income famillies excluded from bottom quintile but included in totals.
2. Taxes total above includes some non-tax revenue sources. Refundable portion of tax credits are included in spending totals. Taxes totals above have been adjusted upward proportionally to close half of government deficits.

Source: Author calculations based on multiple data sources, primarily Census Bureau, IRS and Bureau of Economic Analysis.

Table A-3: Distributional Analysis of Government Spending (Method A), 2000-2012 [1,2]

Item	All Families	Bottom 20%	Second 20%	Middle 20%	Fourth 20%	Top 20%	Top 10%	Top 5%	Top 1%
Avg. Total Spending (A)									
2000	21,511	15,091	14,485	18,758	22,821	47,040	65,890	95,760	247,962
2001	22,111	15,594	15,436	19,853	23,834	46,295	63,551	90,063	221,583
2002	22,263	15,826	15,926	19,957	23,965	45,879	62,579	87,872	211,847
2003	23,181	16,178	16,471	20,609	25,000	48,783	66,869	94,600	230,780
2004	24,371	16,922	17,163	21,208	25,807	52,818	73,747	106,098	267,715
2005	26,585	18,083	18,464	22,872	27,847	59,222	83,823	121,726	315,602
2006	28,058	18,763	19,601	24,082	29,143	62,860	89,568	130,916	342,130
2007	29,427	19,245	20,860	25,122	30,516	66,133	94,322	138,417	363,288
2008	30,045	19,926	21,552	25,844	31,849	66,266	92,910	133,697	335,814
2009	30,192	20,854	22,118	26,581	32,129	63,467	87,075	122,474	291,801
2010	31,165	21,814	23,120	26,888	32,675	65,873	91,497	130,494	323,103
2011	31,556	22,017	23,235	27,087	33,110	67,281	93,277	132,277	324,814
2012	31,824	22,339	22,941	27,125	33,284	68,545	95,857	136,642	345,369
Avg. Federal Spending (A)									
2000	14,345	11,212	9,755	12,769	14,474	29,591	41,901	61,640	160,267
2001	14,573	11,478	10,370	13,382	14,889	28,512	39,593	56,902	141,140
2002	14,453	11,621	10,619	13,171	14,662	27,580	38,051	54,122	131,682
2003	15,049	11,893	10,948	13,524	15,307	29,536	41,063	58,924	145,307
2004	15,790	12,364	11,340	13,810	15,745	32,288	45,795	66,827	170,022
2005	17,397	13,138	12,305	15,124	17,262	36,897	53,034	78,030	203,299
2006	18,504	13,606	13,157	16,126	18,310	39,593	57,142	84,380	220,927
2007	19,378	13,626	14,039	16,872	19,270	41,891	60,540	89,625	235,486
2008	19,702	14,248	14,488	17,183	19,958	41,540	58,977	85,731	216,904
2009	20,122	15,421	15,170	17,968	20,370	39,769	55,263	78,572	189,032
2010	20,996	16,345	16,146	18,308	20,879	41,545	58,368	83,967	209,140
2011	21,150	16,437	16,099	18,325	21,037	42,310	59,319	84,657	208,976
2012	21,293	16,628	15,729	18,336	21,159	43,230	61,173	87,653	222,564
Avg. S&L Spending (A)									
2000	7,167	3,878	4,730	5,990	8,346	17,449	23,990	34,121	87,696
2001	7,538	4,117	5,066	6,471	8,945	17,783	23,958	33,161	80,443
2002	7,811	4,205	5,308	6,786	9,302	18,299	24,528	33,750	80,165
2003	8,132	4,285	5,523	7,085	9,693	19,247	25,806	35,675	85,472
2004	8,581	4,557	5,823	7,398	10,062	20,529	27,952	39,271	97,693
2005	9,188	4,946	6,159	7,748	10,586	22,325	30,789	43,696	112,303
2006	9,554	5,157	6,444	7,956	10,834	23,267	32,427	46,536	121,203
2007	10,049	5,619	6,821	8,249	11,246	24,242	33,781	48,791	127,803
2008	10,343	5,678	7,064	8,661	11,890	24,726	33,933	47,966	118,910
2009	10,070	5,433	6,948	8,613	11,759	23,698	31,812	43,902	102,769
2010	10,169	5,469	6,973	8,579	11,796	24,327	33,129	46,527	113,962
2011	10,406	5,580	7,136	8,763	12,073	24,971	33,958	47,620	115,837
2012	10,530	5,710	7,212	8,789	12,125	25,315	34,684	48,990	122,805

Notes:

1. Percentiles contain equal numbers of persons. Negative income famillies excluded from bottom quintile but included in totals.
2. Method A assumes that most public goods benefit families in proportion to their incomes, while Method B allocates these public goods equally to households or in proportion to their family size (i.e., per person), depending on the spending category. Spending totals above have been are adjusted downward proportionally to close half of government deficits.

Source: Author calculations based on multiple data sources, primarily Census Bureau, IRS and Bureau of Economic Analysis.

Table A-4: Distributional Analysis of Government Spending (Method B), 2000-2012[1,2]

Item	All Families	Bottom 20%	Second 20%	Middle 20%	Fourth 20%	Top 20%	Top 10%	Top 5%	Top 1%
Avg. Spending (B)									
2000	21,511	22,263	19,465	20,868	21,550	24,278	26,166	28,951	37,518
2001	22,111	22,926	20,251	21,598	22,038	24,477	26,297	28,873	37,367
2002	22,263	23,246	20,784	21,645	21,952	24,149	25,839	28,144	36,080
2003	23,181	23,984	21,682	22,503	22,919	25,459	27,307	29,864	38,346
2004	24,371	25,458	22,848	23,411	23,907	26,777	28,860	31,655	40,640
2005	26,585	27,540	24,671	25,547	26,215	29,906	32,514	35,970	47,970
2006	28,058	28,956	26,217	27,052	27,681	31,401	34,091	37,530	47,945
2007	29,427	29,852	27,751	28,327	29,278	33,194	35,955	39,584	49,531
2008	30,045	30,478	28,224	28,622	29,878	34,609	37,883	42,387	58,366
2009	30,192	30,808	28,416	28,950	29,584	34,633	38,132	42,814	60,904
2010	31,165	32,268	29,852	29,616	30,441	34,584	37,588	41,527	55,096
2011	31,556	32,832	30,166	29,928	30,714	34,977	37,970	41,541	54,474
2012	31,824	33,402	30,052	30,144	31,122	35,141	38,258	41,700	55,078
Avg. Federal Spending (B)									
2000	14,345	16,018	13,020	14,143	13,541	14,606	15,942	18,216	24,704
2001	14,573	16,343	13,496	14,504	13,626	14,284	15,478	17,524	23,788
2002	14,453	16,464	13,703	14,218	13,273	13,708	14,788	16,548	22,267
2003	15,049	17,052	14,286	14,702	13,852	14,492	15,750	17,763	24,199
2004	15,790	18,048	14,995	15,186	14,390	15,392	16,890	19,183	26,108
2005	17,397	19,460	16,310	16,825	16,067	17,771	19,796	22,816	32,372
2006	18,504	20,512	17,452	18,037	17,196	18,861	20,852	23,680	31,372
2007	19,378	20,798	18,521	18,947	18,310	20,174	22,327	25,303	32,804
2008	19,702	21,320	18,748	18,928	18,524	20,970	23,502	27,283	41,038
2009	20,122	22,220	19,194	19,395	18,478	20,993	23,756	27,800	43,918
2010	20,996	23,550	20,508	19,988	19,173	20,917	23,204	26,451	37,910
2011	21,150	23,773	20,532	20,084	19,289	21,218	23,530	26,359	37,178
2012	21,293	24,125	20,266	20,225	19,579	21,402	23,840	26,479	37,407
Avg. S&L Spending (B)									
2000	7,167	6,245	6,445	6,725	8,010	9,672	10,223	10,734	12,814
2001	7,538	6,583	6,755	7,094	8,413	10,194	10,819	11,348	13,580
2002	7,811	6,783	7,081	7,427	8,679	10,440	11,051	11,596	13,813
2003	8,132	6,931	7,396	7,801	9,067	10,968	11,557	12,101	14,147
2004	8,581	7,410	7,853	8,225	9,516	11,385	11,970	12,472	14,532
2005	9,188	8,080	8,361	8,722	10,147	12,134	12,718	13,154	15,598
2006	9,554	8,444	8,766	9,015	10,485	12,540	13,239	13,850	16,574
2007	10,049	9,054	9,230	9,380	10,968	13,020	13,628	14,281	16,727
2008	10,343	9,158	9,475	9,693	11,354	13,639	14,380	15,103	17,329
2009	10,070	8,588	9,222	9,556	11,106	13,640	14,376	15,014	16,987
2010	10,169	8,718	9,344	9,628	11,268	13,667	14,384	15,076	17,186
2011	10,406	9,060	9,634	9,844	11,425	13,759	14,440	15,183	17,296
2012	10,530	9,278	9,786	9,920	11,542	13,739	14,417	15,222	17,671

Notes:

1. Percentiles contain equal numbers of persons. Negative income famillies excluded from bottom quintile but included in totals.
2. Method A assumes that most public goods benefit families in proportion to their incomes, while Method B allocates these public goods equally to households or in proportion to their family size (i.e., per person), depending on the spending category. Spending totals above have been are adjusted downward proportionally to close half of government deficits.

Source: Author calculations based on multiple data sources, primarily Census Bureau, IRS and Bureau of Economic Analysis.

Table A-5: Ratio of Spending to Taxes, 2000-2012[1,2]

Item	All Families	Bottom 20%	Second 20%	Middle 20%	Fourth 20%	Top 20%	Top 10%	Top 5%	Top 1%
Ratio Spending to Taxes (A)[3]									
2000	1.00	4.23	1.86	1.33	0.95	0.56	0.50	0.46	0.39
2001	1.00	4.09	1.89	1.34	0.94	0.54	0.48	0.44	0.36
2002	1.00	3.82	1.84	1.30	0.92	0.55	0.49	0.45	0.38
2003	1.00	3.70	1.80	1.28	0.92	0.57	0.51	0.47	0.39
2004	1.00	3.72	1.78	1.26	0.92	0.58	0.53	0.49	0.42
2005	1.00	3.70	1.83	1.30	0.94	0.58	0.53	0.49	0.42
2006	1.00	3.68	1.88	1.32	0.95	0.58	0.53	0.49	0.42
2007	1.00	3.64	1.93	1.34	0.96	0.58	0.52	0.48	0.42
2008	1.00	3.49	1.92	1.32	0.95	0.57	0.52	0.48	0.40
2009	1.00	3.38	1.87	1.31	0.93	0.56	0.51	0.46	0.39
2010	1.00	3.39	1.90	1.30	0.93	0.56	0.51	0.46	0.39
2011	1.00	3.42	1.92	1.32	0.94	0.56	0.50	0.46	0.39
2012	1.00	3.53	1.93	1.33	0.94	0.56	0.51	0.46	0.40
Ratio Spending to Taxes (B)[3]									
2000	1.00	6.23	2.50	1.48	0.89	0.29	0.20	0.14	0.06
2001	1.00	6.01	2.48	1.46	0.87	0.29	0.20	0.14	0.06
2002	1.00	5.62	2.40	1.41	0.84	0.29	0.20	0.14	0.06
2003	1.00	5.48	2.36	1.40	0.84	0.30	0.21	0.15	0.07
2004	1.00	5.59	2.38	1.39	0.85	0.29	0.21	0.14	0.06
2005	1.00	5.63	2.44	1.45	0.88	0.29	0.20	0.14	0.06
2006	1.00	5.67	2.51	1.48	0.90	0.29	0.20	0.14	0.06
2007	1.00	5.65	2.57	1.51	0.92	0.29	0.20	0.14	0.06
2008	1.00	5.33	2.52	1.46	0.90	0.30	0.21	0.15	0.07
2009	1.00	4.99	2.41	1.43	0.86	0.31	0.22	0.16	0.08
2010	1.00	5.01	2.45	1.43	0.87	0.29	0.21	0.15	0.07
2011	1.00	5.09	2.50	1.45	0.87	0.29	0.20	0.14	0.06
2012	1.00	5.28	2.52	1.48	0.88	0.29	0.20	0.14	0.06

Notes:

1. Percentiles contain equal numbers of persons. Negative income famillies excluded from bottom quintile but included in totals. Taxes and spending are adjusted proportionally to close government deficits, thereby making spending equal to taxes.
2. Market income is a broad definition of income from market sources (excludes transfers) that aggregates to BEA income totals.
3. Method A assumes that most public goods benefit families in proportion to their incomes, while Method B allocates these public goods equally to households or in proportion to their family size (i.e., per person), depending on the spending category.

Source: Author calculations based on multiple data sources, primarily Census Bureau, IRS and Bureau of Economic Analysis.

Table A-6: Income Redistribution (Method A), 2000-2012[1,2,3]

Item	All Families	Bottom 20%	Second 20%	Middle 20%	Fourth 20%	Top 20%	Top 10%	Top 5%	Top 1%
Avg. Income Redist. (A)									
2000	0	11,519	6,695	4,625	-1,272	-36,883	-65,382	-112,635	-387,018
2001	0	11,781	7,261	5,048	-1,446	-38,792	-68,366	-116,417	-390,451
2002	0	11,688	7,254	4,569	-2,157	-37,090	-63,923	-107,237	-352,598
2003	0	11,803	7,299	4,489	-2,206	-37,385	-64,668	-108,619	-355,169
2004	0	12,371	7,547	4,319	-2,337	-38,431	-66,657	-112,503	-372,570
2005	0	13,192	8,361	5,248	-1,918	-42,663	-74,898	-127,476	-427,644
2006	0	13,660	9,157	5,858	-1,519	-45,442	-80,401	-137,593	-463,770
2007	0	13,963	10,068	6,319	-1,150	-48,056	-85,633	-148,003	-507,398
2008	0	14,209	10,353	6,196	-1,507	-48,984	-86,489	-147,573	-493,729
2009	0	14,684	10,310	6,277	-2,332	-49,177	-85,350	-143,708	-459,900
2010	0	15,379	10,960	6,235	-2,345	-51,572	-89,654	-151,300	-494,923
2011	0	15,572	11,164	6,491	-2,239	-52,783	-91,951	-156,199	-513,431
2012	0	16,007	11,028	6,695	-2,041	-53,672	-93,424	-158,568	-522,104
Avg. Income Post-Redist. (A)									
2000	62,226	17,003	30,152	49,007	75,355	202,767	299,444	450,436	1,227,821
2001	61,323	17,742	31,850	51,189	77,285	188,099	268,882	389,925	983,612
2002	61,294	17,786	32,244	51,240	77,496	187,206	266,147	383,194	945,471
2003	63,844	18,075	33,076	52,683	80,489	198,412	283,356	411,454	1,037,835
2004	68,830	18,884	34,346	54,640	84,359	222,454	325,215	483,229	1,280,036
2005	74,076	20,191	36,090	57,438	88,114	244,403	363,314	546,243	1,495,463
2006	78,613	21,351	38,045	59,796	91,500	261,423	392,415	596,356	1,659,369
2007	81,813	22,943	40,378	61,878	93,975	269,930	405,834	619,542	1,732,482
2008	78,803	22,952	40,704	62,305	95,162	250,667	366,787	543,675	1,418,619
2009	73,131	23,100	39,452	60,066	91,241	221,533	314,146	451,862	1,099,318
2010	76,367	24,294	40,699	60,672	92,650	237,016	342,980	504,642	1,300,777
2011	78,381	24,848	41,706	62,292	95,679	242,846	349,235	509,633	1,289,931
2012	81,602	25,568	42,081	63,579	98,201	257,734	375,804	555,031	1,469,991
Share Income Post-Redist. (A)									
2000	100%	7.3%	10.9%	15.7%	19.7%	46.9%	34.3%	25.8%	14.4%
2001	100%	7.7%	11.6%	16.6%	20.5%	43.9%	30.9%	22.4%	11.5%
2002	100%	7.7%	11.7%	16.6%	20.7%	43.7%	30.6%	22.1%	11.0%
2003	100%	7.6%	11.5%	16.3%	20.6%	44.4%	31.3%	22.8%	11.8%
2004	100%	7.4%	11.1%	15.7%	20.0%	46.3%	33.5%	25.1%	13.7%
2005	100%	7.3%	10.9%	15.4%	19.4%	47.5%	35.0%	26.7%	15.1%
2006	100%	7.1%	10.8%	15.2%	19.1%	48.2%	35.8%	27.6%	15.9%
2007	100%	7.3%	11.0%	15.2%	18.9%	48.1%	35.9%	27.7%	16.0%
2008	100%	7.6%	11.5%	15.9%	19.9%	45.7%	33.0%	24.7%	13.3%
2009	100%	8.2%	12.0%	16.5%	20.8%	43.3%	30.2%	21.9%	11.0%
2010	100%	8.3%	11.8%	16.0%	20.1%	44.4%	31.7%	23.5%	12.5%
2011	100%	8.3%	11.8%	16.0%	20.1%	44.4%	31.6%	23.2%	12.2%
2012	100%	8.3%	11.4%	15.6%	19.7%	45.5%	32.9%	24.4%	13.4%

Notes:

1. Percentiles contain equal numbers of persons. Negative income famillies excluded from bottom quintile but included in totals. Taxes and spending are adjusted proportionally to close government deficits, thereby making spending equal to taxes.
2. Market income is a broad definition of income from market sources (excludes transfers) that aggregates to BEA income totals.
3. Method A assumes that most public goods benefit families in proportion to their incomes, while Method B allocates these public goods equally to households or in proportion to their family size (i.e., per person), depending on the spending category.

Source: Author calculations based on multiple data sources, primarily Census Bureau, IRS and Bureau of Economic Analysis.

Table A-7: Income Redistribution (Method B), 2000-2012[1,2,3]

Item	All Families	Bottom 20%	Second 20%	Middle 20%	Fourth 20%	Top 20%	Top 10%	Top 5%	Top 1%
Avg. Income Redist. (B)									
2000	0	18,691	11,675	6,734	-2,543	-59,645	-105,106	-179,445	-597,462
2001	0	19,113	12,076	6,793	-3,241	-60,610	-105,621	-177,608	-574,666
2002	0	19,108	12,112	6,258	-4,169	-58,820	-100,663	-166,964	-528,365
2003	0	19,609	12,510	6,384	-4,287	-60,709	-104,229	-173,355	-547,603
2004	0	20,908	13,232	6,522	-4,238	-64,472	-111,545	-186,947	-599,645
2005	0	22,648	14,568	7,923	-3,551	-71,979	-126,208	-213,232	-695,276
2006	0	23,853	15,773	8,828	-2,981	-76,900	-135,879	-230,978	-757,955
2007	0	24,570	16,960	9,524	-2,388	-80,995	-144,000	-246,836	-821,156
2008	0	24,761	17,025	8,974	-3,478	-80,641	-141,516	-238,883	-771,177
2009	0	24,637	16,609	8,646	-4,877	-78,011	-134,293	-223,369	-690,796
2010	0	25,833	17,692	8,964	-4,580	-82,860	-143,564	-240,267	-762,930
2011	0	26,387	18,095	9,332	-4,636	-85,087	-147,258	-246,935	-783,771
2012	0	27,071	18,139	9,715	-4,204	-87,076	-151,023	-253,510	-812,395
Avg. Income Post-Redist. (B)									
2000	62,226	24,175	35,132	51,116	74,085	180,005	259,719	383,626	1,017,376
2001	61,323	25,074	36,665	52,934	75,489	166,281	231,627	328,735	799,397
2002	61,294	25,206	37,102	52,928	75,484	165,476	229,406	323,467	769,704
2003	63,844	25,881	38,287	54,578	78,408	175,088	243,794	346,718	845,401
2004	68,830	27,421	40,031	56,844	82,459	196,414	280,328	408,785	1,052,961
2005	74,076	29,648	42,297	60,113	86,481	215,087	312,005	460,487	1,227,831
2006	78,613	31,543	44,662	62,766	90,038	229,964	336,937	502,970	1,365,184
2007	81,813	33,551	47,270	65,082	92,738	236,991	347,468	520,709	1,418,725
2008	78,803	33,503	47,376	65,083	93,192	219,010	311,760	452,365	1,141,171
2009	73,131	33,054	45,750	62,435	88,696	192,699	265,203	372,201	868,421
2010	76,367	34,748	47,431	63,401	90,416	205,727	289,071	415,676	1,032,770
2011	78,381	35,663	48,637	65,133	93,282	210,542	293,928	418,897	1,019,591
2012	81,602	36,632	49,192	66,599	96,038	224,329	318,205	460,090	1,179,700
Share Income Post-Redist. (B)									
2000	100%	10.4%	12.6%	16.3%	19.4%	41.6%	29.7%	22.0%	12.0%
2001	100%	10.9%	13.4%	17.2%	20.0%	38.8%	26.6%	18.9%	9.4%
2002	100%	10.9%	13.5%	17.2%	20.1%	38.6%	26.4%	18.6%	9.0%
2003	100%	10.9%	13.3%	16.9%	20.1%	39.2%	26.9%	19.2%	9.6%
2004	100%	10.7%	12.9%	16.4%	19.5%	40.9%	28.9%	21.3%	11.3%
2005	100%	10.7%	12.8%	16.1%	19.0%	41.8%	30.0%	22.5%	12.4%
2006	100%	10.5%	12.6%	15.9%	18.8%	42.4%	30.8%	23.3%	13.0%
2007	100%	10.7%	12.9%	16.0%	18.6%	42.2%	30.7%	23.3%	13.1%
2008	100%	11.1%	13.4%	16.6%	19.4%	39.9%	28.0%	20.5%	10.7%
2009	100%	11.8%	13.9%	17.2%	20.2%	37.7%	25.5%	18.0%	8.7%
2010	100%	11.9%	13.8%	16.7%	19.6%	38.6%	26.7%	19.4%	10.0%
2011	100%	12.0%	13.7%	16.7%	19.6%	38.5%	26.6%	19.1%	9.6%
2012	100%	11.8%	13.4%	16.4%	19.2%	39.6%	27.8%	20.3%	10.8%

Notes:

1. Percentiles contain equal numbers of persons. Negative income famillies excluded from bottom quintile but included in totals. Taxes and spending are adjusted proportionally to close government deficits, thereby making spending equal to taxes.
2. Market income is a broad definition of income from market sources (excludes transfers) that aggregates to BEA income totals.
3. Method A assumes that most public goods benefit families in proportion to their incomes, while Method B allocates these public goods equally to households or in proportion to their family size (i.e., per person), depending on the spending category.

Source: Author calculations based on multiple data sources, primarily Census Bureau, IRS and Bureau of Economic Analysis.

Table A-8: Percent Change in Income from Redistribution, 2000-2012 [1,2]

Item	All Families	Bottom 20%	Second 20%	Middle 20%	Fourth 20%	Top 20%	Top 10%	Top 5%	Top 1%
% Change in Income from Redistribution (A)									
2000	0%	210.1%	28.5%	10.4%	-1.7%	-15.4%	-17.9%	-20.0%	-24.0%
2001	0%	197.6%	29.5%	10.9%	-1.8%	-17.1%	-20.3%	-23.0%	-28.4%
2002	0%	191.7%	29.0%	9.8%	-2.7%	-16.5%	-19.4%	-21.9%	-27.2%
2003	0%	188.2%	28.3%	9.3%	-2.7%	-15.9%	-18.6%	-20.9%	-25.5%
2004	0%	189.9%	28.2%	8.6%	-2.7%	-14.7%	-17.0%	-18.9%	-22.5%
2005	0%	188.5%	30.2%	10.1%	-2.1%	-14.9%	-17.1%	-18.9%	-22.2%
2006	0%	177.6%	31.7%	10.9%	-1.6%	-14.8%	-17.0%	-18.7%	-21.8%
2007	0%	155.5%	33.2%	11.4%	-1.2%	-15.1%	-17.4%	-19.3%	-22.7%
2008	0%	162.5%	34.1%	11.0%	-1.6%	-16.3%	-19.1%	-21.3%	-25.8%
2009	0%	174.5%	35.4%	11.7%	-2.5%	-18.2%	-21.4%	-24.1%	-29.5%
2010	0%	172.5%	36.9%	11.5%	-2.5%	-17.9%	-20.7%	-23.1%	-27.6%
2011	0%	167.9%	36.6%	11.6%	-2.3%	-17.9%	-20.8%	-23.5%	-28.5%
2012	0%	167.4%	35.5%	11.8%	-2.0%	-17.2%	-19.9%	-22.2%	-26.2%
% Change in Income from Redistribution (B)									
2000	0.0%	340.8%	49.8%	15.2%	-3.3%	-24.9%	-28.8%	-31.9%	-37.0%
2001	0.0%	320.6%	49.1%	14.7%	-4.1%	-26.7%	-31.3%	-35.1%	-41.8%
2002	0.0%	313.4%	48.5%	13.4%	-5.2%	-26.2%	-30.5%	-34.0%	-40.7%
2003	0.0%	312.6%	48.5%	13.2%	-5.2%	-25.7%	-29.9%	-33.3%	-39.3%
2004	0.0%	321.0%	49.4%	13.0%	-4.9%	-24.7%	-28.5%	-31.4%	-36.3%
2005	0.0%	323.6%	52.5%	15.2%	-3.9%	-25.1%	-28.8%	-31.6%	-36.2%
2006	0.0%	310.2%	54.6%	16.4%	-3.2%	-25.1%	-28.7%	-31.5%	-35.7%
2007	0.0%	273.6%	56.0%	17.1%	-2.5%	-25.5%	-29.3%	-32.2%	-36.7%
2008	0.0%	283.2%	56.1%	16.0%	-3.6%	-26.9%	-31.2%	-34.6%	-40.3%
2009	0.0%	292.7%	57.0%	16.1%	-5.2%	-28.8%	-33.6%	-37.5%	-44.3%
2010	0.0%	289.8%	59.5%	16.5%	-4.8%	-28.7%	-33.2%	-36.6%	-42.5%
2011	0.0%	284.5%	59.2%	16.7%	-4.7%	-28.8%	-33.4%	-37.1%	-43.5%
2012	0.0%	283.1%	58.4%	17.1%	-4.2%	-28.0%	-32.2%	-35.5%	-40.8%

Notes:

1. Percentiles contain equal numbers of persons. Negative income famillies excluded from bottom quintile but included in totals. Taxes and spending are adjusted proportionally to close government deficits, thereby making spending equal to taxes.
2. Market income is a broad definition of income from market sources (excludes transfers) that aggregates to BEA income totals.
3. Method A assumes that most public goods benefit families in proportion to their incomes, while Method B allocates these public goods equally to households or in proportion to their family size (i.e., per person), depending on the spending category.

Source: Author calculations based on multiple data sources, primarily Census Bureau, IRS and Bureau of Economic Analysis.

Table A-9: Distributional Analysis of Taxes Paid Assuming Deficit is Redistribution from Future, 2000-2012[1]

Item	All Families	Bottom 20%	Second 20%	Middle 20%	Fourth 20%	Top 20%	Top 10%	Top 5%	Top 1%
Avg. Taxes (Total)[2]									
2000	22,309	3,671	8,053	14,642	24,991	87,152	136,338	216,445	659,509
2001	22,137	3,796	8,166	14,811	25,313	85,271	132,210	206,939	613,346
2002	21,049	3,954	8,234	14,567	24,684	78,299	119,377	184,139	532,892
2003	21,510	4,145	8,577	14,990	25,217	79,678	121,619	187,943	542,363
2004	22,803	4,352	9,071	15,842	26,304	85,064	130,880	203,820	597,511
2005	25,398	4,761	9,717	16,875	28,425	97,033	151,125	237,278	707,965
2006	27,327	5,048	10,235	17,789	29,858	105,186	165,038	260,710	782,642
2007	28,372	5,155	10,455	18,162	30,529	109,861	173,104	275,532	837,943
2008	27,165	5,301	10,223	17,823	30,127	103,760	161,505	253,318	748,364
2009	24,817	5,313	9,905	16,810	28,255	91,749	140,464	217,117	616,176
2010	25,864	5,581	10,288	17,261	29,007	96,610	149,002	231,989	676,230
2011	26,583	5,652	10,359	17,485	29,760	100,266	154,583	240,838	701,809
2012	27,456	5,640	10,434	17,740	30,473	104,716	162,076	252,834	744,519
Avg. Federal Taxes									
2000	15,026	1,405	4,555	9,351	17,004	62,572	98,397	156,448	476,786
2001	14,689	1,428	4,481	9,259	16,958	60,713	94,598	148,071	436,500
2002	13,474	1,459	4,391	8,845	16,126	53,811	82,155	126,218	360,603
2003	13,565	1,543	4,580	9,046	16,251	53,749	82,181	126,409	358,998
2004	14,314	1,638	4,845	9,487	16,860	57,040	87,853	136,265	393,431
2005	16,189	1,846	5,303	10,248	18,280	65,991	103,298	162,127	479,918
2006	17,624	2,016	5,616	10,836	19,345	72,435	114,323	180,728	540,181
2007	18,326	2,192	5,833	11,130	19,764	75,223	119,071	189,240	569,071
2008	17,103	2,157	5,560	10,700	19,256	69,282	107,908	168,334	486,058
2009	15,167	2,212	5,197	9,755	17,575	59,687	91,278	139,903	383,891
2010	16,063	2,391	5,512	10,176	18,272	63,841	98,524	152,468	431,888
2011	16,568	2,410	5,505	10,225	18,643	66,881	103,625	161,001	459,132
2012	17,385	2,422	5,596	10,490	19,324	71,011	110,565	172,126	496,640
Avg. S&L Taxes									
2000	7,283	2,266	3,498	5,292	7,988	24,579	37,940	59,996	182,723
2001	7,448	2,368	3,685	5,552	8,354	24,558	37,612	58,869	176,847
2002	7,575	2,495	3,842	5,722	8,558	24,488	37,222	57,921	172,289
2003	7,944	2,602	3,997	5,945	8,966	25,929	39,438	61,534	183,365
2004	8,489	2,714	4,226	6,355	9,444	28,025	43,027	67,556	204,079
2005	9,209	2,914	4,414	6,627	10,145	31,042	47,826	75,152	228,047
2006	9,703	3,033	4,619	6,954	10,512	32,751	50,716	79,982	242,461
2007	10,046	2,964	4,623	7,032	10,764	34,638	54,033	86,292	268,872
2008	10,062	3,145	4,664	7,123	10,870	34,478	53,598	84,985	262,306
2009	9,650	3,101	4,708	7,055	10,679	32,062	49,186	77,214	232,285
2010	9,801	3,190	4,776	7,085	10,734	32,769	50,477	79,522	244,342
2011	10,016	3,242	4,854	7,260	11,117	33,385	50,957	79,837	242,678
2012	10,071	3,218	4,839	7,250	11,149	33,704	51,510	80,707	247,879

Notes:

1. Percentiles contain equal numbers of persons. Negative income famillies excluded from bottom quintile but included in totals.
2. Taxes total above includes some non-tax revenue sources. Refundable portion of tax credits are included in spending totals. Unlike most tables in this study, taxes have not been adjusted upwards to close deficits in this table.

Source: Author calculations based on multiple data sources, primarily Census Bureau, IRS and Bureau of Economic Analysis.

Table A-10: Distributional Analysis of Government Spending Assuming Deficit is Redistribution from Future (Method A), 2000-2012[1,2]

Item	All Families	Bottom 20%	Second 20%	Middle 20%	Fourth 20%	Top 20%	Top 10%	Top 5%	Top 1%
Avg. Total Spending (A)									
2000	20,714	14,496	13,945	18,055	21,998	45,352	63,511	92,280	238,929
2001	22,085	15,552	15,414	19,824	23,822	46,281	63,522	90,006	221,420
2002	23,478	16,740	16,806	21,054	25,238	48,299	65,897	92,556	223,185
2003	24,851	17,449	17,677	22,105	26,732	52,139	71,511	101,231	247,074
2004	25,939	18,126	18,286	22,578	27,387	56,056	78,327	112,765	284,653
2005	27,771	18,984	19,304	23,904	29,021	61,732	87,434	127,042	329,455
2006	28,789	19,330	20,127	24,725	29,846	64,381	91,782	134,205	350,753
2007	30,482	19,986	21,624	26,040	31,565	68,414	97,618	143,296	376,109
2008	32,924	21,960	23,655	28,346	34,804	72,417	101,611	146,308	367,655
2009	35,567	24,878	26,143	31,365	37,636	74,249	102,011	143,654	342,638
2010	36,465	25,852	27,165	31,499	38,007	76,513	106,408	151,904	376,361
2011	36,528	25,787	26,991	31,386	38,121	77,384	107,401	152,404	374,433
2012	36,192	25,640	26,143	30,873	37,697	77,585	108,598	154,868	391,577
Avg. Federal Spending (A)									
2000	13,664	10,680	9,292	12,163	13,787	28,187	39,912	58,715	152,661
2001	14,457	11,386	10,287	13,275	14,770	28,284	39,277	56,448	140,012
2002	15,431	12,408	11,337	14,062	15,655	29,447	40,627	57,785	140,595
2003	16,532	13,065	12,027	14,857	16,816	32,448	45,110	64,733	159,630
2004	17,266	13,520	12,400	15,101	17,217	35,306	50,075	73,072	185,912
2005	18,606	14,050	13,160	16,175	18,461	39,460	56,718	83,450	217,421
2006	19,383	14,253	13,783	16,893	19,180	41,475	59,859	88,392	231,432
2007	20,430	14,365	14,801	17,788	20,316	44,165	63,826	94,490	248,268
2008	22,300	16,128	16,399	19,449	22,591	47,020	66,757	97,041	245,517
2009	25,076	19,219	18,905	22,392	25,385	49,561	68,870	97,919	235,576
2010	25,929	20,185	19,940	22,609	25,784	51,306	72,080	103,693	258,274
2011	25,732	19,998	19,587	22,294	25,595	51,477	72,170	102,998	254,250
2012	25,202	19,680	18,616	21,701	25,043	51,164	72,400	103,741	263,413
Avg. S&L Spending (A)									
2000	7,050	3,815	4,653	5,892	8,210	17,165	23,599	33,565	86,268
2001	7,629	4,166	5,127	6,549	9,052	17,997	24,246	33,558	81,408
2002	8,047	4,332	5,468	6,991	9,584	18,852	25,270	34,771	82,590
2003	8,320	4,384	5,650	7,248	9,917	19,691	26,401	36,498	87,444
2004	8,673	4,606	5,885	7,478	10,170	20,750	28,252	39,693	98,742
2005	9,166	4,934	6,144	7,730	10,560	22,271	30,716	43,591	112,035
2006	9,406	5,077	6,344	7,832	10,665	22,906	31,923	45,813	119,321
2007	10,052	5,621	6,823	8,252	11,249	24,249	33,792	48,806	127,841
2008	10,624	5,832	7,256	8,896	12,213	25,397	34,854	49,267	122,137
2009	10,491	5,660	7,238	8,973	12,250	24,688	33,141	45,736	107,061
2010	10,537	5,667	7,226	8,890	12,223	25,208	34,328	48,211	118,087
2011	10,796	5,789	7,403	9,091	12,526	25,908	35,232	49,406	120,183
2012	10,990	5,960	7,527	9,172	12,654	26,420	36,197	51,127	128,164

Notes:

1. Percentiles contain equal numbers of persons. Negative income famillies excluded from bottom quintile but included in totals.
2. Method A assumes that most public goods benefit families in proportion to their incomes, while Method B allocates these public goods equally to households or in proportion to their family size (i.e., per person), depending on the spending category. Unlike most tables in this study, spending is not adjusted to close deficits in this table.

Source: Author calculations based on multiple data sources, primarily Census Bureau, IRS and Bureau of Economic Analysis.

Table A-11: Distributional Analysis of Government Spending Assuming Deficit is Redistribution from Future (Method B), 2000-2012 [1,2]

Item	All Families	Bottom 20%	Second 20%	Middle 20%	Fourth 20%	Top 20%	Top 10%	Top 5%	Top 1%
Avg. Total Spending (B)									
2000	20,714	21,401	18,742	20,087	20,777	23,427	25,243	27,911	36,137
2001	22,085	22,875	20,224	21,567	22,030	24,486	26,303	28,869	37,340
2002	23,478	24,566	21,926	22,832	23,113	25,392	27,174	29,615	38,005
2003	24,851	25,825	23,261	24,133	24,494	27,141	29,127	31,894	41,058
2004	25,939	27,224	24,333	24,919	25,354	28,338	30,567	33,581	43,236
2005	27,771	28,872	25,784	26,695	27,306	31,111	33,859	37,523	50,181
2006	28,789	29,800	26,911	27,770	28,336	32,103	34,877	38,441	49,180
2007	30,482	30,984	28,759	29,358	30,276	34,293	37,171	40,962	51,317
2008	32,924	33,539	30,954	31,382	32,630	37,746	41,373	46,396	64,250
2009	35,567	36,637	33,527	34,125	34,598	40,372	44,582	50,286	72,427
2010	36,465	38,116	35,008	34,660	35,353	39,993	43,559	48,287	64,624
2011	36,528	38,322	34,976	34,648	35,321	40,090	43,609	47,821	63,177
2012	36,192	38,235	34,198	34,289	35,219	39,669	43,263	47,225	62,715
Avg. Federal Spending (B)									
2000	13,664	15,258	12,402	13,472	12,898	13,913	15,186	17,352	23,531
2001	14,457	16,213	13,388	14,388	13,517	14,170	15,354	17,384	23,598
2002	15,431	17,578	14,630	15,180	14,172	14,636	15,789	17,668	23,774
2003	16,532	18,733	15,694	16,151	15,217	15,920	17,303	19,514	26,584
2004	17,266	19,735	16,397	16,606	15,735	16,830	18,469	20,975	28,548
2005	18,606	20,812	17,443	17,994	17,183	19,006	21,171	24,401	34,620
2006	19,383	21,487	18,281	18,894	18,014	19,758	21,843	24,806	32,864
2007	20,430	21,927	19,526	19,975	19,304	21,269	23,539	26,676	34,585
2008	22,300	24,132	21,221	21,425	20,968	23,736	26,603	30,882	46,451
2009	25,076	27,691	23,920	24,170	23,028	26,162	29,605	34,645	54,732
2010	25,929	29,083	25,326	24,684	23,678	25,831	28,655	32,665	46,817
2011	25,732	28,923	24,980	24,436	23,468	25,815	28,627	32,069	45,233
2012	25,202	28,553	23,986	23,937	23,173	25,330	28,216	31,339	44,273
Avg. S&L Spending (B)									
2000	7,050	6,143	6,340	6,615	7,879	9,514	10,057	10,560	12,606
2001	7,629	6,662	6,836	7,179	8,513	10,316	10,948	11,484	13,742
2002	8,047	6,988	7,296	7,652	8,942	10,756	11,385	11,947	14,231
2003	8,320	7,091	7,566	7,981	9,277	11,221	11,824	12,380	14,474
2004	8,673	7,489	7,937	8,313	9,618	11,508	12,098	12,606	14,688
2005	9,166	8,060	8,341	8,701	10,123	12,105	12,687	13,123	15,561
2006	9,406	8,312	8,630	8,875	10,322	12,345	13,034	13,635	16,316
2007	10,052	9,057	9,233	9,382	10,972	13,024	13,632	14,285	16,732
2008	10,624	9,407	9,733	9,956	11,662	14,010	14,771	15,513	17,799
2009	10,491	8,946	9,607	9,955	11,570	14,210	14,976	15,641	17,696
2010	10,537	9,033	9,682	9,976	11,676	14,162	14,905	15,622	17,808
2011	10,796	9,399	9,996	10,213	11,853	14,275	14,982	15,752	17,945
2012	10,990	9,682	10,213	10,352	12,046	14,339	15,047	15,886	18,442

Notes:

1. Percentiles contain equal numbers of persons. Negative income famillies excluded from bottom quintile but included in totals.
2. Method A assumes that most public goods benefit families in proportion to their incomes, while Method B allocates these public goods equally to households or in proportion to their family size (i.e., per person), depending on the spending category. Unlike most tables in this study, spending is not adjusted to close deficits in this table.

Source: Author calculations based on multiple data sources, primarily Census Bureau, IRS and Bureau of Economic Analysis.

Table A-12: Ratio of Spending to Taxes Assuming Deficit is Purely Redistribution from Future, 2000-2012[1,2]

Item	All Families	Bottom 20%	Second 20%	Middle 20%	Fourth 20%	Top 20%	Top 10%	Top 5%	Top 1%
Ratio Spending to Taxes (A)[3]									
2000	0.93	3.95	1.73	1.23	0.88	0.52	0.47	0.43	0.36
2001	1.00	4.10	1.89	1.34	0.94	0.54	0.48	0.43	0.36
2002	1.12	4.23	2.04	1.45	1.02	0.62	0.55	0.50	0.42
2003	1.16	4.21	2.06	1.47	1.06	0.65	0.59	0.54	0.46
2004	1.14	4.16	2.02	1.43	1.04	0.66	0.60	0.55	0.48
2005	1.09	3.99	1.99	1.42	1.02	0.64	0.58	0.54	0.47
2006	1.05	3.83	1.97	1.39	1.00	0.61	0.56	0.51	0.45
2007	1.07	3.88	2.07	1.43	1.03	0.62	0.56	0.52	0.45
2008	1.21	4.14	2.31	1.59	1.16	0.70	0.63	0.58	0.49
2009	1.43	4.68	2.64	1.87	1.33	0.81	0.73	0.66	0.56
2010	1.41	4.63	2.64	1.82	1.31	0.79	0.71	0.65	0.56
2011	1.37	4.56	2.61	1.80	1.28	0.77	0.69	0.63	0.53
2012	1.32	4.55	2.51	1.74	1.24	0.74	0.67	0.61	0.53
Ratio Spending to Taxes (B)[3]									
2000	0.93	5.83	2.33	1.37	0.83	0.27	0.19	0.13	0.05
2001	1.00	6.03	2.48	1.46	0.87	0.29	0.20	0.14	0.06
2002	1.12	6.21	2.66	1.57	0.94	0.32	0.23	0.16	0.07
2003	1.16	6.23	2.71	1.61	0.97	0.34	0.24	0.17	0.08
2004	1.14	6.26	2.68	1.57	0.96	0.33	0.23	0.16	0.07
2005	1.09	6.06	2.65	1.58	0.96	0.32	0.22	0.16	0.07
2006	1.05	5.90	2.63	1.56	0.95	0.31	0.21	0.15	0.06
2007	1.07	6.01	2.75	1.62	0.99	0.31	0.21	0.15	0.06
2008	1.21	6.33	3.03	1.76	1.08	0.36	0.26	0.18	0.09
2009	1.43	6.90	3.39	2.03	1.22	0.44	0.32	0.23	0.12
2010	1.41	6.83	3.40	2.01	1.22	0.41	0.29	0.21	0.10
2011	1.37	6.78	3.38	1.98	1.19	0.40	0.28	0.20	0.09
2012	1.32	6.78	3.28	1.93	1.16	0.38	0.27	0.19	0.08

Notes:

1. Percentiles contain equal numbers of persons. Negative income famillies excluded from bottom quintile but included in totals. Unlike most tables in this study, taxes and spending are not adjusted to close deficits in this table.
2. Market income is a broad definition of income from market sources (excludes transfers) that aggregates to BEA income totals.
3. Method A assumes that most public goods benefit families in proportion to their incomes, while Method B allocates these public goods equally to households or in proportion to their family size (i.e., per person), depending on the spending category.

Source: Author calculations based on multiple data sources, primarily Census Bureau, IRS and Bureau of Economic Analysis.

Table A-13: Income Shares Post-Redistribution, 2000-2012[1,2]

Item	All Families	Bottom 20%	Second 20%	Middle 20%	Fourth 20%	Top 20%	Top 10%	Top 5%	Top 1%
Share Income Post-Redist. (A)									
2000	100%	7.2%	10.8%	15.7%	19.7%	46.9%	34.3%	25.8%	14.4%
2001	100%	7.7%	11.6%	16.6%	20.5%	43.9%	30.9%	22.4%	11.5%
2002	100%	7.9%	11.8%	16.6%	20.6%	43.6%	30.6%	22.1%	11.1%
2003	100%	7.8%	11.5%	16.3%	20.5%	44.3%	31.3%	22.8%	11.8%
2004	100%	7.6%	11.1%	15.7%	19.9%	46.1%	33.5%	25.1%	13.7%
2005	100%	7.4%	10.9%	15.4%	19.3%	47.4%	35.0%	26.7%	15.1%
2006	100%	7.2%	10.8%	15.2%	19.1%	48.2%	35.8%	27.6%	15.9%
2007	100%	7.4%	11.0%	15.2%	18.8%	48.0%	35.8%	27.7%	16.0%
2008	100%	7.8%	11.5%	15.9%	19.7%	45.6%	33.0%	24.7%	13.4%
2009	100%	8.7%	12.0%	16.4%	20.4%	43.2%	30.3%	22.0%	11.2%
2010	100%	8.8%	11.9%	15.9%	19.8%	44.2%	31.7%	23.6%	12.7%
2011	100%	8.8%	11.8%	15.9%	19.8%	44.2%	31.6%	23.3%	12.4%
2012	100%	8.6%	11.5%	15.5%	19.4%	45.4%	32.8%	24.5%	13.5%
Share Income Post-Redist. (B)									
2000	100%	10.2%	12.6%	16.4%	19.4%	41.7%	29.8%	22.1%	12.0%
2001	100%	10.9%	13.4%	17.2%	20.1%	38.8%	26.6%	18.9%	9.4%
2002	100%	11.2%	13.6%	17.1%	20.0%	38.5%	26.3%	18.6%	9.0%
2003	100%	11.2%	13.4%	16.9%	20.0%	39.0%	26.8%	19.2%	9.6%
2004	100%	11.0%	13.0%	16.4%	19.4%	40.6%	28.7%	21.2%	11.2%
2005	100%	10.8%	12.8%	16.1%	19.0%	41.6%	30.0%	22.5%	12.4%
2006	100%	10.6%	12.7%	15.9%	18.8%	42.3%	30.7%	23.3%	13.0%
2007	100%	10.8%	12.9%	16.0%	18.6%	42.1%	30.6%	23.2%	13.1%
2008	100%	11.4%	13.5%	16.6%	19.3%	39.7%	27.9%	20.5%	10.8%
2009	100%	12.3%	13.9%	17.0%	19.8%	37.4%	25.5%	18.1%	8.9%
2010	100%	12.5%	13.9%	16.7%	19.3%	38.2%	26.6%	19.3%	10.0%
2011	100%	12.5%	13.8%	16.6%	19.3%	38.2%	26.5%	19.1%	9.8%
2012	100%	12.3%	13.5%	16.3%	19.0%	39.3%	27.7%	20.2%	10.8%

Notes:

1. Percentiles contain equal numbers of persons. Negative income famillies excluded from bottom quintile but included in totals. Unlike most tables in this study, taxes and spending are not adjusted to close deficits in this table.
2. Market income is a broad definition of income from market sources (excludes transfers) that aggregates to BEA income totals.
3. Method A assumes that most public goods benefit families in proportion to their incomes, while Method B allocates these public goods equally to households or in proportion to their family size (i.e., per person), depending on the spending category.

Source: Author calculations based on multiple data sources, primarily Census Bureau, IRS and Bureau of Economic Analysis.

Table A-14: Percent Change in Income from Redistribution Assuming Deficit is Purely Redistribution from Future, 2000-2012[1,2]

Item	All Families	Bottom 20%	Second 20%	Middle 20%	Fourth 20%	Top 20%	Top 10%	Top 5%	Top 1%
% Change in Income from Redistribution (A)									
2000	-2.6%	197.4%	25.1%	7.7%	-3.9%	-17.4%	-20.0%	-22.1%	-26.0%
2001	-0.1%	197.2%	29.5%	10.9%	-1.9%	-17.2%	-20.4%	-23.1%	-28.5%
2002	4.0%	209.7%	34.3%	13.9%	0.7%	-13.4%	-16.2%	-18.7%	-23.9%
2003	5.2%	212.1%	35.3%	14.8%	1.8%	-11.7%	-14.4%	-16.7%	-21.2%
2004	4.6%	211.5%	34.4%	13.4%	1.2%	-11.1%	-13.4%	-15.3%	-18.9%
2005	3.2%	203.2%	34.6%	13.5%	0.7%	-12.3%	-14.5%	-16.4%	-19.7%
2006	1.9%	185.7%	34.2%	12.9%	0.0%	-13.3%	-15.5%	-17.2%	-20.3%
2007	2.6%	165.1%	36.8%	14.2%	1.1%	-13.0%	-15.4%	-17.2%	-20.6%
2008	7.3%	190.5%	44.3%	18.8%	4.8%	-10.5%	-13.2%	-15.5%	-19.9%
2009	14.7%	232.5%	55.7%	27.1%	10.0%	-6.5%	-9.6%	-12.3%	-17.5%
2010	13.9%	227.4%	56.8%	26.2%	9.5%	-7.0%	-9.8%	-12.2%	-16.7%
2011	12.7%	217.1%	54.5%	24.9%	8.5%	-7.7%	-10.7%	-13.3%	-18.2%
2012	10.7%	209.2%	50.6%	23.1%	7.2%	-8.7%	-11.4%	-13.7%	-17.7%
% Change in Income from Redistribution (B)									
2000	-2.6%	323.3%	45.6%	12.3%	-5.5%	-26.6%	-30.5%	-33.5%	-38.6%
2001	-0.1%	320.1%	49.0%	14.6%	-4.2%	-26.8%	-31.4%	-35.2%	-41.9%
2002	4.0%	338.0%	54.8%	17.7%	-2.0%	-23.6%	-27.9%	-31.5%	-38.1%
2003	5.2%	345.7%	57.0%	19.0%	-0.9%	-22.3%	-26.6%	-30.0%	-36.0%
2004	4.6%	351.2%	57.0%	18.0%	-1.1%	-21.7%	-25.6%	-28.6%	-33.5%
2005	3.2%	344.5%	57.9%	18.8%	-1.2%	-23.0%	-26.8%	-29.6%	-34.2%
2006	1.9%	321.9%	57.7%	18.5%	-1.6%	-23.8%	-27.5%	-30.3%	-34.5%
2007	2.6%	287.6%	60.4%	20.2%	-0.3%	-23.8%	-27.7%	-30.6%	-35.1%
2008	7.3%	323.0%	68.3%	24.2%	2.6%	-22.0%	-26.5%	-29.9%	-35.8%
2009	14.7%	372.2%	81.1%	32.2%	6.8%	-19.0%	-24.0%	-28.0%	-34.9%
2010	13.9%	365.0%	83.1%	32.0%	6.7%	-19.6%	-24.4%	-28.0%	-34.1%
2011	12.7%	352.2%	80.6%	30.8%	5.7%	-20.4%	-25.2%	-29.0%	-35.4%
2012	10.7%	340.9%	76.5%	29.1%	4.7%	-20.9%	-25.3%	-28.8%	-34.2%

Notes:

1. Percentiles contain equal numbers of persons. Negative income famillies excluded from bottom quintile but included in totals. Unlike most tables in this study, taxes and spending are not adjusted to close deficits in this table.
2. Market income is a broad definition of income from market sources (excludes transfers) that aggregates to BEA income totals.
3. Method A assumes that most public goods benefit families in proportion to their incomes, while Method B allocates these public goods equally to households or in proportion to their family size (i.e., per person), depending on the spending category.

Source: Author calculations based on multiple data sources, primarily Census Bureau, IRS and Bureau of Economic Analysis.

Table A-15: Average Tax Rates, 2000-2012[1]

Item	All Families	Bottom 20%	Second 20%	Middle 20%	Fourth 20%	Top 20%	Top 10%	Top 5%	Top 1%
Taxes (Total)[2]									
2000	30.8%	23.1%	25.4%	26.9%	29.0%	34.1%	35.2%	36.3%	38.6%
2001	30.7%	22.1%	24.0%	25.8%	28.5%	35.2%	36.9%	38.5%	42.1%
2002	28.8%	21.5%	23.3%	24.8%	27.3%	32.5%	33.9%	35.2%	38.5%
2003	28.2%	21.5%	23.5%	24.7%	26.8%	31.4%	32.6%	33.7%	36.3%
2004	27.9%	21.8%	24.1%	25.3%	26.8%	30.3%	31.2%	31.9%	33.7%
2005	29.1%	23.1%	25.0%	26.0%	28.0%	31.5%	32.3%	32.9%	34.5%
2006	29.5%	23.7%	25.1%	26.3%	28.3%	31.9%	32.6%	33.2%	34.4%
2007	29.3%	22.8%	24.2%	26.0%	28.1%	32.0%	32.7%	33.4%	34.8%
2008	28.7%	21.7%	22.8%	24.9%	27.1%	32.0%	33.1%	34.0%	36.3%
2009	27.0%	19.3%	21.4%	23.2%	25.4%	30.7%	32.0%	33.2%	35.9%
2010	26.9%	19.9%	21.8%	23.6%	25.6%	30.0%	31.0%	31.8%	33.6%
2011	27.2%	20.0%	21.7%	23.5%	25.7%	30.6%	31.7%	32.8%	35.2%
2012	27.2%	20.0%	22.1%	23.7%	25.9%	30.4%	31.3%	32.1%	33.7%
Federal Taxes									
2000	21.1%	8.3%	14.6%	17.5%	20.1%	24.9%	25.8%	26.6%	28.4%
2001	20.8%	7.7%	13.4%	16.5%	19.5%	25.5%	26.8%	28.0%	30.5%
2002	18.8%	7.2%	12.6%	15.4%	18.2%	22.8%	23.7%	24.6%	26.6%
2003	18.2%	7.3%	12.7%	15.3%	17.6%	21.6%	22.5%	23.2%	24.6%
2004	17.9%	7.5%	13.0%	15.5%	17.6%	20.8%	21.4%	21.8%	22.8%
2005	18.9%	8.2%	13.8%	16.1%	18.3%	21.9%	22.5%	23.0%	23.9%
2006	19.3%	8.5%	13.8%	16.2%	18.6%	22.3%	23.0%	23.4%	24.3%
2007	19.2%	8.7%	13.5%	16.1%	18.4%	22.3%	22.9%	23.4%	24.1%
2008	18.2%	7.5%	12.2%	15.0%	17.5%	21.7%	22.4%	23.0%	24.0%
2009	16.5%	6.4%	10.8%	13.3%	15.9%	20.1%	20.9%	21.6%	22.5%
2010	16.6%	6.9%	11.2%	13.8%	16.1%	19.9%	20.5%	20.9%	21.5%
2011	16.9%	7.0%	11.1%	13.6%	16.1%	20.5%	21.4%	22.0%	23.1%
2012	17.2%	7.2%	11.5%	13.9%	16.5%	20.8%	21.5%	22.0%	22.6%
S&L Taxes									
2000	9.7%	14.8%	10.8%	9.4%	8.9%	9.2%	9.4%	9.6%	10.2%
2001	9.9%	14.4%	10.7%	9.4%	9.0%	9.7%	10.1%	10.5%	11.7%
2002	10.0%	14.3%	10.7%	9.4%	9.1%	9.8%	10.1%	10.6%	11.9%
2003	10.0%	14.2%	10.8%	9.5%	9.2%	9.8%	10.1%	10.6%	11.7%
2004	10.0%	14.3%	11.0%	9.8%	9.3%	9.6%	9.8%	10.1%	11.0%
2005	10.2%	15.0%	11.2%	9.9%	9.6%	9.7%	9.8%	10.0%	10.5%
2006	10.2%	15.2%	11.3%	10.1%	9.7%	9.5%	9.6%	9.7%	10.2%
2007	10.2%	14.1%	10.7%	9.9%	9.7%	9.8%	9.9%	10.1%	10.7%
2008	10.4%	14.3%	10.6%	9.9%	9.6%	10.3%	10.6%	11.0%	12.3%
2009	10.5%	12.9%	10.6%	9.8%	9.6%	10.6%	11.0%	11.6%	13.4%
2010	10.3%	13.0%	10.6%	9.9%	9.5%	10.1%	10.4%	10.8%	12.2%
2011	10.3%	13.1%	10.6%	9.9%	9.6%	10.1%	10.3%	10.8%	12.1%
2012	10.0%	12.8%	10.6%	9.8%	9.4%	9.7%	9.8%	10.1%	11.1%

Notes:

1. Percentiles contain equal numbers of persons. Negative income famillies excluded from bottom quintile but included in totals.
2. Income measure in table above is comprehensive income, which includes market income plus fungible value of government transfers. It differs from the market income metric used in other tables and is designed to better reflect ability to pay taxes.
3. Taxes total excludes non-tax revenues sources and the deficit tax that is included in other tables. Excludes refundable credits.
4. Refundable tax credits not included in totals as they are classified as spending and are shown for illustrative purposes only.

Source: Author calculations based on multiple data sources, primarily Census Bureau, IRS and Bureau of Economic Analysis.

Table A-16a: Average Spending Rates (Method A), 2000-2012[1]

Item	All Families	Bottom 20%	Second 20%	Middle 20%	Fourth 20%	Top 20%	Top 10%	Top 5%	Top 1%
Spending (Total)[2]									
2000	30.8%	110.7%	48.5%	35.4%	26.9%	18.6%	17.2%	16.2%	14.7%
2001	30.7%	111.0%	50.6%	37.2%	28.3%	20.0%	18.6%	17.6%	16.0%
2002	28.8%	113.0%	53.4%	38.8%	29.5%	21.1%	19.7%	18.7%	17.1%
2003	28.2%	113.4%	54.4%	39.6%	30.1%	21.7%	20.2%	19.2%	17.6%
2004	27.9%	114.2%	54.2%	38.9%	29.5%	21.0%	19.7%	18.7%	17.1%
2005	29.1%	115.1%	55.2%	39.6%	30.1%	21.1%	19.7%	18.6%	17.0%
2006	29.5%	112.7%	54.8%	39.4%	29.8%	20.5%	19.1%	18.1%	16.4%
2007	29.3%	109.3%	55.8%	40.1%	30.6%	21.0%	19.5%	18.4%	16.7%
2008	28.7%	114.2%	59.7%	43.0%	33.2%	23.6%	22.0%	20.9%	19.1%
2009	27.0%	119.6%	66.0%	48.2%	36.6%	26.6%	25.0%	23.8%	21.8%
2010	26.9%	119.6%	67.1%	47.9%	36.3%	25.8%	24.1%	22.8%	20.8%
2011	27.2%	117.8%	65.7%	46.8%	35.5%	25.4%	23.8%	22.6%	20.6%
2012	27.2%	115.0%	63.1%	45.2%	34.2%	24.2%	22.7%	21.4%	19.5%
Federal Spending									
2000	21.1%	81.5%	32.3%	23.9%	16.8%	11.5%	10.8%	10.3%	9.4%
2001	20.8%	81.2%	33.7%	24.9%	17.5%	12.2%	11.5%	11.0%	10.1%
2002	18.8%	83.7%	36.0%	25.9%	18.3%	12.8%	12.1%	11.6%	10.8%
2003	18.2%	84.9%	37.0%	26.6%	18.9%	13.5%	12.8%	12.3%	11.4%
2004	17.9%	85.1%	36.8%	26.0%	18.5%	13.3%	12.6%	12.1%	11.2%
2005	18.9%	85.2%	37.6%	26.8%	19.1%	13.5%	12.7%	12.2%	11.2%
2006	19.3%	83.1%	37.5%	26.9%	19.1%	13.2%	12.5%	11.9%	10.8%
2007	19.2%	78.6%	38.2%	27.4%	19.7%	13.6%	12.8%	12.2%	11.0%
2008	18.2%	83.9%	41.4%	29.5%	21.5%	15.3%	14.5%	13.9%	12.8%
2009	16.5%	92.4%	47.8%	34.4%	24.7%	17.8%	16.9%	16.2%	15.0%
2010	16.6%	93.4%	49.3%	34.4%	24.7%	17.3%	16.3%	15.6%	14.3%
2011	16.9%	91.3%	47.7%	33.3%	23.8%	16.9%	16.0%	15.2%	14.0%
2012	17.2%	88.2%	44.9%	31.8%	22.7%	16.0%	15.1%	14.3%	13.1%
S&L Spending									
2000	9.7%	29.1%	16.2%	11.6%	10.0%	7.0%	6.4%	5.9%	5.3%
2001	9.9%	29.7%	16.8%	12.3%	10.7%	7.8%	7.1%	6.6%	5.9%
2002	10.0%	29.2%	17.4%	12.9%	11.2%	8.2%	7.5%	7.0%	6.3%
2003	10.0%	28.5%	17.4%	13.0%	11.2%	8.2%	7.5%	6.9%	6.2%
2004	10.0%	29.0%	17.4%	12.9%	11.0%	7.8%	7.1%	6.6%	5.9%
2005	10.2%	29.9%	17.6%	12.8%	10.9%	7.6%	6.9%	6.4%	5.8%
2006	10.2%	29.6%	17.3%	12.5%	10.6%	7.3%	6.6%	6.2%	5.6%
2007	10.2%	30.7%	17.6%	12.7%	10.9%	7.4%	6.8%	6.3%	5.7%
2008	10.4%	30.3%	18.3%	13.5%	11.6%	8.3%	7.6%	7.0%	6.4%
2009	10.5%	27.2%	18.3%	13.8%	11.9%	8.9%	8.1%	7.6%	6.8%
2010	10.3%	26.2%	17.8%	13.5%	11.7%	8.5%	7.8%	7.2%	6.5%
2011	10.3%	26.4%	18.0%	13.6%	11.7%	8.5%	7.8%	7.3%	6.6%
2012	10.0%	26.7%	18.2%	13.4%	11.5%	8.2%	7.6%	7.1%	6.4%

Notes:
1. Percentiles contain equal numbers of persons. Negative income famillies excluded from bottom quintile but included in totals.
2. Income measure in table above is comprehensive income, which includes market income plus fungible value of government transfers. It differs from the market income metric used in other tables and is designed to better reflect ability to pay taxes.
3. Taxes total excludes non-tax revenues sources and the deficit tax that is included in other tables. Excludes refundable credits.
4. Refundable tax credits not included in totals as they are classified as spending and are shown for illustrative purposes only.

Source: Author calculations based on multiple data sources, primarily Census Bureau, IRS and Bureau of Economic Analysis.

Table A-16b: Average Spending Rates (Method B), 2000-2012[1]

Item	All Families	Bottom 20%	Second 20%	Middle 20%	Fourth 20%	Top 20%	Top 10%	Top 5%	Top 1%
Spending (Total)[2]									
2000	30.8%	163.3%	65.2%	39.4%	25.4%	9.6%	6.8%	4.9%	2.2%
2001	30.7%	163.2%	66.3%	40.5%	26.1%	10.6%	7.7%	5.6%	2.7%
2002	28.8%	165.7%	69.7%	42.1%	27.0%	11.1%	8.1%	6.0%	2.9%
2003	28.2%	167.9%	71.5%	43.2%	27.6%	11.3%	8.2%	6.1%	2.9%
2004	27.9%	171.4%	72.1%	43.0%	27.3%	10.6%	7.7%	5.6%	2.6%
2005	29.1%	175.1%	73.7%	44.2%	28.3%	10.6%	7.6%	5.5%	2.6%
2006	29.5%	173.7%	73.3%	44.2%	28.3%	10.2%	7.3%	5.2%	2.3%
2007	29.3%	169.4%	74.1%	45.2%	29.4%	10.5%	7.4%	5.3%	2.3%
2008	28.7%	174.4%	78.1%	47.6%	31.1%	12.3%	9.0%	6.6%	3.3%
2009	27.0%	176.1%	84.7%	52.4%	33.6%	14.5%	10.9%	8.3%	4.6%
2010	26.9%	176.3%	86.5%	52.8%	33.8%	13.5%	9.9%	7.3%	3.6%
2011	27.2%	175.0%	85.1%	51.7%	32.9%	13.2%	9.7%	7.1%	3.5%
2012	27.2%	171.4%	82.5%	50.2%	32.0%	12.4%	9.0%	6.5%	3.1%
Federal Spending									
2000	21.1%	116.5%	43.1%	26.4%	15.7%	5.7%	4.1%	3.1%	1.5%
2001	20.8%	115.7%	43.9%	27.0%	16.0%	6.1%	4.5%	3.4%	1.7%
2002	18.8%	118.6%	46.5%	28.0%	16.6%	6.4%	4.7%	3.6%	1.8%
2003	18.2%	121.8%	48.3%	28.9%	17.1%	6.6%	4.9%	3.7%	1.9%
2004	17.9%	124.3%	48.6%	28.6%	17.0%	6.3%	4.6%	3.5%	1.7%
2005	18.9%	126.2%	49.8%	29.8%	17.8%	6.5%	4.8%	3.6%	1.8%
2006	19.3%	125.3%	49.8%	30.1%	18.0%	6.3%	4.5%	3.3%	1.5%
2007	19.2%	119.9%	50.3%	30.8%	18.7%	6.5%	4.7%	3.4%	1.5%
2008	18.2%	125.5%	53.6%	32.5%	20.0%	7.7%	5.8%	4.4%	2.4%
2009	16.5%	133.1%	60.4%	37.1%	22.4%	9.4%	7.3%	5.7%	3.5%
2010	16.6%	134.5%	62.6%	37.6%	22.6%	8.7%	6.5%	4.9%	2.6%
2011	16.9%	132.1%	60.8%	36.5%	21.8%	8.5%	6.4%	4.7%	2.5%
2012	17.2%	128.0%	57.8%	35.1%	21.1%	7.9%	5.9%	4.3%	2.2%
S&L Spending									
2000	9.7%	46.9%	22.1%	13.0%	9.6%	3.9%	2.7%	1.9%	0.8%
2001	9.9%	47.5%	22.4%	13.5%	10.1%	4.5%	3.2%	2.2%	1.0%
2002	10.0%	47.1%	23.2%	14.1%	10.5%	4.7%	3.4%	2.4%	1.1%
2003	10.0%	46.1%	23.3%	14.3%	10.4%	4.7%	3.3%	2.4%	1.0%
2004	10.0%	47.2%	23.5%	14.3%	10.4%	4.3%	3.0%	2.1%	0.9%
2005	10.2%	48.9%	23.8%	14.4%	10.5%	4.1%	2.9%	1.9%	0.8%
2006	10.2%	48.5%	23.5%	14.1%	10.3%	3.9%	2.7%	1.8%	0.8%
2007	10.2%	49.5%	23.8%	14.5%	10.7%	4.0%	2.7%	1.8%	0.7%
2008	10.4%	48.9%	24.6%	15.1%	11.1%	4.6%	3.2%	2.2%	0.9%
2009	10.5%	43.0%	24.3%	15.3%	11.3%	5.1%	3.7%	2.6%	1.1%
2010	10.3%	41.8%	23.9%	15.2%	11.2%	4.8%	3.4%	2.3%	1.0%
2011	10.3%	42.9%	24.3%	15.2%	11.0%	4.7%	3.3%	2.3%	1.0%
2012	10.0%	43.4%	24.6%	15.2%	10.9%	4.5%	3.1%	2.2%	0.9%

Notes:

1. Percentiles contain equal numbers of persons. Negative income famillies excluded from bottom quintile but included in totals.
2. Income measure in table above is comprehensive income, which includes market income plus fungible value of government transfers. It differs from the market income metric used in other tables and is designed to better reflect ability to pay taxes.
3. Taxes total excludes non-tax revenues sources and the deficit tax that is included in other tables. Excludes refundable credits.
4. Refundable tax credits not included in totals as they are classified as spending and are shown for illustrative purposes only.

Source: Author calculations based on multiple data sources, primarily Census Bureau, IRS and Bureau of Economic Analysis.

Appendix B

Table B-1: Distributional Analysis of Government Fiscal Policies with Deficit Financed Entirely by Higher Taxes, 2012[1]

Item	All Families	Bottom 20%	Second 20%	Middle 20%	Fourth 20%	Top 20%	Top 10%	Top 5%	Top 1%
Avg. Market Income[2]	81,602	9,561	31,053	56,884	100,242	311,405	469,228	713,599	1,992,095
(Share)	100%	3.1%	8.4%	14.0%	20.1%	55.0%	41.0%	31.4%	18.2%
Avg. Taxes[3]	36,192	7,023	13,392	23,118	40,178	139,718	216,486	337,586	990,428
Federal	25,202	3,511	8,112	15,207	28,012	102,939	160,276	249,515	719,931
State & Local	10,990	3,511	5,280	7,912	12,166	36,780	56,211	88,072	270,497
Avg. Spending (Method A)[4]	36,192	25,640	26,143	30,873	37,697	77,585	108,598	154,868	391,577
Federal	25,202	19,680	18,616	21,701	25,043	51,164	72,400	103,741	263,413
State & Local	10,990	5,960	7,527	9,172	12,654	26,420	36,197	51,127	128,164
Avg. Spending (Method B)[4]	36,192	25,640	26,143	30,873	37,697	77,585	108,598	154,868	391,577
Federal	25,202	19,680	18,616	21,701	25,043	51,164	72,400	103,741	263,413
State & Local	10,990	5,960	7,527	9,172	12,654	26,420	36,197	51,127	128,164
Avg. Redistribution (A)	0	18,617	12,751	7,755	-2,481	-62,134	-107,889	-182,719	-598,851
Federal	0	16,169	10,504	6,495	-2,969	-51,774	-87,875	-145,774	-456,517
State & Local	0	2,448	2,247	1,261	488	-10,360	-20,013	-36,945	-142,333
Avg. Redistribution (B)	0	18,617	12,751	7,755	-2,481	-62,134	-107,889	-182,719	-598,851
Federal	0	16,169	10,504	6,495	-2,969	-51,774	-87,875	-145,774	-456,517
State & Local	0	2,448	2,247	1,261	488	-10,360	-20,013	-36,945	-142,333
Ratio: spending to taxes (A)	1.00	3.65	1.95	1.34	0.94	0.56	0.50	0.46	0.40
Federal	1.00	5.60	2.29	1.43	0.89	0.50	0.45	0.42	0.37
State & Local	1.00	1.70	1.43	1.16	1.04	0.72	0.64	0.58	0.47
Ratio: spending to taxes (B)	1.00	3.65	1.95	1.34	0.94	0.56	0.50	0.46	0.40
Federal	1.00	5.60	2.29	1.43	0.89	0.50	0.45	0.42	0.37
State & Local	1.00	1.70	1.43	1.16	1.04	0.72	0.64	0.58	0.47
Income after Redistrib. (A)	81,602	28,178	43,804	64,639	97,761	249,272	361,340	530,880	1,393,244
(Share)	100%	9.1%	11.9%	15.9%	19.6%	44.0%	31.6%	23.4%	12.7%
Income after Redistrib. (B)	81,602	28,178	43,804	64,639	97,761	249,272	361,340	530,880	1,393,244
(Share)	100%	9.1%	11.9%	15.9%	19.6%	44.0%	31.6%	23.4%	12.7%

Notes:

1. Percentiles contain equal numbers of persons. Negative income famillies excluded from bottom quintile but included in totals. Taxes are adjusted proportionally to close government deficits, thereby making spending equal to taxes.
2. Market income is a broad definition of income from market sources (excludes transfers) that aggregates to BEA income totals.
3. Taxes total above includes some non-tax revenue sources. Refundable portion of tax credits are included in spending totals.
4. Method A assumes that most public goods benefit families in proportion to their incomes, while Method B allocates these public goods equally to households or in proportion to their family size (i.e., per person), depending on the spending category.

Source: Author calculations based on multiple data sources, primarily Census Bureau, IRS and Bureau of Economic Analysis.

Table B-2: Distributional Analysis of Government Fiscal Policies with Federal Grants-in-Aid Moved to State & Local Spending, 2012[1]

Item	All Families	Bottom 20%	Second 20%	Middle 20%	Fourth 20%	Top 20%	Top 10%	Top 5%	Top 1%
Avg. Market Income[2]	81,602	9,561	31,053	56,884	100,242	311,405	469,228	713,599	1,992,095
(Share)	100%	3.1%	8.4%	14.0%	20.1%	55.0%	41.0%	31.4%	18.2%
Avg. Taxes[3]	31,824	6,331	11,913	20,429	35,325	122,217	189,281	295,210	867,473
Federal	21,293	2,967	6,854	12,848	23,668	86,975	135,420	210,820	608,285
State & Local	10,530	3,365	5,059	7,581	11,657	35,242	53,861	84,390	259,188
Avg. Spending (Method A)[4]	31,824	22,339	22,941	27,125	33,284	68,545	95,857	136,642	345,369
Federal	17,722	13,867	12,985	15,463	17,775	35,636	50,240	71,536	179,558
State & Local	14,102	8,472	9,956	11,662	15,510	32,910	45,616	65,106	165,811
Avg. Spending (Method B)[4]	31,824	33,402	30,052	30,144	31,122	35,141	38,258	41,700	55,078
Federal	17,722	19,335	16,381	17,148	16,927	18,787	21,136	23,584	33,752
State & Local	14,102	14,067	13,670	12,996	14,194	16,354	17,122	18,117	21,326
Avg. Redistribution (A)	0	16,007	11,028	6,695	-2,041	-53,672	-93,424	-158,568	-522,104
Federal	-3,571	10,900	6,131	2,614	-5,893	-51,339	-85,180	-139,285	-428,727
State & Local	3,571	5,107	4,897	4,081	3,852	-2,333	-8,244	-19,283	-93,377
Avg. Redistribution (B)	0	27,071	18,139	9,715	-4,204	-87,076	-151,023	-253,510	-812,395
Federal	-3,571	16,368	9,528	4,300	-6,741	-68,188	-114,285	-187,236	-574,533
State & Local	3,571	10,702	8,611	5,415	2,537	-18,888	-36,738	-66,273	-237,862
Ratio: spending to taxes (A)	1.00	3.53	1.93	1.33	0.94	0.56	0.51	0.46	0.40
Federal	0.83	4.67	1.89	1.20	0.75	0.41	0.37	0.34	0.30
State & Local	1.34	2.52	1.97	1.54	1.33	0.93	0.85	0.77	0.64
Ratio: spending to taxes (B)	1.00	5.28	2.52	1.48	0.88	0.29	0.20	0.14	0.06
Federal	0.83	6.52	2.39	1.33	0.72	0.22	0.16	0.11	0.06
State & Local	1.34	4.18	2.70	1.71	1.22	0.46	0.32	0.21	0.08
Income after Redistrib. (A)	81,602	25,568	42,081	63,579	98,201	257,734	375,804	555,031	1,469,991
(Share)	100%	8.3%	11.4%	15.6%	19.7%	45.5%	32.9%	24.4%	13.4%
Income after Redistrib. (B)	81,602	36,632	49,192	66,599	96,038	224,329	318,205	460,090	1,179,700
(Share)	100%	11.8%	13.4%	16.4%	19.2%	39.6%	27.8%	20.3%	10.8%

Notes:

1. Families classifed by age of family head. Negative income famillies excluded from subgroups but included in totals. Taxes and spending are adjusted proportionally to close government deficits, thereby making spending equal to taxes.
2. Market income is a broad definition of income from market sources (excludes transfers) that aggregates to BEA income totals.
3. Taxes total above includes some non-tax revenue sources. Refundable portion of tax credits are included in spending totals.
4. Method A assumes that most public goods benefit families in proportion to their incomes, while Method B allocates these public goods equally to households or in proportion to their family size (i.e., per person), depending on the spending category.

Source: Author calculations based on multiple data sources, primarily Census Bureau, IRS and Bureau of Economic Analysis.

Table B-3: Distributional Analysis of Government Fiscal Policies, 2012 (with Alternative Assumption of Property Tax)[1]

Item	All Families	Bottom 20%	Second 20%	Middle 20%	Fourth 20%	Top 20%	Top 10%	Top 5%	Top 1%
Avg. Market Income[2]	81,602	9,561	31,053	56,884	100,242	311,405	469,228	713,599	1,992,095
(Share)	100%	3.1%	8.4%	14.0%	20.1%	55.0%	41.0%	31.4%	18.2%
Avg. Taxes[3]	31,824	6,863	12,487	21,191	36,361	118,036	179,611	275,542	778,130
Federal	21,293	2,967	6,854	12,848	23,668	86,975	135,420	210,820	608,285
State & Local	10,530	3,896	5,634	8,343	12,694	31,061	44,191	64,722	169,845
Avg. Spending (Method A)[4]	31,824	22,339	22,941	27,125	33,284	68,545	95,857	136,642	345,369
Federal	21,293	16,628	15,729	18,336	21,159	43,230	61,173	87,653	222,564
State & Local	10,530	5,710	7,212	8,789	12,125	25,315	34,684	48,990	122,805
Avg. Spending (Method B)[4]	31,824	33,402	30,052	30,144	31,122	35,141	38,258	41,700	55,078
Federal	21,293	24,125	20,266	20,225	19,579	21,402	23,840	26,479	37,407
State & Local	10,530	9,278	9,786	9,920	11,542	13,739	14,417	15,222	17,671
Avg. Redistribution (A)	0	15,476	10,454	5,933	-3,077	-49,491	-83,755	-138,900	-432,761
Federal	0	13,661	8,875	5,487	-2,509	-43,745	-74,248	-123,168	-385,721
State & Local	0	1,815	1,578	446	-568	-5,746	-9,507	-15,732	-47,040
Avg. Redistribution (B)	0	26,540	17,564	8,953	-5,240	-82,895	-141,353	-233,842	-723,052
Federal	0	21,158	13,412	7,376	-4,089	-65,573	-111,580	-184,342	-570,878
State & Local	0	5,382	4,152	1,576	-1,151	-17,322	-29,773	-49,500	-152,174
Ratio: spending to taxes (A)	1.00	3.26	1.84	1.28	0.92	0.58	0.53	0.50	0.44
Federal	1.00	5.60	2.29	1.43	0.89	0.50	0.45	0.42	0.37
State & Local	1.00	1.47	1.28	1.05	0.96	0.82	0.78	0.76	0.72
Ratio: spending to taxes (B)	1.00	4.87	2.41	1.42	0.86	0.30	0.21	0.15	0.07
Federal	1.00	8.13	2.96	1.57	0.83	0.25	0.18	0.13	0.06
State & Local	1.00	2.38	1.74	1.19	0.91	0.44	0.33	0.24	0.10
Income after Redistrib. (A)	81,602	25,037	41,507	62,817	97,165	261,914	385,474	574,699	1,559,334
(Share)	100%	8.1%	11.3%	15.4%	19.5%	46.3%	33.7%	25.3%	14.3%
Income after Redistrib. (B)	81,602	36,100	48,617	65,836	95,002	228,510	327,875	479,757	1,269,043
(Share)	100%	11.7%	13.2%	16.2%	19.0%	40.4%	28.7%	21.1%	11.6%

Notes:

1. Families classifed by age of family head. Negative income famillies excluded from subgroups but included in totals.
   Alternative assumption: Business property tax portion distributed based on total consumption instead of owner's income.
   Taxes and spending are adjusted proportionally to close government deficits, thereby making spending equal to taxes.
2. Market income is a broad definition of income from market sources (excludes transfers) that aggregates to BEA income totals.
3. Taxes total above includes some non-tax revenue sources. Refundable portion of tax credits are included in spending totals.
4. Method A assumes that most public goods benefit families in proportion to their incomes, while Method B allocates these public goods equally to households or in proportion to their family size (i.e., per person), depending on the spending category.

Source: Author calculations based on multiple data sources, primarily Census Bureau, IRS and Bureau of Economic Analysis.

Table B-4: Distributional Analysis of Taxes: Tax as Percentage of Income, by Type of Tax, 2012 (with Alternative Assumption of Property Tax)[1]

Item	All Families	Bottom 20%	Second 20%	Middle 20%	Fourth 20%	Top 20%	Top 10%	Top 5%	Top 1%
Avg. Income[2]	92,511	22,305	41,461	68,237	110,084	320,427	479,257	723,893	2,005,287
Taxes (Total)[3]	27.2%	22.3%	23.4%	24.8%	26.8%	29.2%	29.4%	29.5%	29.4%
Federal Taxes	17.2%	7.2%	11.5%	13.9%	16.5%	20.8%	21.5%	22.0%	22.6%
Individual Income	8.1%	0.6%	1.9%	3.9%	5.8%	12.3%	13.9%	15.1%	16.8%
Payroll	5.7%	2.8%	5.7%	6.6%	7.4%	5.0%	4.0%	3.1%	1.7%
Corporate Income	2.1%	1.0%	1.6%	1.7%	1.8%	2.5%	2.7%	2.9%	3.4%
Alcoholic Beverages	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%
Tobacco	0.1%	0.4%	0.3%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%
Motor Fuels	0.2%	0.6%	0.4%	0.3%	0.3%	0.1%	0.1%	0.1%	0.0%
Airport	0.1%	0.2%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Other Excise	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%
Tariffs and Duties	0.2%	0.5%	0.4%	0.3%	0.3%	0.1%	0.1%	0.1%	0.1%
Estate and Gift	0.1%	0.0%	0.0%	0.0%	0.0%	0.3%	0.4%	0.5%	0.6%
Unemployment Tax	0.4%	0.8%	0.9%	0.6%	0.5%	0.2%	0.1%	0.1%	0.0%
State & Local Taxes	10.0%	15.1%	11.9%	10.9%	10.3%	8.4%	7.9%	7.5%	6.8%
Individual Income	2.2%	0.1%	0.7%	1.3%	1.9%	3.0%	3.3%	3.5%	4.0%
Other Personal Taxes	0.3%	0.6%	0.4%	0.3%	0.3%	0.2%	0.1%	0.1%	0.1%
Corporate Income	0.3%	0.2%	0.3%	0.3%	0.3%	0.4%	0.4%	0.5%	0.6%
General Sales	2.2%	4.2%	3.0%	2.7%	2.5%	1.5%	1.2%	1.0%	0.7%
Motor Fuels	0.3%	0.6%	0.5%	0.4%	0.3%	0.2%	0.1%	0.1%	0.0%
Alcoholic Beverages	0.0%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%
Tobacco	0.1%	0.5%	0.3%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%
Public Utilities	0.2%	0.5%	0.3%	0.3%	0.2%	0.1%	0.1%	0.1%	0.0%
Insurance Receipts	0.1%	0.2%	0.2%	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%
Other Sales Taxes	0.4%	0.9%	0.6%	0.5%	0.4%	0.2%	0.2%	0.2%	0.1%
Property	3.2%	6.0%	4.6%	3.9%	3.5%	2.1%	1.8%	1.5%	0.8%
Other business taxes	0.6%	1.2%	0.9%	0.7%	0.7%	0.5%	0.4%	0.4%	0.4%
Estate and Gift	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%
Refundable tax credits[4]	0.6%	3.0%	3.1%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%
Fed. tax less refund. credits	16.6%	4.2%	8.4%	13.3%	16.4%	20.8%	21.5%	22.0%	22.6%
Total tax less refund. credits	26.6%	19.3%	20.2%	24.1%	26.7%	29.2%	29.4%	29.5%	29.4%
Federal non-tax receipts	1.6%	3.6%	2.0%	1.5%	1.1%	1.4%	1.6%	1.8%	2.2%
S&L non-tax receipts	0.9%	1.6%	1.1%	0.8%	0.7%	0.8%	0.9%	1.0%	1.3%
Federal deficit "tax"[5]	4.2%	2.4%	3.0%	3.5%	3.9%	5.0%	5.2%	5.3%	5.6%
S&L deficit "tax"[5]	0.5%	0.8%	0.6%	0.5%	0.5%	0.4%	0.4%	0.4%	0.4%

Notes:

1. Percentiles contain equal numbers of persons. Negative income famillies excluded from bottom quintile but included in totals. Alternative assumption: Business property tax portion distributed based on total consumption instead of owner's income.
2. Income measure in table above is comprehensive income, which includes market income plus fungible value of government transfers. It differs from the market income metric used in other tables and is designed to better reflect ability to pay taxes.
3. Taxes total excludes non-tax revenues sources and the deficit tax that is included in other tables. Excludes refundable credits.
4. Refundable tax credits not included in totals as they are classified as spending and are shown for illustrative purposes only.
5. Deficit tax" is the addition to taxes in the primary tables in order to "close" the deficit.

Source: Author calculations based on multiple data sources, primarily Census Bureau, IRS and Bureau of Economic Analysis.

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