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The Fiscal Cost of Low-Skill Households to the U.S. Taxpayer

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Executive Summary

Each year, families and individuals pay taxes to the government and receive back a wide variety of services and benefits. When the benefits and services received by one group exceed the taxes paid, a distributional deficit occurs, and other groups must pay for the services and benefits of the group in deficit. Each year, government is involved in a large-scale transfer of resources between different social groups.

This paper provides a fiscal distribution analysis of households headed by persons without a high school diploma. The report refers to these households as “low-skill households.” The analysis measures the total benefits and services received by these households compared to total taxes paid. The difference between benefits received and taxes paid represents the total resources transferred by government on behalf of this group from the rest of society.

The size and cost of government are far larger than many people imagine. In fiscal year (FY) 2004, federal, state, and local expenditures combined amounted to \$3.75 trillion. One way to grasp the size of government more readily is to calculate average expenditures per household. In 2004, there were some 115 million households (multi-person families and single persons living alone) in the U.S. Government spending thus averaged \$32,706 per household across the U.S. population.

Government expenditures can be divided into six categories. The first four, which can be termed “immediate benefits and services,” are:

- **Direct benefits**, which include Social Security, Medicare, and a few smaller transfer programs;
- **Means-tested benefits**, including cash, food, housing, social services, and medical care for poor and near poor individuals;
- **Public educational services**, which include the governmental cost of primary, secondary, vocational, and post-secondary education;
- **Population-based services**, which are government services made available to a general community including police and fire protection, highways, sewers, food safety inspection, and parks.

Two additional spending categories are:

- **Interest and other financial obligations resulting from prior government activity**, including interest payments on government debt and other expenditures relating to the cost of government services provided in earlier years; and
- **Pure public goods**, which include national defense, international affairs and scientific research, and some environmental expenditures.

On average, low-skill households receive more government benefits and services than do other households. In FY 2004, low-skill households received \$32,138 per household in immediate benefits and services (direct benefits, means-tested benefits, education, and population-based services). If public goods and the cost of interest and other financial obligations are added, total benefits rose to \$43,084 per low-skill household. In general, low-skill households received about \$10,000 more in government benefits than did the average U.S. household, largely because of the higher level of means-tested welfare benefits received by low-skill households.

In contrast, low-skill households pay less in taxes than do other households. On average, low-skill households paid only \$9,689 in taxes in FY 2004. Thus, low-skill households received at least three dollars in immediate benefits and services for each dollar in taxes paid. If the costs of public goods and past financial obligations are added, the ratio rises to four to one.

Strikingly, low-skill households in FY 2004 had average earnings of \$20,564 per household. Thus, the \$32,138 per household in government immediate benefits and services received by these households not only exceeded their taxes paid, but also substantially exceeded their average household earned income.

A household’s net fiscal deficit equals the cost of benefits and services received minus taxes paid. If the costs of direct and means-tested benefits, education, and population-based services alone are counted, the average low-skill

household had a fiscal deficit of \$22,449 (expenditures of \$32,138 minus \$9,689 in taxes). The average net fiscal deficit of a low-skill household actually exceeded the household's earnings.

If interest and other financial obligations relating to past government activities are added, the average deficit per household rose to \$27,301. In addition, the average low-skill household was a free rider with respect to government public goods, receiving public goods costing some \$6,095 per household for which it paid nothing.

Receiving, on average, at least \$22,449 more in benefits than they pay in taxes each year, low-skill households impose substantial long-term costs on the U.S. taxpayer. Assuming an average adult life span of 50 years for each head of household, the average lifetime costs to the taxpayer will be \$1.1 million for each low-skill household for immediate benefits received minus all taxes paid. If the cost of interest and other financial obligations is added, the average lifetime cost rises to \$1.3 million per low-skill household.

In 2004, there were 17.7 million low-skill households. With an average net fiscal deficit of \$22,449 per household, the total annual fiscal deficit (total benefits received minus total taxes paid) for all of these households equaled \$397 billion (the deficit of \$22,449 per household times 17.7 million households). This sum includes direct and means-tested benefits, education, and population-based services. If the low-skill households' share of interest and other financial obligations for past activities is added, their total annual fiscal deficit rises to \$483 billion. Over the next ten years the total cost of low-skill households to the taxpayer (immediate benefits minus taxes paid) is likely to be at least 3.9 trillion dollars. This number would go up significantly if changes in immigration policy lead to substantial increases in the number of low-skill immigrants entering the country and receiving services.

Politically feasible changes in government policy will have little effect for decades on the level of fiscal deficit generated by most low-skill households. For example, to make the average low-skill household fiscally neutral (taxes paid equaling immediate benefits received and the appropriate share of interest on government debt), it would be necessary to eliminate Social Security, Medicare, all 60 means-tested aid programs and cut the cost of public education in half. It seems certain that, on average, low-skill households will generate deep fiscal deficits for the foreseeable future. Policies that reduce the future number of high school dropouts and other policies affecting future generations could reduce long-term costs.

Policies that would expand Medicaid and other entitlements will increase the size of future deficits of low-skill households at the margin. On the other hand, policy changes that curtailed medical inflation could reduce costs at the margin in future years. Policies which would halt the growth of out-of-wedlock childbearing or increase real educational attainments of future generations could also limit the growth of future deficits somewhat. However, these policy changes would be dwarfed by any alteration in immigration policy that would substantially increase the future inflow of low-skill immigrants; such a policy would dramatically increase the future fiscal burden to taxpayers.

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The Fiscal Cost of Low-Skill Households to the U.S. Taxpayer

Introduction

Each year, families and individuals pay taxes to the government and receive back a wide variety of services and benefits. A fiscal deficit occurs when the benefits and services received by one group exceed the taxes paid. When such a deficit occurs, other groups must pay for the services and benefits of the group in deficit. Each year, government is involved in a large-scale transfer of resources between different social groups.

Fiscal distribution analysis measures the distribution of total government benefits and taxes in society. It provides an assessment of the magnitude of government transfers between groups. This paper provides a fiscal distribution analysis of households headed by persons without a high school diploma. It measures the total benefits and services received by this group and the total taxes paid. The difference between benefits received and taxes paid represents the total resources transferred by government on behalf of this group from the rest of society.

The first step in an analysis of the distribution of benefits and taxes is to count accurately the cost of all benefits and services provided by the government. The size and cost of government is far larger than many people imagine. In fiscal year (FY) 2004, the expenditures of the federal government were \$2.3 trillion. In the same year, expenditures of state and local governments were \$1.45 trillion. The combined value of federal, state, and local expenditures in FY 2004 was \$3.75 trillion.¹

The sum of \$3.75 trillion is so large that it is difficult to comprehend. One way to grasp the size of government more readily is to calculate average expenditures per household. In 2004, there were some 115 million households in the U.S.² (This figure includes multi-person families and single persons living alone.) The average cost of government spending thus amounted to \$32,706 per household across the U.S. population.³

The \$3.75 trillion in government expenditure is not free but must be paid for by taxing or borrowing economic resources from Americans or by borrowing from abroad. In general, government expenditures are funded by taxes and fees. In FY 2004, federal taxes amounted to \$1.82 trillion. State and local taxes and related revenues amounted to \$1.6 trillion.⁴ Together, federal, state, and local taxes amounted to \$3.43 trillion. At \$3.43 trillion, taxes and related revenues came to 91 percent of the \$3.75 trillion in expenditures. The gap between taxes and spending was financed by government borrowing.

Types of Government Expenditure

Once the full cost of government benefits and services has been determined, the next step in the analysis of the distribution of benefits and taxes is to determine the beneficiaries of specific government programs. Some programs, such as Social Security, neatly parcel out benefits to specific individuals. With programs such as these, it is relatively easy to determine the identity of the beneficiary and the cost of the benefit provided. At the opposite extreme, other government programs (for example, medical research at the National Institutes of Health) do not neatly parcel out benefits to individuals. Determining the proper allocation of the benefits of that type of program is more difficult.

1. See Appendix Tables A-1, A-2A, A-2B, and A-2C.

2. This figure includes persons in nursing homes. See Appendix A.

3. In measuring the distribution of benefits and services, this paper will count the value of each benefit and service as equal to the cost borne by the taxpayer to deliver it. The cost of any benefit to the taxpayer does not necessarily equal the subjective value the beneficiary may place upon the benefit. For example, if the food stamp program provides a family \$400 per month in food stamp benefits, the family itself may value the food stamps at more or less than \$400. Similarly, if child receives public education costing \$10,000 per pupil per year, the child's family may value those education services subjectively as worth more or less than \$10,000. While the question of recipient valuation of government benefits is an interesting one, this paper is concerned with the basic question of the distribution of benefits valued according their costs to taxpayers.

4. This figure includes property income earned by the government such as the sale of assets or interest earned on assets.

To ascertain most accurately the distribution of government benefits and services, this study begins by dividing government expenditures into six categories: direct benefits; means-tested benefits; educational services; population-based services; interest and other financial obligations resulting from prior government activity; and pure public goods.

Direct Benefits. Direct benefit programs involve either cash transfers or the purchase of specific services for an individual. Unlike means-tested programs (described below), direct benefit programs are not limited to low-income persons. By far the largest direct benefit programs are Social Security and Medicare. Other substantial direct benefit programs are Unemployment Insurance and Workmen's Compensation.

Direct benefit programs involve a fairly transparent transfer of economic resources. The benefits are parceled out discretely to individuals in the population; both the recipient and the cost of the benefit are relatively easy to determine. In the case of Social Security, the cost of the benefit would equal the value of the Social Security check plus the administrative costs involved in delivering the benefit.

Calculating the cost of Medicare services is more complex. Ordinarily, government does not seek to compute the particular medical services received by an individual. Instead, government counts the cost of Medicare for an individual as equal to the average per capita cost of Medicare services. (This number equals the total cost of Medicare services divided by the total number of recipients.)⁵ Overall, government spent \$840 billion on direct benefits in FY 2004.

Means-Tested Benefits. Means-tested programs are typically termed welfare programs. Unlike direct benefits, means-tested programs are available only to households below specific income thresholds. Means-tested welfare programs provide cash, food, housing, medical care, and social services to poor and low-income persons.

The federal government operates over 60 means-tested aid programs.⁶ The largest of these are Medicaid; the Earned Income Tax Credit (EITC); food stamps; Supplemental Security Income (SSI); Section 8 housing; public housing; Temporary Assistance to Needy Families (TANF); the school lunch and breakfast programs; the WIC (Women, Infants, and Children) nutrition program; and the Social Services Block Grant (SSBG). Many means-tested programs, such as SSI and the EITC, provide cash to recipients. Others, such as public housing or SSBG, pay for services that are provided to recipients.

The value of Medicaid benefits is usually counted in a manner similar to Medicare benefits. Government does not attempt to itemize the specific medical services given to an individual; instead, it computes an average per capita cost of services to individuals in different beneficiary categories such as children, elderly persons, and disabled adults. (The average per capita cost for a particular group is determined by dividing the total expenditures on the group by the total number of beneficiaries in the group.) Overall, the U.S. spent \$564 billion on means-tested aid in FY 2004.⁷

Public Education. Government provides primary, secondary, post-secondary, and vocational education to individuals. In most cases, the government pays directly for the cost of educational services provided. In other cases, such as the Pell Grant program, the government in effect provides money to an eligible individual who then spends it on educational services.

Education is the single largest component of state and local government spending, absorbing roughly a third of all state and local expenditures. The average per pupil cost of public primary and secondary education is now around \$9,600 per year. Overall, federal, state, and local governments spent \$590 billion on education in FY 2004.

Population-Based Services. Whereas direct benefits, means-tested benefits, and education services provide discrete benefits and services to particular individuals, population-based programs generally provide services to a whole group or community. Population-based expenditures include police and fire protection, courts, parks, sanitation, and food safety and health inspections. Another important population-based expenditure is transportation, especially roads and highways.

5. For example, the Census Bureau assigns Medicare costs in this manner in the Current Population Survey.

6. Congressional Research Service, *Cash and Noncash Benefits for Persons with Limited Income: Eligibility Rules, Recipient and Expenditure Data, FY2002–FY2004*, March 27, 2006.

7. This spending figure excludes means-tested veterans programs and most means-tested education programs.

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A key feature of population-based expenditures is that such programs generally need to expand as the population of a community expands. (This quality separates them from pure public goods, described below.) For example, as the population of a community increases, the number of police and firemen will generally need to expand in proportion.

In its study of the fiscal costs of immigration, *The New Americans*, the National Academy of Sciences argued that if service remains fixed while the population increases, a program will become “congested,” and the quality of service for users will deteriorate. Thus, the NAS uses the term “congestible goods” to describe population-based services.⁸ Highways are an obvious example of this point. In general, the cost of population-based services can be allocated according to an individual’s estimated utilization of the service or at a flat per capita cost across the relevant population.

A sub-category of population-based services is government administrative support functions such as tax collections and legislative activities. Few taxpayers view tax collection as a government benefit; therefore, assigning the cost of this “benefit” appears problematic.

The solution to this dilemma is to conceptualize government activities into two categories: primary functions and secondary functions. Primary functions provide benefits directly to the public; they include direct and means-tested benefits, education, ordinary population-based services such as police and parks and public goods. By contrast, secondary or support functions do not provide direct benefits to the public but do provide necessary support services that enable the government to perform primary functions. For example, no one can receive food stamp benefits unless the government first collects taxes to fund the program. Secondary functions can thus be considered an inherent part of the “cost of production” of primary functions, and the benefits of secondary support functions can be allocated among the population in proportion to the allocation of benefits from government primary functions.

Government spent \$662 billion on population-based services in FY 2004. Of this amount, some \$546 billion went for ordinary services such as police and parks, and \$116 billion went for administrative support functions.

Interest and Other Financial Obligations Relating to Past Government Activities. Often, tax revenues are insufficient to pay for the full cost of government benefits and services. In that case, government will borrow money and accumulate debt. In subsequent years, interest payments must be paid to those who lent the government money. Interest payments for the government debt are in fact partial payments for past government benefits and services that were not fully paid for at the time of delivery.

Similarly, government employees deliver services to the public; part of the cost of the service is paid for immediately through the employee’s salary. But government employees are also compensated by future retirement benefits. Expenditures of public sector retirement are thus, to a considerable degree, present payments in compensation for services delivered in the past. The expenditure category “interest and other financial obligations relating to past government activities” thus includes interest and principal payments on government debt and outlays for government employee retirement. Total government spending on these items equaled \$468 billion in FY 2004.⁹

Allocation of the benefit of this spending is problematic since the benefits were actually delivered in past years, but a definite portion of spending on interest and employee retirement was generated by past expenditures on behalf of low-skill households. Broadly conceived, spending on behalf of low-skill households includes not only spending for benefits in the current year, but also lagged spending that relates to outlays on such households in earlier years. In this sense, the low-skill households’ share of interest and government employee retirement outlays would be proportionate to their share of government expenditures in prior years. Although calculating the low-skill households’ share of spending in prior years would be very complex, the present analysis approximates this figure by assuming that these households’ share of expenditures in prior years is equal to its share of FY 2004 expenditures.

An alternative approach to allocating interest and employee retirement costs would employ the distinction between government primary and secondary functions described in the prior section. If government failed to pay interest on its existing debt, it would be unable to borrow in the future; benefits would have to be slashed or taxes raised steeply. Gov-

8. National Research Council, *The New Americans: Economic, Demographic, and Fiscal Effects of Immigration* (Washington, D.C.: National Academy Press, 1997), p. 303.

9. Of this total, an estimated \$67 billion represents the costs of financial obligations resulting from past public goods expenditures. These costs are entered in the public goods category in Table 1.

ernment's honoring of past financial obligations is thus an essential secondary function, a necessary cost of business that enables government to perform its primary functions. The ultimate beneficiaries of this secondary function are the beneficiaries of the primary functions that can be continued because government fulfills its debt obligations. The low-skill households' share of expenditures on these secondary functions would equal their share of benefits from primary function expenditures in FY 2004. Both approaches to allocating costs relating to interest and related financial obligations yield the same level of spending on behalf of low-skill households in FY 2004.

Pure Public Goods. Economic theory distinguishes between "private consumption goods" and pure public goods. Economist Paul Samuelson is credited with first making this distinction. In his seminal 1954 paper "The Pure Theory of Public Expenditure,"¹⁰ Samuelson defined a pure public good (or what he called in the paper a "collective consumption good") as a good "which all enjoy in common in the sense that each individual's consumption of such a good leads to no subtractions from any other individual's consumption of that good." By contrast, a "private consumption good" is a good that "can be parceled out among different individuals." Its use by one person precludes or diminishes its use by another.

A classic example of a pure public good is a lighthouse: The fact that one ship perceives the warning beacon does not diminish the usefulness of the lighthouse to other ships. Another clear example of a governmental pure public good would be a future cure for cancer produced by government-funded research. The fact that non-taxpayers would benefit from this discovery would neither diminish its benefit nor add extra costs to taxpayers. By contrast, an obvious example of a private consumption good is a hamburger: When one person eats it, it cannot be eaten by others.

Direct benefits, means-tested benefits, and education services are private consumption goods in the sense that use of a benefit or service by one person precludes or limits the use of that same benefit by other. (Two people cannot cash the same Social Security check.) Population-based services such as parks and highways are often mentioned as "public goods," but they are not pure public goods in the strict sense described above. In most cases, as the number of persons using a population-based service (such as highways and parks) increases, either the service must expand (at added cost to taxpayers) or the service will become "congested" and its quality will be reduced. Consequently, use of population-based services such as police and fire departments by non-taxpayers does impose significant extra costs on taxpayers.

Government pure public goods are rare; they include scientific research, defense, spending on veterans, international affairs, and some environmental protection activities such as the preservation of endangered species. Each of these functions generally meets the criterion that the benefits received by non-taxpayers do not result in a loss of utility for taxpayers. Government pure public good expenditures on these functions equaled \$628 billion in FY 2004. Interest payments on government debt and related costs resulting from public good spending in previous years add an estimated additional cost of \$67 billion, bringing the total public goods cost in FY 2004 to \$695 billion.

Although low-income households that pay little or no tax do benefit from pure public good programs, their gain neither adds costs nor reduces benefits for others. Thus, the benefit gleaned by non-taxpayers from these pure public good functions does not impose an extra burden on society. However, households that pay little or no tax are "free riders" on public good programs in the sense that they benefit from government activities for which they have not paid. (For a further discussion of pure public goods, see Appendix B.)

Summary: Total Expenditures. As Table 1 shows, overall government spending in FY 2004 came to \$3.75 billion, or \$32,706 per household across the entire U.S. population. Direct benefits had an average cost of \$7,326 per household across the whole population, while means-tested benefits had an average cost of \$4,920 per household. Education benefits and population-based services cost \$5,143 and \$5,765, respectively. Interest payments on government debt and other costs relating to past government activities cost \$3,495 per household. Pure public good expenditures comprised 18.5 percent of all government spending and had an average cost of \$6,056 per household.

A detailed breakdown of expenditures is provided in Appendix Table A-1 for federal expenditures and Appendix Tables A-2A, A-2B, and A-2C for state and local expenditures.

10. Paul A. Samuelson, "The Pure Theory of Public Expenditure," *Review of Economics and Statistics*, Vol. 36, No. 4 (1954), pp. 387-389.

Table I SR 12

Summary of Total Federal, State, and Local Expenditures, FY 2004

	Federal Expenditures (in millions)	State and Local Expenditures (in millions)	Total Expenditures (in millions)	Percentage of Total Expenditures	Average Expenditure per Household Whole Population (in dollars)
Direct Benefits	783,350	57,607	840,957	22.4%	\$7,326
Means-tested Benefits	406,512	158,240	564,752	15.0%	\$4,920
Educational Benefits	59,621	530,801	590,422	15.7%	\$5,143
Population-Based Services	180,122	481,696	661,818	17.6%	\$5,765
Interest and Related Costs*	182,000	219,260	401,260	10.7%	\$3,495
Pure Public Goods Expenditures	694,153	1,050	695,203	18.5%	\$6,056
Total Expenditures	2,305,758	1,448,654	3,754,412	100.0%	\$32,706
Total Expenditures Less Public Good Expenditures	1,611,605	1,447,604	3,059,209		\$26,660

* Excludes interest costs resulting from public goods expenditures in prior years.
 Source: Appendix Tables 1 and 2c.

Taxes and Revenues

Total taxes and revenues for federal, state, and local governments amounted to \$3.43 trillion in FY 2004, with an average cost of \$29,919 per household across the whole population. A detailed breakdown of federal, state, and local taxes is provided in Appendix Table A-3. The biggest revenue generator was the federal income tax, which cost the taxpayers \$808 billion in 2003, followed by Federal Insurance Contribution Act (FICA) taxes, which gathered \$685 billion.

Property tax was the biggest revenue producer at the state and local levels, generating \$318 billion, while general sales taxes gathered \$244 billion.

Summary of Estimation Methodology

This paper seeks to estimate the total cost of benefits and services received, and the total value of taxes paid, by households headed by persons without a high school diploma. To produce this estimate, calculations were performed on 50 separate expenditure categories and 33 tax and revenue categories. These calculations are explained in detail in Appendix A and presented in Appendix Tables A-4 and A-5. The present section will briefly summarize the procedures used.

Data on receipt of direct and means-tested benefits were taken from the U.S. Census Bureau's Current Population Survey (CPS). Data on attendance in public primary and secondary schools were also taken from the CPS; students attending public school were then assigned educational costs equal to the average per pupil expenditures in their state. Public post-secondary education costs were calculated in a similar manner.

Wherever possible, the cost of population-based services was based on the estimated utilization of the service by low-skill households. For example, the low-skill households' share of highway expenditures was assumed to equal their share of gasoline consumption as reported in the Bureau of Labor Statistics Consumer Expenditure Survey (CEX). When data on utilization of a service were not available, the estimated low-skill households' share of population-based services was assumed to equal their share of the total U.S. population.

The share of public goods received by low-skill households was assumed to equal their share of the total U.S. population. The low-skill households' share of the cost of interest and other financial obligations relating to past government activities was assumed to equal their share of current expenditures on direct and means-tested benefits, education, population-based services, and public goods.

Federal and state income taxes were calculated based on data from the CPS. FICA taxes were also calculated from CPS data and were assumed to fall solely on workers.

Sales, excise, and property tax payments were based on consumption data from the Consumer Expenditure Survey. For example, if the CEX showed that low-skill households accounted for 10 percent of all tobacco product sales in the U.S., those households were assumed to pay 10 percent of all tobacco excise taxes.

Corporate income taxes were assumed to be borne partly by workers and partly by owners; the distribution of these taxes was estimated according to the distribution of earnings and property income in the CPS.

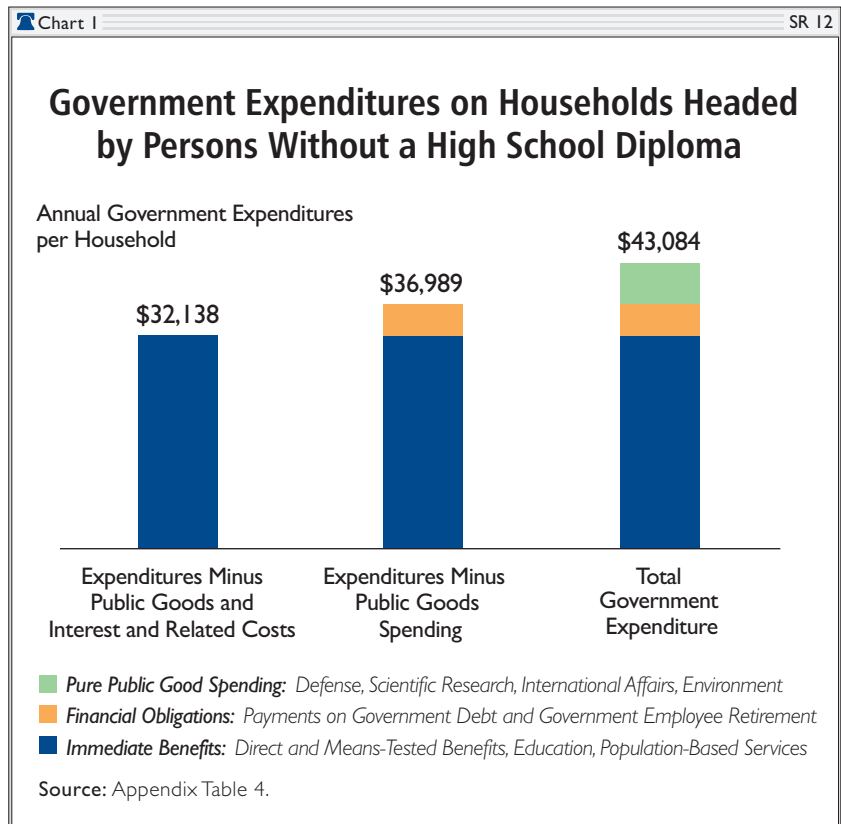
A fundamental rule in the analysis was that the estimated expenditure for each program for the whole population had to equal actual government outlays for that program. Similarly, total revenue for each estimated tax had to equal total revenue from the tax as reported in government budget documents.

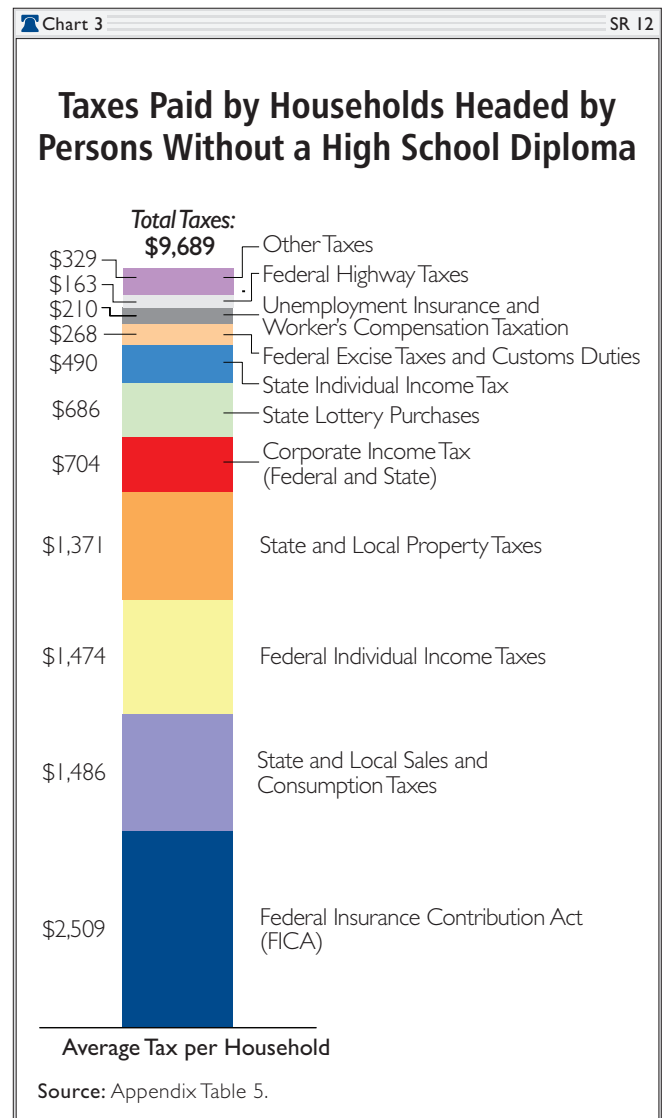
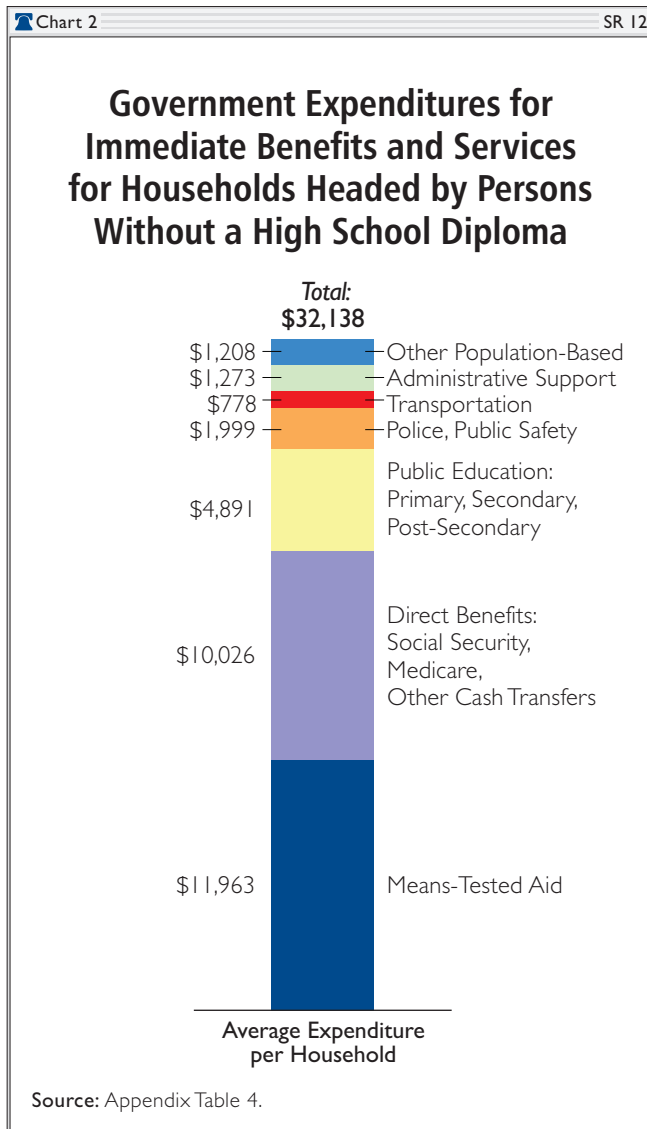
CPS data are problematic in this respect since they generally underreport both benefits received and taxes paid. Consequently, both benefits and tax data from the CPS had to be adjusted for underreporting. The key assumption in this adjustment process was that households headed by persons without a high school diploma (low-skill households) and the general population underreport benefits and taxes to a similar degree. Thus, if food stamp benefits were underreported by 10 percent in the CPS as a whole, then low-skill households were also assumed to underreport food stamp benefits by 10 percent. In the absence of data suggesting that low-skill and high-skill households underreport at different rates, this seemed to be a reasonable working assumption.

Costs of Benefits and Services for Low-Skill Households. The focus of this paper is the benefits received and taxes paid by households headed by persons without a high school diploma. (Throughout the paper, these households are also called low-skill households.) In 2004, there were 17.7 million such households in the U.S. Appendix Table A-4 shows the estimated costs of government benefits and services received by these households in 50 separate expenditure categories. The results are summarized in Charts 1 and 2.

Overall, households headed by persons without a high school diploma (or low-skill households) received an average of \$32,138 per household in direct benefits, means-tested benefits, education, and population-based services in FY 2004. If expenditures for interest and other financial obligations relating to past government activities are added to the count, expenditures rise to \$36,989 per household. If the cost of public goods is added, annual total expenditures on benefits and services come to \$43,084 per low-skill household.

Chart 2 gives a more detailed breakdown of the immediate benefits and services received by low-skill households. Means-tested aid came to \$11,963 per household, while direct benefits (mainly Social Security and Medicare) amounted to \$10,026. Education spending on behalf of these households averaged \$4,891 per household, while spending on police, fire, and public safety came to \$1,999 per household. Transportation added another \$778, while administrative support services cost \$1,273. Miscellaneous population-based services added a final \$1,208.





It is important to note that the costs of benefits and services outlined in Chart 2 are a composite average of all low-skill households. They represent the total costs of benefits and services received by all low-skill households divided by the number of such households. It is unlikely that any single household would receive this exact package of benefits; for example, it is rare for a household to receive Social Security benefits and primary and secondary education services at the same time. Nonetheless, the figures are an accurate portrayal of the governmental costs of low-skill households as a group. When combined with similar data on taxes paid, they enable an assessment of the fiscal status of such households as a group and their impact on other taxpayers.

Taxes and Revenues Paid by Low-Skill Households. Appendix Table A-5 details the estimated taxes and revenues paid by low-skill households in 31 categories. The results are summarized in Chart 3. As the chart shows, total federal, state, and local taxes paid by low-skill households came to \$9,689 per household in 2004. Federal and state individual income taxes comprised only 20 percent of total taxes paid. Instead, taxes on consumption and employment produced the bulk of the tax burden for low-skill households.

The single largest tax payment was \$2,509 per household in Federal Insurance Contribution Act (FICA) tax. (Workers were assumed to pay both the employee and employer share of FICA taxes.) On average, low-skill households paid \$1,486 in state and local sales and consumption taxes. The analysis assumed that a significant portion of property taxes on rental and business properties was passed through to renters and consumers; this contributed to a

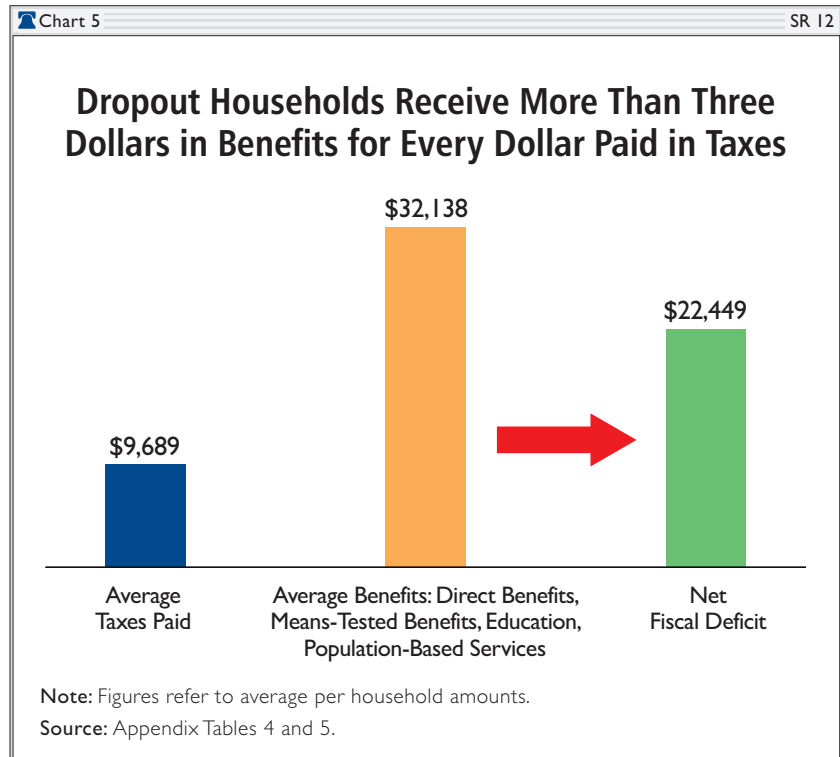
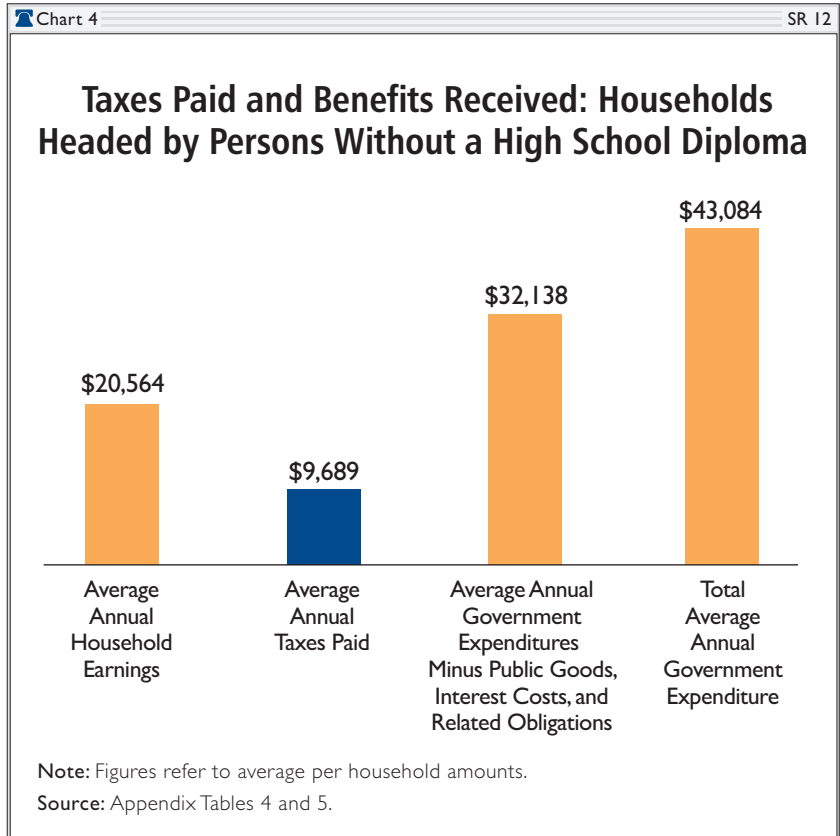
\$1,371 property tax burden for the average low-skill household. The analysis also assumed that 70 percent of corporate income taxes fell on workers; this contributed to an average \$704 corporate tax burden for low-skill households. Low-skill households are frequent participants in state lotteries, with an estimated average purchase of \$686 in lottery tickets per household in 2004.

Balance of Taxes and Benefits. On average, low-skill households received \$32,138 per household in immediate government benefits and services in FY 2004, including direct benefits, means-tested benefits, education, and population-based services. Total benefits rose to \$43,084 if public goods and the cost of interest and other financial obligations are added.

By contrast, low-skill households paid only \$9,689 in taxes. Thus, low-skill households received at least three dollars in benefits and services for each dollar in taxes paid. If the costs of public goods and past financial obligations are added, the ratio rises to four to one.

Strikingly, as Chart 4 shows, low-skill households in FY 2004 had average earnings of \$20,564 per household; thus, the average cost of government benefits and services received by these households not only exceeded the taxes paid by these households, but substantially exceeded the average earned income of these households.

Net Annual Fiscal Deficit. The net fiscal deficit of a household equals the cost of benefits and services received minus taxes paid. As Chart 5 shows, if the costs of direct and means-tested benefits, education, and population-based services alone were counted, the average low-skill household had a fiscal deficit of \$22,449 (expenditures of \$32,138 minus \$9,689 in taxes). The net fiscal deficit of the average low-skill household actually exceeded the household's earnings. If interest and other financial obligations relating to past government activities were added as well, the average deficit per household rose to \$27,301.



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In addition, the average low-skill household was a free rider with respect to government public goods, receiving public goods costing some \$6,095 per household for which it paid nothing.

Net Lifetime Costs. Receiving, on average, at least \$22,449 more in benefits than they pay in taxes each year, low-skill households impose substantial long-term costs on the U.S. taxpayer. Assuming an average 50-year adult life span for heads of household, the average lifetime costs to the taxpayer will be \$1.1 million for each low-skill household, net of any taxes paid. If the costs of interest and other financial obligations are added, the average lifetime cost rises to \$1.3 million per household.

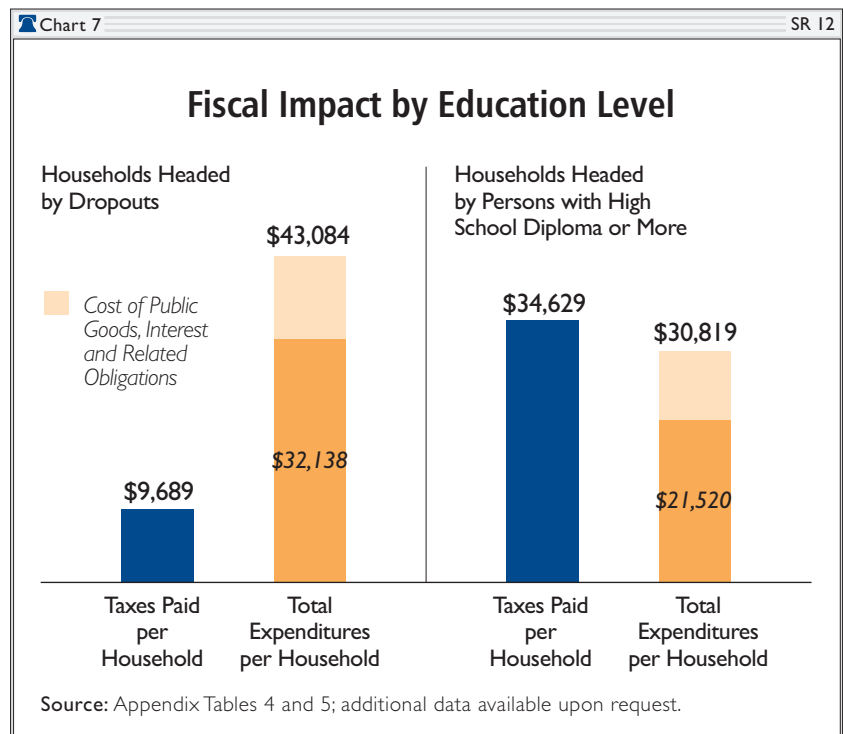
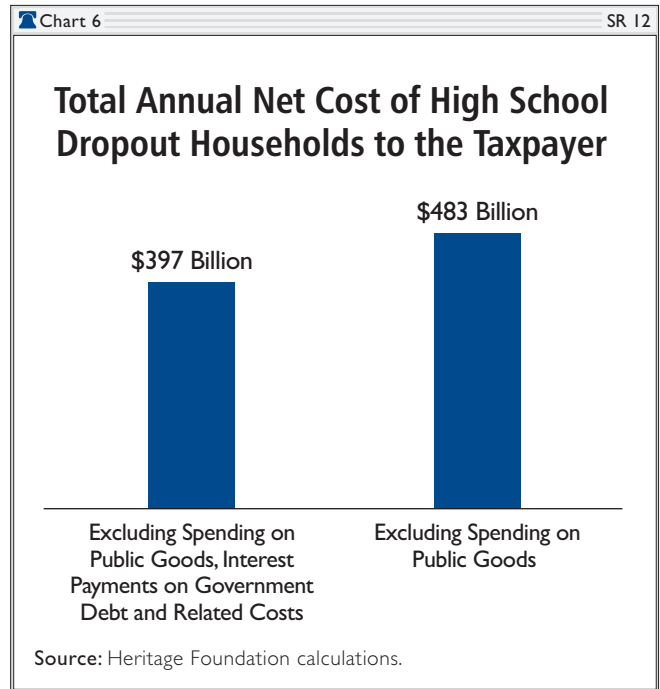
Aggregate Net Fiscal Costs. In 2004, there were 17.7 million low-skill households. As shown in Chart 5, the average net fiscal deficit per household was \$22,449. This means that the total annual fiscal deficit (total benefits received minus total taxes paid) for all 17.7 million low-skill households together equaled \$397 billion (the deficit of \$22,449 per household times 17.7 million households). This sum includes direct and means-tested benefits, education, and population-based services.

If the low-skill households' share of interest and other financial obligations for past activities is added, the total annual fiscal deficit of these households rose to \$483 billion. Over the next ten years, the constant dollar net cost of low-skill households (immediate benefits received minus taxes paid) is likely to be at least \$3.9 trillion. Policy changes that would expand entitlement programs such as Medicaid will increase these costs at the margin. On the other hand, changes in immigration law that would significantly increase the inflow of low-skill workers and families will increase future government spending dramatically.

Low-Skill Households Compared to Other Households.

Chart 7 compares households headed by persons without a high school diploma to households headed by persons with a high school diploma or better. Whereas the dropout-headed household paid only \$9,689 in taxes in FY 2004, the higher-skill households paid \$34,629—more than three times as much. While dropout-headed households received from \$32,138 to \$43,084 in benefits, high-skill households received less: \$21,520 to \$30,819. The difference in government benefits was due largely to the greater amount of means-tested aid received by low-skill households.

Households headed by dropouts received \$22,449 more in immediate benefits (i.e., direct and means-tested aid, education, and population-based



services) than they paid in taxes. Higher-skill households paid \$13,109 more in taxes than they received in immediate benefits.

Externalities of Benefits. It might be argued that certain government benefits generate positive externalities; that is, they benefit society at large as well as the immediate beneficiary. This is argued most often with respect to education.

An increase in the skill level of each U.S. worker may have a positive feedback effect that increases the productivity and wage of other workers; thus, everyone will gain indirectly as the overall skill level of U.S. workers rises.

Consequently, it might be argued that all Americans benefit economically from the education of children in low-skill families. If so, it might be further argued that it is inappropriate to assign the full per pupil costs of education to children in low-skill households. But if other households benefit indirectly from the education of children in low-skill families, it is equally true that low-skill families benefit indirectly from the education of children in middle- and upper-class families. This is particularly true of the education of high-skill workers who will produce future technological and managerial innovations that lead to productivity increases.

Thus, if it is true that the education of children in low-skill homes produces positive externalities that raise the incomes of more affluent families, it is equally true that the education of children in more affluent homes will produce positive externalities for low-skill households. Rather than attempting to map the reciprocal externalities of education, it appears simpler to assign the full per pupil cost of public education to the child receiving that education.

Education as a Social Investment. It is sometimes argued that the costs of public education should be “off the books” and should not be counted toward the fiscal deficits generated by low-skill households. Proponents of this view contend that publicly financed education for children in low-skill families represents a positive investment for taxpayers because it will increase the wages earned and taxes paid by those children as adults, thereby reducing the future fiscal drag (benefits in excess of taxes) that their children will impose on society.¹¹ Although this argument obviously has considerable merit, two caveats are in order.

First, even if public education does represent a positive investment for taxpayers, the immediate costs of that investment are real. When children in low-skill families receive public education, other families generally will pay the costs of that education and will be forced to forgo their own economic needs and wants to do so. Consequently, education costs should remain on the ledger when computing the net transfers between social groups.

Second, the potential returns to public education often appear exaggerated. When a child from a lower socioeconomic class receives subsidized public education, three fiscal outcomes are possible:

1. There is no increase in wages, and the child remains in the same deep fiscal deficit as his parents;
2. The child’s income increases, and the magnitude of his fiscal deficit is reduced relative to that of his parents, but the child remains in fiscal deficit when becoming an adult; or
3. Education raises the child’s income to the point where he becomes a positive fiscal contributor (taxes exceed benefits over a lifetime).

Simplistic accounts of the gains from education often suggest that schooling will enable children from a lower socioeconomic standing to readily achieve the third outcome. Given the regressive nature of the distribution of benefits and the progressive nature of taxation, this seems unlikely. On average, an individual must achieve a fairly high income to become a net fiscal contributor. This does not mean that investment in education is unwise. It simply means that society should be realistic about its expectations with respect to what education can achieve.

Conclusion

Households headed by persons without a high school diploma are roughly 15 percent of all U.S. households. Overall, these households impose a significant fiscal burden on other taxpayers: The cost of the government benefits

11. The analysis in this paper does not include fiscal impacts in the second generation, that is, it does not examine the fiscal status of children in low-skill households once they become adults and begin to live independently. Once a minor child in a low-skill household becomes an adult and moves out of his parents’ household, he is no longer included in the fiscal cost analysis for the parents’ household.

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they consume greatly exceeds the taxes they pay to government. Before government undertakes to transfer even more economic resources to these households, it should have a very clear account of the magnitude of the economic transfers that already occur.

The substantial net tax burden imposed by low-skill U.S. households also suggests lessons for immigration policy. Recently proposed immigration legislation would greatly increase the number of poorly educated immigrants entering and living in the United States.¹² Before this policy is adopted, Congress should examine carefully the potential negative fiscal effects of low-skill immigrant households receiving services.

Politically feasible changes in government policy will have little effect on the level of fiscal deficit generated by most low-skill households for decades. For example, to make the average low-skill household fiscally neutral (taxes paid equaling immediate benefits received plus interest on government debt), it would be necessary to eliminate Social Security, Medicare, all 60 means-tested aid programs and cut the cost of public education in half. It seems certain that, on average, low-skill households will generate deep fiscal deficits for the foreseeable future. Policies that reduce the future number of high school dropouts and other policies affecting future generations could reduce long-term costs.

Future government policies that would expand entitlement programs such as Medicaid would increase future deficits at the margin. Policies that reduced the out-of-wedlock childbearing rate or which increased the real educational attainments and wages of future low-skill workers could reduce deficits somewhat in the long run.

Changes to immigration policy could have a much larger effect on the fiscal deficits generated by low-skill families. Policies which would substantially increase the inflow of low-skill immigrant workers receiving services would dramatically increase the fiscal deficits described in this paper and impose substantial costs on U.S. taxpayers.

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12. Robert Rector, "Senate Immigration Bill Would Allow 100 Million New Legal Immigrants over the Next Twenty Years," Heritage Foundation *WebMemo* No. 1076, May 15, 2006. Robert Rector, "Immigration Numbers: Setting the Record Straight," Heritage Foundation *WebMemo* No. 1097, May 26, 2006.

Appendix A General Methodology

Introduction

This appendix documents the methods used to calculate the spending and tax figures presented in the paper. Throughout, the term “low-skill households” is used as a synonym for households headed by persons without a high school degree.

Data Sources

Data on federal expenditures were taken from *Historical Tables, Budget of the United States Government, Fiscal Year 2006*.¹³ Data on federal taxes and revenues were taken from *Analytical Perspectives, Budget of the United States Government, Fiscal Year 2006*.¹⁴

State and local aggregate expenditures and revenue data were taken from the U.S. Bureau of Census survey of government finances and employment.¹⁵ Added information on state and local spending categories was taken from U.S. Census Bureau, *Federal State and Local Governments: 1992 Government Finance and Employment Classification Manual*.¹⁶

Detailed information on means-tested spending was taken from Congressional Research Service, *Cash and Non-cash Benefits for Persons with Limited Income: Eligibility Rules, Recipient and Expenditure Data, FY2002–FY2004*. This report provides important information on state and local means-tested expenditures from states’ and localities’ own financial resources as distinct from expenditures funded by federal grants in aid.¹⁷

Data on Medicaid expenditures for different recipient categories were taken from the Medicaid Statistical Information System (MSIS) as published in *Medicare & Medicaid Statistical Supplement, 2006*.¹⁸ Data on the distribution of benefits and distribution of some taxes were taken from the U.S. Census Bureau’s Current Population Survey (CPS) of March 2005 (which covers the year 2004).¹⁹ Additional data on public school attendance were taken from the October 2004 *Current Population Survey*.²⁰ Data on household expenditures were taken from the Bureau of Labor Statistics Consumer Expenditure Survey (CEX) for 2004.²¹

Data on Medicaid expenditures in institutional long-term care facilities were taken from *Medicare & Medicaid Statistical Supplement, 2006*.²² Data on the education levels of elderly persons in institutional long-term care facilities were taken from the National Long Term Care Survey (NLTC).²³ Data on the number of individuals residing in nursing homes in the average month and the number of Medicaid recipients in nursing homes were taken from the

13. Office of Management and the Budget, *Historical Tables, Budget of the United States Government, Fiscal Year 2006*.

14. Office of Management and the Budget, *Analytical Perspectives, Budget of the United States Government, Fiscal Year 2006*, pp. 299–313.

15. See www.census.gov/govs/estimate/0400ussl_1.html.

16. See <http://ftp2.census.gov/govs/class/classfull.pdf>.

17. Congressional Research Service, *Cash and Noncash Benefits for Persons with Limited Income: Eligibility Rules, Recipient and Expenditure Data, FY2002–FY2004*, March 27, 2006.

18. U.S. Department of Health and Human Services, Centers for Medicare and Medicaid Services, *Medicare & Medicaid Statistical Supplement, Medicaid Tables 14.1–14.27, 2006*. This survey covers 2003.

19. The analysis used an electronic version of the March CPS data from the National Bureau of Economic Research. See www.nber.org/data/cps.html.

20. The analysis used an electronic version of the October CPS data from the National Bureau of Economic Research. See www.nber.org/data/cps.html.

21. U.S. Department of Labor, U.S. Bureau of Labor Statistics, *Consumer Expenditure in 2004*, Report 992, April 2006.

22. U.S. Department of Health and Human Services, Centers for Medicare and Medicaid Services, *Medicare & Medicaid Statistical Supplement, Medicaid Tables 14.1–14.27, 2006*.

23. Duke University and National Institutes of Health, National Institute on Aging, National Long Term Care Survey, 1999 Public Use Data Files National Long Term Care Study (NLTC), 1999 public use dataset. Produced and distributed by the Duke University Center for Demographic Studies with funding from the National Institute on Aging under Grant No. U01-AG007198. The NLTC is a nationally representative sample of individuals ages 65 years and older in long-term care facilities.

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2004 National Nursing Home Survey (NNHS). Data on the number of individuals in other types of institutions were taken from Census 2000 Summary File 1.²⁴

Count of Households. The Current Population Survey (CPS) reports some 113.15 million households in the U.S. in 2004. In addition, in the average month in 2004, some 1.65 million persons resided in long-term care facilities.²⁵

These long-term care residents were not included in the population reported in the CPS; however, because these individuals are the beneficiaries of a substantial share of Medicaid expenditure, it is important that they be included in any accounting of fiscal balances and distribution. Consequently, the 1.65 million persons in long-term care facilities were included in the present analysis; each individual in such a facility was counted as a separate household, swelling the overall count of households from 113.15 million to 114.8 million.²⁶

Calculating Aggregate Federal, State, and Local Spending. Aggregate federal expenditures at the sub-function level were taken from *Historical Tables, Budget of the United States Government, FY 2007*. These data are presented in Appendix Table A-1. State and local aggregate expenditures were based on data from the U.S. Bureau of Census survey of government.²⁷

Two modifications were necessary to yield an estimate of the overall combined spending for federal, state, and local government. First, some \$408 billion in state and local spending is financed by grants in aid from the federal government. Since these funds are counted as federal expenditures, recording them again as state and local expenditure would constitute a double count. Consequently, federal grants in aid were deducted from the appropriate categories of state and local spending.

A second modification involves the treatment of market-like user fees and charges at the state and local levels. These transactions involve direct payment of a fee in exchange for a government service: for example, payment of an entry fee at a park. User fees are described in the federal budget in the following manner:

[I]n addition to collecting taxes...the Federal Government collects income from the public from market-oriented activities and the financing of regulatory expenses. These collections are classified as user charges, and they include the sale of postage stamps and electricity, charges for admittance to national parks, premiums for deposit insurance, and proceeds from the sale of assets such as rents and royalties for the right to extract oil from the Outer Continental Shelf.²⁸

In the federal budget, user fees are not counted as revenue, and the government services financed by user fees are not included in the count of government expenditures. As the Office of Management and Budget states:

[User charges] are subtracted from gross outlays rather than added to taxes on the receipts side of the budget. The purpose of this treatment is to produce budget totals for receipts, outlays, and budget authority in terms of the amount of resources allocated governmentally, through collective political choice, rather than through the market.²⁹

24. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics, 2004 National Nursing Home Survey (NNHS), public use files, and U.S. Census Bureau, 2000 Census Summary File (SF 1), PCT16, PCT17-PCT17L.

25. In the average month in 2004, about 1.49 million individuals resided in nursing homes; another estimated 155,000 individuals resided in long-term care institutions other than nursing homes. Data on nursing home residents come from Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics, 2004 National Nursing Home Survey (NNHS), public use files. Data on individuals in other types of long-term care institutions come from the Bureau of Labor Statistics.

26. Because individuals in long-term care facilities are not counted in the CPS, they are not included in the expenditure and revenue allocation estimation of this analysis, except for Medicaid expenditures on institutional long-term care. However, they are included in the total number of U.S. households and the total number of low-skill households. To the extent that individuals without a high school degree represent a disproportionate share of the population in institutional long-term care and receive a number of government benefits and services, this analysis provides an underestimation of both actual aggregate and average expenditures received by low-skill households in the U.S.

27. See www.census.gov/govs/estimate/0400ussl_1.html.

28. Office of Management and Budget, *Analytical Perspectives, Budget of the United States Government, Fiscal Year 2006*, p. 301.

29. *Ibid.*

In contrast, Census tabulations of state and local government finances include user fees as revenue and also include the cost of the service provided for the fee as an expenditure.³⁰ The most prominent user fees treated in this manner in the Census state and local government financial data are household payments to public utilities for water, power, and sanitation services.

But market-like, user fee payments of this type do not involve a transfer of resources from one group to another or from one household to another. In addition, government user fee transactions do not alter the net fiscal deficit or surplus of any household (defined as the cost of total government benefits and services received minus total taxes and revenues paid) because each dollar in services received will be matched by one dollar of fees paid. Finally, determining who has paid a user fee and received the corresponding service is very difficult.

For these reasons, this paper has applied the federal accounting principle of excluding most user fees from revenue tallies and excluding the services funded by the fees from the count of expenditures to state and local government finances. This means that user charges and fees were removed from both the revenue and expenditure tallies for state and local government. As noted, the inclusion or exclusion of these user fees has no effect on the fiscal deficit figures for low-skill households presented in this paper.

Appendix Tables A-2A, A-2B, and A-2C show the deductions of federal grant in aid and user fee expenditures that yielded the state and local expenditure totals used in this analysis.

Estimating the Allocation of Direct and Means-Tested Benefits. In most cases, the dollar cost of direct benefits and means-tested benefits received by low-skill households was estimated by the dollar cost of benefits received as reported in the Census Bureau's Current Population Survey (CPS). One problem with this approach is that the CPS underreports receipt of most government benefits. This means that the aggregate dollar cost of benefits for a particular program as reported in the CPS is generally less than the actual program expenditures according to government budgetary data.

To be accurate, any fiscal analysis must adjust for benefit underreporting. This has been done in prior studies; for example, the National Academy of Sciences study of the fiscal costs of immigration, *The New Americans*, made an adjustment for such underreporting.³¹

The current analysis adjusts for underreporting in the CPS with a simple mathematical procedure that increases overall spending on any given program to equal actual aggregate spending levels and increases expenditures on low-skill households in an equal proportion. Let:

E_{tx} = total expenditures for program x reported in the CPS;

E_{lx} = expenditures for program x for low-skill households reported in the CPS;

E_{bx} = total expenditures for program x according to independent budgetary sources; and

H_l = number of low-skill households in the CPS.

The share of expenditures reported in the CPS received by low-skill households would equal E_{lx}/E_{tx} . The actual expenditures allocated to low-skill households would be estimated to equal (E_{lx}/E_{tx}) times E_{bx} .

The average per household benefit from the program received by low-skill households would equal:

(E_{lx}/E_{tx}) times (E_{bx}/H_l)

For example, if the CPS reported that low-skill households received 50 percent of food stamp benefits and the total expenditures on food stamps according to budgetary data were \$10 billion, then low-skill households would be estimated to receive \$5 billion in food stamp benefits. If there were 20 million low-skill households, then the average food stamp benefit per low-skill household would equal \$5 billion divided by 20 million households, or \$250.

30. U.S. Census Bureau, *Federal State and Local Governments: 1992 Government Finance and Employment Classification Manual*, sections 3.31 and 7.24.

31. National Research Council, *The New Americans: Economic, Demographic, and Fiscal Effects of Immigration* (Washington, D.C.: National Academy Press, 1997), p. 308.

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The key assumption behind this underreporting adjustment procedure is that low-skill households underreport receipt of welfare and other government benefits at roughly the same rate as the general population. For example, if receipt of food stamps is underreported by 15 percent in the CPS for the overall population, the adjustment procedure assumes that the sub-group of low-skill households in the CPS would also underreport food stamp receipt by 15 percent. The average level of food stamp benefits among low-skill households as reported in the CPS is then adjusted upward by this ratio to compensate for the underreporting.³² Since there is no evidence to suggest that low-skill households underreport government benefits to the Census at a rate different from that of the general population, this procedure appears valid as an estimating technique.

Estimating the Allocation of Education Expenditures. The average cost of public education services was calculated in a somewhat different manner since the CPS reports whether an individual is enrolled in a public school but does not report the cost of education services provided. Consequently, data from the Census survey of governments were used to calculate the average per pupil cost of public primary and secondary education in each state.³³ The total governmental cost of primary and secondary schooling for each household was then estimated by multiplying the number of enrolled pupils in the household by the average per pupil cost in the state where the household resides.

This procedure yielded estimates of total public primary and secondary education costs for low-skill households in the CPS and for the whole population in the CPS. Adjustments for misreporting in the CPS were made according to the procedures outlined above. (This process is described more fully below.) Public costs for post-secondary education were allocated in a similar manner.

Estimating the Allocation of Medical Expenditures. There is often confusion concerning the calculation of the cost of Medicaid and Medicare benefits by the Census. The Census makes no effort to determine the costs of medical treatments given to a particular person. Instead, it calculates the average cost of Medicaid or Medicare benefits per person for a particular demographic/beneficiary group. For example, per capita Medicaid costs for children are very different from those for the elderly. The Census assigns the appropriate per capita Medicaid or Medicare costs to each individual who reports coverage in the CPS, according to the individual's beneficiary class: for example, elderly, children, non-elderly able-bodied adults, and disabled adults.

The present analysis uses the per capita Medicaid and Medicare costs provided by the CPS and then adjusts for underreporting according to the procedures described above. (For more details, see the specific discussion of Medicare and Medicaid below.)

Medicaid expenditures on persons in institutional long-term care facilities require separate calculations. In the average month in 2004, some 1.65 million persons resided in long-term care facilities;³⁴ about 62 percent of these individuals received Medicaid assistance.³⁵

Individuals in long-term care facilities are not included in the population reported in the CPS. In FY 2004, some \$76 billion in Medicaid funds was spent on individuals in nursing homes and other institutional long-term care facilities,³⁶ of which nearly 60 percent was spent on Medicaid recipients without a high school diploma.³⁷

Estimating the Allocation of Population-Based Services. Wherever possible, this analysis has allocated the cost of population-based services for low-skill households in proportion to their estimated utilization of those ser-

32. If CPS underreports benefits by 15 percent, then the underreporting would be corrected by multiplying the CPS total by the inverse of 100 percent minus 15 percent (the inverse of 85 percent).

33. U.S. Census Bureau, Governments Division, *Public Education Finances, 2004*, issued March 2006. Costs included both current expenditures and capital outlays.

34. In the average month in 2004, about 1.49 million individuals resided in nursing homes; another estimated 155,000 individuals resided in long-term care institutions other than nursing homes.

35. The 62 percent statistic comes from the 2004 National Nursing Home Survey (NNHS). This analysis assumes that the share of Medicaid recipients in other types of long-term care institutions is equal to the share of Medicaid recipients in nursing homes.

36. Estimates based on FY 2003 MSIS expenditure data, as published in *Medicare & Medicaid Statistical Supplement, 2006*, and adjusted to equal actual FY 2004 expenditure levels as reported by the CRS. The spending figure includes a 16 percent increase for ancillary medical services.

37. Estimate comes from the 1999 National Long Term Care Survey.

vices. For example, the proportionate utilization of roads and highways by low-skill households was estimated, in part, on the basis of their share of gasoline purchases as reported in the Consumer Expenditure Survey (CEX).

When an estimate of proportionate utilization was not possible, the cost of population-based services was allocated on a uniform per capita basis. Some population-based services, such as airports, will be used infrequently by low-skill households; in these cases, the cost of the service for low-skill households was set at zero or at an arbitrary low level.

Estimating the Allocation of the Costs of General Government and Administrative Support Services.

Allocation of the costs of general government services such as tax collections and legislative functions presents difficulties since there is apparently no one who directly benefits from those services. Most taxpayers would regard IRS collection activities as a burden, not a benefit; however, while government administrative functions *per se* do not benefit the public, they do provide a necessary foundation that makes all other government benefit and service programs possible. A household that receives food stamp benefits, for example, could not receive those benefits unless the IRS had collected the tax revenue to fund the program in the first place.

It seems reasonable to integrate proportionally the cost of government support services into the cost of other government functions that depend on those services. Following this reasoning, the expenditures for general government and administrative support have been allocated among households in the same proportions that total direct benefits, means-tested benefits, education, and population-based services are distributed among households.³⁸

Estimating the Allocation of Financial Obligations Relating to Past Government Activities. Year by year, throughout most of the post-war period, U.S. taxpayers have not paid for the full cost of benefits and services provided by government. A portion of annual costs is passed on to be paid in future years.

Government costs are shifted to future years through two mechanisms. First, when government expenditure exceeds revenue, the government runs a deficit and borrows funds. The cost of borrowing is passed to future years in the form of interest payments and repayments of principal on public debts. Second, when a government employee provides a service to the public, part of the cost of that service is paid for immediately through the employee's salary, but the employee may also receive government retirement benefits in the future in compensation for services provided in the present. Expenditures on public-sector retirement systems are thus, to a considerable degree, present payments in compensation for services delivered in the past.

The mechanism for allocating these costs for past service among the present-day population is uncertain. In this paper, the following procedure was used.

First, veterans benefits were regarded as compensation for pure public goods and were allocated as such.

Second, the share of debt payments associated with past public good expenditure was considered a pure public good itself and allocated as such.

Third, the remaining interest and government retirement payments were allocated in proportion to the share of all direct benefits, means-tested benefits, education, and population services received by a group in FY 2004. Thus, the share of interest payments on government debt and government employee retirement costs allocated to low-skill households was proportionate to those households' share of direct and means-tested benefit spending, education, and spending on population-based services in FY 2004.

There are two rationales for this allocation. First, the government's honoring of past financial obligations is a necessary precondition for current government operations. For example, if government violated its obligations and refused to pay retirement benefits owed to past employees, it would find it difficult to hire current employees, at least at their present wage rates. Similarly, if the government failed to pay interest on its existing debt, it would find it very difficult to borrow money in the future; unable to borrow, the government would be forced to slash benefits or sharply raise taxes. Thus, payment of past government financial obligations is a necessary element of current government operations; it is an integral part of the "cost of production" of current government benefits and services.

38. Approximately 27 percent of total federal expenditure is devoted to pure public good functions; thus, 27 percent of federal support service expenditure was assumed to assist public good functions.

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As in the case of tax collections, the public does not benefit directly from the payment of past governmental financial obligations, but the payment of those past obligations makes the provision of current benefits and services possible. Payment of past obligations is an important governmental secondary function that makes primary functions possible.

It seems reasonable, therefore, to integrate the cost of servicing past financial obligations into the costs of current government operations and to allocate the benefits of debt service expenditures in proportion to the distribution of present benefit and services.³⁹ That procedure has been used in this analysis.

A second perspective on this issue can be obtained by considering the multi-year costs of high school dropout households rather than just the single-year costs. As noted, in most years in the post-war period, government has failed to pay fully for its activities, passing part of the cost on to future years. A significant portion of current government debt represents benefits for low-skill households that were financed by deficit spending in prior years. In a multi-year perspective, the true fiscal cost of low-skill households includes not merely the fiscal deficit (benefits minus taxes) for the current year, but the fiscal deficit of low-skill households from prior years that has been shifted forward to the present by government borrowing.

Consequently, the true cost of low-skill households for the taxpayers would include the portion of government debt obligations that can be attributed to past benefits for low-skill households. To calculate this, it would be necessary to calculate the share of government debt that can be attributed to past benefits and services for low-skill households, a number that would be roughly comparable to the share of total government spending allocated on behalf of low-skill households in prior years.

Calculating such a figure would be a daunting task; however, review of government spending over the past three decades suggests that the share of spending devoted to low-skill households has probably not changed dramatically over that time. Consequently, the share of government spending on direct benefits, means-tested benefits, education, and population-based services to support low-skill households in FY 2004 (19 percent) can serve as a very rough proxy for the share of spending on such households in recent decades. Thus, the share of interest on the government debt that can be attributed to past expenditures on low-skill households is probably roughly proportionate to the share of current spending devoted to those households.

Estimating the Distribution of Pure Public Goods. Government pure public goods include expenditures on defense, veterans, international affairs, scientific research, and part of spending on the environment, as well as debt obligations relating to past public good spending. The total cost of pure public goods was divided by the whole U.S. population to determine an average per capita cost.

The share of benefits going to low-skill households was estimated based on their share of the population; the average value came out at roughly \$6,000 per low-skill household. (This procedure assumes that low-skill households receive the same per capita utility from pure public good spending as does the general population.) Thus, it might be reasonable to say that each low-skill household benefits from some \$6,000 in public goods spending each year that it does not pay for, but it would be inaccurate to assume that the benefit received by low-skill households imposes added costs on society. For a further discussion, see Appendix B.

Estimating the Distribution of Taxes and Other Government Collections. The distribution of federal and state income taxes was calculated from CPS data. The Census imputes tax payments into the CPS based on a household's income and demographic characteristics and the appropriate federal and state tax rules; however, since income is underreported in the CPS, this means that imputed taxes will also be too low. Thus, the imputed tax payments in the CPS were adjusted to equal the aggregate income tax revenues reported in government budgetary documents. Federal revenue totals were taken from *Analytical Perspectives, Budget of the U.S. Government, Fiscal Year 2006*.⁴⁰ State and local tax and revenue data were taken from the U.S. Census survey of governments.⁴¹

39. Financial obligations also include government employee retirement costs.

40. Office of Management and Budget, *Analytical Perspectives, Budget of the United States Government, Fiscal Year 2006*, pp. 299–323.

41. See www.census.gov/govs/estimate/0400ussl_1.html.

The procedures for adjusting for the underreporting of income taxes were the same as those used to adjust for underreporting of expenditures. For example, for federal income tax, let:

T_t = total income tax reported in the CPS;

T_l = total income tax for low-skill households reported in the CPS;

T_b = total income tax according to independent budgetary sources; and

H_l = number of low-skill households in the CPS.

The share of taxes paid by low-skill households as reported in the CPS would equal T_l/T_t . The actual taxes allocated to low-skill households would be estimated to equal (T_l/T_t) times T_b .

The average tax paid per low-skill household would equal:

(T_l/T_t) times (T_b/H_l)

State income taxes were adjusted for underreporting according to the same formula.

Employees were assumed to pay both the “employee” and “employer” share of FICA taxes. Allocation of FICA taxes was estimated based on the distribution reported in the CPS, adjusted for underreporting in the manner described above.

The incidence of federal and state corporate profits tax was assumed to fall 70 percent on workers and 30 percent on owners of capital.⁴² The workers’ share was allocated according to the distribution of earnings in the CPS, the owners’ share according to the allocation of property income in the CPS.

Sales and excise taxes were assumed to fall on the consumer; tax payments were estimated based on the share of total consumption of relevant commodity or commodities in the Consumer Expenditure Survey. For example, since the CEX reported that households headed by persons without a high school degree consumed 18.2 percent of the sales of tobacco products, these same households were estimated to pay a corresponding 18.2 percent of all excise and sales taxes on tobacco products. Additional information on specific taxes is provided below.

Specific Calculations on Expenditures

The average cost of government benefits and services per low-skill household was calculated for 50 separate expenditure categories. The algorithms employed for each category are described below, and the specific calculations are shown in Appendix Table A-4.

Calculations for Specific Direct Benefit Expenditures.

- **Social Security Benefits.** Social Security benefits for individual households were calculated using dollar benefit values reported in the CPS. Adjustments for underreporting of benefits in the CPS were made using the procedures described above.
- **Medicare.** The value of Medicare benefits per household was calculated based on data in the CPS. The CPS calculates the value of Medicare coverage for an individual as equal to the average cost per eligible beneficiary. Adjustments for misreporting of benefits in the CPS were made using the procedures described above.⁴³
- **Unemployment Insurance Benefits.** Unemployment insurance benefits for individual households were calculated using dollar benefit values reported in the CPS. Adjustments for underreporting of benefits in the CPS were made using the procedures described above.
- **Workmen’s Compensation.** Workmen’s compensation benefits for individual households were calculated using dollar benefit values reported in the CPS. Adjustments for underreporting of benefits in the CPS were made using the procedures described above.

42. William C. Randolph, “International Burdens of the Corporate Income Tax,” Congressional Budget Office *Working Paper* No. 2006-09, 2006.

43. In the case of Medicare, the CPS actually slightly overreports the total cost of benefits; therefore, in this case, the adjustment procedure results in a small reduction in Medicare costs per household compared to the CPS data.

The Heritage Foundation

- **Other Federal Retirement Programs.** This category includes Railroad Retirement and the Black Lung Disability Trust Fund. Benefits for individual households were calculated using dollar values reported in the CPS. Adjustments for underreporting of benefits in the CPS were made using the procedures described above.
- **Agricultural Subsidy Programs.** Low-skill households were assumed to receive zero benefit from these programs.
- **Deposit Insurance.** Net expenditure for this category is very low; low-skill households were assumed to receive zero benefit.

Calculations for Public Education.

- **Public Primary and Secondary Education.** The average cost of public education services was calculated in a somewhat different manner since the CPS reports whether an individual is enrolled in a public school but does not report the cost of education services provided. Data from the October 2004 CPS were used to determine enrollment in public schools, while data from the Census survey of governments were used to calculate the average per pupil cost of public primary and secondary education in each state.⁴⁴ The total governmental cost of primary and secondary schooling for each household was then estimated by multiplying the number of enrolled pupils in the household by the average per pupil cost in the state where the household resides.

This procedure provided an estimate of total public primary and secondary education costs for the whole population and the percentage of total costs going to low-skill households. The percentage of costs going to low-skill households was multiplied by the expenditure total for primary and secondary education from independent budgetary sources; this yielded an estimate of aggregate primary and secondary public school expenditures for low-skill households. Average per household costs of public primary and secondary education were calculated by dividing the total costs of low-skill households by the overall number of such households.

- **Public Post-Secondary Education.** Public costs for post-secondary education were allocated using the same procedures used for primary and secondary expenditures.
- **Other Education.** These state and local costs were allocated in proportion to the low-skill households' share of the general population.

Calculations for Specific Means-Tested Benefit Expenditures.

Means-Tested Expenditures in General. Aggregate figures on federal means-tested expenditures were taken from Office of Management and Budget totals in *Historical Tables, Budget of the United States Government, Fiscal Year 2006*. (See Appendix Table A-1.) Federal expenditures on individual means-tested programs are presented in Appendix Table A-4 and were taken from the Congressional Research Service report, *Cash and Noncash Benefits for Persons with Limited Income: Eligibility Rules, Recipient and Expenditure Data, FY2002–FY2004*.

Figures on specific state and local means-tested expenditures are presented in Appendix Tables A-2A, A-2B, A-2C, and A-4 and were taken from the CRS report. These figures exclude state means-tested expenditures financed by federal grants. An estimated \$2.5 billion in state-run General Relief programs was included in the “public assistance” category in Appendix Table A-4; these expenditures do not appear in the CRS report because they lack a federal component.

The total means-tested expenditure figure of \$550.9 billion, presented in Appendix Table A-3, excludes means-tested veterans benefits (which are counted as public good spending) and most means-tested educational spending.⁴⁵

Medicaid Expenditures in General. The Medicaid Statistical Information System (MSIS)⁴⁶ reports Medicaid expenditures for four recipient groups: children; disabled, non-elderly adults; able-bodied, non-elderly adults;

44. Data from U.S. Census Bureau, Governments Division, *Public Education Finances, 2004*, issued March 2006.

45. The means-tested spending total does include Head Start.

and elderly adults. The MSIS data further divide expenditures in each of the four recipient categories into expenditures for recipients in the general population and expenditures for recipients in long-term care institutions, which include nursing facilities (NF) and intermediate care facilities for the mentally handicapped (ICF-MR). This yields eight overall Medicaid recipient categories; separate expenditure calculations were made for each of these eight categories.

- **Elderly Medicaid Recipients in Long-Term Care Institutions.** Medicaid expenditures for elderly persons without a high school diploma in long-term care institutions were estimated according to four steps.

First, institutional long-term care expenditures on recipients of unknown recipient status were imputed into the four known recipient categories of persons in institutions on a pro rata basis.

Second, institutional long-term care expenditures (nursing facility plus ICF-MR spending) as reported in the MSIS are facility expenditures and do not reflect Medicaid spending on ancillary medical services (such as inpatient hospital, physician, and prescription drugs services) used by institutional long-term care recipients. On average, ancillary medical spending is estimated to be about 16 percent of facility expenditures across the four recipient groups.⁴⁷ To calculate the adjusted institutional long-term care expenditures that would include both facility and ancillary spending, MSIS-based nursing facility and ICF-MR expenditures are multiplied by a factor of 1.16.

Third, total Medicaid expenditures reported in the MSIS fall short of total expenditures reported by the Congressional Research Service.⁴⁸ To compensate for this shortfall, the expenditure total calculated in stage 2 was multiplied by the ratio of CRS total Medicaid expenditures divided by MSIS total expenditures; this yielded an adjusted institutional long-term care expenditure total (ALCET) for elderly persons in long-term care.

Fourth, the National Long Term Care study showed that some 59 percent of elderly Medicaid recipients in nursing facilities lacked a high school diploma.⁴⁹ In addition, all elderly persons in ICF-MR were assumed to lack a high school diploma. Based on their share of Medicaid recipients in long-term care institutions, elderly persons without a high school diploma were assumed overall to receive 59.9 percent of the adjusted long-term care expenditure total (ALCET) for all elderly persons in institutional long-term care.

- **Non-elderly Medicaid Recipients in Long-Term Care.** Medicaid expenditures for non-elderly persons without a high school diploma were estimated according to four steps similar to those used for the elderly.

First, institutional long-term care expenditures on recipients of unknown recipient status were imputed into the four known-eligibility recipient categories on a pro rata basis.

Second, institutional long-term care expenditures (nursing facility plus ICF-MR spending) as reported in the MSIS are facility expenditures and do not reflect Medicaid spending on ancillary medical services (such as inpatient hospital, physician, and prescription drugs services) used by institutional long-term

46. Calculations in this appendix are based on FY 2003 MSIS data, U.S. Department of Health and Human Services, Centers for Medicare and Medicaid Services, *Medicare & Medicaid Statistical Supplement, 2006*, Medicaid Tables 14.1–14.27, at www.cms.hhs.gov/MedicareMedicaidStatSupp/LT/itemdetail.asp?filterType=none&filterByDID=-99&sortByDID=1&sortOrder=ascending&itemID=CMS1190631&intNumPerPage=10 (February 20, 2007).

47. The 16 percent figure was taken from Anna Sommers *et al.*, “Medicaid’s Long-Term Care Beneficiaries: An Analysis of Spending Patterns,” Kaiser Commission on Medicaid and the Uninsured, 2006, Table 2. The study used MSIS 2002 data.

48. MSIS expenditures fall short of actual Medicaid expenditures because of its accounting system and because the MSIS does not include disproportionate provider payments, some supplemental payments, and administrative costs. In addition, Medicaid expenditure calculations for the different recipient groups are based on published FY 2003 data. Assuming that each recipient group’s share of spending did not vary from 2003 to 2004, FY 2003 expenditure figures were also adjusted to equal actual FY 2004 spending levels as reported by the CRS. Step 3 in this estimation process accounted for both adjustments at once.

49. National Long Term Care Study (NLTC), 1999 public use dataset. Produced and distributed by the Duke University Center for Demographic Studies with funding from the National Institute on Aging under Grant No. U01-AG007198. The NLTC is a nationally representative sample of individuals ages 65 years and older in long-term care facilities.

care recipients. On average, ancillary medical spending is estimated to be about 16 percent of facility expenditures across the four recipient groups.⁵⁰ To calculate the adjusted institutional long-term care expenditures that would include both facility and ancillary spending, MSIS-based nursing facility and ICF-MR expenditures were multiplied by a factor of 1.16.

Third, total Medicaid expenditures reported in the MSIS fall short of total expenditures reported by the Congressional Research Service. To compensate for this, the expenditure total calculated in stage 2 was multiplied by the ratio of CRS total Medicaid expenditures divided by MSIS total expenditures; this yielded an adjusted institutional long-term care expenditure total (ALCET) for non-elderly persons in long-term care.

Fourth, the share of adjusted institutional long-term care expenditure for non-elderly persons that went to persons without a high school diploma was then estimated. Of the total adjusted Medicaid expenditures for non-elderly recipients in institutional long-term care, 52.3 percent was spent on individuals residing in intermediate care facilities for the mentally handicapped (ICF-MR); all beneficiaries in these facilities were assumed to be without a high school diploma.⁵¹ Some 6.8 percent of expenditures went to non-elderly persons who lacked a high school diploma and who resided in nursing facilities.⁵² Altogether, 59.1 percent of Medicaid expenditures on non-elderly persons in institutional long-term care went to persons who lacked a high school diploma.

- **Medicaid Expenditures on Elderly Persons in the General Population.** Medicaid expenditures for elderly persons residing in low-skill households were calculated as follows.

First, total Medicaid expenditures reported in the MSIS fall short of total expenditures reported by the Congressional Research Service. To compensate for this, Medicaid expenditures for elderly persons as reported in the MSIS were multiplied by the ratio of CRS total Medicaid expenditures divided by MSIS total expenditures.

Second, the adjusted long-term care expenditure total (ALCET) for elderly persons in long-term care institutions was subtracted from the product calculated in stage 1. The remainder equaled expenditures on the non-institutional elderly.

Third, the percent of Medicaid expenditures on the non-institutional elderly going to persons in low-skill households was calculated from CPS data; this percentage was applied to the remainder in stage 2 to yield Medicaid expenditures for the non-institutional elderly going to low-skill households.

The formula for Medicaid expenditures for elderly persons in low-skill households in the general population would be as follows. Let:

M_{el} = Medicaid expenditures for elderly persons residing in low-skill households in the general population;

M_{et} = Total Medicaid expenditures on the elderly according to MSIS data;

M_{ei} = Medicaid expenditures on the elderly in long-term care institutions;

$MSIS_t$ = Total Medicaid expenditure according to MSIS data;

CRS_t = Total Medicaid expenditure according to Congressional Research Service data; and

CPS_e = Share of Medicaid expenditures for elderly persons in the CPS going to elderly persons residing in low-skill households.

50. The 16 percent figure came from Anna Sommers *et al.*, "Medicaid's Long-Term Care Beneficiaries: An Analysis of Spending Patterns," Kaiser Commission on Medicaid and the Uninsured, 2006, Table 2. The Kaiser study used MSIS 2002 data.

51. For more information on ICF-MR facilities, see www.cms.hhs.gov/CertificationandCompliance/09_ICFMRs.asp (March 7, 2007).

52. To derive this figure, the percent of non-elderly adult recipients without a high school education in long-term care nursing facilities was assumed to equal that of the general U.S. population: about 14 percent in 2004. U.S. Census Bureau, Current Population Survey, Educational Attainment in the United States: 2004, Table 1, at www.census.gov/population/socdemo/education/cps2004/tab01-01.xls (March 2, 2007).

Medicaid expenditures for elderly persons residing in low-skill households in the general population can then be calculated as:

$$M_{el} = (M_{et} - M_{ei}) \text{ times } CRS_t/MSIS_t \text{ times } CPS_e$$

- **Medicaid Expenditures on Children in the General Population.** Medicaid expenditures for children residing in low-skill households were calculated with the same three-step procedure used for elderly persons in the general population.

First, total Medicaid expenditures reported in the MSIS fall short of total expenditures reported by the Congressional Research Service. To compensate for this, Medicaid expenditures for children as reported in the MSIS were multiplied by the ratio of CRS total Medicaid expenditures divided by MSIS total expenditures.

Second, the adjusted long-term care expenditure total (ALCET) for children in long-term care institutions was subtracted from the product calculated in stage 1. The remainder equaled Medicaid expenditures on non-institutionalized children.

Third, the percent of Medicaid expenditures on non-institutionalized children going to children in low-skill households was calculated from CPS data; this percentage was applied to the remainder in stage 2 to yield Medicaid expenditures for the non-institutionalized children residing in low-skill households.

- **Medicaid Expenditures on Able-bodied Adults in the General Population.** Medicaid expenditures for able-bodied adults residing in low-skill households were calculated with the same three-step procedure used for elderly persons in the general population.

First, total Medicaid expenditures reported in the MSIS fall short of total expenditures reported by the Congressional Research Service. To compensate for this, Medicaid expenditures for able-bodied adults in the general population as reported in the MSIS were multiplied by the ratio of CRS total Medicaid expenditures divided by MSIS total expenditures.

Second, the adjusted long-term care expenditure total (ALCET) for able-bodied adults in long-term care institutions was subtracted from the product calculated in stage 1. The remainder equaled Medicaid expenditures on non-institutionalized able-bodied adults.

Third, the percent of Medicaid expenditures on non-institutionalized able-bodied adults going to able-bodied adults in low-skill households was calculated from CPS data; this percentage was applied to the remainder in stage 2 to yield Medicaid expenditures for the non-institutionalized able-bodied adults residing in low-skill households.

- **Medicaid Expenditures on Disabled Adults in the General Population.** Medicaid expenditures for disabled adults residing in low-skill households were calculated with the same three-step procedure used for elderly persons in the general population.

First, total Medicaid expenditures reported in the MSIS fall short of total expenditures reported by the Congressional Research Service. To compensate for this, Medicaid expenditures for disabled adults in the general population as reported in the MSIS were multiplied by the ratio of CRS total Medicaid expenditures divided by MSIS total expenditures.

Second, the adjusted long-term care expenditure total (ALCET) for disabled adults in long-term care institutions was subtracted from the product calculated in stage 1. The remainder equaled Medicaid expenditures on non-institutionalized disabled adults.

Third, the percent of Medicaid expenditures on non-institutionalized disabled adults going to disabled adults in low-skill households was calculated from CPS data; this percentage was applied to the remainder in stage 2 to yield Medicaid expenditures for the non-institutionalized disabled adults residing in low-skill households.

The Heritage Foundation

- **Food Stamps.** The Food Stamp Program is a means-tested program. Benefits for individual households were calculated using dollar benefit values reported in the CPS. Adjustments for underreporting of food stamp benefits in the CPS were made using the procedures described above.
- **Supplemental Security Income (SSI).** SSI is a means-tested program. SSI benefits for individual households were calculated using dollar benefit values reported in the CPS. Adjustments for underreporting of benefits in the CPS were made using the procedures described above.
- **The Earned Income Tax Credit (EITC).** The EITC is a means-tested program supporting low-income working families with children. Dollar values of EITC benefits are calculated by the Census for each eligible household and imputed into the CPS data files. For the present analysis, EITC benefits for individual households were based on the dollar benefit values reported in the CPS. Adjustments for underreporting of EITC benefits in the CPS were made using the procedures described above.
- **Public Housing Subsidies.** There are a number of federal means-tested housing benefit programs. Public housing benefits for individual households were determined using dollar benefit values reported in the CPS. Adjustments for underreporting of benefits in the CPS were made using the procedures described above.
- **Public Assistance.** Public assistance covers cash benefits from the Temporary Assistance to Needy Families (TANF) program and General Relief programs.⁵³ Public assistance benefits were determined for individual households using dollar benefit values reported in the CPS. Adjustments for underreporting of benefits in the CPS were made using the procedures described above.
- **Energy Assistance.** Energy assistance is a means-tested benefit program. Benefits for individual households were determined using dollar benefit values reported in the CPS. Adjustments for underreporting of benefits in the CPS were made using the procedures described above.
- **Women, Infants and Children (WIC) Nutrition Program.** WIC is a means-tested program subsidizing food consumption for low-income pregnant women and low-income mothers with infants and small children. The CPS reports receipt of WIC benefits by households but gives no dollar value. The share of total WIC spending going to low-skill households was assumed to equal the share of WIC recipients in the CPS in low-skill households.
- **Day Care Assistance.** Federal, state, and local governments provide day care assistance to low-income parents through a variety of means-tested programs. The CPS reports receipt of day care assistance by households but gives no dollar value. The share of total day care spending going to low-skill households was assumed to equal the share of day care recipients in the CPS in low-skill households.
- **Indian Health Services.** Indian Health is a means-tested aid program. The CPS reports receipt of Indian Health benefits by households but gives no dollar value. The share of total Indian Health spending going to low-skill households was assumed to equal the share of Indian Health recipients in the CPS in low-skill households.
- **Training.** The CPS reports whether an individual participates in government job training programs but assigns no cost to this participation. The share of total means-tested training spending going to low-skill households was assumed to equal the share of training-participant recipients in the CPS who lived in low-skill households.
- **Other Means-Tested Aid.** Altogether, the federal government operates some 70 different means-tested aid programs. The CPS contains data on household utilization of 11 of the largest programs, which cover 93 percent of overall means-tested spending, but provides no data on the smaller programs. Allocation of benefits from the remaining means-tested programs was estimated in the following manner.

53. The state and local expenditures on public assistance presented in Appendix Table A-4 include data and state TANF spending taken from the Congressional Research Service and an estimated \$2.5 billion in state and local spending on General Relief.

First, the share of reported total spending for the 11 means-tested programs covered by the CPS going to households headed by persons without a high school degree was determined.

Second, the low-skill households were assumed to receive a share of the means-tested benefits from the remaining unreported programs equal to their share of all expenditures on reported means-tested programs in the CPS.

Third, once the estimated total benefits from these residual programs received by low-skill households as a whole was calculated, an average value per low-skill household could be computed.

Specific Calculations for Population-Based Programs.

- **Highways and Roads.** Utilization of roads, highways, and parking facilities by low-skill households was assumed to be proportionate to their share of gasoline expenditures in the CEX.
- **Mass Transit Subsidies.** Low-skill households were assumed to utilize mass transit in proportion to their share of expenditures on public transportation as reported in the CEX.
- **Air Transportation.** Low-skill households were assumed to receive minimal benefit from government spending on airports and air travel. The low-skill household share of this spending was arbitrarily set at 2 percent of total expenditures.
- **Sea and Inland Port Facilities and Other Ground Transportation.** The share of these expenditures benefiting low-skill households was assumed to equal their share of total consumption in the CEX.
- **Other Federal Ground Transportation.** Low-skill households were assumed to receive none of the benefits of this spending.
- **Justice, Police, and Public Safety.** These programs provide a general benefit to entire communities. These expenditures were assumed to have a uniform per capita value across the entire population. The share of expenditures benefiting low-skill households was assumed to be equal to their share of the total population.
- **Population-Based Expenditures on Resources, Sanitation, and the Environment.** This category covers spending on parks and recreation, sewage and waste management, pollution control, natural resources, and public utility expenditures that are not financed through user fees. These expenditures were assumed to have a uniform per capita value across the entire population. The share of expenditures benefiting low-skill households was assumed to be equal to their share of the total population.
- **Public Utility Spending for Water Supply.** These expenditures represent expenditures on public water supply beyond those financed through user fees. The low-skill households' share of this spending was assumed to equal the group's share of expenditures on water in the CEX.
- **Public Utility Spending for Electric Power Supply.** These expenditures represent expenditures on public electric power beyond those financed through user fees. The low-skill households' share of this spending was assumed to equal the group's share of expenditures on electricity in the CEX.
- **Public Utility Spending for Gas Supply.** These expenditures represent expenditures on public gas supply beyond those financed with user fees. The low-skill households' share of this spending was assumed to equal the group's share of expenditures on gas supply in the CEX.
- **Pollution Control and Abatement.** The analysis assumes that expenditures on pollution control would be proportionate to a household's propensity to pollute and that a household's propensity to pollute would be proportionate to its share of overall consumption. In consequence, low-skill households' share of pollution control expenditure would be proportionate to the group's share of total consumption in the CEX.
- **General Health.** This category includes spending on mental health, substance abuse, and public health. These expenditures were assumed to have a uniform per capita value across the entire popu-

The Heritage Foundation

lation. The share of expenditures benefiting low-skill households was assumed to be equal to their share of the total population.

- **Consumer and Occupational Health.** These expenditures were assumed to have a uniform per capita value across the entire population. The share of expenditures benefiting low-skill households was assumed to be equal to their share of the total population.
- **Protective Inspection and Regulation.** These expenditures were assumed to have a uniform per capita value across the entire population. The share of expenditures benefiting low-skill households was assumed to be equal to their share of the total population.
- **Community Development.** These expenditures were assumed to have a uniform per capita value across the entire population. The share of expenditures benefiting low-skill households was assumed to be equal to their share of the total population.
- **Miscellaneous Spending.** This category includes labor services, activities to advance commerce, postal service, and libraries. These expenditures were assumed to have a uniform per capita value across the entire population. The share of expenditures benefiting low-skill households was assumed to be equal to their share of the total population.

Specific Calculations for General Government Support Services for Other Government Programs.

- **General Government/Administrative Support Functions at the State and Local Levels.** This category consists mainly of administrative services in support of other government functions. It includes tax and revenue collection, lottery administration, budgeting, central administration, legislative functions, trust fund administration, central administration, and legislative functions. These activities do not provide benefits or services to the general public, but rather provide support for other programs that do directly affect the public. For example, tax collection does not directly benefit anyone but is necessary to provide funding for all other programs that do provide benefits and services to the public. Since the purpose of these support functions is to sustain other government programs, the costs for administrative support services was allocated according to the share of overall state and local direct benefits, means-tested benefits, education, and population-based services received by a household.
- **General Government/Administrative Support Functions at the Federal Level.** Like the previous category, this category includes tax collection activity, legislative functions, and other administrative support activities; and like the previous category, these activities do not directly benefit the public, but rather sustain all other government activities. In FY 2004, some 27 percent of total federal spending was allocated to pure public good functions. Therefore, 27 percent of federal general government and administrative support spending was estimated to be in support of pure public good functions. The remaining spending was allocated among households according to the share of all federally funded direct benefits, means-tested benefits, education, and population-based services received by a household.

Specific Calculations for Financial Obligations Relating to Past Government Activities.

- **Federal Financial Obligations.** This category includes interest payments on the federal debt and expenditures on federal employee retirement. These expenditures do not directly benefit the public, but rather sustain all other government activities. In FY 2004, some 27 percent of total federal spending was allocated to pure public good functions. Therefore, 27 percent of federal financial obligations were estimated to be in support of pure public good functions. The remaining spending was allocated among households according to the share of all direct and means-tested benefits, education, and population-based services received by a household.
- **State and Local Financial Obligations.** This category includes interest payments on the state and local debt and expenditures on state and local employee retirement. These expenditures do not directly benefit the public, but rather sustain all other government activities. Spending was allocated among households according to the share of all direct and means-tested benefits, education, and population-based services received by a household.

Specific Calculations for Public Goods Expenditure. This category includes spending on national defense, international affairs, science and scientific research, veterans programs, and natural resources and the environment. These expenditures were assumed to have a uniform per capita value across the entire population. The share of expenditures benefiting low-skill households was assumed to be equal to their share of the total population.

- **National Defense.** National defense is a pure public good. Defense expenditures were assumed to have a uniform per capita value across the entire population. The share of expenditures benefiting low-skill households was assumed to be equal to their share of the total population.
- **Veterans Programs.** Spending on veterans programs represents a cost related to past public goods services. These expenditures were assumed to have a uniform per capita value across the entire population. The share of expenditures benefiting low-skill households was assumed to be equal to their share of the total population.
- **Science and Scientific Research.** These expenditures were assumed to have a uniform per capita value across the entire population. The share of expenditures benefiting low-skill households was assumed to be equal to their share of the total population.
- **International Affairs.** These expenditures were assumed to have a uniform per capita value across the entire population. The share of expenditures benefiting low-skill households was assumed to be equal to their share of the total population.
- **Natural Resources and the Environment.** These expenditures represent an estimate of pure public goods spending on the environment such as preservation of species and wilderness. Parks, recreation, and pollution abatement activities are not included in this category because the cost of those activities will tend to increase as the population increases. The environmental expenditures in this category were assumed to have a uniform per capita value across the entire population. The share of expenditures benefiting low-skill households was assumed to be equal to their share of the total population.
- **Expenditures on Administrative Support Functions That Assist Governmental Public Good Functions.** Some 27 percent of federal government spending in FY 2004 went to public good functions; therefore, it is assumed that 27 percent of federal administrative support spending also was devoted to backing public goods functions.
- **Financial Obligations for Past Public Good Functions.** This category includes interest payments on the federal debt and federal employee retirement costs. These are obligations that result from federal activities in prior years. The public good share of these obligations would be equal to the public good share of total federal spending in prior years. In FY 2004, some 27 percent of federal spending went to public good functions. The analysis assumes that 27 of federal spending in past years also went to public good functions; therefore, the public good share of spending on past financial obligations is assumed to equal 27 percent of the full costs of past financial obligations.

Specific Calculations for Taxes and Revenues

Average payments per low-skill household were calculated for 33 specific tax and revenue categories. The algorithm used for each revenue category is described below, and the calculations for each category are presented in Appendix Table A-5.

Specific Calculations for Federal Taxes and Revenues.

- **Federal Individual Income Tax.** The distribution of federal income taxes was calculated from CPS data. The Census imputes tax payments into the CPS based on a household's income and demographic characteristics and the appropriate federal income tax rules; however, since income is underreported in the CPS, this means that imputed taxes will also be too low. Thus, the imputed tax payments in the CPS were adjusted so that aggregate tax revenues equaled those reported in *Analytical Perspectives, Budget of the U.S. Government, Fiscal Year 2006*.⁵⁴ Adjustments for underreporting of tax

54. Office of Management and Budget, *Analytical Perspectives, Budget of the United States Government, Fiscal Year 2006*, pp. 299–323.

payments in the CPS were made using the procedures used for adjusting benefits for underreporting as described above.

- **Federal Insurance Contribution Act (FICA) Taxes.** Employees were assumed to pay both the “employer” and “employee” share of FICA taxes. Data on the distribution of FICA tax were taken from the CPS. The Census imputes FICA tax values into the CPS based on reported earnings. Adjustment for underreporting was done in the manner previously described.
- **Federal Corporate Income Tax.** There are many conflicting opinions on the incidence of corporate income tax. The tax may be paid by owners, workers, consumers, or a combination of all three. For example, the Congressional Budget Office has traditionally assumed that the burden of this tax was fully borne by the owners of businesses; however, a recent CBO analysis concluded that in a competitive international environment, 70 percent of the cost of this tax was in fact shifted to workers.⁵⁵ As a whole, workers will experience lower wages as a result of the tax.

This study uses the conclusions of this recent CBO analysis, assigning 70 percent of the federal corporate income tax burden to workers and 30 percent to owners; this allocation increases the estimate of the average taxes paid by low-skill households. The distribution of the workers’ share of the tax burden was estimated on the basis of the distribution of earnings reported in the CPS. The share of federal corporate income tax borne by workers in low-skill households was assumed to be proportionate to the share of total earnings reported by low-skill households in the CPS. The distribution of the owners’ share of the tax burden was estimated on the basis of the distribution of property income (dividends, interest, and rent) in the CPS; the share borne by workers in low-skill households was assumed to be proportionate to the share of total property income reported by low-skill households in the CPS.

- **Federal Receipts for Unemployment Insurance.** This tax was assumed to fall on workers. The share paid by low-skill workers was assumed to equal their share of earnings in the CPS.
- **Federal Highway Trust Fund Taxes.** This tax was assumed to fall half on the private owners of motor vehicles and half on businesses. The business share was further assumed to fall half on consumers and half on owners. Overall, the tax was assumed to fall 50 percent on private motor vehicle operators, 25 percent on consumers, and 25 percent on owners of businesses.⁵⁶ The portion of the tax paid by private motor vehicle operators that fell on low-skill households was assumed to equal those households’ share of gasoline consumption as reported in the CEX. The portion of the tax paid by consumers that fell on low-skill households was assumed to be proportionate to those households’ share of total consumption as reported in the CEX. The portion of the tax paid by business owners that fell on low-skill households was assumed to be proportionate to those households’ share of property income (interest, dividends, and rent) as reported in the CPS.
- **Federal Airport and Airways Taxes.** Low-skill households probably use air travel infrequently. They were assumed to pay 2 percent of these taxes and to utilize a corresponding 2 percent of government air travel expenditures.
- **Federal Excise Tax on Alcohol.** This tax was assumed to fall on the consumers of alcohol. The share of the tax borne by low-skill households was assumed to be proportionate to those households’ share of the total consumption of alcohol products as reported in the CEX.
- **Federal Excise Tax on Tobacco.** This tax was assumed to fall on the consumers of tobacco products. The share of the tax borne by low-skill households was assumed to be proportionate to those households’ share of the total consumption of tobacco products as reported in the CEX.
- **Federal Excise Tax on Telephones.** This tax was assumed to fall on telephone users. The share of the tax borne by low-skill households was assumed to be proportionate to those households’ share of the total consumption of telephone products as reported in the CEX.

55. Randolph, “International Burdens of the Corporate Income Tax.”

56. Based on information provided by the Tax Foundation.

- **Federal Excise Tax on Transportation Fuels.** This tax was assumed to fall on the consumers of transportation fuels. The share of the tax borne by low-skill households was assumed to be proportionate to those households' share of the total consumption of fuels as reported in the CEX.
- **Other Federal Excise Taxes.** These taxes were assumed to fall on consumers in general. The share of tax borne by low-skill households was assumed to be proportionate to those households' share of the total consumption as reported in the CEX.
- **Federal Gift and Estate Taxes.** Low-skill households were assumed to pay none of these taxes.
- **Federal Customs, Duties, and Fees.** These taxes were assumed to fall on consumers. The share of tax borne by low-skill households was assumed to be proportionate to those households' share of the total consumption as reported in the CEX.

Specific Calculations for State and Local Taxes and Revenues.

- **State Individual Income Tax.** This tax was estimated in the same manner as the federal individual income tax. State income tax data reported in the CPS are calculated using the tax rules of the individual states.
- **State Corporate Income Tax.** This tax was estimated in the same manner as the federal corporate income tax.
- **State and Local Property Taxes.** Property taxes were assumed to fall partly on businesses and partly on owner-occupied and rented dwellings. The tax falling on businesses was assumed to be partly borne by owners and partly passed on to consumers. Overall, 50 percent of the tax was allocated to households as home owners and renters; the share of this tax paid by low-skill households was assumed to be proportionate to these households' share of payments for shelter costs in the CEX. Another 25 percent of property taxes was assumed to be paid by owners of capital; the share paid by low-skill households was assumed to be proportionate to these households' share of dividends, interest, and rent income in the CPS. A final 25 percent of property tax was assumed to be passed on from businesses to consumers; the share of this burden borne by low-skill households was assumed to be equal to their share of total consumption as reported in the CEX.
- **State and Local General Sales Taxes.** These taxes were assumed to fall on consumers. The share that low-skill households paid was assumed to be proportionate to their share of the consumption of non-exempt goods and services as reported in the CEX. Items routinely exempted from sales tax coverage include food eaten at home, housing expenditure, utilities, fuels, gas and motor oil, public services, health care, education, cash contributions, and personal insurance and pension payments.⁵⁷
- **State and Local Tax on Motor Fuel.** This tax was calculated in the same manner as the federal Highway Trust Fund taxes.
- **State and Local Sales Tax on Alcohol.** This tax was estimated in the same manner as the federal excise tax on alcohol.
- **State and Local Sales Tax on Tobacco.** This tax was estimated in the same manner as the federal excise tax on tobacco.
- **Motor Vehicle License Fees.** The share of these fees paid by low-skill households was assumed to equal these households' share of spending on licenses as reported in the CEX.
- **Public Utilities Tax.** The share of this tax paid by low-skill households was assumed to equal these households' share of total utility expenditures as reported in the CEX.
- **Other Selective State and Local Sales Taxes.** The share of these taxes paid by low-skill households was assumed to equal these households' share of total consumption based on CEX data.

57. Based on information provided by the Tax Foundation.

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- **Other State and Local Taxes Including Estate, Stock Transaction, and Severance Taxes.** Low-skill households are assumed to pay few of these taxes.
- **State Taxes for Unemployment Insurance.** These taxes, like FICA taxes, were assumed to fall on workers. The share of taxation borne by low-skill households was assumed to equal their share of earnings reported in the CPS.
- **Other Insurance Trust Fund Revenues.** The share of these revenues paid by low-skill households was assumed to be proportionate to the number of persons in low-skill households as a share of the general population.
- **State Taxes for Workmen's Compensation.** These taxes, like FICA taxes, were assumed to fall on workers. The share of taxation borne by low-skill households was assumed to equal their share of earnings reported in the CPS.
- **Employee Contributions to State and Local Government Retirement Funds.** The distribution of these revenue contributions was assumed to be proportionate to the distribution of state and local employees participating in employer pension plans according to CPS data.
- **State Lottery Receipts.** An important source of government revenue paid by low-skill households is the purchase of state lottery tickets. Households headed by persons without a high school degree appear to pay more to state government through lottery ticket sales than they do through individual income taxes. A major study of the sale of state lottery tickets to different socioeconomic groups shows that per capita spending on state lottery tickets by adult high school dropouts was twice that of other adults.⁵⁸ In the present analysis, lottery spending by households headed by persons without a high school degree was assumed to be twice that of other households. The share of state lottery revenue contributed by low-skill households was calculated as $2h_l/(h_l + h_t)$, where h_l is the number of low-skill households and h_t is the number of households in the total population.
- **Earnings on Investments Held in Employee Retirement Trust Funds.** These state and local revenues represent the property income received by government trust funds as owners of capital. These earnings are not taxes and cannot be allocated among households.
- **State and Local Interest Earnings and Earnings from the Sale of Property.** These revenues represent the property income received by government as owner of capital and other property. These earnings are not taxes and cannot be allocated among households.
- **Special Assessments.** Low-skill households were assumed to pay none of these taxes.
- **Other State and Local Revenue.** This revenue includes dividends on investment, recovery of expenditures made in prior years, and other non-tax revenue. Low-skill households were assumed to fund none of this revenue.

58. Charles T. Clotfelter, Philip J. Cook, Julie A. Edell, and Marian Moore, "State Lotteries at the Turn of the Century: Report to the National Gambling Impact Study Commission," Duke University, April 23, 1999.

Appendix B

Pure Public Goods, Private Consumption Goods, and Population-Based Services

Fiscal distribution analysis seeks to determine the government benefits received by a particular group compared to taxes paid. A necessary first step in this process is to distinguish government programs that provide “pure public goods” as opposed to “private goods.” These two types of expenditures have very different fiscal implications.

Economist Paul Samuelson is credited with being the first to develop the theory of public goods. In his seminal 1954 paper “The Pure Theory of Public Expenditure,”⁵⁹ Samuelson defined a pure public good (or what he called in the paper a “collective consumption good”) as a good “which all enjoy in common in the sense that each individual’s consumption of such a good leads to no subtractions from any other individual’s consumption of that good.” By contrast, a “private consumption good” is a good that “can be parceled out among different individuals.” Its use by one person precludes or diminishes its use by another.

A classic example of a pure public good would be a lighthouse: The fact that any particular ship perceives the warning beacon does not diminish the usefulness of the lighthouse to other ships. A typical example of a private consumption good is a hamburger: When one person eats it, it cannot be eaten by others.

Formally, all pure public goods will meet two criteria.⁶⁰

- **Non-rivalrous consumption:** Everyone in a given community can use the good; its use by one person will not diminish its utility to others.
- **Zero-cost extension to additional users:** Once a pure public good has been initially produced, it requires no extra cost for additional individuals to benefit from the good. Expansion of the number of beneficiaries does not reduce its utility to any initial user and does not add new costs of production. As Nobel prize–winning economist James Buchanan explains, with a pure public good, “Additional consumers may be added at zero marginal cost.”⁶¹

The second criterion is a direct corollary of the first. If consumption of a good is truly non-rivalrous, then adding extra new consumers will not reduce utility or add costs for the initial consumers.

The distinction between collective and private consumption goods can be illustrated by considering the difference between a recipe for pie and an actual piece of pie. A recipe for pie is a public consumption good in the sense that it can be shared with others without reducing its usefulness to the original possessor; moreover, the recipe can be disseminated to others with little or no added cost. By contrast, an actual slice of pie is a private consumption good: Its consumption by one person bars its consumption by another. Efforts to expand the number of individuals utilizing the pie slice will either reduce the satisfaction of each user (as each gets a smaller portion of the initial) or entail new costs (to produce more pie).

Examples of Governmental Pure Public Goods. Pure public goods are relatively rare. One prime example of a governmental public good is medical research. If research funded by the National Institutes of Health produces a cure for cancer, all Americans will benefit from this discovery. The benefit received by one person is not reduced by the benefit received by others; moreover, the value of the discovery to each individual would remain the same even if the U.S. population doubled.

Another notable example of a pure public good is defense expenditure. The utility of an Army division or an aircraft carrier lies in its effectiveness in combating foreign threats to America. In most respects, one person’s benefit from defense strength is not reduced because others also benefit. The military effectiveness of an Army division or an aircraft carrier is not reduced just because the size of the civilian population being defended is increased.

59. Paul A. Samuelson, “The Pure Theory of Public Expenditure,” *Review of Economics and Statistics*, Vol. 36, No. 4 (1954), pp. 387–389.

60. A third criterion is non-exclusion from benefit; it is difficult to deny members of a community an automatic benefit from the good. This aspect of public goods is not critical to the fiscal allocation issues addressed in this paper.

61. James M. Buchanan, *The Demand and Supply of Public Goods*, Liberty Fund, Library of Economics and Liberty, p. 5.4.3, at www.econlib.org/library/Buchanan/buchCv5Contents.html (March 6, 2007).

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Finally, individuals may receive psychic satisfaction from the preservation of wildlife or wilderness areas. This psychic satisfaction is not reduced because others receive the same benefit and is not directly effected by changes in the population. By contrast, enjoyment of a national park may be reduced if population increases lead to crowding. In consequence, general activities to preserve species may be considered a public good, while provision of parks is a private good.

Pure Public Goods Compared to Population-Based Goods. Many government services that are dubbed public goods are not true public goods. Economists Thomas MaCurdy and Thomas Nechyba state that “relatively few of the goods produced by [the] government sector are pure public goods, in the sense that the cost of providing the same level of the good is invariant to the size of the population.”⁶² In other words, many government services referred to conventionally as “public goods” need to be increased at added expense to the taxpayer as the population increases, thereby violating the criterion of zero cost extension to additional users.

For example, police protection is often incorrectly referred to as a “public good.” True, police do provide a diffuse service that benefits nearly all members of a community, but the benefit each individual receives from a policeman is reduced by the claims other citizens may make on the policeman’s time. Someone living in a town of 500 protected by a single policeman gets far more protection from that policeman than would another individual protected by the same single policeman in a town of 10,000.

The National Academy of Sciences explains that government services that generally need to be increased as the population increases are not real public goods. It refers to these services as “congestible” goods: If such a program remains fixed in size as the number of users increases, it may become “congested,” and the quality of service will consequently be reduced. An obvious example would be highways. Other examples of “congestible” goods are sewers, parks, fire departments, police, courts, and mail service.⁶³ These types of programs are categorized as “population-based” services in the paper.

In contrast to population-based services, governmental pure public goods have odd fiscal properties. The fact that a low-income person who pays little or nothing in taxes receives benefit from government defense or medical research programs does not impose added cost or reduce the utility of those programs to other taxpayers. Therefore, it is inaccurate to say that the non-taxpayers’ use of these programs imposes a burden on other taxpayers. On the other hand, non-taxpayers or individuals who pay little in taxes are “free riders” on public goods in the sense that they benefit from a good they have not paid for.

62. Thomas MaCurdy, Thomas Nechyba, and Jay Bhattacharya, “An Economic Framework for Assessing the Fiscal Impacts of Immigration,” in James P. Smith and Barry Edmonston, *The Immigration Debate: Studies on the Economic, Demographic and Fiscal Effects of Immigration* (Washington, D.C.: National Academy Press, 1998), p. 16.

63. National Research Council, *The New Americans*, p. 303.

Federal Outlays—Fiscal Year 2004

Function and Subfunction	Millions of Dollars	Program Type
050 National Defense:		
051 Department of Defense—Military:		
Military Personnel	113,576	Public Good
Operation and Maintenance	174,045	Public Good
Procurement	76,216	Public Good
Research, Development, Test, and Evaluation	60,759	Public Good
Military Construction	6,312	Public Good
Family Housing	3,905	Public Good
Other	1,708	Public Good
051 Subtotal, Department of Defense—Military	436,521	Public Good
053 Atomic Energy Defense Activities	16,625	Public Good
054 Defense-related Activities	2,762	Public Good
Total, National Defense	455,908	Public Good
150 International Affairs:		
151 International Development and Humanitarian Assistance	13,825	Public Good
152 International Security Assistance	8,369	Public Good
153 Conduct of Foreign Affairs	7,897	Public Good
154 Foreign Information and Exchange Activities	1,141	Public Good
155 International Financial Programs	-4,341	Public Good
Total, International Affairs	26,891	Public Good
250 General Science, Space, and Technology:		
251 General Science and Basic Research	8,416	Public Good
252 Space Flight, Research, and Supporting Activities	14,637	Public Good
Total, General Science, Space and Technology	23,053	Public Good
270 Energy:		
271 Energy Supply	-1,555	
272 Energy Conservation	926	
274 Emergency Energy Preparedness	158	
276 Energy Information, Policy, and Regulation	305	
Total, Energy	-166	Population-based Services
300 Natural Resources and Environment:		
301 Water Resources	5,571	Public Good
302 Conservation and Land Management	9,758	Public Good
303 Recreational Resources	2,963	Population-based Services
304 Pollution Control and Abatement	8,485	Population-based Services
306 Other Natural Resources	3,948	Public Good
Total, Natural Resources and Environment	30,725	
350 Agriculture:		
351 Farm Income Stabilization	11,186	Direct Benefit
352 Agricultural Research and Services	4,254	Public Good
Total, Agriculture	15,440	
370 Commerce and Housing Credit:		
371 Mortgage Credit	2,659	Direct Benefit
372 Postal Service	-4,070	Population-based Services
373 Deposit Insurance	-1,976	Direct Benefit
376 Other Advancement of Commerce	8,660	Population-based Services
Total, Commerce and Housing Credit	5,273	

(continued on next page)

Table A-1

Federal Outlays—Fiscal Year 2004 (continued)

Function and Subfunction	Millions of Dollars	Program Type
400 Transportation:		
401 Ground Transportation		
Highways and Roads	32,336	Population-based Services
Other Ground Transportation	8,407	Population-based Services
402 Air Transportation	16,743	Population-based Services
403 Water Transportation	6,898	Population-based Services
407 Other Transportation	242	Population-based Services
Total, Transportation	64,626	
450 Community and Regional Development:		
451 Community Development	6,167	Not Applicable
452 Area and Regional Development	2,329	Not Applicable
453 Disaster Relief and Insurance	7,301	Not Applicable
Total, Community and Regional Development	15,797	Duplicates Below
450 Community and Regional Development: Duplicate Accounts		
Community and Regional Development Proportional	13,754	Population-based Services
Community and Regional Development: Public Good (Homeland Security)	2,043	Public Good
Total, Community and Regional Development: Duplicate Accounts	15,797	
500 Education, Training, Employment, and Social Services:		
501 Elementary, Secondary, and Vocational Education	34,357	Educational Benefits
502 Higher Education	25,264	Educational Benefits
503 Research and General Education Aids	3,005	Public Good
504 Training and Employment	7,912	Means-tested
505 Other Labor Services	1,552	Population-based Services
506 Social Services (Including Head Start)	15,855	Means-tested
Total, Education, Training, Employment, and Social Services	87,945	
550 Health:		
551 Health Care Services, Public Health, Mental Health, and Substance Abuse	19,888	Population-based Services
551 Health Care Services, Means-tested	190,204	Means-tested
552 Health Research and Training	27,099	Public Good
554 Consumer and Occupational Health and Safety	2,943	Population-based Services
Total, Health	240,134	
570 Medicare:		
571 Medicare	269,360	Direct Benefit
600 Income Security:		
601 General Retirement and Disability Insurance (Excluding Social Security) (Pension Benefit Guarantee, Black Lung and Disabled Miners, Railroad Retirement)	6,573	Direct Benefit
602 Federal Employee Retirement and Disability: Total	88,729	Interest and Other Financial Obligations
602 Federal Employee Retirement and Disability Due to Past Public Good Functions+subtotal	23,868	Public Good
602 Federal Employee Retirement and Disability, All Other: Sub-total	64,861	Interest and Other Financial Obligations
603 Unemployment Compensation (Counted as State Expenditure)		Not Applicable
604 Housing Assistance	36,568	Means-tested
605 Food and Nutrition Assistance	46,012	Means-tested
609 Other Income Security (Supplemental Security Income, Refundable Earned Income Credit, Temporary Assistance to Needy Families, Low Income Energy Assistance, Foster Care, Child Care and Child Development Block Grant)	109,961	Means-tested
Total, Income Security	332,837	

(continued on next page)

Federal Outlays—Fiscal Year 2004 (continued)

Function and Subfunction	Millions of Dollars	Program Type
650 Social Security:		
651 Social Security	495,548	Direct Benefit
700 Veterans Benefits and Services:		
701 Income Security for Veterans	31,654	Public Good
702 Veterans Education, Training, and Rehabilitation	2,751	Public Good
703 Hospital and Medical Care for Veterans	26,783	Public Good
704 Veterans Housing	-1,980	Public Good
705 Other Veterans Benefits and Services	571	Public Good
Total, Veterans Benefits and Services	59,779	Public Good
750 Administration of Justice:		
751 Federal Law Enforcement Activities	19,090	Population-based Services
752 Federal Litigative and Judicial Activities	9,685	Population-based Services
753 Federal Correctional Activities	5,509	Population-based Services
754 Criminal Justice Assistance	11,251	Population-based Services
Total, Administration of Justice	45,535	Population-based Services
800 General Government:		
801 Legislative Functions	3,187	Population-based Services
802 Executive Direction and Management	510	Population-based Services
803 Central Fiscal Operations	9,339	Population-based Services
804 General Property and Records Management	228	Population-based Services
805 Central Personnel Management	217	Population-based Services
806 General Purpose Fiscal Assistance	7,675	Population-based Services
808 Other General Government	2,345	Population-based Services
809 Deductions for Offsetting Receipts	-1,679	Population-based Services
Total, General Government	21,822	Population-based Services
<i>General Government in Support of Public Good Functions</i>	<i>5,870</i>	Public Good
<i>General Government, All Other</i>	<i>15,952</i>	Population-based Services
900 Net Interest:		
901 Interest on Treasury Debt Securities (Gross)	321,679	Not Applicable
902 Interest Received by on-budget Trust Funds	-67,761	Not Applicable
903 Interest Received by off-budget Trust Funds	-86,228	Not Applicable
908 Other Interest	-4,473	Not Applicable
909 Other Investment Income	-2,972	Not Applicable
Total, Net Interest	160,245	
<i>Net Interest Due to Past Public Good Functions</i>	<i>43,106</i>	Public Good
<i>Net Interest, All Other</i>	<i>117,139</i>	Interest and Other Financial Obligations
TOTAL OUTLAYS WITH OFFSETTING RECEIPTS	2,305,758	
(Excludes Unemployment Insurance)		

Source: Budget Historical Tables for FY 2006 at www.whitehouse.gov/omb/budget/fy2006/pdf/hist.pdf. Budget codes 401 details taken from FY2006 Budget Appendix, pp. 792-824

Removing Federal Grants in Aid from State and Local Expenditures

	State and Local Expenditures <i>(in millions)</i>	Expenditure Subtotals <i>(in millions)</i>	Federal Grants in Aid to States <i>(in millions)</i>	State and Local Expenditures Less Federal Grants <i>(in millions)</i>
Total Income Security, Health, and Social Services	532,154.07			
Means-tested Aid and Services		440,859.00	277,849.00	163,010.00
Other		91,295.07	9,835.00	81,460.07
Total Transportation	141,958.53			
Highways		118,178.67	30,689.00	87,489.67
Air Transportation (Airports)		18,030.57	2,958.00	15,072.57
Parking Facilities		1,335.99		1,335.99
Sea and Inland Port Facilities		4,046.65		4,046.65
Transit Subsidies		366.66	20.00	346.66
Total Education and Training	664,561.08			
Higher Education		173,085.92	482.00	172,603.92
Elementary and Secondary		452,054.91	20,522.00	431,532.91
Other Education		30,219.74	14,810.00	15,409.74
Libraries		9,200.51	136.00	9,064.51
Training			4,325.00	-4,325.00
Total Resources and Environment	109,673.71			
Natural Resources		23,298.71	7,423.00	15,875.71
Parks and Recreation		30,467.48	239.00	30,228.48
Sewage		35,534.72		35,534.72
Solid Waste Management		20,372.80		20,372.80
Justice and Public Safety	187,551.12		5,084.00	182,467.12
Veterans	1,503.74		454.00	1,049.74
General Government	67,748.37		9,015.00	58,733.37
Protective Inspection and Regulation	11,498.04			11,498.04
Unallocated Expenditure	100,142.99		14,712.00	85,430.99
Employment Security Administration	4,679.16		2,650.00	2,029.16
Interest on General Debt	81,723.06			81,723.06
Insurance Trust Expenditure				
Unemployment Compensation	43,277.64			43,277.64
Employee Retirement	137,537.44			137,537.44
Workers' Compensation	12,299.80			12,299.80
Other Insurance Trust	4,289.89			4,289.89
Utility Expenditure				
Water Supply	44,806.24			44,806.24
Electric Power	59,298.84			59,298.84
Gas Supply	6,716.95			6,716.95
Transit	44,236.69		7,777.00	36,459.69
Liquor Store Expenditure	4,672.90			4,672.90
TOTAL STATE AND LOCAL OUTLAYS	2,260,330.26			
TOTAL FEDERAL GRANTS IN AID TO THE STATES			408,980.00	1,851,350.26

Removing User Fees and Charges from State and Local Expenditures

State and Local Expenditures Net Federal Grants in Aid	Expenditures Net Federal Grants (from Table 2A) (in millions of dollars)	User Fees and Charges: Type	User Fees and Charges: Amount (in millions of dollars)	State and Local Expenditures Net Federal Grants in Aid and Net Fees and Charges	Final Expenditures (in millions of dollars)
Total Income Security, Health, and Social Services				Total Income Security, Health, and Social Services	
Means-tested Aid and Services	163,010.00	Housing and Community Development	4,770	Means-tested Aid and Services	158,239.53
Other Income, Health and Services	81,460.07	Hospitals	72,652	Other Income, Health and Services	8,808.39
Total Transportation				Total Transportation	
Highways	87,489.67	Highways	8,991	Highways	78,498.76
Air Transportation (Airports)	15,072.57	Air Transportation (Airports)	13,345	Air Transportation (Airports)	1,727.56
Parking Facilities	1,335.99	Parking Facilities	1,540	Parking Facilities	-203.93
Sea and Inland Port Facilities	4,046.65	Sea and Inland Port Facilities	3,107	Sea and Inland Port Facilities	939.84
Transit Subsidies	346.66			Transit Subsidies	346.66
Total Education and Training				Total Education and Training	
Higher Education	172,603.92	Institutions of Higher Education	71,780	Higher Education	100,823.83
Elementary and Secondary	431,532.91	School Lunch Sales (Gross)	6,326	Elementary and Secondary	425,206.94
Other Education	15,409.74	Other Education Charges	6,314	Other Education	9,095.47
Libraries	9,064.51	Libraries		Libraries	9,064.51
Training	-4,325.00			Training	-4,325.00
Total Resources and Environment				Total Resources and Environment	
Natural Resources	15,875.71	Natural Resources	3,264	Natural resources	12,611.90
Parks and Recreation	30,228.48	Parks and Recreation	7,982	Parks and recreation	22,246.96
Sewage	35,534.72	Sewerage	29,792	Sewerage	5,742.49
Solid Waste Management	20,372.80	Solid Waste Management	12,083	Solid waste management	8,289.80
Justice and Public Safety	182,467.12			Justice and Public Safety	182,467.12
Veterans	1,049.74			Veterans	1,049.74
General Government	58,733.37			General Government	58,733.37
Protective Inspection and Regulation	11,498.04			Protective Inspection and Regulation	11,498.04
Administration and Unallocated Expenditures	85,430.99	Other Charges	46,696	Total Unallocated Expenditure	38,734.62
Employment Security Administration	2,029.16			Employment Security Administration	2,029.16
Interest on General Debt	81,723.06			Interest on General Debt	81,723.06
Insurance Trust Expenditure				Insurance Trust Expenditure	
Unemployment Compensation	43,277.64			Unemployment Compensation	43,277.64
Employee Retirement	137,537.44			Employee Retirement	137,537.44
Workers' Compensation	12,299.80			Workers' Compensation	12,299.80
Other Insurance Trust	4,289.89			Other Insurance Trust	4,289.89
Utility Expenditure		Utility Revenue		Utility Expenditure	
Water Supply	44,806.24	Water Supply	36,087	Water Supply	8,719.05
Electric Power	59,298.84	Electric Power	55,980	Electric Power	3,318.36
Gas Supply	6,716.95	Gas Supply	6,506	Gas Supply	211.20
Transit	36,459.69	Transit	9,783	Transit	26,676.34
Liquor Store Expenditure	4,672.90	Liquor Store Revenue	5,698	Liquor Store Expenditure	-1,024.71
Total State and Local Outlays	1,851,350.26	Total Fees and Charges	402,696	Total State and Local Outlays	1,448,653.82

State and Local Outlays Minus Federal Grants in Aid and User Fees and Charges

State and Local Outlays Net Federal Grants in Aid and Net Fees and Charges	Net Expenditures <i>(in millions of dollars)</i>	Type of Program
Total Income Security, Health, and Social Services		
Means-tested Aid and Services	158,239.53	Means-tested
Other Income, Health and Services	8,808.39	Population-based
Total Transportation		
Highways	78,498.76	Population-based
Air Transportation (Airports)	1,727.56	Population-based
Parking Facilities	-203.93	Population-based
Sea and Inland Port Facilities	939.84	Population-based
Transit Subsidies	346.66	Population-based
Total Education and Training		
Higher Education	100,823.83	Educational Benefits
Elementary and Secondary	425,206.94	Educational Benefits
Other Education	9,095.47	Direct Benefit
Libraries	9,064.51	Population-based
Training	-4,325.00	Educational Benefits
Total Resources and Environment		
Natural Resources	12,611.90	Population-based
Parks and Recreation	22,246.96	Population-based
Sewerage	5,742.49	Population-based
Solid Waste Management	8,289.80	Population-based
Justice and Public Safety	182,467.12	Population-based
Veterans	1,049.74	Public Good
General Government	58,733.37	Population-based
Protective Inspection and Regulation	11,498.04	Population-based
Administraton and Unallocated Expenditure	38,734.62	Population-based
Employment Security Administration	2,029.16	Direct Benefit
Interest on General Debt	81,723.06	Interest and Other Costs due to Past Services
Insurance Trust Expenditure		
Unemployment Compensation	43,277.64	Direct Benefit
Employee Retirement	137,537.44	Interest and Other Costs due to Past Services
Workers' Compensation	12,299.80	Direct Benefit
Other Insurance Trust	4,289.89	Population-based
Utility Expenditure		
Water Supply	8,719.05	Population-based
Electric Power	3,318.36	Population-based
Gas Supply	211.20	Population-based
Transit	26,676.34	Population-based
Liquor Store Expenditure	-1,024.71	Population-based
TOTAL STATE AND LOCAL EXPENDITURES	1,448,653.82	
Summary		
Direct Benefit Total	57,606.60	
Means-tested Total	158,239.53	
Educational Benefits Total	530,801.24	
Population-based Services	481,696.22	
Interest and Other Financial Obligation Due to Past Activities	219,260.50	
Pure Public Good Expenditures	1,049.74	
TOTAL STATE AND LOCAL EXPENDITURES	1,448,653.82	

Government Taxes and Revenues

Federal Revenue Receipts FY 2004 <i>From Taxes and Related Sources</i>	Aggregate Revenue <i>(in millions of dollars)</i>	Revenue Sub-totals <i>(in millions of dollars)</i>	Average Federal Revenue per Household <i>114.79 million households (in dollars)</i>
Individual Income Taxes	808,959		\$7,047
Corporate Income Taxes	189,371		\$1,650
Federal Insurance Contributions Act (FICA)	685,334		\$5,970
Old Age and Survivors Insurance		457,120	
Disability Insurance		77,625	
Hospital Insurance		150,589	
Unemployment Insurance - Federal Receipts	6,718		\$59
Other Retirement Receipts	8,620		\$75
Railroad Retirement		2,297	
Railroad Social Security Equivalent Account		1,729	
Federal Employees Retirement Employee Share		4,543	
Non-federal Employees Retirement		51	
Excise Taxes	69,855		\$609
Alcohol Excise Tax		8,105	
Tobacco Excise Tax		7,926	
Telephone Excise Tax		5,997	
Transportation Fuels Excise Tax		1,381	
Other Taxes		1,157	
Trust Fund Excise Taxes	45,289		\$395
Highway		34,711	
Airport		9,174	
Other		1,404	
Estate and Gift Tax	24,831		\$216
Customs Duties and Fees	21,083		\$184
Other Miscellaneous Receipts	12,913		\$112
Miscellaneous: Fees for Permits and Regulatory and Judicial Services		8,675	
Miscellaneous: Fines, Penalties, and Forfeitures		3,902	
Other Miscellaneous Federal Receipts		336	
TOTAL FEDERAL RECEIPTS	1,827,684		\$15,922

Note: Excludes \$32.6 billion in unemployment insurance receipts from state governments and \$19.6 billion in earnings of the Federal Reserve System.

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Government Taxes and Revenues (continued)

State and Local Revenue <i>From Taxes and Related Sources</i>	Aggregate Revenue <i>(in millions of dollars)</i>	Revenue Sub-totals <i>(in millions of dollars)</i>	Average Revenue per Household <i>(in dollars)</i>
Taxes			
Property	318,242		\$2,772
General Sales	244,891		\$2,133
Selective Sales	115,738		\$1,008
Motor fuel		34,944	
Alcoholic beverage		4,986	
Tobacco products		12,626	
Public utilities		21,427	
Other selective sales		41,756	
Individual Income	215,215		\$1,875
Corporate Income	33,716		\$294
Motor Vehicle License	18,709		\$163
Other Taxes	63,766		\$556
Miscellaneous General Revenue	165,139		\$1,439
Interest Earnings		53,194	
Special Assessments		6,453	
Sale of Property		1,960	
Lottery Receipts		45,466	
Other General Revenue		58,066	
Insurance Trust Revenue	66,024		\$575
Unemployment Compensation		38,362	
Workers' Compensation		21,758	
Other Insurance Trust Revenue		5,904	
Employee Retirement Trust Revenue*	365,318		\$3,182
Employee Contributions		30,786	
Earnings on Investments		315,554	
Other		18,974	
TOTAL STATE AND LOCAL REVENUE	1,606,758		\$13,997

Note: Excludes \$396 billion in user fees and \$408 billion in federal grants to states and localities.

TOTAL FEDERAL, STATE, AND LOCAL REVENUE <i>From Taxes and Related Sources</i>	3,434,442		\$29,919
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Note: Excludes intra-government transfers to retirement trust funds.

Sources: Analytical Perspectives, Budget of the United States Government, Fiscal Year 2006; U.S. Census, Survey of Governments, at www.census.gov/govs/estimate/0400ussl_1.html.

Aggregate Government Expenditures

Low-skill group share of total program expenditures means the percentage of total expenditures received by households headed by persons who lack a high school diploma.
 Low-skill group share of beneficiaries means the percentage of all program beneficiaries who reside in households headed by persons who lack a high school diploma.

	Allocation Algorithms for Expenditures for Households Headed by Persons without a High School Degree	Aggregate Federal Spending (in millions of dollars)	Aggregate State and Local Spending (in millions of dollars)	Combined Aggregate Spending (in millions of dollars)	Share of Expenditures Received by Households Headed by Persons without a High School Degree (in percent)	Aggregate Expenditures Received by Households Headed by Persons without a High School Degree (in millions of dollars)	Average Expenditures per Household for Households Headed by Persons without a High School Degree (in dollars)
Direct Benefits							
Social Security Benefits	Low-skill group share of total program expenditures in the CPS	495,548.0		495,548.0	20.72%	102,677.55	\$5,811
Medicare Benefits	Low-skill group share of total program expenditures in the CPS	269,360.0		269,360.0	24.93%	67,151.45	\$3,800
Other Cash Transfers and Benefits							
Unemployment Compensation	Low-skill group share of total program expenditures in the CPS		45,306.8	45,306.8	11.91%	5,396.04	\$305
Worker's Compensation	Low-skill group share of total program expenditures in the CPS		12,299.8	12,299.8	14.09%	1,733.04	\$98
Other Federal Retirement (Railroad and Black Lung Disability) (601)	Low-skill group share of total program expenditures in the CPS	6,573.0		6,573.0	3.00%	197.19	\$11
Agricultural Subsidies	Low-skill households are assumed to receive no benefits	11,186.0		11,186.0	0.00%	0.00	\$0
Mortgage Credit and Deposit Insurance	Low-skill households are assumed to receive no benefits	683.0		683.0	0.00%	0.00	\$0
<i>Other Cash Transfers and Benefits Sub-total</i>				76,048.6			
Direct Benefits Total		783,350.0	57,606.6	840,956.6		177,155.27	\$10,026
Education Benefits							
Higher Education	See text	25,264.0	100,823.8	126,087.8	5.37%	6,770.92	\$383
Elementary and Secondary Training and Other Education	See text Low-skill group share of the total population	34,357.0	425,206.9	459,563.9	17.17%	78,907.13	\$4,466
			4,770.5	4,770.5	15.49%	738.95	\$42
Education Benefits Total		59,621.0	530,801.3	590,422.3		86,417.0	\$4,891

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Aggregate Government Expenditures (continued)

	Allocation Algorithms for Expenditures for Households Headed by Persons without a High School Degree	Aggregate Federal Spending (in millions of dollars)	Aggregate State and Local Spending (in millions of dollars)	Combined Aggregate Spending (in millions of dollars)	Share of Expenditures Received by Households Headed by Persons without a High School Degree (in percent)	Aggregate Expenditures Received by Households Headed by Persons without a High School Degree (in millions of dollars)	Average Expenditures per Household for Households Headed by Persons without a High School Degree (in dollars)
Means-tested Benefits							
Public Aid	Low-skill group share of total program expenditures in the CPS	6,485.0	10,082.0	16,567.0	38.49%	6,376.64	\$361
SSI	Low-skill group share of total program expenditures in the CPS	34,693.0	5,146.0	39,839.0	38.35%	15,278.26	\$865
EITC	Low-skill group share of total program expenditures in the CPS	34,012.0		34,012.0	29.36%	9,985.92	\$565
Food Stamps	Low-skill group share of total program expenditures in the CPS	28,431.0	2,562.0	30,993.0	39.64%	12,285.63	\$695
School Lunch and Breakfast	Low-skill group share of total program expenditures in the CPS	8,531.0		8,531.0	29.01%	2,474.84	\$140
WIC	Low-skill group share of beneficiaries in the CPS	4,899.0		4,899.0	35.98%	1,762.66	\$100
Housing	Low-skill group share of total program expenditures in the CPS	38,881.0	0.8	38,881.8	40.89%	15,898.77	\$900
Energy	Low-skill group share of total program expenditures in the CPS	2,118.0	141.0	2,259.0	31.85%	719.49	\$41
Daycare	Low-skill group share of beneficiaries in the CPS	13,158.0	4,946.0	18,104.0	20.25%	3,666.06	\$207
Indian Health	Low-skill group share of beneficiaries in the CPS	3,706.0		3,706.0	23.44%	868.69	\$49
Training	Low-skill group share of beneficiaries in the CPS	6,131.0	876.0	7,007.0	21.81%	1,528.23	\$86
Medicaid/SCHIP							
Medicaid: Elderly in General Population	Low-skill group share of total program expenditures in the CPS			26,401.0	41.97%	11,080.50	\$627
Medicaid: Non-elderly Disabled Adults in the General Population	Low-skill group share of total program expenditures in the CPS			108,146.0	29.75%	32,173.44	\$1,821
Medicaid: Non-elderly Able-bodied Adults in the General Population	Low-skill group share of total program expenditures in the CPS			35,860.6	35.27%	12,648.03	\$716

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Aggregate Government Expenditures (continued)

	Allocation Algorithms for Expenditures for Households Headed by Persons without a High School Degree	Aggregate Federal Spending (in millions of dollars)	Aggregate State and Local Spending (in millions of dollars)	Combined Aggregate Spending (in millions of dollars)	Share of Expenditures Received by Households Headed by Persons without a High School Degree (in percent)	Aggregate Expenditures Received by Households Headed by Persons without a High School Degree (in millions of dollars)	Average Expenditures per Household for Households Headed by Persons without a High School Degree (in dollars)
Means-tested Benefits (continued)							
Medicaid: Children in the General Population including Children on SCHIP	Low-skill group share of total program expenditures in the CPS			59,976.8	31.96%	19,168.59	\$1,085
Medicaid Elderly in Institutional Care	See text			47,691.8	59.90%	28,567.39	\$1,617
Medicaid Others in Institutional Care	See text			28,857.0	59.10%	17,054.49	\$965
Medicaid/SCHIP Total		179,712.0	127,221.0	306,933.2			
Other Means-tested Aid (Foster Care, Social Services, Child Credit, Medical Care)	Allocated in proportion to the sum of total means-tested expenditures reported individually in the CPS	45,755.0	7,264.7	53,019.7	37.43%	19,844.90	\$1,123
Means-tested Benefit Total		406,512.0	158,239.5	564,751.5		211,382.51	\$1,963
Population-based and Government Support Services							
Transportation							
Highways, Roads, and Parking Facilities	Low-skill group share of gasoline consumption in the CEX	32,336.0	78,294.9	110,630.9	10.3%	11,394.98	\$645
Air Transportation (Airports)	Low-skill households are assumed to receive two percent of all expenditures	16,743.0	1,727.6	18,470.6	2.0%	369.41	\$21
Sea and Inland Port Facilities	Low-skill group share of total consumption in the CEX	6,898.0	939.8	7,837.8	8.5%	666.22	\$38
Other Federal Ground Transportation	Low-skill households are assumed to receive zero percent of expenditures	8,407.0		8,407.0	0.0%		\$0
Transit Subsidies	Low-skill group share of public transportation consumption in the CEX		27,023.0	27,023.0	4.90%	1,324.13	\$75
Other	Unallocated	242.0		242.0	0.0%		\$0
Transportation Sub-total				172,611.3			\$778.4

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Aggregate Government Expenditures (continued)

	Allocation Algorithms for Expenditures for Households Headed by Persons without a High School Degree	Aggregate Federal Spending (in millions of dollars)	Aggregate State and Local Spending (in millions of dollars)	Combined Aggregate Spending (in millions of dollars)	Share of Expenditures Received by Households Headed by Persons without a High School Degree (in percent)	Aggregate Expenditures Received by Households Headed by Persons without a High School Degree (in millions of dollars)	Average Expenditures per Household for Households Headed by Persons without a High School Degree 17.67 million households (in dollars)
Population-based and Government Support Services (continued)							
Justice, Police, and Public Safety	Low-skill group share of the total population	45,535.0	182,467.1	228,002.1	15.49%	35,317.53	\$1,999
Resources, Recreation, and Environment	Natural Resources		12,611.9	12,611.9	15.49%	1,953.58	\$111
	Parks and Recreation	2,963.0	22,247.0	25,210.0	15.49%	3,905.02	\$221
Sewerage	Low-skill group share of the total population		5,742.5	5,742.5	15.49%	889.51	\$50
Solid Waste Management	Low-skill group share of the total population		8,289.8	8,289.8	15.49%	1,284.09	\$73
Public Utility Spending: Expenditures Exceeding User Charges							
Water Supply	Low-skill group share of water consumption in the CEX		8,719.0	8,719.0	11.60%	1,011.41	\$57
Electric Power	Low-skill group share of electricity consumption in the CEX		3,318.4	3,318.4	12.70%	421.43	\$24
Gas Supply	Low-skill group share of natural gas consumption in the CEX		211.2	211.2	11.40%	24.08	\$1
Pollution Control and Abatement	Low-skill group share of total consumption in the CEX	8,485.0		8,485.0	8.50%	721.23	\$41
Energy	Low-skill group share of the total population	-166.0		-166.0	15.49%	-25.71	-\$1
Resources, Recreation, and Environment Sub-total				72,421.8			\$576

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Aggregate Government Expenditures (continued)

	Allocation Algorithms for Expenditures for Households Headed by Persons without a High School Degree	Aggregate Federal Spending (in millions of dollars)	Aggregate State and Local Spending (in millions of dollars)	Combined Aggregate Spending (in millions of dollars)	Share of Expenditures Received by Households Headed by Persons without a High School Degree (in percent)	Aggregate Expenditures Received by Households Headed by Persons without a High School Degree (in millions of dollars)	Average Expenditures per Household for Households Headed by Persons without a High School Degree (17.67 million households) (in dollars)
Population-based and Government Support Services (continued)							
Other Health Related							
General Health (Mental Health, Substance Abuse, Public Health)	Low-skill group share of the total population	19,888.0	8,808.4	28,696.4	15.49%	4,445.07	\$252
Consumer and Occupational Health	Low-skill group share of the total population	2,943.0		2,943.0	15.49%	455.87	\$26
Protective Inspection and Regulation	Low-skill group share of the total population		11,498.0	11,498.0	15.49%	1,781.05	\$101
<i>Other Health Related Sub-total</i>				43,137.4			\$378
Miscellaneous							
Other Labor Services	Low-skill group share of the total population	1,552.0		1,552.0	15.49%	240.40	\$14
Other Advancement of Commerce	Low-skill group share of the total population	8,660.0		8,660.0	15.49%	1,341.43	\$76
Postal Service	Low-skill group share of the total population	-4,070.0		-4,070.0	15.49%	-630.44	-\$36
Community Development	Low-skill group share of the total population	13,754.0		13,754.0	15.49%	2,130.49	\$121
Libraries	Low-skill group share of the total population		9,064.5	9,064.5	15.49%	1,404.09	\$79
<i>Miscellaneous Subtotal</i>				28,960.5			\$254
General Government/Administrative Support							
General Government		21,822.0	58,733.4	80,555.4			
General Government Activities in Support of Public Good Functions		5,870.1					
General Government Less Activities in Support of Public Good Functions	Low-skill group share of total direct, means-tested and education benefits and other population-based benefits	15,951.9	58,733.4	74,685.3	19.28%	14,395.75	\$815

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Aggregate Government Expenditures (continued)

	Allocation Algorithms for Expenditures for Households Headed by Persons without a High School Degree	Aggregate Federal Spending (in millions of dollars)	Aggregate State and Local Spending (in millions of dollars)	Combined Aggregate Spending (in millions of dollars)	Share of Expenditures Received by Households Headed by Persons without a High School Degree (in percent)	Aggregate Expenditures Received by Households Headed by Persons without a High School Degree (in millions of dollars)	Average Expenditure per Household for Households Headed by Persons without a High School Degree (in dollars)
Population-based and Government Support Services (continued)							
Unallocated Expenditures	Low-skill group share of total direct, means-tested and education benefits and other population-based benefits	37,709.9	37,709.9	37,709.9	19.28%	7,268.67	\$411
Other insurance trust	Low-skill group share of total direct, means-tested and education benefits and other population-based benefits	4,289.9	4,289.9	4,289.9	19.28%	826.89	\$47
General Government Net Public Good Support Sub-total			116,685.1				\$1,272.9
Population-based and Government Support Total		180,121.9	481,696.3	661,818.1		92,916.17	\$5,258
Interest and Other Financial Obligations Associated With Past Service							
Interest Payments on Government Debt	Low-skill group share of total direct, means-tested and other population-based benefits	160,245.0	81,723.1	241,968.1	21.37%	51,696.51	\$2,926
Retirement Benefits for Former Government Employees	Low-skill group share of total direct, means-tested and other population-based benefits	88,729.0	137,537.4	226,266.4	21.37%	48,341.84	\$2,736
Financial Obligations Associated with Past Services and Benefits Total		248,974.0	219,260.5	468,234.5			
Less Financial Obligations for Past Public Goods		66,974.0					
Total Net Financial Obligations: Interest and Other Financial Obligations Associated with Past Service Minus Obligations Associated with Past Public Goods		182,000.0	219,260.5	401,260.5	21.37%	85,729.34	\$4,852

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Aggregate Government Expenditures (continued)

	Allocation Algorithms for Expenditures for Households Headed by Persons without a High School Degree	Aggregate Federal Spending (in millions of dollars)	Aggregate State and Local Spending (in millions of dollars)	Combined Aggregate Spending (in millions of dollars)	Share of Expenditures Received by Households Headed by Persons without a High School Degree (in percent)	Aggregate Expenditures Received by Households Headed by Persons without a High School Degree (in millions of dollars)	Average Expenditures per Household for Households Headed by Persons without a High School Degree (in dollars)
Pure Public Goods Expenditures							
National Defense and Related Costs	Low-skill group share of the total population	457,951.0		457,951.0	15.49%	70,936.61	\$4,015
Veterans	Low-skill group share of the total population	59,779.0	1,049.7	60,828.7	15.49%	9,422.37	\$533
Science and Scientific Research	Low-skill group share of the total population	57,411.0		57,411.0	15.49%	8,892.96	\$503
International Affairs	Low-skill group share of the total population	26,891.0		26,891.0	15.49%	4,165.42	\$236
Natural Resources and Environment	Low-skill group share of the total population	19,277.0		19,277.0	15.49%	2,986.01	\$169
General Government Services in Support of Public Good Functions	Low-skill group share of the total population	5,870.1		5,870.1	15.49%	909.28	\$51
Interest and Other Financial Obligations for Past Public Good Functions	Low-skill group share of the total population	66,974.0		66,974.0	15.49%	10,374.27	\$587
Pure Public Goods Expenditures Total		694,153.1	1,049.7	695,202.8	15.49%	107,686.92	\$6,094
TOTAL EXPENDITURES		2,305,758.0	1,448,653.9	3,754,411.9		761,287.2	\$43,084
TOTAL EXPENDITURES LESS PURE PUBLIC GOOD EXPENDITURES		1,611,604.9	1,447,604.2	3,059,209.0		653,600.3	\$36,989

Source: See Appendix A.

Tax and Revenue Algorithms and Calculations

LGSC (low-skill group share of consumption) means the share of consumption of a given item performed by households headed by persons without a high school diploma. LGSTC (low-skill group share of total consumption) means the share of total consumption of all items performed by households headed by persons without a high school diploma.

	Consumption Share of Households Headed by Persons without a High School Degree in CEX <i>(in percent)</i>	Relevant Income Share Received by Households Headed by Persons without a High School Degree in CPS <i>(in percent)</i>	Aggregate Tax Paid by Households Headed by Persons without a High School Degree <i>(in millions)</i>	Taxes Paid per Household Headed by Persons without a High School Degree <i>17.67 million households (in dollars)</i>
Federal Taxes and Revenues				
Algorithms for Households Headed by Persons without a High School Degree				
Federal Individual Income Tax		CPS tax payment figures with adjustment for under-reporting	808,959.0	\$1,474
FICA Taxes		CPS tax payments with adjustments	685,334.0	\$2,509
Federal Corporate Income Tax		Incidence assumed to be 70 percent on workers and 30 percent on owners	189,371.0	
Federal Corporate Income Tax on Workers		70 percent of total tax times share of earned income in CPS		\$464
Federal Corporate Income Tax on Owners		30 percent of total tax times share of dividend, interest and rental income in CPS		\$133
Unemployment Insurance - Federal Receipts		Assume incidence falls 100 percent on workers; share of tax paid by households headed by person without a high school degree equals their share of earned income in the CPS	6,718.0	\$24
Highway Trust Fund		Incidence assumed to fall half on private owners of motor vehicles; one quarter on owners of business; and one quarter on general consumers	34,711.0	
Highway Trust Fund Taxes on Private Vehicle Drivers	10.3%	One half of total tax times LGSC on gasoline in CEX		\$101
Highway Trust Fund Taxes on Business Owners		One quarter of total tax times share of dividend, interest and rental income in CPS		\$20
Highway Trust Fund Taxes on Consumers	8.5%	One quarter of total tax times LGSTC in CEX		\$42
Airport and Airway Taxes	2%	Taxes paid by households headed by persons without a high school degree assumed to be two percent of total	9,174.0	\$10

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Tax and Revenue Algorithms and Calculations (continued)

	Algorithms for Households Headed by Persons without a High School Degree	Aggregate Tax Receipts (in millions)	Consumption Share of Households Headed by Persons without a High School Degree in CEX (in percent)	Relevant Income Share Received by Households Headed by Persons without a High School Degree in CPS (in percent)	Aggregate Tax Paid by Households Headed by Persons without a High School Degree (in millions)	Taxes Paid per Household by Households Headed by Persons without a High School Degree (in dollars)
Federal Taxes and Revenues (continued)						
Federal Excise Taxes: Alcohol	Total tax times LGSC of alcohol in CEX	8,105.0	6.4%		518.7	\$29
Federal Excise Taxes: Tobacco	Total tax times LGSC of tobacco in CEX	7,926.0	17.4%		1,379.1	\$78
Federal Excise Taxes: Telephone	Total tax times LGSC of telephone in CEX	5,997.0	11.4%		683.7	\$39
Federal Excise Taxes: Transportation Fuels	Total tax times LGSC of fuels in CEX	1,381.0	11.2%		154.7	\$9
Federal Excise Taxes: All Other	Total tax times LGSTC in CEX	2,561.0	8.5%		217.7	\$12
Federal Retirement Receipts						
Railroad and Other Retirement Receipts	Total receipts times share of railroad earnings in CPS	4,077.0		1.1%	44.8	\$3
Federal Employees Retirement Employee Share	Total receipts times share of federal employee earnings in CPS	4,543.0		2.98%	135.4	\$8
Federal Gift and Estate Tax	Share paid by households headed by persons without a high school degree assumed to be minimal	24,831.0		0%	0.0	\$0
Customs Duties and Fees	Total tax times LGSTC in CEX	21,083.0	8.5%		1,792.1	\$101
Miscellaneous: Fees for Permits and Regulatory and Judicial Services	Not Applicable	8,675.0				N.A.
Miscellaneous: Fines, Penalties, and Forfeitures	Not Applicable	3,902.0				N.A.
Other Miscellaneous Federal Receipts	Not Applicable	336.0				N.A.
Federal Total Taxes and Revenues		1,827,684.0			89,363.5	\$5,057

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Tax and Revenue Algorithms and Calculations (continued)

State and Local Taxes and Revenues	Algorithms for Households Headed by Persons without a High School Degree	Aggregate Tax Receipts (in millions)	Consumption Share of Households Headed by Persons without a High School Degree in CEX (in percent)	Relevant Income Share Received by Households Headed by Persons without a High School Degree in CPS (in percent)	Aggregate Tax Paid by Households Headed by Persons without a High School Degree (in millions)	Taxes Paid per Household by Households Headed by Persons without a High School Degree 17.67 million households (in dollars)
State and Local Individual Income Taxes	CPS tax payment figures with under-reporting adjustment	215,214.7		4.02%	8,651.6	\$490
State and Local Corporate Income Tax	Incidence assumed to fall 70 percent on workers and 30 percent on owners	33,715.8				
State and Local Corporate Income Tax on Workers	70 percent of total tax times the share of total earnings received by households headed by persons without a high school degree as reported in the CPS			6.19%	1,460.9	\$83
State and Local Corporate Income Tax on Owners	30 percent of total tax times the share of total interest, dividends and rent received by households headed by persons without a high school degree as reported in the CPS			4.15%	419.8	\$24
Property Taxes	Incidence is assumed to fall half on homes and rented apartments; half on businesses. The business portion is further assumed to fall half on consumers and half on owners.	318,242.5				
Property Taxes on Owner-occupied and Rented Domiciles	One-half of total tax time LGCS of shelter costs		8.9%		14,161.8	\$801
Property Taxes on Owners	One-quarter of total tax times the share of total interest, dividends and rent received by households headed by persons without a high school degree as reported in the CPS			4.15%	3,301.8	\$187
Property Taxes on Consumers	One-quarter of total tax times LGSTC		8.5%		6,762.7	\$383
General Sales Taxes	Total Tax Times LGSTC Minus Exemptions	244,891.3	6.88%		16,848.5	\$953
Motor Fuel Tax	Incidence assumed to fall half on private owners of motor vehicles; one quarter on owners of business; and one quarter on general consumers	34,943.6				

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Tax and Revenue Algorithms and Calculations (continued)

State and Local Taxes and Revenues (continued)	Algorithms for Households Headed by Persons without a High School Degree	Aggregate Tax Receipts (in millions)	Consumption Share of Households Headed by Persons without a High School Degree in CEX (in percent)	Relevant Income Share Received by Households Headed by Persons without a High School Degree in CPS (in percent)	Aggregate Tax Paid by Households Headed by Persons without a High School Degree (in millions)	Taxes Paid per Household by Households Headed by Persons without a High School Degree 17.67 million households (in dollars)
Motor Fuel Tax on Drivers of Personal Vehicles	One-half total tax times LGSC of gasoline		10.3%		1,956.8	\$111
Motor Fuel Tax on Consumers	One-quarter of total tax times LGSTC		8.5%	4.15%	777.5	\$44
Motor Fuel Tax on Business Owners	One-quarter of total tax on gasoline times share of interest, dividends and rents in the CPS going to households headed by persons without a high school degree				362.5	\$21
Tobacco Tax	Total tax times LGSC of tobacco	12,625.8	18.2%		2,297.9	\$130
Alcohol Tax	Total tax times LGSC of alcohol	4,985.7	6.3%		308.4	\$17
Other Selective Sales Tax	Total tax times LGSTC	41,755.9	8.5%		3,716.3	\$210
Motor Vehicle Licenses	Total tax times LGSC for licenses	18,709.0	5.3%		1,010.3	\$57
Public Utilities Tax	Total tax times LGSC for utilities	21,426.6	11.9%		2,699.7	\$153
Other General Taxes State and Local (Mainly Estate, Stock Transaction, and Severance Taxes)	Assume taxes paid by households headed by persons without a high school degree will be minimal	63,766.5	0%			\$0
Insurance Trust Revenue						
Unemployment Compensation	Assume incidence falls 100 percent on workers; share of tax paid by households headed by person without a high school degree equals their share of earned income in the CPS	38,361.5		6.19%	2,374.6	\$134
Workers' Compensation	Assume incidence falls 100 percent on workers; share of tax paid by households headed by person without a high school degree equals their share of earned income in the CPS	21,757.9		6.19%	1,346.8	\$76
Other Insurance Trust Revenue	Unknown	5,904.4				\$0

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Tax and Revenue Algorithms and Calculations (continued)

State and Local Taxes and Revenues (continued)	Algorithms for Households Headed by Persons without a High School Degree	Aggregate Tax Receipts (in millions)	Consumption Share of Households Headed by Persons without a High School Degree in CEX (in percent)	Relevant Income Share Received by Households Headed by Persons without a High School Degree in CPS (in percent)	Aggregate Tax Paid by Households Headed by Persons without a High School Degree (in millions)	Taxes Paid per Household by Households Headed by Persons without a High School Degree 17.67 million households (in dollars)
Employee Retirement Trust Revenue						
Employee Contributions	Total contribution times the share of earnings of state and local employees going to households headed by person without a high school degree	30,785.8		4.18%	1,287.0	\$73
Earnings on Investments	Not applicable	315,553.9				N.A.
Other	Not applicable	18,978.8				N.A.
State and Local Other General Revenue						
Interest Earnings	Not applicable	53,194.3				N.A.
Sale of Property	Not applicable	1,959.6				N.A.
Special Assessments	Not applicable	6,452.7				N.A.
Other General Revenue	Unknown	58,066.0				N.A.
Lottery Receipts	Per capita expenditures assuming double normal use by households headed by persons without a high school degree	45,465.8		2.66%	12,130	\$686
Total State and Local Taxes and Revenues		1,606,757.9			81,874.9	\$4,633
TOTAL FEDERAL, STATE, AND LOCAL TAXES AND REVENUES		3,434,441.9			171,238.5	\$9,689