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Federal Entitlement Spending

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Summary

Federal entitlement programs that provide means-tested benefits to lower income Americans or that provide age-related benefits to seniors account for 57% of federal spending. Most of that spending is through Social Security, Medicare, and Medicaid. Social Security and Medicare are expected to grow as a percent of the economy in the coming years as the population ages and as health spending per capita outpaces per capita income growth. Since Medicaid provides means-tested health care insurance, its spending is also expected to grow faster than the economy.

Addressing the current and future budget deficits requires reforms to the three largest entitlement programs: Social Security, Medicare, and Medicaid. Solving the budget math can be accomplished by raising taxes and/or cutting spending. Neither option is attractive, but there are ways to schedule future benefit adjustments to Social Security and Medicare that have a similar incidence on workers as do tax increases today. Thus, it may be preferable to focus on reforms that address the spending side of the programs rather than reforms that increase tax revenues.

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Introduction

Federal spending has hovered around 20% of gross domestic product (GDP) for more than 50 years. However, all signs indicate that federal spending is on a course to rise substantially as members of the baby boom generation continue to retire and as health care spending outpaces GDP growth. Today, Social Security, Medicare, and Medicaid together account for almost 50% of federal government outlays and equal 10.1% of GDP. In just 10 years, the Congressional Budget Office predicts these three programs as a share of GDP will grow by almost one-third to 13.3% of GDP.

Social Security and Medicare are primarily elderly entitlement programs and workers have a sense of participating in the programs during their working years as they pay payroll taxes. But Medicaid is means-tested in that individuals must meet certain criteria, including consideration of their incomes to be eligible for the program. In terms of annual spending, the other federal means-tested entitlement programs are individually much smaller than any one of the big three: Social Security, Medicare, and Medicaid. In fact, all of the other means-tested programs combined are about the same size as Medicaid.

In what follows, we discuss federal spending on the two elderly entitlements, Social Security and Medicare, and on the means-tested programs including Medicaid, and each of the other major programs. While federal spending on means-tested tax credits, food programs, general support, housing subsidies, and education grants is sizable, these programs are not the main causes of rising federal spending. Health care spending through Medicare and Medicaid and the new subsidized insurance resulting from the Affordable Care Act are the main drivers of the forecast of future increases in the federal spending share of GDP. Social Security is also responsible for some of the rise, given the sheer number of new retirees.

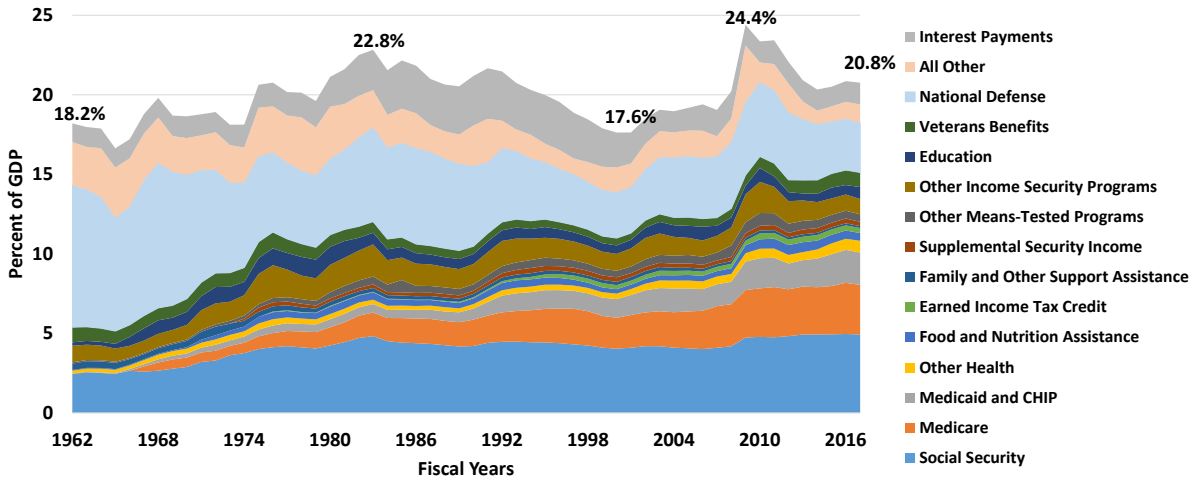
The Congressional Budget Office predicts deficits in each of the next ten years averaging almost 5% of GDP, as well as rising federal spending throughout its forecast. Persistent deficits add to the debt that is already at unprecedented peacetime levels. The simple budget math requires tax or spending reforms or a combination of the two. The programs that must be considered for reform are the health care programs and Social Security.

We conclude with an outline of some reform options for Social Security, Medicare, and Medicaid. Belt tightening is never an attractive option – someone always gets squeezed. However, if we wait, we essentially kick the can on to the next generation without suggesting workable alternatives now that would allow individuals and policy makers plan for the future.

How is the Federal Budget Spent?

To put federal spending on entitlement programs in context, it is helpful to consider the composition of federal spending over time. From 1962 to the present, federal outlays averaged 20% of gross domestic product (GDP). The composition of federal outlays from 1962 to the present is depicted in Figure 1. In 1962, outlays equaled 18.2% of GDP, they rose to 22.8% in 1983, and by 2000 and 2001 they declined to 17.6%. During the Great Recession in 2009 they rose to 24.4%, and by 2017 they stood at 20.8% of GDP. As is evident from the figure, the allocation of the federal budget changed substantially over the past six decades. National defense declined from 8.9% to 3.1% of GDP from 1962 to 2017. In 1962, Medicare and Medicaid did not yet exist, and Social Security spending was equal to 2.5% of GDP. By 2017 these "big three" accounted for 10.1% of GDP.

Figure 1. Federal Spending by Category as a Percentage of GDP



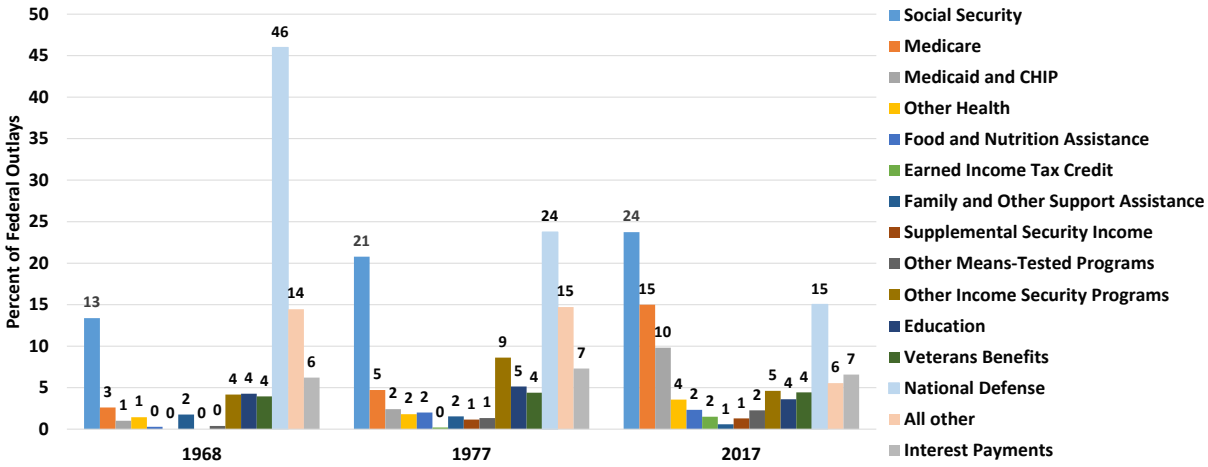
Sources: Tables 1.1, 8.5, and 8.7 Historical Tables, Budget of the United States Government, Office of Management and Budget.

Given our focus on entitlement programs, the bottom portion of the figure presents detail on the other categories of spending that provide support to individuals. Of those, the remaining mean-tested programs in addition to Medicaid: food and nutrition assistance, the earned income tax credit, family and other support, supplemental security income, and other means-tested programs were equal to 0.5% of GDP in 1962 and 1.7% of GDP in 2017. During the recession they grew to 2.2% of GDP. Federal spending through the remaining categories and programs providing resources to individuals including other health, other income security programs, education, and veterans' benefits accounted for 2.4% of GDP in 1962 and 3.4% in 2017. In 2010, these programs accounted for 4.2% of GDP, largely due to the fact that the other income security programs include unemployment benefits.

In the top portion, the All Other category includes energy, agriculture, international affairs, natural resources and the environment, and transportation among others. Together, these categories declined from 2.7% to 1.2% of GDP from 1962 to 2017. Interest payments on the debt reached 3.2% of GDP in 1991, when the debt held by the public was equal to 44% of GDP. Though the debt held by the public in 2017 has risen to 77% of GDP, interest payments were only 1.4% of GDP, given the historically low interest rates.

Figure 2 contrasts the composition of federal outlays in 1968, 1977, and 2017. The initial year of the comparison, 1968, was three years after the passage of the legislation that established Medicare and Medicaid. It was also the last year of President Johnson's administration, four years after he had declared war on poverty, and it was also the height of the Vietnam War. The second year for this comparison, 1977, is several years after the end of the Vietnam War and provides a benchmark 40 years prior to 2017.

Figure 2. Percent of Federal Spending



Sources: Tables 1.1, 8.5, and 8.7 Historical Tables, Budget of the United States Government, Office of Management and Budget.

From this figure we see the rise in the prominence of Social Security, Medicare, and Medicaid in federal spending; in 2017 they accounted for about half, 49%, of all federal outlays. In 1968 they accounted for 17% of federal spending and in 1977 they accounted for about 28%. The means-tested programs other than Medicaid accounted for 2.5% of all federal spending in 1968, 6.3% in 1977, and 8.0% in 2017. Over the past 40 years, these programs have seen an increase of 1.7 percentage points in their share of federal spending. Inclusive of Medicaid, all means-tested programs accounted for almost 18% of federal spending in 2017, up from about 9% in 1977. Including Social Security and Medicare along with the means-tested programs results in at least 57% of federal spending attributable to entitlement programs as of 2017.[1] Next, we turn to a discussion of each entitlement program, beginning with the three that dominate the federal budget.

[1] Some of the "Other Health" spending is through means-tested programs.

The Big Three: Social Security, Medicare and Medicaid

Social Security and Medicare primarily provide benefits to older Americans, the former through a monthly pension payment and the latter through health care insurance. Since its inception in 1935, Social Security has provided benefits for retirees, and over the years it has been expanded to include benefits for survivors, dependents, and the disabled. The program has two components. The Old-Age and Survivors Insurance (OASI) portion of the program pays benefits to retirees and certain family members and to the survivors of deceased workers. The Disability Insurance (DI) portion of the program pays benefits to disabled workers and certain family members. Once disabled workers reach retirement age, their benefits are paid through the OASI portion of the program. Funding for the OASI and DI programs is paid through dedicated payroll taxes and taxes on Social Security benefits. Since 2010, the program's combined expenses have exceeded its dedicated tax revenues. While OASI and DI each have Trust Funds, the current deficits are totally funded through general revenues.

The legislation establishing Medicare was signed into law in July of 1965. This health insurance program initially covered retirees and was expanded in 1973 to cover the disabled. Medicare has three parts. The Hospital Insurance (HI) portion of the program pays for hospitalization expenses, hospice care, skilled nursing services, and home health care. The HI portion of the program is also known as Part A. Medicare's other two parts, Parts B and D, are under the Supplementary Medical Insurance (SMI) portion of the program. Part B primarily covers doctors' visits, outpatient hospital care and some of home health care services. Part D covers pharmaceuticals and was added to the program through the Medicare Modernization act of 2003.

The HI portion of Medicare is funded by a payroll tax and revenues from the taxation of Social Security benefits. Between 2005 and 2016, HI spending exceeded its dedicated tax revenues. For the years 2017 to 2020, HI is anticipated to have small surpluses, and thereafter growing deficits are expected. The two parts of the SMI program are financed by general revenues and premium payments from beneficiaries. The approximate shares of SMI financing are 75% from general revenues and 25% from premium payments. In addition to age or disability status, eligibility for Social Security and Medicare retirement benefits is also contingent on an individual or his or her spouse paying payroll taxes in support of the programs for 40 quarters.

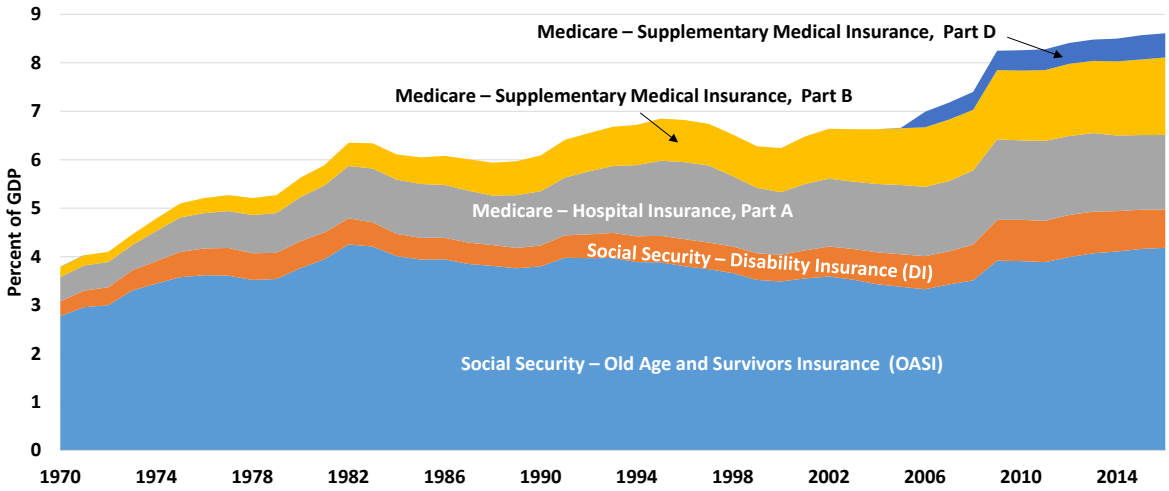
Like Medicare, Medicaid is also a health insurance program, but unlike Medicare's eligibility based on age or disability and the payment of payroll taxes, Medicaid is means-tested and prior to the passage of the Affordable Care Act, enrollees had to meet other eligibility requirements. Medicaid is also a joint federal and state program in which states have flexibility in determining eligibility and coverage. The federal funding amounts are also governed by a formula known as the Federal Medical Assistance Percentage (FMAP). The federal government pays for 50% of Medicaid spending in high income states, like New York and Connecticut, but in low income states the federal share is higher. For example, in Mississippi the federal share in 2018 was 75.65%.

Lower income individuals including children, their parents, and those who care for a disabled family member are eligible for Medicaid. Aged adults with low asset levels and income are also eligible for Medicaid as a supplement to Medicare coverage. The passage of the Affordable Care Act extended coverage to individuals under the age of 65 who live in households with income less than 138% of the federal poverty level. However, these individuals must live in states that accepted the expansion of the program. As of 2018, 32 states including the District of Columbia have accepted the federal funds to expand their Medicaid programs.[2] The federal government initially pays for 100% of the cost of expansion and after 10 years, the share will decline to 90%.

Social Security and Medicare

Given that Social Security and Medicare are primarily elderly entitlement programs, they are discussed here in tandem. Spending through the separate components of each program is depicted as percentages of GDP for the years 1970-2016 in Figure 3. The relatively rapid growth in Social Security's spending as a share of GDP from 1970 to 1982 was due, in part, to a formula that produced increasing benefits prior to amendments in 1977 that corrected the problem for subsequent new retirees. The increasing share was also due to the 1981-1982 recession's effect of slowing GDP growth. In 1982, Social Security expenditures equaled 4.8% of GDP. From 1983 to 2011 Social Security's expenses as a percent of GDP were lower than they were in 1982. In 2016, the program's spending was equal to about 5% of GDP. Unlike Social Security's spending, which remained a relatively stable share of GDP for much of the period in Figure 3, Medicare spending grew as a share of GDP throughout the time period. In 1970, Medicare spending was 0.7% of GDP, in 1990 it was 1.9%, in 2010 it had grown to 3.5%, and in 2016 it stood at 3.6%.

Figure 3. Total Spending on Social Security and Medicare as a Percent of GDP

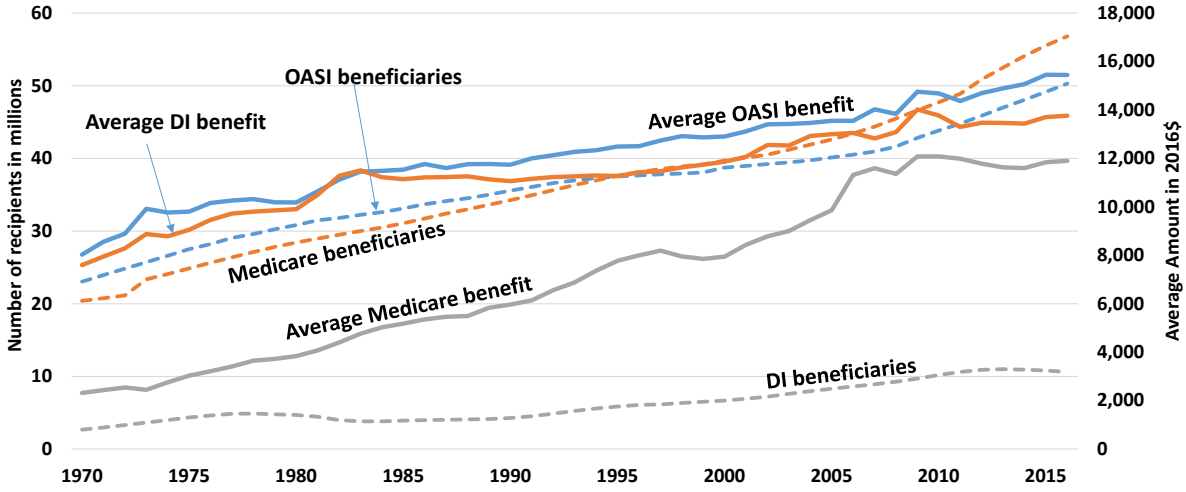


Sources: 2017 Social Security and Medicare Trustees Reports.

[2] See Table 1: Medicaid and CHIP: February and March 2018 Preliminary Monthly Enrollment.

The cause of the two programs' differential growth as shares of GDP is a consequence of different growth rates in spending per beneficiary. Per capita Social Security spending grows at about the same rate as per capita GDP, but per capita Medicare spending has grown faster than per capita GDP. Figure 4 depicts average per capita real Social Security and Medicare benefits along with the number of beneficiaries. Social Security beneficiaries and average benefits are depicted for both the OASI and DI portion of the program. Average real OASI benefits, across all beneficiaries including retirees, spouses, widows and other survivors, grew from $8,022 in 1970 to $15,444 in 2016, or at a real rate of 1.4% per year. Average real DI benefits grew from $7,599 to $13,764 between 1970 and 2016 or at 1.3% per year.

Figure 4. Social Security and Medicare Beneficiaries and Average Benefits in 2016$



Sources: 2017 Social Security and Medicare Trustees Reports. Dollar amounts converted to 2016$ using the CPI-U.

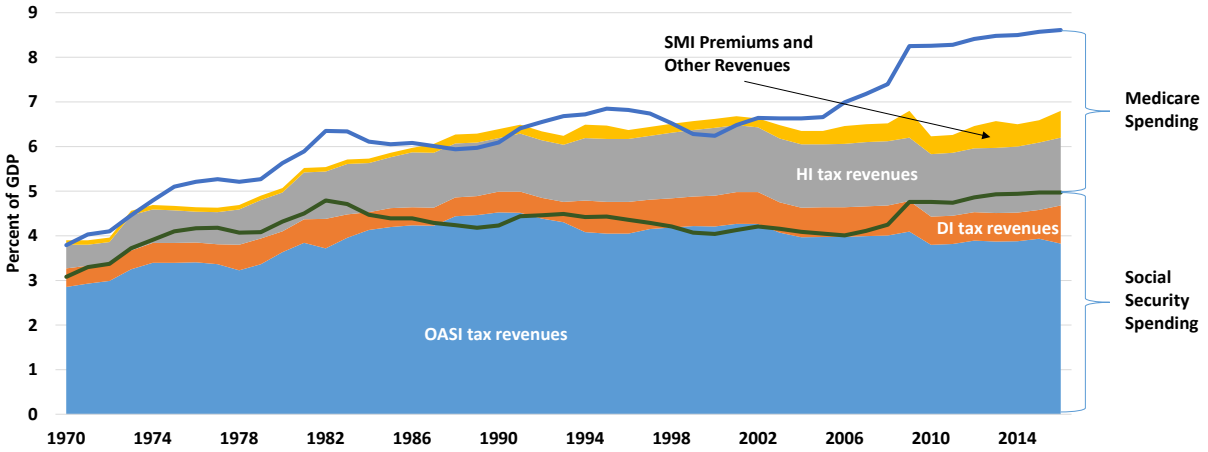
In contrast to Social Security benefit growth, average real Medicare benefits grew from only $2,317 in 1970 to $11,899 in 2016, for a real growth rate of 3.6%. Real benefits have not grown as rapidly over the last 10 years. This is partly a result of the influx of younger, lower spending beneficiaries as the baby boom generation retires. Excluding the addition of Part D benefits from the calculation still produces a real growth rate in average Part A and B benefits of 3.3%. By 2016, the average Medicare benefit was 77% the size of the average OASI benefit, up from 29% in 1970. In 2016, Medicare enrollees numbered 56.8 million, OASI beneficiaries numbered 50.3 million and DI beneficiaries numbered 10.6 million.

Because Social Security and Medicare Part A have dedicated tax revenues and Medicare Parts B and D have premium revenues, it is helpful to consider the degree to which these dedicated revenues fund the programs' expenditures. Figure 5 shows the dedicated revenues along with the expenditures. OASI and DI revenues tracked expenditures for the first three years of the period depicted, but for the next decade, expenditures exceeded revenues, which prompted the

1983 Social Security reforms – the last major set of reforms to the program. These reforms included additional payroll tax revenues, adding a tax on Social Security benefits if income was above a specified threshold, and bringing more employees into Social Security covered employment. Longer run benefit reductions through raising the full retirement age to 67 by 2027 were also part of the 1983 reforms.

The 1983 reforms produced system wide surpluses in each year between 1984 and 2009. The surpluses reached a peak of 2.2% of payroll, or 0.86% of GDP in 2000. The surpluses were credited to the OASI and DI Social Security Trust Funds. In 2009, the combined value of the trust funds was 17.6% the size of GDP and in 2016 the value had declined to 15.3%. The combined trust fund is expected to be exhausted in 2034. The Social Security surpluses between 1984 and 2009 allowed for less borrowing by the federal government as a whole and lower income taxes.[3] While the trust fund will not be exhausted for 16 more years, the current deficits can only be paid through additional government borrowing today, or through increasing other tax revenues – which is not likely, given the passage of the recent tax bill.

Figure 5. Social Security and Medicare Spending and Revenues as a Percentage of GDP



Sources: 2017 Social Security and Medicare Trustees Reports.

Medicare's HI tax revenues covered its expenses between 1984 and 2008. But in 2016, the entire Medicare program required $297.5 billion in general revenues in addition to its dedicated premium payments, payroll and Social Security benefit tax revenues, and Part D transfers from the states.[4] As seen in the figure, combined Social Security and Medicare expenses have exceeded the combined dedicated premiums and tax revenues since 2002. These expenses

[3] Liqun Liu, Andrew J. Rettenmaier, Thomas R. Saving and Zijun Wang in "The Effect of Trust Fund Surpluses on the Rest of the Federal Budget," *The Quarterly Review of Economics and Finance*, 64, (2017) 228-237, estimate that only a third of the surpluses are saved by the federal government.

[4] Table II.B1, 2017 Medicare Trustees Report.

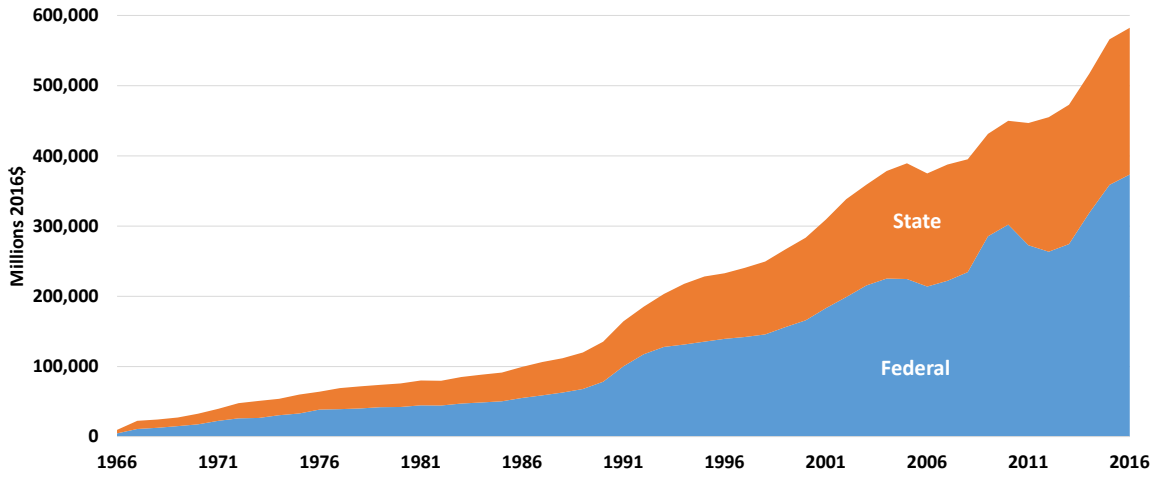
require funding from general revenues that were equal to 1.8% of GDP as of 2016. The general revenue funding requirements as a percent of GDP are expected to grow over the entirety of the Social Security trustees' projection horizon. These future funding requirements are further discussed in a subsequent section.

Medicaid

Medicaid and Medicare were signed into law in 1965 as Titles 18 and 19 of the Social Security Act. Title 21 of the Social Security Act, known as the Children's Health Insurance program, was added through the 1997 Balanced Budget Act. The Affordable Care Act of 2010 added the newly eligible adults who are less than 65 years of age and have incomes less than 138% of the poverty threshold. Medicaid's enrollment in 2016 numbered 72.6 million, exceeding Medicare's by almost 16 million. In 2016, the program accounted for 17% of all national health care spending while Medicare accounted for just over 20%.

As mentioned earlier, Medicaid is a joint federal/state program. Figure 6 depicts the total state and federal spending amounts in 2016$ for the years 1966 to 2016. In 2016, the federal government spent $373 billion and state governments spent $209 billion. The federal share of total Medicaid spending was 64% in 2016. It was as high as 67% in 2010 when the states' Federal Medical Assistance Percentages were temporarily increased during the Great Recession. In the decade prior to the recession, the average federal share hovered between 57% and 60%. In 2012 and 2013, before the ACA's addition of the newly eligible adults, the federal share was about 58%. The recent rise in the federal share is a consequence of the federal government funding most of the newly eligible adults' program expenses.

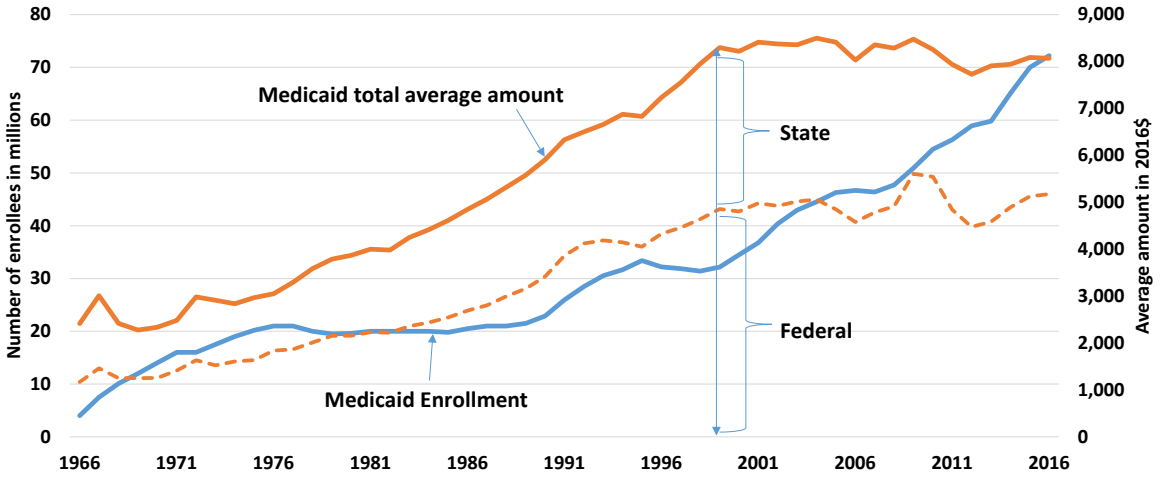
Figure 6. Federal and State Medicaid and CHIP Spending in 2016$



Sources: National Health Expenditures by Type of Service and Source of Funds: Calendar Years 1960-2016, Centers for Medicare and Medicaid Services. Dollar amounts converted to 2016$ using the CPI-U.

Figure 7 illustrates total annual Medicaid enrollment and annual average state and federal spending in 2016$. Enrollment is in terms of person-year equivalents. The figure illustrates the substantial 20% growth in Medicaid's enrollment from about 60 million in 2013, before the eligibility expansion, to 72.2 million in 2016. The per capita spending amounts indicate relatively stable real spending from the late 1990s to the present. Some of that slowdown is due to a shift in pharmaceutical spending from Medicaid to Medicare for dual-eligible aged beneficiaries when Part D was added to the Medicare program. Some is also due to the growth in the share of children beneficiaries through CHIP and more recently it is due to the newly-eligible enrollees whose per capita expenditures are lower than the overall average. Average federal spending in 2016 was $5,172 and average state spending was $2,895 for a total of $8,067.

Figure 7. Medicaid Enrollment and Average Amounts in 2016$



Sources: : National Health Expenditures by Type of Service and Source of Funds: Calendar Years 1960-2016, Centers for Medicare and Medicaid Services (CMS). Enrollment from 2016 Actuarial Report on the Financial Outlook for Medicaid and Health Expenditures by State of Residence, 1991-2014, CMS. Dollar amounts converted to 2016$ using the CPI-U.

As of 2015, children accounted for 41% of enrollees, non-newly eligible adults accounted of 22%, the newly eligible adults made up 13%, persons with disabilities accounted for 15% and aged enrollees accounted for the remaining 8%. Disabled enrollees accounted for the largest share of spending, at 40% of total expenditures in 2015.[5]

Means-Tested Programs

Medicaid and CHIP rival the size of all of the other federal means-tested programs combined. These other means-tested programs provide recipients resources through in-kind transfers for food, housing, education, and health care, as well as general cash assistance and tax credits.

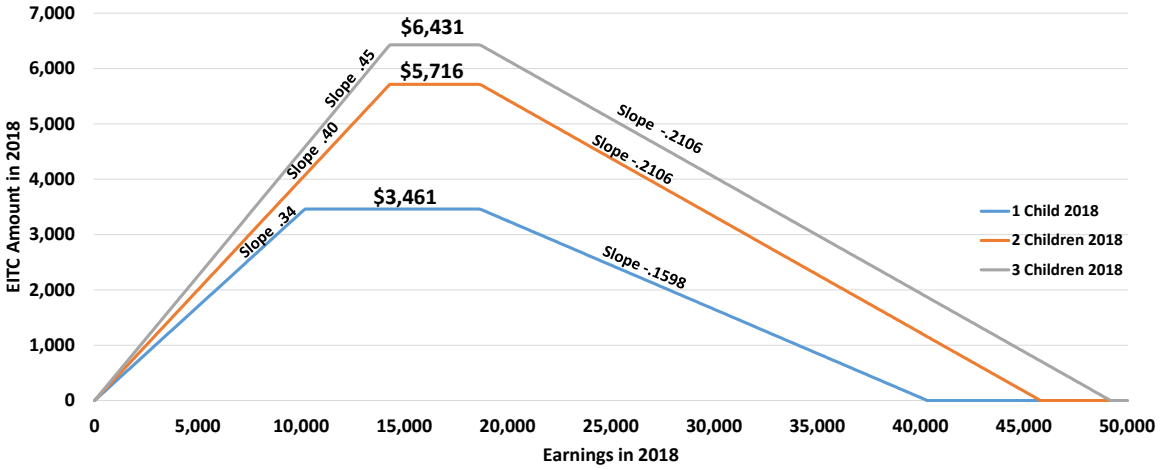
[5] See Figure 1, *2016 Actuarial Report on the Financial Outlook of Medicaid,* US Department of Health and Human Services.

Three programs often discussed together are: the Temporary Assistance for Needy Families (TANF) program, the Supplemental Nutrition Assistance Program (SNAP), and the Supplemental Security Income (SSI) program. These programs are discussed together because the Welfare Indicators Act of 1994 requires the Department of Health and Human Services to report on the joint utilization of the programs. We discuss these three along with the Earned Income Tax Credit (EITC), given that the EITC's recipients expanded during the 1990s at the same time the TANF program's recipients were declining.

Earned Income Tax Credit

The Earned Income Tax Credit (EITC) is a refundable tax credit administered via the federal income tax. The EITC tax credit amount a family receives depends on the family's earned income, as well as the number of children and the filing status. Given the number of children and the filing status, the EITC amount is a function of the level of earned income. Over an initial range of earnings, tax credits increase as workers earn more, effectively raising workers' wage rates. After the initial range of earnings with increasing tax credit amounts, there is a range of earnings over which the tax credits are constant. As workers earn above this range, the tax credits gradually fall, such that above a given threshold the tax credit is zero.

Figure 8. Earned Income Tax Credit Amount in 2018 for single parent families with 1, 2, or 3 or more children



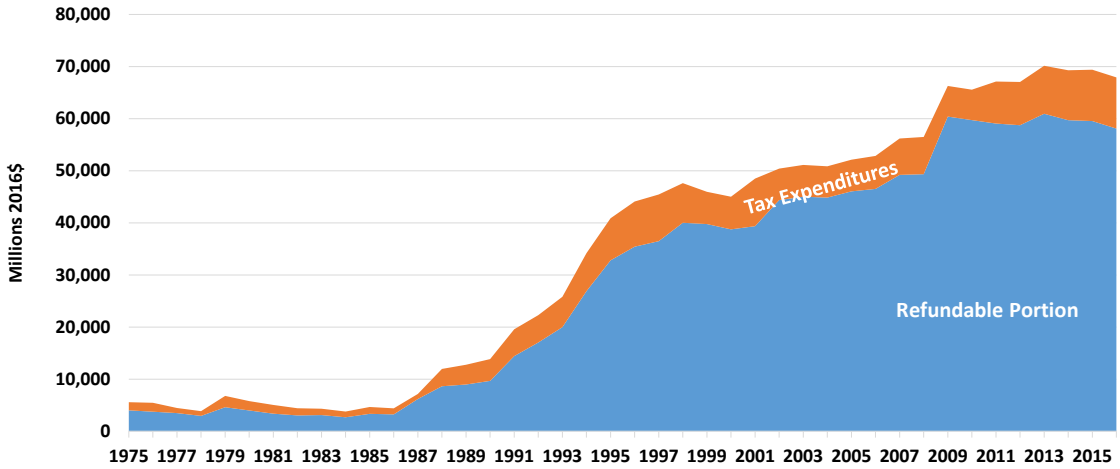
Source: Internal Revenue Service. 2018 EITC Income Limits, Maximum Credit Amounts and Tax Law Updates.

Figure 8 depicts how the EITC credit amount depends on the income level for three single taxpayers with 1, 2 and 3 or more children, respectively, for the year 2018. Take the credit schedule for a family with one child, the blue schedule, for example. The range of the earned income that qualifies for some EITC is between $0 and $40,320, which can be decomposed into

three subranges. The phase-in range is between $0 and $10,180 (the maximum earned income). For every additional dollar earned within this range, the credit amount increases by $0.34 (the credit rate) until credit amount reaches $3,461 (the maximum credit) at the end of this range. The plateau range is between $10,180 and $18,660 (the beginning income of phase-out). The credit amount is constant at the maximum of $3,461 over this range. The phase-out range is between $18,660 and $40,320 (the ending income of phase-out). For every additional dollar earned within this range, the credit amount decreases by $0.1598 (the phase-out rate) until the credit amount eventually reaches $0 at the end of this range.

Beginning in 1975 as a temporary program to partially refund Social Security payroll taxes to low-income families with children, the EITC has grown over time into the largest means-tested cash transfer program for low-income families with or without children. In 2016, the program provided $67.9 billion total EITC benefits – of which $58.1 billion was refunded to the relevant taxpayers whereas the remainder takes the form of reduced tax liabilities (often referred to as tax expenditures) – to about 27.7 million tax filers for an average benefit of $2,455.

Figure 9. Earned Income Tax Credit (EITC) Expenditures in 2016$

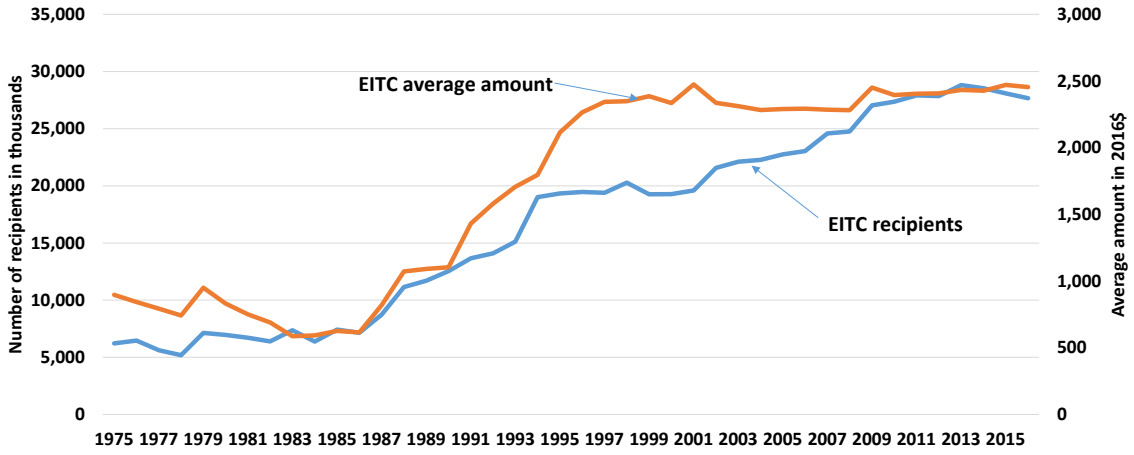


Sources: Years 1975-2015 from Gene Falk and Margot L. Crandell-Hollick, "The Earned Income Tax Credit(EITC), an Overview," Congressional Research Service, April 18, 2018, Table A-1, and year 2016 from Internal Revenue Service, Statistics of Income, Table 1, preliminary. Dollar amounts converted to 2016$ using the CPI-U.

Figure 9 illustrates the historical benefit levels up to 2016. From 1975 to 1986, the program was fairly modest. Then, the program grew rapidly between 1986 and 1996. After that, the program continued to grow at a lower rate than the previous period, until 2013. The program's real spending has declined slightly in the past few years. The growth pattern since 1986 can be explained by the growth over the same period in in the number of tax filers who claimed EITC and in the average amount of EITC benefits per filer/claimer.

Figure 10 depicts the changes over time in the number of tax filers who claimed the EITC and in the average amount of EITC benefits per filer/claimer. It shows that the number of EITC recipients grew steadily between 1986 and 2015. In contrast, the average EITC benefit amount grew rapidly between 1986 and 1996 and stabilized in the $2,200 to $2,500 range since then.

Figure 10. EITC Recipients and Average Amounts in 2016$



Sources: Years 1975-2015 from Gene Falk and Margot L. Crandell-Hollick, "The Earned Income Tax Credit(EITC), an Overview," Congressional Research Service, April 18, 2018, Table A-1, and year 2016 from Internal Revenue Service, Statistics of Income, Table 1, preliminary. Dollar amounts converted to 2016$ using the CPI-U.

The program's generosity significantly increased between 1986 and 1996, as indicated by the average benefit amount that more than tripled over this period, and this plays a critical role in EITC's overall growth. It is interesting to note that the political debates over the same period also lead to the Personal Responsibility and Work Opportunity Reconciliation Act of 1996 that placed considerable time limits and work requirements on the main government cash transfer program at the time, the Aid to Families with Dependent Children (AFDC), which was superseded by Temporary Assistance for Needy Families (TANF) in 1996.

The main political appeal of the EITC, at the exact time the AFDC/TANF was being tightened, lies in that one must work and earn income to receive the benefits offered by the program. In fact, up to a relevant level of earned income (e.g., $10,180 for a single parent family with one child in 2018), the higher the earned income, the larger the tax credit. In contrast, for almost all other means-tested programs including AFDC/TANF, benefits to a recipient decrease as the recipient's earned income increases. As a result, EITC does not have the disincentive effects on labor force participation and labor supply that a typical means-tested program has on low-income families. That is, the labor force participation rate would be higher and the number of hours worked would be larger, under the EITC than under a conventional means-tested program that would transfer the same amount of benefits to low-income families.

On the other hand, it is not clear that the EITC has increased labor supply compared to a situation without the EITC. To see this, let us examine three families whose earned income belongs to the phase-in range, the plateau range or the phase-out range, respectively.[6] For a family with an earned income falling in the relevant phase-in range, the EITC acts as an earnings subsidy that effectively increases the wage rate. A wage increase produces both a substitution effect, leading to more hours of work, and an income effect, leading to fewer hours. Only when the substitution effect dominates the income effect will the worker work more with the EITC.

For a family with earned income falling in the relevant plateau range, the EITC is like a lump-sum grant, with the credit amount being independent of earnings. The lump-sum grant produces only an income effect, unambiguously leading to fewer hours of work under the EITC. For a family with an earned income falling in the relevant phase-out range, the EITC operates like a typical cash transfer to the poor that effectively decreases the wage rate. A wage decrease produces both a substitution effect, leading to fewer hours of work, and an income effect, also leading to fewer hours. So the worker will unambiguously reduce work hours under the EITC.

Temporary Assistance for Needy Families

The Temporary Assistance for Needy Families (TANF) block grant was created in the Personal Responsibility and Work Opportunity Reconciliation Act of 1996 to replace the Aid to Families with Dependent Children (AFDC), the main government cash transfer program from 1935 to 1996. Compared to its predecessor, TANF imposes time limits on receiving benefits (no more than five years for lifetime benefits), and has a much greater emphasis on encouraging recipients to work.[7] As a result, TANF provided cash payments to less than 3 million people in 2016, compared to the 13 million cash recipients at the end of AFDC.

Under TANF, the size of the grant to each state is fixed in advance, and the state uses the grant as it sees fit, subject to only very broad guidelines. As a result, the eligibility standards and benefit formula vary greatly from one state to another. For example, benefits are reduced by one whole dollar for each dollar of earnings in many states, whereas in other states, the benefits are only partially reduced or not reduced at all for each additional dollar of earned income. Further, the maximum benefits for a given family size, to a family with no earned income, also vary considerably across states. In July 2016, the maximum monthly benefits for a family of three

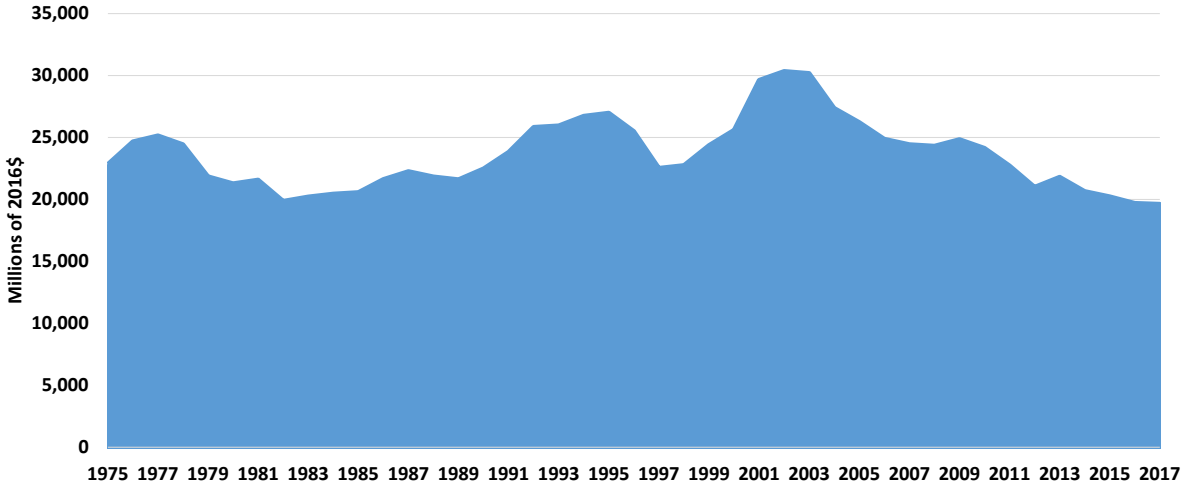
[6] For a discussion of some nuanced empirical studies on EITC's effects on labor force participation and labor supply, see Liqun Liu and Andrew J. Rettenmaier (2017). "Navigating the Earned Income Tax Credit," PERC Study No. 1703. Private Enterprise Research Center, Texas A&M University.

[7] States would face penalties if a certain percentage of adult recipients are not working or in work preparation programs. Specifically, the law stipulates that at least 50% of all families and 90% of two-parent families be "engaged in work".

were as low as $170 in Mississippi and $185 in Tennessee, and as high as $923 in Alaska and $789 in New York.[8]

Figures 11 and 12 jointly paint a picture of how, at the aggregate level, the TANF program has evolved over time (the old AFDC is treated as TANF before 1996 for convenience). As Figure 11 shows, the total federal TANF spending in real terms has roughly stayed the same since 1975, with a few noticeable peaks attributable to various recessions. For example, the peak spending of 1975-1976 followed the 1973-1975 recession; the 1992-1994 spending peak followed the early 1990s recession; and the 2000-2002 spending peak was associated with the early 2000s recession. Spending in 2017 was about $20 billion.

Figure 11. Temporary Assistance for Needy Families (TANF) in Millions of 2016$



Source: Table 11.3 Historical Tables, Budget of the United States Government, Office of Management and Budget. Dollar amounts converted to 2016$ using the CPI-U.

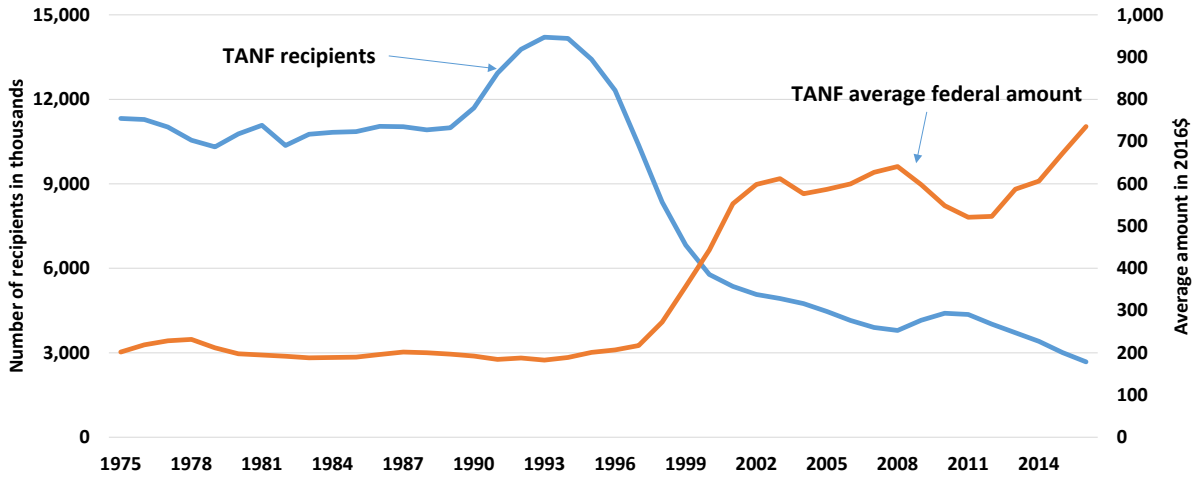
Figure 12 looks at the two components of the federal spending on TANF: the number of TANF recipients and the average federal TANF amount. It is obvious that the number of TANF recipients has considerably decreased since 1996, the year AFDC was replaced by TANF.[9] It is also obvious that during the same period that the number of recipients sharply declined, the average amount has climbed, which explains why the total federal TANF spending has basically stayed the same

[8] Linda Giannarelli, Christine Heffernan, Sarah Minton, Megan Thompson, and Kathryn Stevens (2017). "Welfare Rules Databook: State TANF Policies as of July 2016." OPRE Report 2017-82, Washington, DC: Office of Planning, Research and Evaluation, U.S. Department of Health and Human Services.

[9] Indeed, the decline seems to have started two years earlier than 1996, which can be explained by the economy recovering from the Early 1990s recession.

while the number of recipients has dropped substantially due to the additional eligibility requirements introduced in 1996.

Figure 12. TANF Recipients and Average Amounts in 2016$



Sources: Number of recipients United State Department of Health and Human Services, Administration for Children and Families, Office of Family Assistance. Dollar amounts converted to 2016$ using the CPI-U.

The composition of spending through the TANF program has changed since 1996. The CBO notes that pure cash assistance payments per beneficiary have been declining while funding for work support and other services have risen as shares of federal TANF spending.[10] This means that the growth in average federal spending shown in Figure 12 is not due to higher cash assistance payments, but is due to job training and other support services.

Compared to the EITC and Supplemental Security Income (to be discussed next) on which (tax) spending levels have considerably increased over time, the federal spending on TANF remaining constant in real terms implies that the relative importance of TANF as a welfare program has declined. The decline of TANF reflects society's concern about the disincentive effects on labor force participation and labor supply from a conventional cash transfer program such as the TANF.

Although the exact TANF benefit formula varies from one state to another, it always specifies a maximum level of benefits, the amount a family of a certain size would receive when the family has no earned income, and a benefit reduction rate, how much a recipient's benefits are reduced when the family's earned income increases. In a majority thirty four states, the benefit reduction rate is 100%, meaning that an eligible family's benefits are reduced dollar-for-dollar as the

[10] See "Temporary Assistance for Needy Families: Spending and Policy Options," CBO, January 2015, Figures 4-5, pages 9-10.

family's earned income increases. In fifteen of the remaining states, TANF benefits also decrease, though by less than dollar for dollar, as a recipient's earned income increases. The exceptions are Arkansas and Wisconsin where benefits are not reduced as an eligible recipient earns more.[11] If TANF recipients' earnings in the labor market result in a loss of TANF benefits, recipients have substantially reduced incentives to work.

These disincentive effects on labor force participation and labor supply from a conventional cash transfer program like the TANF have been well recognized. Research on these disincentive effects generally concluded that the AFDC (the predecessor of TANF) reduced labor supply by 10% to 50% among recipients.[12] Further, because such a conventional cash transfer program discourages work and development of working skills, it might have enabled a vicious cycle of welfare dependency.

These concerns explain the time limits and work requirements introduced into TANF in 1996. There is some evidence that time limits and work requirements are effective in reducing welfare dependence. One study finds that 12% of the decrease in TANF caseloads was contributable to the families that got off of the TANF before the 5-year time limit so that they can "bank" their remaining quota for possible later use.[13] Another study finds that changes in time limits and work requirements have caused the expenditure patterns of the TANF recipients to shift toward buying items that facilitate work outside the home.[14]

These concerns also explain the appeal of non-cash transfers such as food and housing assistance. They also explain the rise of two other major cash transfer programs at the exact same time the TANF has been staggering. The first is the EITC discussed earlier, the non-conventional cash transfer program that encourages labor participation and labor supply. The second is the Supplemental Security Income (SSI) program that targets specific groups of the population – the aged, blind and disabled – for which the disincentive effects on labor force participation and labor supply for recipients are not a particular concern.

[11] Arkansas is a special case. Benefits equal the maximum amount for the family size as long as the family's gross income is less than $446, but are reduced to half of the maximum amount when the gross income is greater than $446. For a detailed discussion of how TANF benefits are calculated in each state, see Linda Giannarelli, Christine Heffernan, Sarah Minton, Megan Thompson, and Kathryn Stevens (2017). "Welfare Rules Databook: State TANF Policies as of July 2016." OPRE Report 2017-82, Washington, DC: Office of Planning, Research and Evaluation, U.S. Department of Health and Human Services.

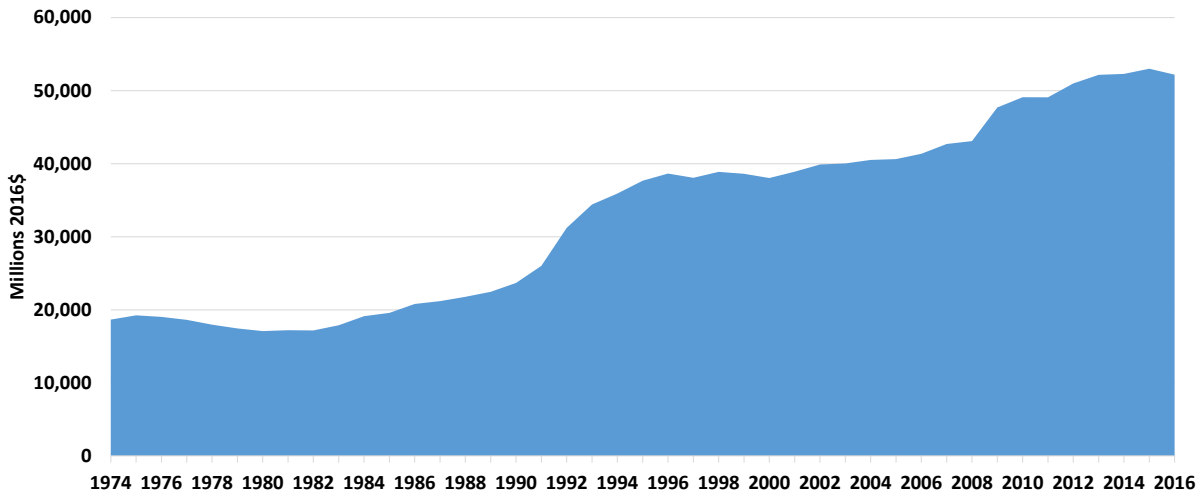
[12] Robert A. Moffitt (2003). "The Temporary Assistance for Needy Families Program," In Means-Tested Transfer Programs in the US, Robert A. Moffitt (ed.). Chicago: University of Chicago Press.
[13] Jeffrey Grogger (2003). "The Effects of Time Limits and Other Policy Changes on Welfare Use, Work, and Income among Female-Headed Families," Review of Economics and Statistics 85, 394-408.
[14] Neeraj Kaushal, Qin Gao, and Jane Waldfogel (2006). "Welfare Reform and Family Expenditures: How Are Single Mothers Adapting to the New Welfare and Work Regime?" Working Paper No. 12624. Cambridge, MA: National Bureau of Economic Research.

Supplemental Security Income

Designed to replace a wide range of earlier federally supported programs run by the states, SSI was established in 1972 as a cash-transfer program for low-income individuals who are aged, blind or disabled. It is financed by the federal government, jointly operated by the federal and state governments, and administered by the Social Security Administration. In 2016, the federal government spent about $52 billion to provide an average SSI benefit of about $6,300 to over 8 million recipients.

Figures 13 and 14 jointly paint a picture of the historical trends in SSI. As Figure 13 shows, total federal SSI spending in real terms has grown considerably since 1975, with two noticeable hikes attributable to recessions. The first hike took place in early 1990s, coinciding with the early 1990s recession. The second hike took place between 2007 and 2009, coinciding with the Great Recession of 2007-2009. Unlike the TANF spending discussed earlier and the SNAP spending to be discussed next, the SSI spending level did not come down after the recessions were over, suggesting that the SSI is more prone to creating welfare dependence than the other two programs.

Figure 13. Supplementary Security Income (SSI) in Millions of 2016$

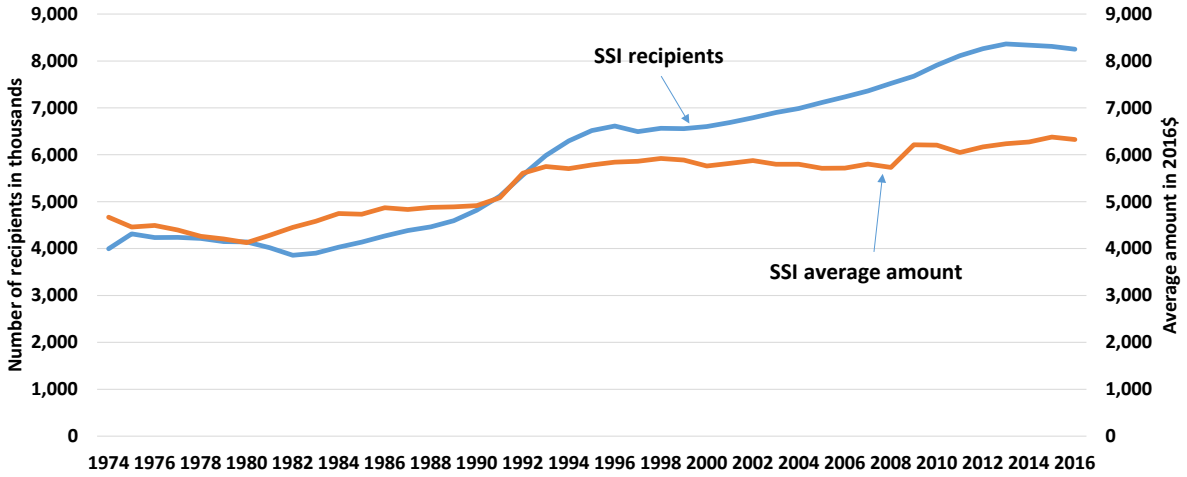


Source: Annual Statistical Supplement to the Social Security Bulletin, Dollar amounts converted to 2016$ using the CPI-U.

Figure 14 illustrates the movements over time in the two components of the total SSI spending: the number of SSI recipients and the average SSI benefit amount. It shows that the average SSI benefit amount has only modestly increased since 1975 in real terms. The overall growth in the federal SSI spending is mainly contributable to the growth in the number of SSI

recipients. In particular, the sharp rise in the number of recipients during early 1990s coincided with the sharp rise in the spending level during that same period.

Figure 14. SSI Recipients and Average Amounts in 2016$



Sources: Annual Statistical Supplement to the Social Security Bulletin, Dollar amounts converted to 2016$ using the CPI-U.

To be eligible for SSI benefits, in addition to being aged, blind or disabled, an individual's monthly income must be less than a certain minimum amount established by the state, and his or her assets must be worth less than $2,000 ($3,000 for a couple). The basic federal SSI payment for 2017 is $735 a month for an individual and $1,103 a month for a couple. A number of states add to the basic federal SSI amount with federal and state supplements. The SSI benefits are reduced by fifty cents for every dollar more than $65 per month that one earns in wages or self-employment.

Therefore, similar to TANF, SSI also has disincentive effects on labor force participation and labor supply. Moreover, as discussed above, SSI is more prone to creating welfare dependence than TANF, based on the fact that, unlike TANF, SSI spending level did not come down after a recession was over. What would explain the growth of the SSI program relative to the TANF program? In particular, SSI has a uniform guaranteed minimum income level, which was $735 a month in 2017. Further, there are no work requirements or time limits for the SSI eligibility.

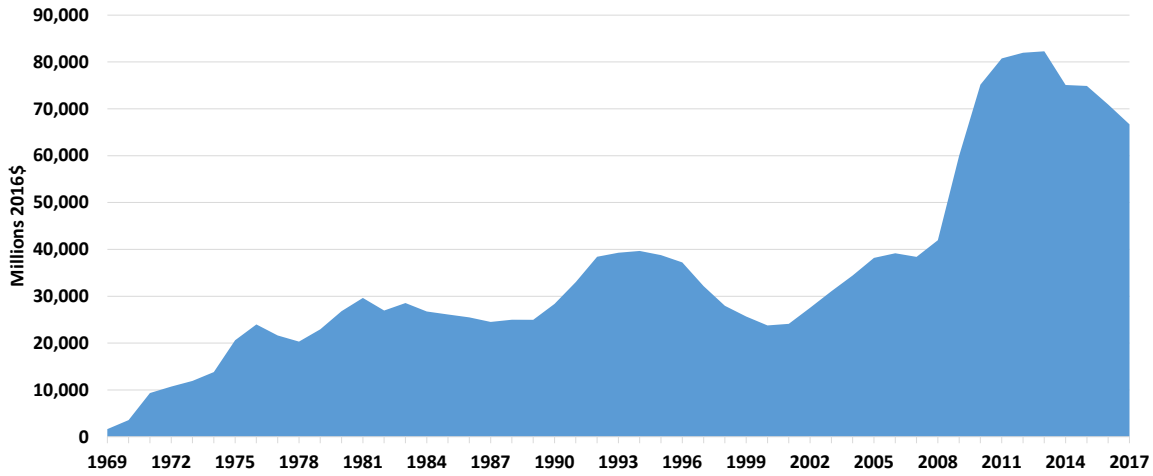
In addition to means-testing, SSI eligibility also depends on being aged, blind or disabled. So the relative popularity of the SSI program suggests that society, in conceiving aids to the poor, cares about the source/reason of poverty. There is an economic explanation for this concern. The SSI program targets population groups that have limited capacity of supplying labor. This is likely why SSI is more generous than some other broadly-based means-tested programs.

Supplemental Nutrition Assistance Program

The Supplemental Nutrition Assistance Program (SNAP), which was formerly known as the Food Stamp Program, provides an Electronic Benefit Transfer (EBT) card with monthly benefits to low-income households that can be used only for the purchase of food. The direct cost of SNAP benefits is paid by the federal government, whereas state governments are responsible for the administration of the program. All low-income households, regardless of their demographic composition, are eligible for SNAP. In 2017, 42 million people received average SNAP benefits of $1,600, with the total federal spending on SNAP being $67 billion.

Figures 15 and 16 depict the historical trends in SNAP (it was the Food Stamp Program prior to 2008) spending and in the number of recipients. As Figure 15 shows, between 1975 and 2008, the total federal SNAP spending in real terms grew modestly, with a few noticeable peaks attributable to various recessions. For example, the peak spending of 1975-1976 followed the 1973-1975 recession; the 1981-1983 spending peak followed the early 1980s recession; and the 1992-1994 spending peak followed the early 1990s recession. After 2008, in contrast, the spending level took off. In particular, the SNAP spending doubled between 2008 and 2011.

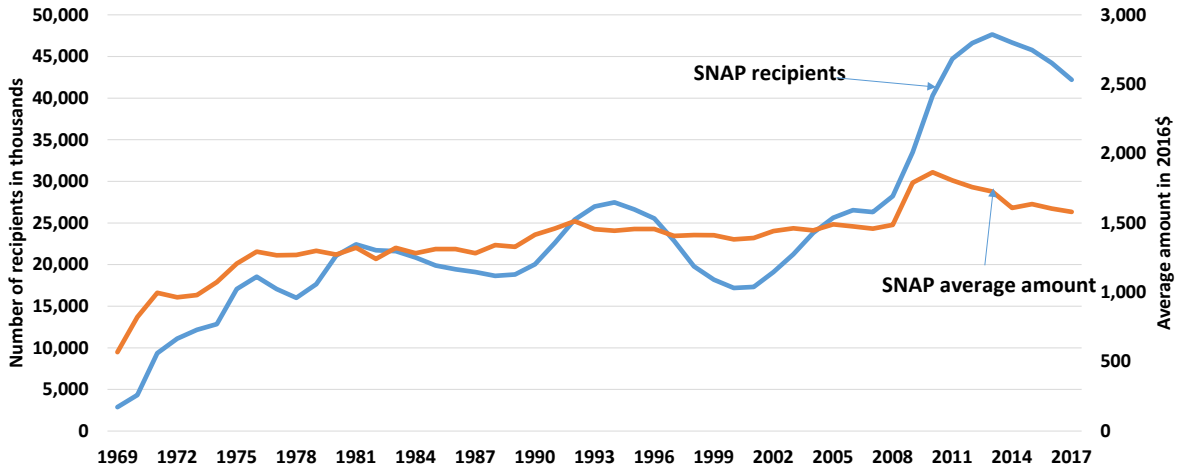
Figure 15. Supplement Nutrition Assistance Program (SNAP) Total Costs in Millions of 2016$



Source: United States Department of Agriculture, Food and Nutrition Service, Supplemental Nutrition Assistance Program (SNAP). Dollar amounts converted to 2016$ using the CPI-U.

Figure 16 further shows that the average SNAP benefit amount has stayed relatively constant in real terms, and the overall growth and periodic highs and lows in the federal SNAP spending can be explained by movements over time in the number of SNAP recipients. In particular, the sharp rise in the number of recipients since the Great Recession of 2007-2009 closely mimic the sharp rise in the spending level.

Figure 16: SNAP Recipients and Average Amounts in 2016$



Source: United States Department of Agriculture, Food and Nutrition Service, Supplemental Nutrition Assistance Program (SNAP). Dollar amounts converted to 2016$ using the CPI-U.

SNAP benefits vary according to the family size, income level and whether the household has an elderly or disabled member, but these benefits follow the same formula nationwide. Given the family size and composition, an eligible household's SNAP benefits decrease when its income increases, with an effective marginal tax rate (i.e., the benefit reduction rate) of 30%.[15] Therefore, similar to the TANF, the SNAP also has disincentive effects on labor force participation and labor supply, creating welfare dependency.

Further, since SNAP benefits can only be used to buy food, it's not surprising they are worth less to some recipients than the same amount of cash. This would be the case when a recipient would rather receive a cash payment and only spend a portion of the cash payment on food. Indeed, there is experimental evidence showing that on average SNAP benefits are valued as equivalent to only 80% of their face cash value.[16]

What explains the government's apparent preference for in-kind transfers – which include food assistance, housing and medical assistance, among other things –over cash transfers? This preference exists even though it is more costly to administer in-kind transfers than cash transfers, and recipients of an in-kind transfer typically value it as equivalent to less than the same amount

[15] The 30% benefit reduction rate is the implication of the fact that the SNAP benefits make up any deficit between what is needed to purchase a low-cost nutritionally adequate diet and 30% of a household's net income.

[16] Diane Whitmore, "What Are Food Stamps Worth?" Industrial Relations Section Working Paper No. 468 (July 2002), Princeton, NJ: Princeton University. Related to this phenomenon of discounting SNAP benefits, the same study also finds that between 20% and 30% of benefit recipients reduce their spending on food when they are given cash instead.

of cash. There are two main explanations for this. First, the government's paternalism tendency makes it hard to trust the judgment of average citizens, not to mention citizens with relatively low income. Second, it may be the case that what government (society) cares about is not so much the well-being of the recipients, but rather the outward manifestations of poverty: malnutrition, homelessness, or poor patients without necessary medical treatment.

Combined Participation and Benefit Incidence of TANF, SNAP, and SSI

Recipients of TANF, SNAP, and SSI often simultaneously receive benefits from more than one of these programs. Some evidence is presented here regarding the combined participation and benefit incidence of three major non-health means-tested programs.

The Department of Health and Human Services tracked the percentage of Americans receiving various proportions of their income from TANF, SNAP, and/or SSI for every year between 1993 and 2015.[17] Between 1993 and 2015 the percentage of the population receiving no benefits from the three means-tested programs decreased from 83.4% to 77.5%. This percentage of the population receiving no benefits from the three programs dropped noticeably during or immediately after a recession, but tended to stabilize or slightly increas when the economy was recovering from a recession. Specifically, from 1994 to 2000, this percentage went up steadily as the economy grew following the early 1990s recession; then from 2000 to 2004, the percentage dropped sharply, coinciding with the early 2000s recession and its aftermath; since 2004, the percentage stayed relatively constant until 2007, when the Great Recession hit, causing the percentage to drop considerably between 2007 and 2012. In 2012, 23.6% of the population received income from one of three programs.

Looking at the overall trends, welfare participation has slightly increased over time. While this indicates that welfare dependence has slightly increased over time, the percentage of the population with welfare benefits exceeding 50% of income has actually trended down, as indicated by the drop from 5.9% of the population in 1993 to 4.6% in 2015. In other words, the percentage of the population that heavily depend on welfare has displayed a downward trend, and the upward trend in welfare participation has been entirely driven by the upward trend in the percentage of population with welfare benefits counting less than 50% of income.

As another example of the interconnectedness of these means-tested programs, a report by the Congressional Research Service indicates that TANF benefits vary considerably among the states, due to the fact that each state sets its own eligibility standards and the benefit formula for the TANF program. However, those states with lower TANF benefits tend to have higher SNAP

[17] See "Welfare Indicators and Risk Factors," Seventeenth Report to Congress, US Department of Health and Human Services, Table 1, p. A-1.

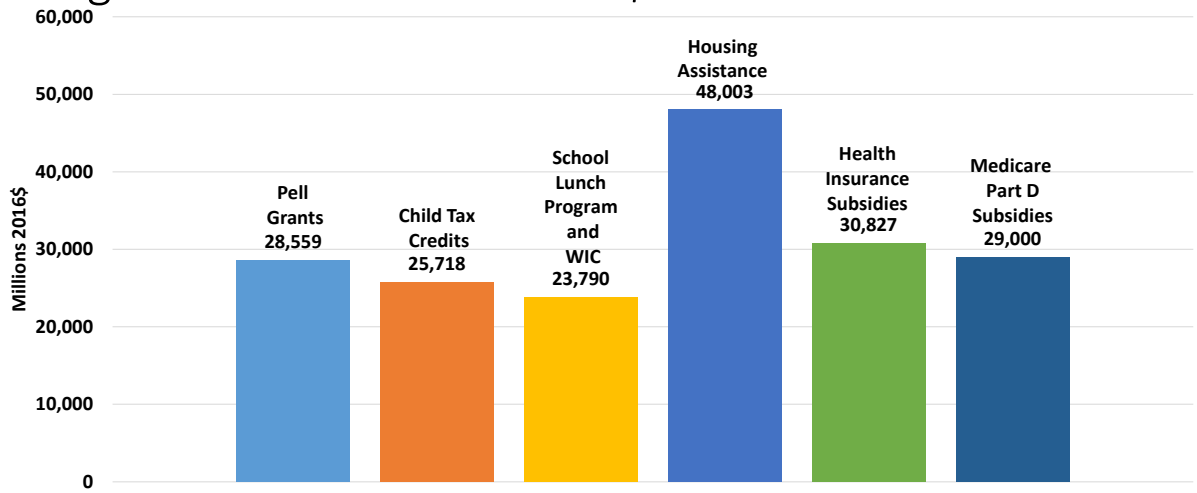
benefits, mitigating the across-state differences in the TANF benefits and leaving the combined TANF and SNAP benefits relatively equal across the states.[18]

Therefore, the benefit incidence of TANF (i.e., the distribution of TANF benefits among the states) is negatively correlated with the benefit incidence of SNAP. What is the cause of this negative correlation? Families receiving TANF benefits automatically qualify for SNAP benefits. Because a recipient family's SNAP benefits are reduced (at a rate of 30%) as the family's income increase, and because a family's TANF cash benefits are counted in determining income for the purposes of SNAP, the states with higher TANF benefits tend to have lower SNAP benefits. Therefore, the SNAP program compensates some of the differences in income caused by the variation in TANF benefits across the states.

Other Means-tested Programs

The primary remaining means-tested programs in addition to the EITC, TANF, SNAP, and SSI are: Pell Grants, Child Tax Credits, the School Lunch Program and the program for Women Infants and Children (WIC), federal housing assistance, Health Insurance Subsidies, and Medicare Part D low-income subsidies. Federal spending on each program in 2016 is presented in Figure 17.

Figure 17. Federal Spending on Other Means-Tested Programs in Millions of 2016$



Sources: Pell Grants: Table 1, Federal Pell Grant Program 2015-2016 End of Year Report, US Department of Education. Housing and Health Insurance Subsidies: Tables 11.3 and 8.5, respectively, Historical Tables, Budget of the United States Government, Office of Management and Budget. Child Tax Credit: Table A. All Returns, Statistics of Income, Internal Revenue Service (Additional child tax credit). School Lunch Program and WIC: United States Department of Agriculture, Food and Nutrition Service, Child Nutrition Tables, WIC Tables. Medicare Part D Subsidies: CBO, Federal Spending for Means-Tested Programs, 2007 to 2027, February 2017.

Pell Grants: The Pell Grant program awards grants of up to $6,095 for the coming academic year to students who have a financial need. The grant does not have to be repaid like a loan, and

[18] See Falk, Gene, "Temporary Assistance for Needy Families (TANF): Eligibility and Benefit Amounts in State Cash Assistance Programs," Congressional Research Service, July 22, 2014.

eligibility is limited to 12 semesters. The program began making grants in 1974 and by 2008 the number of recipients numbered 5.5 million. During the recession the number grew to its maximum of 9.4 million in 2012. In 2011, real program wide spending reached its maximum of $38 billion 2016$. Total federal spending on Pell Grants was about $29 billion in 2016, with an average grant of $3,728.

Housing Assistance Programs: Federal housing aid dates back to the Great Depression. It initially focused on the construction and maintenance of public housing for low-income households. It has gradually shifted housing assistance policies toward providing rent subsidies for low-income households who can then use them to help pay rental costs in the private housing market. Federal housing assistance programs now include Housing Choice Vouchers (which provides federally funded portable vouchers that recipients use to help pay for housing in the private market), Project-Based Rental Assistance (which provides for federally contracted and subsidized rent in designated buildings that are privately owned and operated), and Public Housing (which provides for federally subsidized rent in buildings that are publicly owned and operated), and other housing assistance programs in the form of grants to state and local governments or tax credits to developers of low-income housing. In 2016, the total federal spending on various housing assistance programs was about $48 billion.

Child Tax Credits: Tax credits provided through the Child Tax Credit were first awarded in 1998. The amounts paid in 2016$ grew to $31 billion by 2009, and by 2016, the total federal spending was $26 billion. The refundable portion of the tax credits were distributed to 19 million tax paying units for an average credit of $1,300. The refundable tax credits go to lower income households who do not owe taxes, but in the case of higher income households the credits offset some of the taxes owed.

School Lunch Program and WIC Program: These programs are both administered by the Department of Agriculture. In 2016, federal spending on the two programs totaled about $24 billion. The WIC program started in 1974 to help defer the food expenses of low-income women and their children up to 5 years of age. Participation in the WIC program numbered about 7.7 million and average spending was $780 per recipient in 2016. The school lunch program was established in 1946. By 2016, about 30.4 million children participated in the school lunch program with average spending of $585 per recipient.

Federal Subsidies for Health Insurance and Medicare Part D Subsidies: Federal subsidies for health insurance is a new means-tested program established under the Affordable Care Act to help low-income people buy health insurance through insurance exchanges. The program began to make payments in January 2014, and during an average month in 2017, about 9 million people received federal insurance subsidies, which amount to a yearly total of $42 billion in that year. The program is projected to become the second-largest means-tested program in 2023 according to CBO estimates.

Federal health insurance subsidies are now available to many individuals and families with income between 100% and 400% of the federal poverty line. The subsidies take the form of tax

credits that subsidize their insurance premiums and cost sharing requirements. As a result of various mandates in the ACA (community rating and benefits requirements), the exchanges have been having trouble attracting enough low-cost (young and healthy) participants into the state pools. A consequence is the ever-increasing health insurance premiums since the inception of the program.

Over one-fourth of Medicare Part D enrollees receive the low income subsidy. As noted in the discussion of Medicaid, drug coverage for Medicare beneficiaries who are also eligible for Medicaid shifted to the Medicare program when Part D was added to the Medicare program. In 2016, federal spending on the low-income subsidy was $29 billion.

Altogether, federal spending in 2016 across the six programs in Figure 17 was about $185 billion or about the same magnitude as the previous four programs considered. Given that all of the means-tested programs, besides Medicaid, are about the same magnitude as Medicaid, we consider reform options for Medicaid among the means-tested programs as well as reform options for the two elderly entitlement programs.

Reforming Social Security, Medicare and Medicaid

Social Security and Medicare

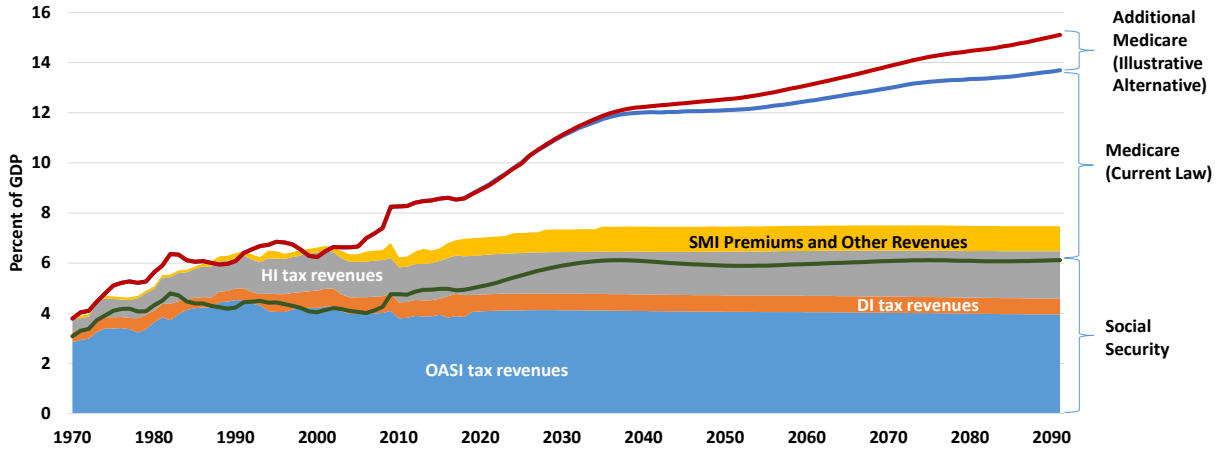
Given the present and forecasted future financing shortfalls for Social Security and Medicare finding solutions requires that we come to grips with how we got here. There are several principal reasons for the difficulties the elderly entitlements face. Increased longevity with the current fixed age of program eligibility and falling fertility have combined to increase the proportion of the population receiving benefits. Also, the Medicare portion of elderly entitlements has been growing faster than national output and is projected to continue to do so. Thus, increasing per-capita cost and an increasing share of the population supported by the programs spell growing financing requirements.

Figure 18 depicts Social Security's and Medicare's combined forecasted spending and revenues as a percentage of GDP to 2090. The forecasts are from the 2017 Trustees Report. There are two forecasts of Medicare's expenses: current law and the illustrative alternative. The current law forecast assumes that the ACA's cost containment mechanisms actually constrain the program's expenses in the future. Primary among those is the assumption that in the long run per capita Medicare expenditures can be constrained to grow at a rate less than per capita GDP growth. For the illustrative alternative forecast, per capita Medicare expenditures are assumed to grow more rapidly than per capita GDP in the long run.[19] The vertical distance between the green line and the combined OASI and DI revenues in each year indicates the general revenue financing requirement for Social Security. The vertical distance between the blue or red lines and

[19] See 2017 Medicare Trustees Report, pages 12-16 and 190-195 for more detail about the long-run growth rate assumptions.

the total dedicated revenues indicate the amount of general revenues both programs will require over time. Today, the two programs require general revenues of 1.62% of GDP or 16% of federal income taxes (combined individual and corporate income taxes) at their 50-year average percent of GDP. In 10 years, 2028, the two programs will require general revenue transfers of 3.36% of GDP or 34% of federal income taxes at their 50-year average. In 20 years, the two programs will require general revenue transfers of 4.5% of GDP or 45% of federal income taxes at the 50-year average. These transfers are in addition to their dedicated payroll tax and premium revenues. As the trustees of both programs have noted for many years and are reiterated in the summary of the 2017 Report, "Lawmakers should address these financial challenges as soon as possible."[20]

Figure 18. Social Security and Medicare Spending and Revenues as a Percentage of GDP



Sources: 2017 Social Security and Medicare Trustees Reports.

Reforms to Control the Ratio of Beneficiaries to Workers

Back in 1983, the last major Social Security reform addressed the longevity issue by initiating the increase in the age of full benefit eligibility from 65 years of age to 67 years. This very gradual increase began with workers born in 1938 and continues through workers born in 1960, whose full retirement age will be 67. The full retirement age for workers born between 1938 and 1942 rose from 65 years and two months to 66 or two months per birth year. Workers born between 1943 and 1954 will all have a full retirement age of 66. For the workers born between 1955 and 1960, the retirement age will again increase by 2 months per birth year until it reaches 67. However, up to this time no changes in Medicare have addressed the increasing longevity issue.

[20] Status of the Social Security and Medicare Programs: A Summary of the 2017 Annual Report, A Message to the Public.

Synchronizing the age of eligibility for the two programs would help both Social Security and Medicare by reducing the size of the recipient population.

Another reason for synchronizing the two programs comes from the simple idea that in its original version, Social Security was to provide income to the elderly for retirement consumption. Such consumption includes health care as well as non-health care. Later, the recognition that health care consumption was growing as a share of elderly expenditures led to the passage of Medicare as a separate program. At the time, the only coordination between the two programs was the age of eligibility for full benefits. It is clear that it is time to recognize that both programs are about aged consumption expenditures in general – be they health care or non-health care consumption. This does not mean that we are suggesting a reform that fully merges the two programs. However, any reform must recognize that the two programs have the same goal – ensuring that the elderly have the resources for their retirement.

The nation's demographics affect both programs by the effect on the number of retirees relative to the number or workers. Simplistically, in a steady state world the rate of new entrants to the labor force, the suppliers of revenue to retirement programs, would match rate of labor force departures, so that the ratio of workers to retirees would remain constant. But this simple world is affected by two factors. First, the rate of entries into the labor force depends on fertility and immigration. Second, retirees are living longer. These two factors have combined to create a falling ratio of workers to retirees. Twenty years ago, there were 3.4 workers per OASDI beneficiary, today there are 2.8, and in twenty years from now, there will be 2.2. But over this same time period, life expectancy at age 65 increased from 17.2 years for men retiring in 1998, to 19.2 years today, and an expected 20.5 years in 2038. For women retiring in 1998 to 2038, life expectancy at age 65 is expected to increase from 20 years to 22.8 years. The key to dealing with the demographic challenge is to change the eligibility requirements so as to create an equilibrium where this critical ratio remains constant.

The demographics issue of retirees' increasing longevity can be addressed in part by harmonizing the Medicare and Social Security retirement age and then by gradually raising the retirement age to 70 years of age. Once the two programs have a common 70 year old eligibility age, the retirement age can be adjusted upwards so that the ratio of expected retirement years to potential work years remains constant.

In order for the Medicare full retirement age (FRA) to increase from its current 65 to 70 by 2032, beginning in 2022, Medicare's FRA would increase by 6 months a year for those 60 years of age or younger in 2022. At the same time we establish Medicare's current retirement age of 65 as the early eligibility age (EEA) for these same individuals. For example, when a 60 year old in 2022 reaches 65 in 2027 they are at the Medicare 2027 EEA. At that time, they can opt for a reduced Medicare benefit or wait until they reach 70 in 2032 and receive full benefits.

This reform stabilizes the ratio of retirement years to work years but still leaves open the issue of demographics as it relates to new entrants to the population. Fertility is in decline throughout the developed world. This decline in fertility will reduce the ratio of young to old; fixing the ratio of retirement years to work years is not sufficient to fix the ratio of retirees to workers. The decline in fertility can be offset by immigration, but as noted, the worker to beneficiary ratio is expected to decline, though it is expected to stabilize at about 2.1 in the long run.

Reforms to Control the Benefit-Income Ratio

The second critical ratio in financing elderly entitlements is the benefit to income ratio. Social Security benefits, while lifetime income dependent, are on average proportional to aggregate national income. Raising the full retirement age to 70 and then indexing the retirement to maintain a fixed ratio of retirement years to work years solves some, but not all, of Social Security's financing shortfall at present tax rates. Combining the retirement age increase with a change in the benefit formula that makes it more progressive than it already is can reduce the program's expected expenditures in the long run to match expected revenues at existing tax rates. However, even with these reforms on the benefit side, additional tax revenues will be necessary to pay benefits for many years to come.

Medicare's financing situation is very different. Medicare is an in-kind benefit rather than an income replacement benefit. As such, its cost depends on the level of health care consumption that recipients elect to receive. For both the working and retired population, health care consumption has been rising faster than income. Thus, even with a successful reform that stabilizes the ratio of retirees to workers, Medicare is faced with a rising benefit-income ratio.

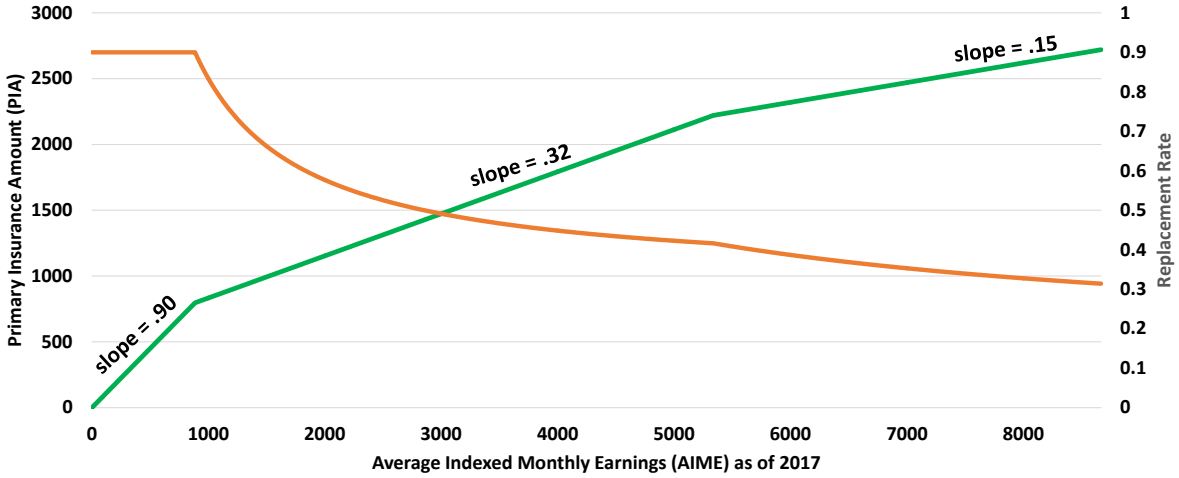
The rising benefit-income ratio has, and will continue to require, increased taxation on the working generation. The level of this taxation will have significant effects on labor supply and national income. It is time to consider ways to decrease the generation transfer share of funding future retirees. Reducing the generation transfer share of Medicare financing, put simply, means that individuals during their working years must put aside resources for retirement health care consumption.

This is exactly what Social Security requires as the income replacement rate falls with lifetime income. The Social Security benefit formula is summarized by the green line in Figure 19. The line shows the relation between an individual's Averaged Indexed Monthly Earnings (AIME) based on the highest 35 years of wage indexed earnings, and the monthly benefit, the Primary Insurance Amount (PIA).

For example, a worker with average wage-indexed monthly earnings at the first bend point of $885 will receive a monthly Social Security check of $796.50, or 90% of earnings. An individual at the second bend point of $5,336 will receive a monthly Social Security benefit of $2,220.82,

41.6% of earnings. An individual whose wage indexed earnings averaged $8,000 per month will receive a monthly benefit of $2,620.42, 32.8% of earnings.

Figure 19. Relationship Between Average Indexed Monthly Earnings and Primary Insurance Amount for Newly Eligible Retirees in 2017



The question is: can we solve Medicare's problem of rapidly rising costs to the working generation by changing the benefit formula to follow some of the progressivity built into the Social Security benefit formula? In effect, can some of the retired population pay for more of their health care consumption? At the same time such a change means that the working population will pay lower taxes and have their higher after-tax income to put funds aside to pay for some of their retirement health care consumption. Clearly, any such change must exclude those individuals at or near retirement age as they have no time left to benefit from the lower taxation that results from the reduced Medicare financed retired health care.

A possible benefit reform would make the initial Medicare benefit depend on past earnings, which is very similar to the formula used by Social Security. Further, this would make Medicare similar to the health insurance that newly enrolled Medicare recipients had during their working life. Specifically, the reform would merge Medicare Parts A, B and D into something similar to Medicare Advantage.

The costs of the combined insurance would be means-tested using the Social Security replacement rate as a guide. The replacement rate would define the percentage of the projected average Medicare cost paid by Medicare, with the remainder paid by the retiree. The initial benefit could be based on projected age-adjusted Medicare cost. Then the benefit for a new retiree could be based on their Social Security AIME and the Social Security replacement rate.

Referring back to Figure 19, the orange line reflects the Social Security replacement rate. This replacement rate could be used to define different workers' Medicare benefits as a share of the

age adjusted Medicare cost. New retirees with an AIME at the first bend point or less would receive a Medicare benefit equal to 90% of their year of retirement Medicare cost. The benefit share of projected cost falls from 90% to 41.6% for AIME's between the first and second bend point and then above the second bend point, retirees would pay for 85% of the additional insurance costs. Such a change would have to be phased-in over several years. Though a departure from Medicare's historical uniform benefit, the path to means-testing in Medicare has already begun in Parts B and D through the MMA in 2003, the ACA in 2010, and most recently through the Medicare Access and CHIP Reauthorization Act (MACRA) of 2015.

The alternative to increased means-testing of Social Security and Medicare benefits as a way to balance the programs' finances is through higher taxes to continue to pay benefits as scheduled. The degree to which the tax instruments used to fund scheduled benefits is progressive like the federal income tax schedule, the contemporaneous taxes and lifetime tax incidence for higher income workers would be similar in the long run to means-tested benefits. That is, the net lifetime benefit (lifetime benefits less lifetime taxes in support of Medicare) would be similar under the two alternatives.

Medicaid

Based on Medicaid's most recent figures from March 2018, the program's enrollment has grown by over 16 million, almost 29%, since 2013 when the ACA's open enrollment began. In states that have expanded Medicaid to adults whose income is below 138% of the poverty threshold, enrollment is up almost 38%. In the states that have not accepted the federal funding, enrollment is up about 12%. The CBO estimates federal spending of $408 billion on Medicaid this year, or 43% higher than in 2013 in inflation adjusted dollars. This large increase in federal spending is a result of the way in which the expansion is funded. The federal government paid for 100% of the expenses for newly eligible adults in 2014-2016 and the percentage only declines to 90% by 2020 and is scheduled to remain at 90% thereafter.

Recall that in 2018, states' Federal Medical Assistance Percentages, FMAPs, range from 50% for high income states to 75.65% in Mississippi. The FMAPs are intended to provide higher federal assistance to lower income states. However, lower income states have, as of this point in time, disproportionately chosen not to participate in the Medicaid expansion. As of March of this year, 19 states have not expanded Medicaid.[21]

Table 1 summarizes average federal and state Medicaid spending in the expansion and non-expansion states as of 2016. Spending is for the entire year, but enrollment is as of July in 2016.[22] As indicated in the table, total Medicaid spending per enrollee is 10% higher in expansion states than in non-expansion states, but when spending is denominated by the number of persons in

[21] The states that have not expanded Medicaid as of March 2018 are: Alabama, Florida, Georgia, Idaho, Kansas, Maine, Mississippi, Missouri, Nebraska, North Carolina, Oklahoma, South Carolina, South Dakota, Tennessee, Texas, Utah, Virginia, Wisconsin, and Wyoming.

[22] The results in Table 1 differ from those presented in Figures 6 and 7 due to different data sources.

poverty, the average in the expansion states is 77% higher. Federal spending per enrollee is 13% higher in the expansion states than in the non-expansion states. Further, federal spending per person below the poverty line in the expansion states was $10,029, but was only $5,504 in the non-expansion states. Federal spending per person below the poverty line in expansion states is almost double the amount in non-expansion states.

These federal spending differences resulted from the fact that states have had leeway in determining eligibility, even before the passage of the ACA. By 2016, there were almost 2 Medicaid enrollees per person in poverty in the expansion states, but only 1.2 enrollees per person in poverty in the non-expansion states. The expansion of Medicaid has also produced higher federal shares of Medicaid spending in the expansion states, 63.55%, than in non-expansion states at 62%. Also, the poverty rate is higher in non-expansion states at 14.75% compared to 13.6% in the expansion states. Finally, the average of the states' FMAPs in the expansion states is 57.33%, but is higher in the non-expansion states at 61.95%. Altogether, this summary of Medicaid's incidence indicates that higher income states are receiving higher federal Medicaid spending per enrollee and higher spending per person below the poverty threshold.

Table 1. Average Federal and State Medicaid Spending per Enrollee and per Person in Poverty

Estimates for 2016		
	Expansion States	Non-Expansion States
Average Federal Spending per Enrollee	5,101	4,514
Average State Spending per Enrollee	2,925	2,768
Average Total Spending per Enrollee	8,026	7,281
Average Federal Spending per Person in Poverty	10,029	5,504
Average State Spending per Person in Poverty	5,751	3,375
Average Total Spending per Person in Poverty	15,780	8,879
Total Enrollees	51,697,944	21,915,497
Total Number in Poverty	26,296,064	17,972,932
Percent of Population in Poverty	13.60	14.75
Federal % of Medicaid Spending	63.55	61.99
Average Federal Medical Assistance Payment %	57.63	61.95

Enrollment: Table 1A: Medicaid and CHIP: June and July 2016 Monthly Enrollment Updated September 2016. **Poverty Counts: "Poverty: 2015 and 2016" American Community Survey Briefs, September 2017. Spending:** FY 2016 Medicaid Financial Management Data – By State**. FMAP 2016: Federal Register/Vol. 79, No. 231.**

Medicaid's expansion across the states has been unequal and is contingent on the states' willingness to accept the expansion funding. This has resulted in a "means-tested" program that provides higher federal spending per enrollee, and higher federal spending per person in poverty, in higher income states than in lower income states. To move the program toward more uniform federal spending based on poverty, funding would be tied to each individual state's number of individuals below the poverty threshold. States would continue to have flexibility to set their own enrollment standards, but the formula defining the federal funding component would be uniform across the states.

The states would initially receive a grant in the same amount they currently receive. Because the states responded differently to the Medicaid expansion subsidy contained in the ACA, the initial distribution of grants would gradually change such that over time states would receive funding tied to the number of individuals who are at or below the poverty threshold, or at or below a multiple of the poverty threshold. In particular, basing the total amount of the federal grant on the number and composition of residents at or below a poverty threshold in the state, the price of health insurance in the state and the average income in the state (through the states' FMAP) can reduce the current differences in federal payments per person at or below a poverty threshold.[23] To encourage states to innovate, future growth in federal Medicaid spending per person in poverty could be indexed to the growth rate at the median of all states' Medicaid spending growth per enrollee.

Conclusion

Federal entitlement programs that provide means-tested benefits to lower income Americans or that provide age-related benefits to seniors account for 57% of federal spending. Most of that spending is through Social Security, Medicare, and Medicaid. Social Security and Medicare are expected to grow as a percent of the economy in the coming years as the population ages and as health spending per capita outpaces per capita income growth. Since Medicaid provides health care insurance for lower income individuals, its spending is also expected to grow faster than the economy. Limiting the growth in federal spending requires reforms to the three largest entitlement programs: Social Security, Medicare, and Medicaid.

Addressing the forecasted future growing deficits requires additional taxes and/or spending cuts. We suggest several reforms to slow the growth in federal spending on Social Security and Medicare. The first reform harmonizes the Social Security and Medicare full retirement age by raising Medicare's full retirement age to 67, then gradually raising the age to 70 for both programs. Once raised to 70, the full retirement age would be indexed such that the ratio of

[23] For example the target grant in each state could begin with a formula identified as: $G_i = n_{ij} \bullet p_{ij} \bullet FMAP_i$. Where G_i is the grant amount in state i, n_{ij} is the number of people in poverty in category j in state i, p_{ij} is the premium for individuals in category j in state i, and $FMAP_i$ is the FMAP in state i. The categories can be thought of as the groups that are required to be covered by Medicaid and could be further adjusted by age. The premiums by category and state could, for example, initially follow the basic health care premiums for postal workers and their dependents. For non-institutional dual-eligible aged individuals, the premium would be consistent with the Medigap insurance available in the state. For dual-eligible enrollees in long-term care facilities, the premium would adjust for the long-term care expenses.

retirement to working years remains fixed. This reform would limit the growth in the programs' spending. Additional reforms are necessary, however, to further limit spending and avoid tax increases to balance the systems' funding. Social Security's benefit formula can be made more progressive through perhaps progressive price indexing. Medicare benefits can be made lifetime income contingent following the Social Security benefit formula. Social Security's replacement rate of lifetime earnings can be used to define the percentage of Medicare's average benefits received by retirees with varying lifetime incomes.

We illustrated how the expansion of Medicaid through the ACA accelerated the program's growth and how the expansion has transformed Medicaid such that the federal spending per enrollee in higher income states is higher than in lower income states. Further, federal Medicaid spending per person at or below the poverty threshold is substantially higher in high income states than in low income states. We outline a reform that would over time define the federal Medicaid contribution for a state based on the number of people at or below a poverty threshold, the health care costs in the state, and the traditional federal medical assistance payment.

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