BEYOND THE NEW NORMAL

Establishing a Pro-Growth Economic Policy Environment

2

Accounting for Government

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PART II

Accounting for Government

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Introduction

The economic recovery following the 2007-09 recession (the Great Recession) has been weak in comparison to past expansions. Perhaps more noteworthy, a visible deceleration of the economy's long term growth rate (or structural growth path) was already underway prior to the Great Recession; in fact, there is evidence that the U.S. economy's growth potential has been slowing since the turn of the 21st Century.

The *Overview* to PRI's *Beyond the New Normal* research program documented that many macroeconomists believe the economy's recent slow growth is preordained because, in their judgement, current times are different. While headwinds to economic growth have certainly developed, such as an aging population, the premise of the *Beyond the New Normal* research program is that the U.S. economy could overcome such headwinds if supported by the right policy environment. But, the policy environment has become progressively more anti-growth over time. Therefore, the economy's average growth rate continues to deteriorate due, primarily, to the government's chosen economic policy mix – the combination of the government's fiscal, monetary, regulatory, and trade policies.[1] The purpose of PRI's research program is to present evidence linking the government's economic policy mix to the economy's weaker economic performance, and develop policy recommendations that would reignite robust and sustainable economic growth.

Flaws in the current approach to measuring the economy obscure the connection between the policy mix and the resultant economic outcomes. As described in a quote attributed to H. Thomas Johnson, "…what you measure is all you'll get. What you don't (or can't) measure is lost."[2] Current measures fail to: adequately measure the policy induced distortions to economic incentives; adequately measure the health of the economy's structure of production; and, inappropriately aggregate government expenditures with private expenditures. Improving these deficiencies in the current approach to measuring the economy improves our understanding of the impact from the economic policy mix on an economy's long-term structural growth path.

The next two papers in the *Beyond the New Normal* research program address these measurement deficiencies. The subsequent paper addresses metrics for the private economy (e.g. measures of incentives and measures of the structure of production), while the current paper focuses on measuring the health of the government sector separately from the private sector.[3]

It is common practice for economic measures to combine government expenditures with private expenditures; therefore, Section 1 illustrates why this convention masks important knowledge about the economy. Valuable economic insights are gained by deconstructing the aggregate economy into the public and private sectors, particularly with respect to designing a pro-growth economic policy mix.

Once we highlight the benefits gained by evaluating the government sector separately from the private sector, the question becomes: how should the government sector's economic contribution be evaluated? Unlike the private sector, the government sector should not try to maximize its growth rate if the goal is to maximize growth of the private economy. Instead, the goal should be to provide the right amount and combination of public goods and services.

Following Section 1, the remainder of the paper addresses the question of how the government sector's economic contribution should be evaluated. We propose that the government sector should be evaluated by analyzing three separate perspectives on its activities. The first perspective reviews the government's performance based on its expenditures; the second perspective reviews the costs imposed when the government funds its expenditures through taxes and debt; and, the third perspective proposes outcomes metrics that provide insights regarding whether the government spending programs are achieving their designated objectives.

Starting with the first perspective, government's purpose is to provide public goods and services that create value for citizens at the federal, state, and local levels. Therefore, evaluating the amount of money the government is spending, and the composition of those expenditures, provides insights regarding the gross benefit the government is trying to create (e.g. benefits without considering the costs imposed in order to create those benefits). Section 2 performs this evaluation.

Once we highlight the benefits gained by evaluating the government sector separately from the private sector, the question becomes: how should the government sector's economic contribution be evaluated?

The second perspective reviews the costs. In order to spend money, the government has to first raise it through taxes, debt, or other revenue sources (i.e. user fees). Raising revenues imposes opportunity costs due to the lost foregone uses of the funds, direct costs of levying and collecting taxes, and the impact on incentives created by the imposition of the taxes. The opportunity cost refers to the reality that resources diverted from private individuals to the government sector cannot be used by those individuals to purchase goods or services, or to finance private investments. These lost opportunities are a cost. The direct costs include: the costs the government incurs to collect and enforce the tax code, as well as the costs of raising revenues through debt; and, the costs taxpayers incur to comply with the tax code. The incentive costs refer to the changed economic behavior that results from the price and incentive distortions created by taxes. These price and incentive distortions change economic behavior and hamper the private economy's growth potential. Section 3 performs these evaluations.

The third perspective connects the government provided public goods and services to the outcomes they are designed to achieve. For instance, the dollars the federal government spends on education is not a measure of the value created by the education expenditures. The value depends upon the actual benefits created by this spending exceeding the costs created when raising these revenues. No automatic mechanism to make this judgement is available, like in the private sector, because the benefactor from government spending is separated from the person who bears the costs of the taxes. Indirect metrics of costs and benefits are available that provide some information regarding whether the tradeoff is positive or negative. These metrics of success represent the third perspective on government activities, which is provided in Section 4.

Unfortunately, there are many difficulties in accurately measuring these data. Expenditure data are generally available, although difficulties will arise because key data holes exist – for instance, depreciation estimates by government expenditure category are not generally available. Similarly, although data are available for government receipts, they are not in the form needed to fully assess the total costs or the marginal costs associated with raising that revenue.

An even greater issue than determining costs is the aforementioned value identification problem – there is not an easy manner to quantify the benefits government expenditures are creating against which the costs can be compared. Indirect evidence can provide a starting point to evaluate whether, and when, the net benefit from government expenditures is positive or negative. Referring back to the education example, the net benefit would evaluate whether greater expenditures on education lead to improved education outcomes. Connecting the indirect evidence on value to the measures of costs reveals important insights regarding the U.S. public economy.

An even greater issue than determining costs is the aforementioned value identification problem – there is not an easy manner to quantify the benefits government expenditures are creating against which the costs can be compared.

The evidence presented builds a persuasive case that, as the size of government has grown and the composition of government spending has skewed away from traditional public goods, the marginal value created by government expenditures has declined. In fact, based on the current level and composition of federal, state, and local government expenditures, government expenditures do not currently meet a *net value criterion* – a net value criterion being defined as government expenditures whose value exceeds the costs of raising the revenues necessary to fund the program. There is also evidence that the manner in which the government has been financing its activities has changed, further increasing the marginal cost of raising the revenues to fund public goods and services.

The combination of diminishing returns from government expenditures combined with increasing costs from raising revenues indicates that additional government expenditures are not creating value for the economy on net. Instead, the data discussed below indicate that additional government spending is transferring resources from higher-valued uses to lower-valued uses and, in the process, reducing the economy's potential growth rate. Therefore, increasing government expenditures under the current environment is counterproductive – government can create the greatest value for the private economy by correcting its value destruction problem, not by expanding the size and scope of its activities.

These results have important implications, both from a theoretical and practical perspective. These implications are discussed in the concluding section. Paramount among the implications is that increases in government expenditures should not be automatically assumed to positively increase the size of the economy dollar for dollar. Instead, government expenditures will only positively increase the size of the private economy when they add value that exceeds their costs. The economic health of the country, consequently, should be exclusively based on the health of the private economy.

Government can create the greatest value for the private economy by correcting its value destruction problem, not by expanding the size and scope of its activities.

Section 1: Measuring the private economy separately from the public economy

Economic statistics have been constructed on the belief that changes in aggregate demand drive changes in output, employment, and inflation. Aggregate demand, commonly measured as gross domestic product (GDP), is the sum of all private consumption expenditures (both domestic and foreign); private investment expenditures (both domestic and foreign); and government consumption and investment expenditures.

The benefit of the GDP measure is that all economic activity is summed into one convenient number. GDP is viewed as a convenient proxy that measures the total income/expenditures of people living in the U.S., and provides a common framework to evaluate how people's economic well-being has changed over time. The worth of the GDP measure depends upon the assumptions used to create it and a common understanding of its limitations. There are other limitations to aggregate demand measures such as GDP that are addressed in a future paper; in the current context, limitations arise because aggregate demand measures of economic activity assume that government expenditures and private expenditures can be treated as if they are similar economic activities.

Private and government expenditures are assumed to be compatible because when there is an increased amount of spending in any component of aggregate demand, this increased spending becomes new income for someone else. That new income then encourages greater consumption, which then creates a virtuous circle that stimulates even greater economic growth. Put another way, economic growth can be driven by consumer spending, or *stimulated* by government expenditures. In either case, greater aggregate demand expenditures increase overall incomes, encouraging even greater consumption, and, subsequently, even greater economic growth as defined by GDP. Declines in either component of aggregate demand reverse the virtuous circle, and risk economic recessions.

The limitation arises because government expenditures are fundamentally different from private expenditures. Private expenditures are the typical goods and services people purchase every day. Purely private goods and services are created by private businesses and individuals,

for the use by other private businesses and individuals. When people purchase private goods and services they are affirming that, to them, the value of those products is worth the costs – otherwise people would not voluntarily engage in a private transaction. Reciprocally, the businesses providing the goods and services are illustrating that the revenues offered by the sellers are sufficient to cover their costs and earn a profit, otherwise businesses would not have voluntarily offered to sell the goods and services at the agreed upon price.

Private transactions are by no means perfect, and mistakes occur. Market distortions, many of which are government created (such as those resulting from subsidies, regulations, and taxes) can also drive a wedge between the parties of a transaction. However, the basic premise still holds that, due to the voluntary nature of private transactions, private exchanges add value to the economy at the price in which the transactions occur. When a dealer sells a car for $10,000, it is clear that $10,000 of market value has been created. Similarly, when a private company pays a worker a salary of $50,000 per year, the market value of that person's work can be reasonably approximated to be $50,000.

Regardless of the type of private transaction, the voluntary nature of these expenditures ensures that the prices paid are equal to the market value created. The more private exchanges that occur, the greater the market value created will be, and the larger the private economy will become. Stated another way, in the private economy, economic growth is synonymous with robust, but sustainable, growth in private expenditures.

Simply counting the amount of money the government spends provides little-to-no information about the value government expenditures create.

Contrast this situation with government expenditures. The government's expenditure policies are separated from its policies to raise revenues (the tax dollars collected or borrowed); therefore, when the government spends money there is no mechanism to equate the value derived from government expenditures with the costs of raising government revenues. As a result, whether public expenditures actually created a net value for the economy is difficult to ascertain. Simply counting the amount of money the government spends provides little-to-no information about the value government expenditures create. This is in stark contrast to private expenditures where the amount of money private individuals spend provides a great deal of information about how much people value those goods and services. Whether government spending is accretive or destructive to national wealth can only be ascertained by conducting a more in-depth examination.

Some government sector expenditures undoubtedly provide value that exceeds their costs and, therefore, benefit the private economy. These expenditures will include pure public goods, such as national defense and law & order; and they can also include public goods that, while not pure, are done effectively by the government, such as infrastructure programs. The value created by these expenditures enables a more vibrant private sector economy.

However, just because expenditures on a certain type of public good or service add value does not mean that expenditures on these goods should be made without limit. Just as eating a fifth hamburger for lunch will likely prove unpleasant (the law of diminishing marginal utility), the value created by public goods and services declines as more and more money is spent on these public goods and services. This is due to the fundamental economic tenet of diminishing marginal returns – at some level the value of all economic goods (including public goods and services) declines the more of that good we receive.

If there were no local fire department, for instance, the first dollars spent on fire prevention services would generate great value for a community. From such a low level, the additional spending creates benefits (in terms of fire prevention services) that exceed the costs of funding the fire department. Such expenditures are growth enhancing. Eventually there will be an expenditure level where the benefits from additional spending on fire prevention services is worth less to the community than the additional tax dollars required to fund these services – just like any other economic good, federal, state, and local government spending is subject to diminishing marginal returns.

Regardless of the type of public service – police protection, road construction, or national defense – there is an ideal service level that balances costs and benefits. Spending more than the ideal service level on any government service, by definition, indicates that the additional costs from providing the public good or service exceeds its additional value. Government spending is, consequently, growth detracting when the expenditure levels exceed the ideal service level. Excessive government expenditures, even on valuable public goods and services, transfer resources from higher valued uses to lower valued uses and are an impediment to the private sector. It is likely that due to the high and expanding size of government expenditures as a share of the economy, the net value obtained from additional government expenditures is currently diminishing and, in some instances, even turning negative.

There are also expenditures on public goods and services that never add value relative to the cost of raising the revenues. By definition, these public sector expenditures transfer resources from higher valued uses in the private sector to lower valued uses in the public sector and, in so doing, detract from growth in the private economy.

Examples of wasteful expenditures include instances where the federal and state governments undertake projects that can be more efficiently provided by the private sector – passenger rail service (Amtrak) and the United States Postal Service are oft-cited examples. There are also public goods and services where the costs always exceed the value, such as the infamous "bridge to nowhere". In this case, the $320 million federal expenditure was supposed to connect a town of 8,900 people in Alaska to a nearby island with a population of 50, but which housed the airport.[4] Due to the notoriety the project received, the funding was eventually canceled; however, it is difficult to imagine the economic value to the country exceeded the proposed $320 million budget – especially given the existing availability of a ferry service. Government expenditures on goods and services such as these are transferring resources from more valued uses to less valued uses and, therefore, detract from economic growth.

Consequently, more information than just the cost of government expenditures is necessary in order to determine whether government expenditures are adding value to the economy, and

therefore increasing the growth rate and vibrancy of the private economy, or reducing value in the economy, and, therefore, inhibiting the growth and vibrancy of the private economy. This information includes a detailed accounting of the use of public funds and the costs from raising the necessary revenues.

The assumption that the costs of government spending are an accurate estimate of the value from government spending is a key flaw with current fiscal policy theory and contributes to policymakers' misinformed understanding of the efficacy of expansionary fiscal policy. This difference in information that is revealed when government spends money versus when private individuals spend money is also why it is inappropriate to combine government expenditures with private expenditures. When government spends money, all that is known are the costs that have been incurred. Without further analysis, it is incorrect to interpret government costs as adding value to the economy. However, measures that combine the dollar value of government expenditures with the dollar value of private expenditures are assuming that the costs from providing government services are an indication of their value.

The potential negative consequence from blindly interpreting the costs from providing government goods and services as value added can be illustrated by analogy to the long-term economic value from the dollars that were lost investing in *Thirsty Dog* bottled water.[5] *Thirsty Dog* bottled water is a discontinued line of carbonated water for pets with flavors such as crispy beef and tangy fish. The owners of *Thirsty Dog* thought consumers wanted to buy flavored bottled water for their dogs and cats. Through the competitive market process, consumers declared that the product was not valued, production ceased, and resources were no longer wasted on producing carbonated fish flavored bottled water.

When government spends money, all that is known are the costs that have been incurred. Without further analysis, it is incorrect to interpret government costs as adding value to the economy.

In the private economy, failures provide valuable information to other businesses and entrepreneurs regarding how to use scarce resources. In the case of bottled water, entrepreneurs learned that resources are better spent serving people, not pets. More broadly, experimentation and failure enables new products and innovations to be developed, many of which may displace older products or production processes. This process, known as creative destruction, was first described by Joseph Schumpeter in 1942 and is essential to generating long-term and sustainable economic growth.[6] It is the central process driving the private economy, but it is missing from the public sector.

In contrast to private expenditures, public expenditures lack the disciplining mechanism that product failures and creative destruction provide in order to weed out low valued projects. Without that discipline, imagine if the "government spending equals value" methodology was applied to the investment in *Thirsty Dog* bottled water. Under this methodology, every dollar

spent on developing bottled water for pets (a cost) would be considered as adding value to the economy long-term, and additional economic growth would assume to be created each and every year that carbonated fish flavored bottled water production continued, despite the reality that consumers do not value the product. The reason for the greater amount of persistent waste, fraud, and abuse in the public sector compared to the private sector also becomes evident once the lack of discipline from failure is taken into account.

The difficulty in assessing the value added from public expenditures also skews the composition of government expenditures. Due to the connection between the cost of goods and services and their value in private transactions, people choose to purchase the array of products that reflect their desires given their limited resources. The separation of cost and value for government expenditures inhibits the optimal composition of public goods and services. The sub-optimal composition and level of government spending reduces its value to society in comparison to private expenditures.

Combining government expenditures with private expenditures can, consequently, distort information regarding the health of the U.S. economy.

Common macroeconomic measures fail to account for all of these fundamental differences between public and private expenditures. For instance, GDP confuses costs with economic value added. Combining the known value added of the private sector with the known costs of providing public goods and services (whose value added is unknown) introduces a distortion into the GDP measure and, therefore, can provide misinformation regarding whether government spending is actually creating value for the economy. Combining government expenditures with private expenditures can, consequently, distort information regarding the health of the U.S. economy. Furthermore, by treating two fundamentally different economic activities as if they are interchangeable, GDP can provide the wrong information at precisely the wrong time.

Instead of focusing on the impact from government expenditures on aggregate demand, policy-makers should focus on assessing the value created by government expenditures, and acknowledging that government expenditure programs with low or negative net value inhibits economic growth; they do not stimulate the economy. With such an acknowledgement, it also becomes necessary to evaluate the health of the private economy separately from the health of the public economy. While the health of the private economy is discussed in a separate paper, the health of the public economy is discussed below.

Section 2: The evolution of public expenditures over time

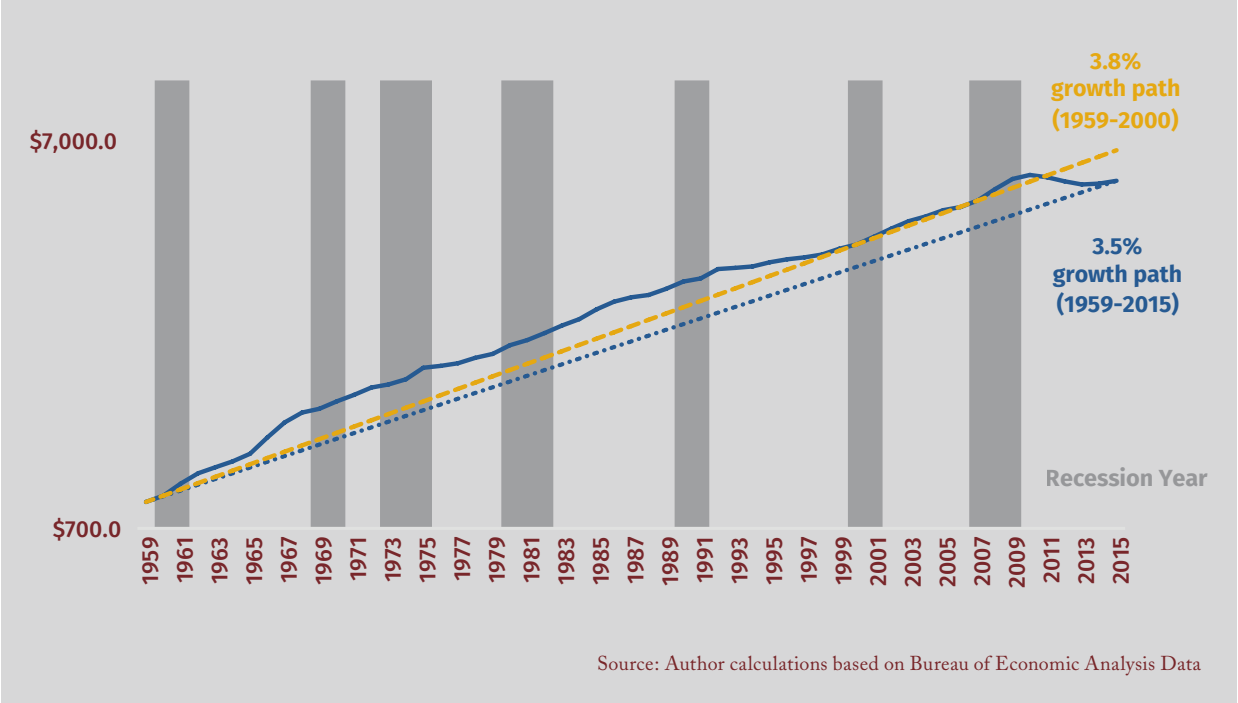
The government should not attempt to maximize the growth of the public economy, which is one of the primary goals for the private economy. Instead, the government's goal should be to maximize the difference between the value created from government expenditures relative to the costs incurred from raising those revenues – also referred to as net value.

Determining the net value generated by government expenditures starts with an accounting of the size of government spending adjusted for inflation and relative to the broader economy. Measuring the value of government expenditures also requires metrics that address the composition of spending. Much of this information is already published by the Bureau of Economic Analysis (BEA), National Income and Product Accounts (NIPA),[7] Office of Management and Budget (OMB),[8] and Federal Reserve.[9]

The Absolute and Relative Size of Government Expenditures

Starting from the broadest measures, total government expenditures grew, on average, 3.5 percent per year (adjusted for inflation) between 1959 and 2015, see Figure 1 (the gray shaded areas represent years in which a recession occurred). Through 2000, the benchmark year where we hypothesize the binding effects from the sub-optimal policy mix become readily visible, total government expenditures actually grew faster (3.8 percent per year).

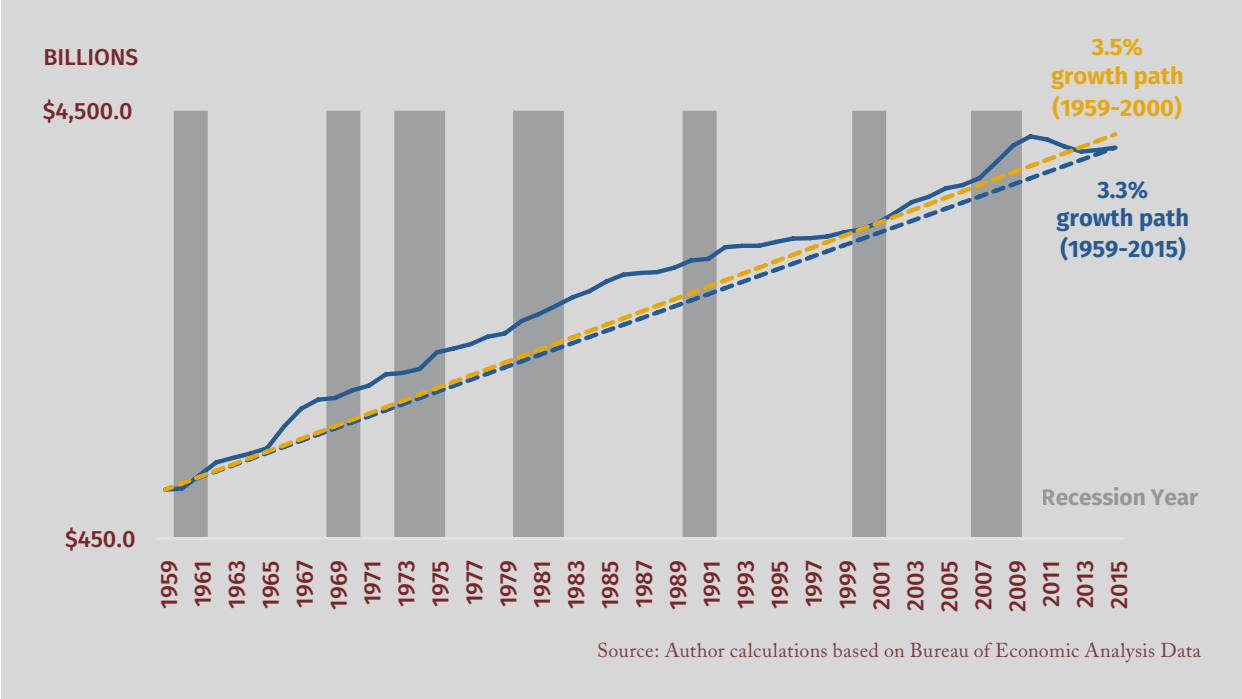
FIGURE 1. Total Government Expenditures
1959 – 2015
in Billions Inflation-Adjusted Dollars (log scale)



Source: Author calculations based on Bureau of Economic Analysis Data

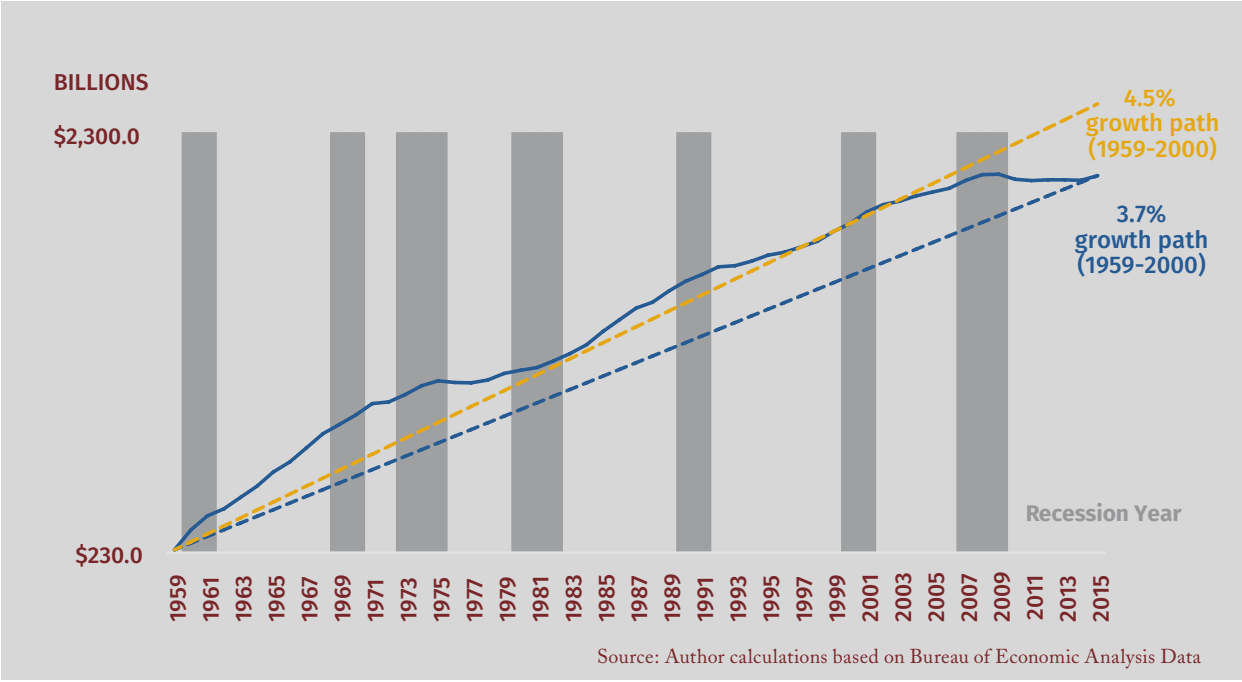
Figures 2 and 3 provide similar information for federal government expenditures as well as state and local government expenditures. Federal government expenditures grew slightly less than total government expenditures (3.3 percent per year through 2015, compared with 3.5 percent per year between 1959 and 2000), see Figure 2. Expenditures at the state and local level were both faster and more volatile over these time periods. State and local expenditures grew 3.7 percent per year through 2015 and a much faster 4.5 percent per year through 2000).[10]

FIGURE 2. Federal Government Expenditures
1959 – 2015
in Billions Inflation-Adjusted Dollars (log scale)



Source: Author calculations based on Bureau of Economic Analysis Data

FIGURE 3. State Government Expenditures
1959 – 2015
in Billions Inflation-Adjusted Dollars (log scale)



Source: Author calculations based on Bureau of Economic Analysis Data

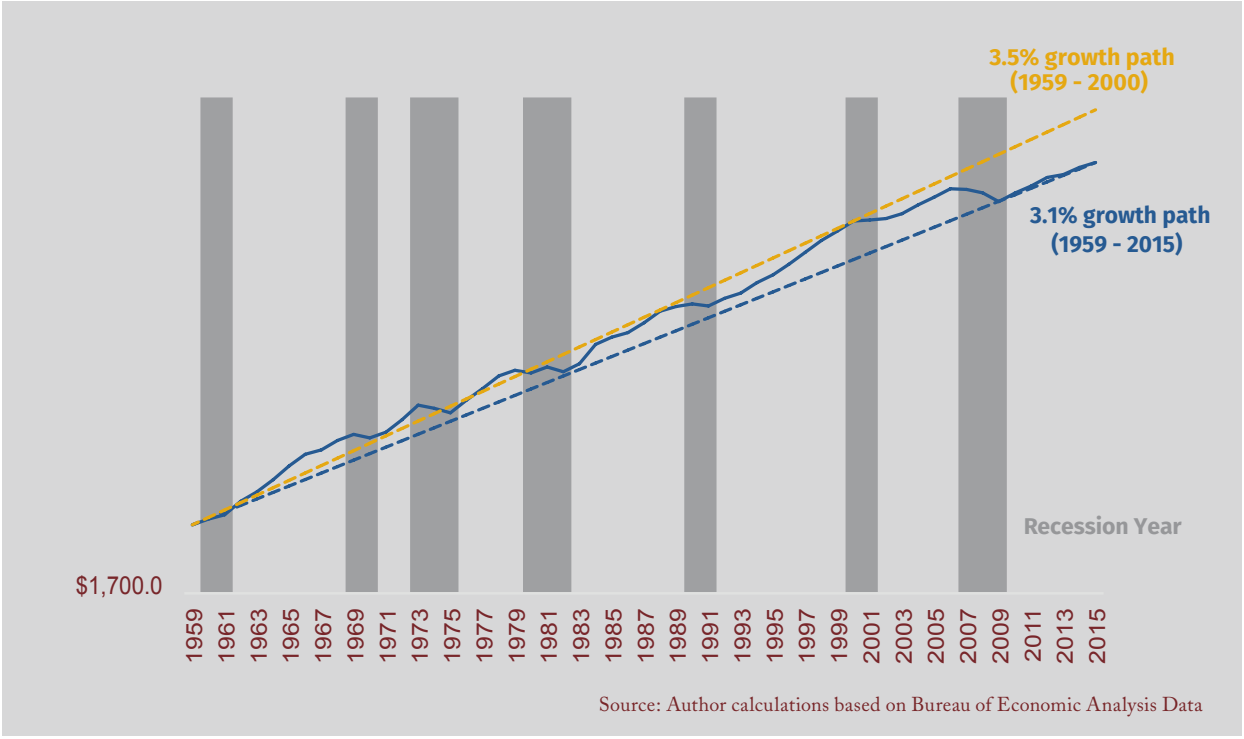
Comparing the actual expenditures (the solid blue lines in Figures 1 – 3) to the average expenditure path helps identify periods of high government expenditure growth and periods of low government expenditure growth. For instance, the extreme slowdown in federal expenditure growth during the 1990s or the extreme growth in federal expenditures during the late 1960s/early 1970s is evident in Figure 2; and the extreme slowdown in state expenditure growth since 2000, or the extreme growth in state and local expenditures during the late 1960s/early 1970s is evident in Figure 3.

Typically, government expenditures and revenues are calculated as a ratio to GDP in order to trace the relative size of the public sector over time. Given the thesis that it is inappropriate to combine government expenditures with private expenditures to measure total economic value added, it is important to first develop a measure of the private economy to which the size and scope of government expenditures can be compared. As a proxy for the size of the private economy we combine the gross labor income earned in the private sector (including the value of salaries, benefits, and taxes paid on the employees' behalf) plus capital income net of depreciation earned in the private sector (businesses and investors).

Through 2000, the private economy grew an average annual rate of 3.5 percent—a faster clip than the longer-term record dating back to 1959. However, government expenditures grew 3.8 percent over the same period—a rate that continued to outpace the private economy.

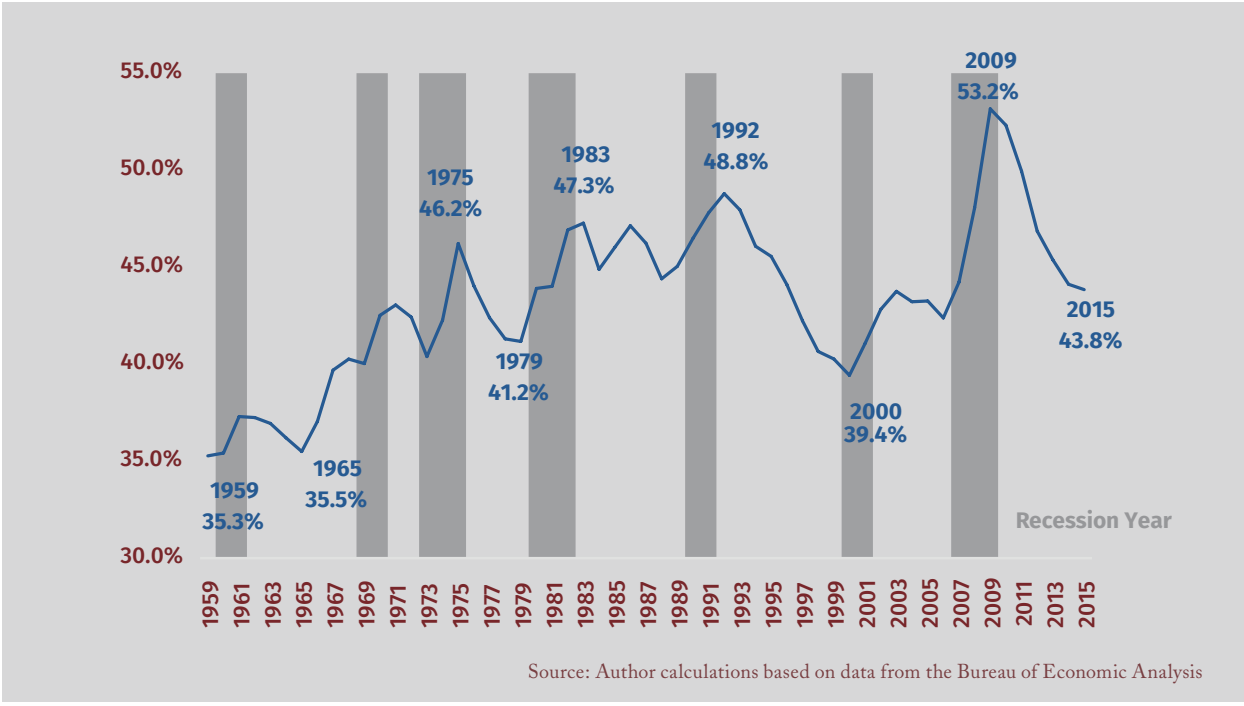
The growth path of the private economy between 1959 and 2015 based on the income earned by private workers and the income earned by businesses and investors less depreciation, is illustrated in Figure 4. As of 2015, the private economy was $12.6 trillion adjusted for inflation, and grew an average 3.1 percent per year.[11] Compared to the growth in government expenditures, which were 3.5 percent per year adjusted for inflation, the public economy has been, on average, increasing in size relative to the private economy during this time period – in total by over 9 percentage points, see Figure 5. Through 2000, the private economy grew an average annual rate of 3.5 percent—a faster clip than the longer-term record dating back to 1959. However, government expenditures grew 3.8 percent over the same period—a rate that continued to outpace the private economy.

FIGURE 4. Income Private Economy
1959 – 2015 — in Billions Inflation-Adjusted Dollars (log scale)



Source: Author calculations based on Bureau of Economic Analysis Data

FIGURE 5. Government Expenditures Relative to Gross Income of the Private Sector less Depreciation
1959 - 2015



Source: Author calculations based on data from the Bureau of Economic Analysis

Relative to the size of the private economy, several important trends regarding the size of government expenditures are evident in Figure 5.[12] First, the growth in government expenditures relative to the private economy has not been even. At times, government expenditures grew faster than the private economy, at other times it contracted relative to the private economy. Part of these fluctuations are due to economic recessions and economic expansions. Just prior to, and continuing throughout each economic recession since 1959, government expenditures increased relative to the size of the private economy. These fluctuations are expected due to the combination of counter-cyclical spending programs that maintained government expenditures at the same time that the economic recession lowered private income growth. However, part of the fluctuations is due to structural changes in government expenditures relative to the private economy.

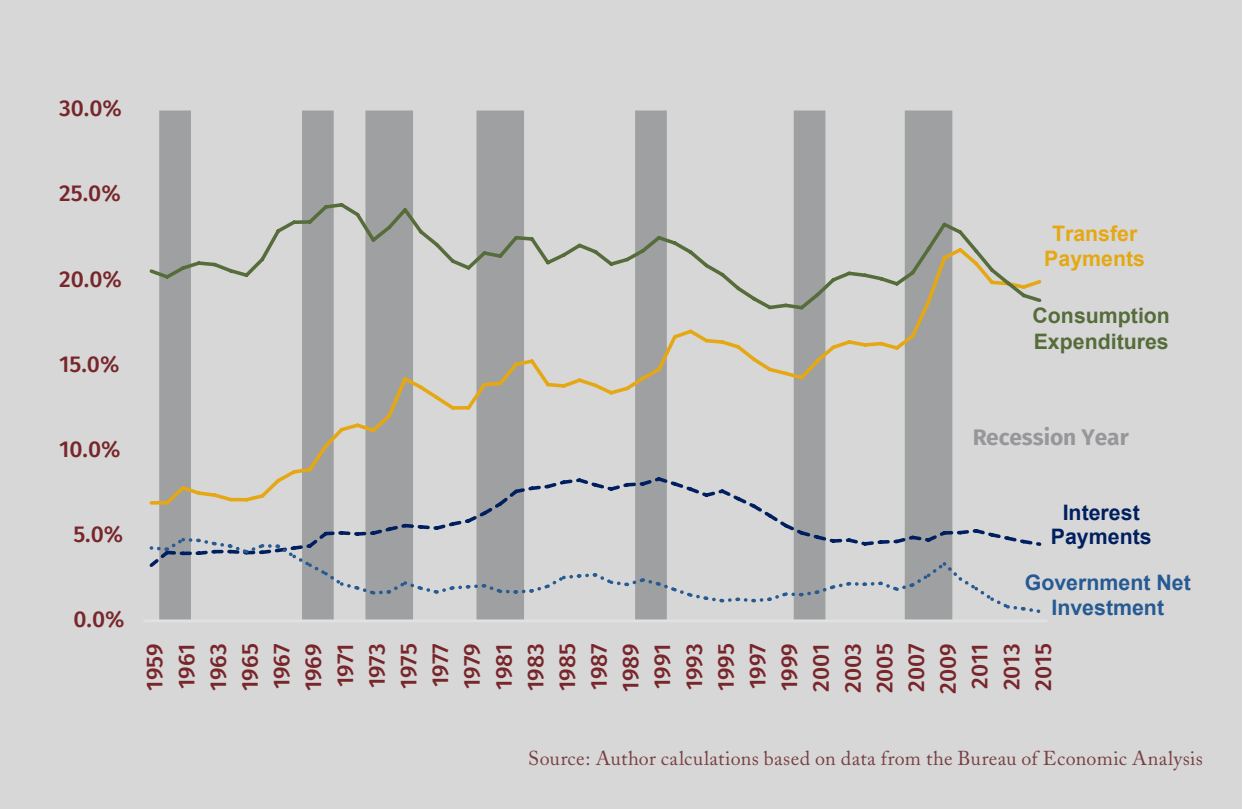
Figure 5 reveals three key sub-periods within this past half century that reflect changes to the long-term relative growth rate of government expenditures compared to the private economy. Between 1965 and 1992, government expenditures generally grew faster than the private economy and were a full 15 percentage points higher in 1992 than 1959. Within this sub-period, this is a clear break that began in 1975. As of 1975, government expenditures were 13 percentage points higher than 1959. Growth in government expenditures relative to the private economy then experienced extreme volatility, but on net expanded another 2.4 percentage points relative to the private economy.

It is the growth in transfer payments that is driving the growth in government relative to the private economy.

However, a clear break in this growth trend began in 1992. Government expenditures grew slower than the private economy for every year between 1992 and 2000 causing the size of government expenditures to decline nearly 11 percentage points relative to the private economy. Since 2000, however, government expenditures resumed its upward, but volatile, growth path relative to the size of the private economy spiking in 2009 at 59.3 percent and settling 9.3 percentage points higher in 2015 relative to 1959.

The growth in government expenditures varied across spending categories indicating that the composition of government spending has changed over time. Accounting for these changes, Figure 6 illustrates that all other major spending categories are flat to down relative to the size of the private economy except for transfer payments, which have increased significantly. It is the growth in transfer payments that is driving the growth in government relative to the private economy. Thus, over the past half century, the government sector has evolved from an organization that primarily provided public goods and services excluding transfer payments (referred to as public goods and services below) into an organization that is primarily devoted to transferring incomes across different groups of people.

FIGURE 6. Government Transfer Payments, Consumption, Interest Payments, and Net Investments Relative to Gross Income of the Private Sector less Depreciation
1959 - 2015

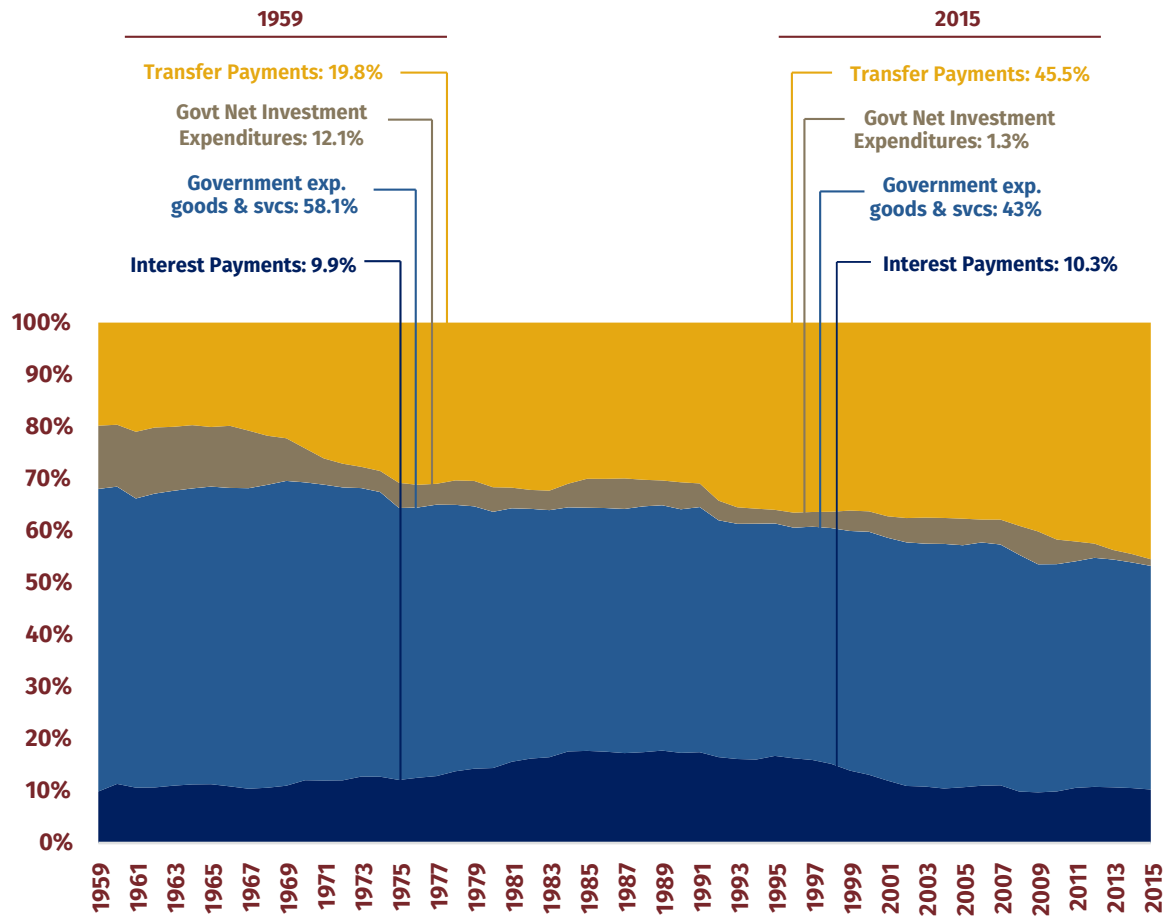


Source: Author calculations based on data from the Bureau of Economic Analysis

Particularly noteworthy in Figure 6 is that government net investments (gross investments minus depreciation) is trending toward zero. This illustrates that the government resources being devoted to purchasing assets such as buildings, roads, and tanks, on net, is declining significantly relative to the size of the private economy. A continued decline in net investments to below the zero threshold would indicate that the government's asset base would be in net decline.

Figure 7 provides a different perspective on the government's transformation. Instead of looking at government expenditure categories relative to the private economy, Figure 7 compares each expenditure category relative to total government expenditures – as a share of the budget.

FIGURE 7. Percentage of Total Government Expenditures by Expenditure Category
1959 - 2015



Source: Author calculations based on data from the Bureau of Economic Analysis

The change in the composition of government expenditures illustrated in Figures 6 and 7 has important implications with respect to the economic impact on the private economy from government expenditures. The trends in each one of these categories are examined below, starting with interest payments.

Interest Payments

Interest payments, which includes interest accrued on the actuarial liabilities of defined benefit pension plans, comprised 10.3 percent of all government expenditures in 2015. As a share of total government expenditures, interest payments remain around the same share of expenditures as in the 1960s.

The economic interpretation of interest expenditures depends upon what the debt financed. When the government issues debt to finance a bridge, for instance, the interest expenditures in future years are connected to services that the bridge is providing citizens in future years. Future taxpayers are both bearing the tax burden, and receiving public goods or services in return, because the future interest expenditures are connected to future services being received in a manner similar to any other future government consumption expenditure.

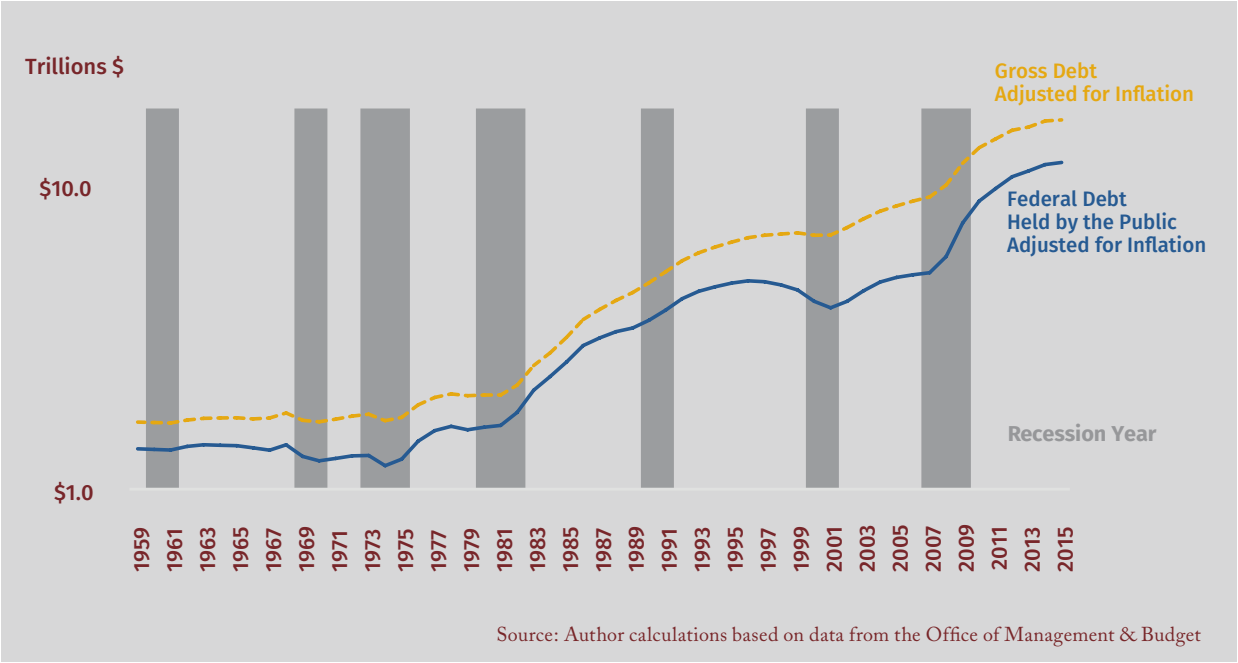
When debt is issued to pay for general consumption expenditures, on the other hand, then the future interest payments are not connected to any future consumption services. Instead, the interest payments are covering the tab for past consumption services received. In this instance, future taxpayers are bearing the tax burden but receiving no public goods or services in return.

The growth in debt and total federal government expenditures exceeding the growth in federal government investment expenditures indicates that much of the debt growth financed consumption expenditures not investment expenditures.

The astronomical growth in debt at the federal level has, to a large extent, funded projects representing current consumption not investments. Not adjusted for inflation, the public debt grew, on average, 7.4 percent per year between 1958 and 2015,[13] while total federal government expenditures grew 6.8 percent per year, and total federal government gross investment expenditures grew an even smaller 4.7 percent per year.[14] The growth in debt and total federal government expenditures exceeding the growth in federal government investment expenditures indicates that much of the debt growth financed consumption expenditures not investment expenditures. The implication is that a larger portion of the interest payment expenditures are covering the costs from government consumption from the past, and provide no consumption or investment services today, nor will they provide any consumption or investment services in the future.

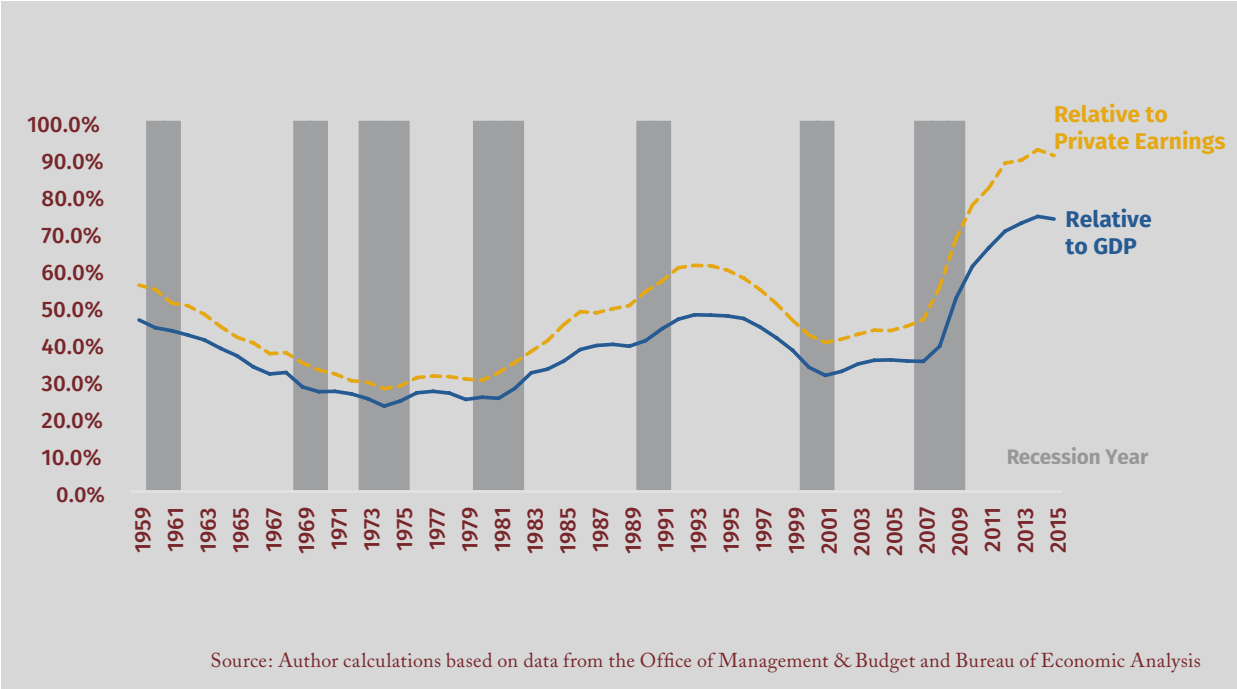
The similar share of expenditures being devoted toward interest payments also obscures another important difference that has developed over time. After adjusting for inflation, total debt has increased dramatically since 1958, see Figure 8. Figure 8 presents the inflation adjusted federal government debt held by the public, which excludes the structural deficits of Social Security and Medicare. Adjusted for inflation, the debt held by the public is nearly nine times larger as of 2015, than it was in 1959. Relative to the size of the private economy (as well as overall GDP), debt held by the public is also around its historical highs, see Figure 9. Despite the unprecedented debt levels, the costs of carrying the debt – the annual payments made by the federal government as a share of the public debt outstanding – are around the lowest burden levels for the past half century, see Figure 10.

FIGURE 8. Federal Debt Held by the Public Adjusted for Inflation ($ 2009)
1958 – 2015
(log scale)



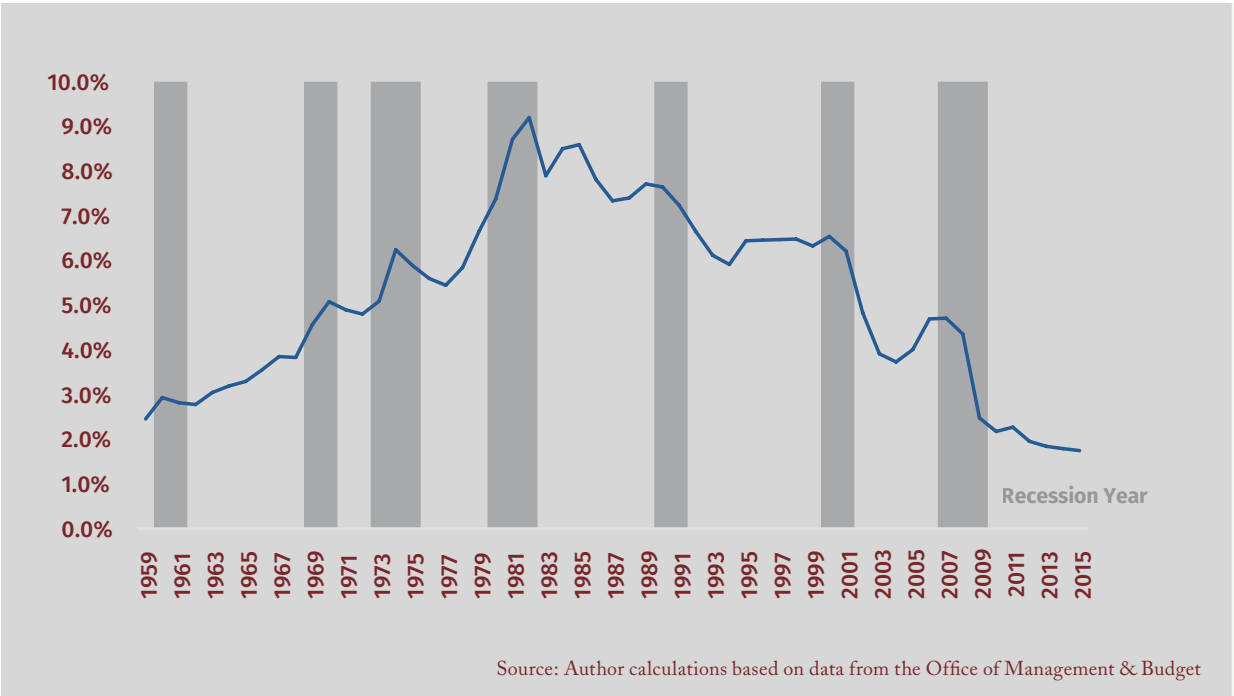
Source: Author calculations based on data from the Office of Management & Budget

FIGURE 9. Federal Debt Held by the Public Relative to Private Earnings and GDP
1958 – 2015



Source: Author calculations based on data from the Office of Management & Budget and Bureau of Economic Analysis

FIGURE 10. Federal Debt Payments Relative to Public Federal Debt Outstanding
1958 – 2015



Source: Author calculations based on data from the Office of Management & Budget

These historically low interest payments relative to publicly held debt outstanding are enabled by the interest rate policies of the Federal Reserve, which has maintained interest rates on short-term debt at or near zero for nearly a decade.

Pulling these trends together, while interest payments represent a similar composition of total government expenditures today as they did a half century ago, the financial implications are vastly different. Much of the debt, particularly at the federal level, has financed current consumption not investment expenditures. Going forward, the interest payment for these expenditures represents a current and future burden without a concurrent public good or service being provided.

The largest concern regarding the debt, however, is its potentially destabilizing impact. The combination of Figures 8 through 10 demonstrates that interest payments are currently a bit higher than ten percent of total expenditures only because interest rates are so low. A return to normal interest rates would increase these interest costs requiring either significant tax increases or significant reductions in other expenditure categories.

To get a sense of how large these cost differences will be, Figure 11 presents the interest rate on a 5-year Treasury Bond – the 5-year Treasury Bond is used as a reference because, as noted by the U.S. Department of the Treasury, the weighted average maturity of marketable debt outstanding as of September 30, 2015 was 69.8 months, or between 5 and 6 years.[15] Clearly, the interest rates since the financial crisis are at historically low levels, which is also reflected in the low debt payment levels in Figure 10.

Figure 11
Interest Rates on 5-Year Treasury Bond, Constant Maturity
January 1962 – April 2016

Source: St. Louis Federal Reserve FRED

If interest rates were to increase back to more normal levels, the dollar costs would increase tremendously. A return to the 2007 interest rate levels (just prior to the financial crisis that precipitated today's low interest rates) would nearly triple current interest payments costing around a half trillion dollars *in additional interest payments* or approximately 13 percent of total 2015 federal expenditures. Due to the term structure of current Treasury debt, these costs would not immediately impact the budget. However, over time as the outstanding debt matures and would need to be rolled over, the higher interest costs would eventually impact the budget causing higher taxes and/or crowding out of other expenditure items.

Therefore, while interest payments do not constitute a much higher share of total government budgets today, there is a large risk that a significantly larger share of the budget will have to be devoted to interest payments in the future. This would represent a significant change in the composition of government spending as a greater share of the budget will be devoted toward paying for goods and services that were consumed long ago. And, these calculations do not even include the unfunded liabilities associated with state and local government public pensions nor the unfunded liabilities associated with Social Security and Medicare.

Given that past debts have been devoted more toward financing consumption expenditures, not investment expenditures, it is unlikely that there is great current value creation in the economy from these expenditures.

Given that past debts have been devoted more toward financing consumption expenditures, not investment expenditures, it is unlikely that there is great current value creation in the economy from these expenditures. This does not imply interest payments should not be met, they must be; and missing these payments would impose very large and negative economic consequences. It does imply that current and future taxpayers do not receive any current benefits – the payments are a burden. The trend that these costs will be increasing in the future due to structural imbalances in government retiree and health programs, and the threats to interest costs should interest rates increase from their current levels, indicate that a greater share of government expenditures will be devoted to lower value added uses from an economic growth perspective.

Expenditures on Public Goods and Services

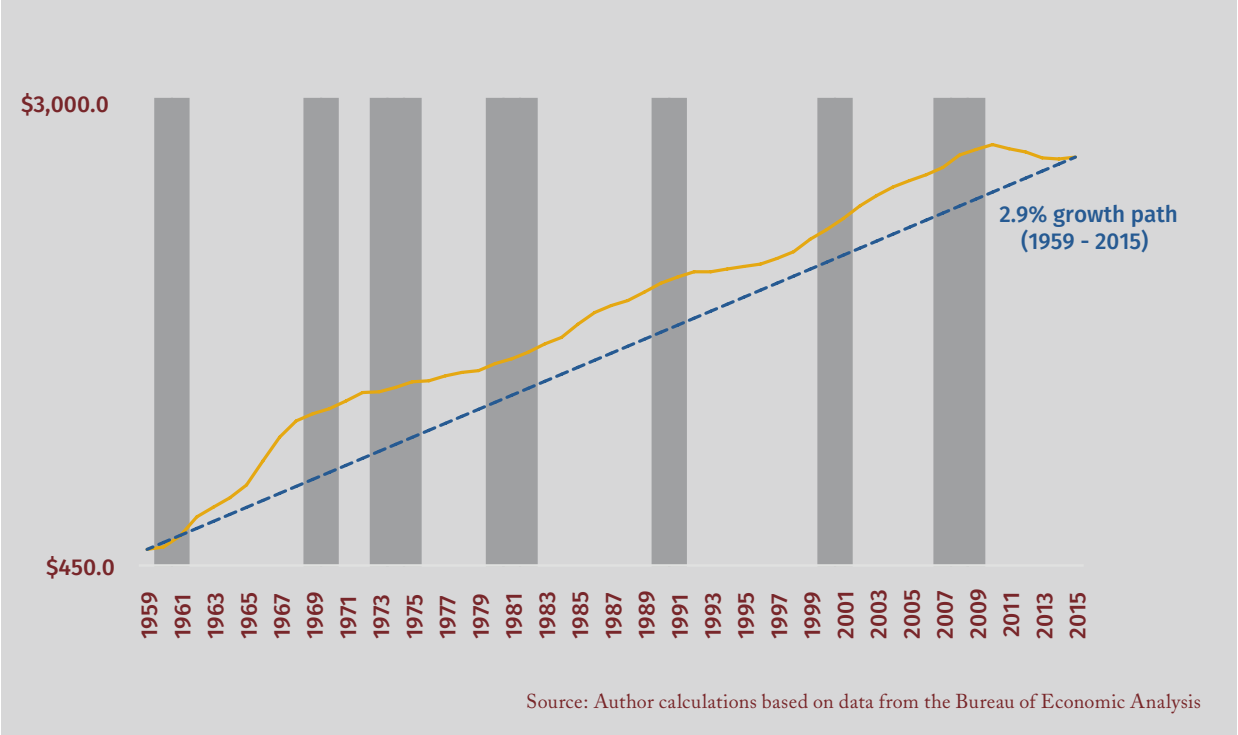
Government consumption expenditures and net investment expenditures on public goods and services, once the primary focus for federal, state, and local governments, has become a significantly smaller share of government expenditures since 1959. Figure 7 illustrated that the share of expenditures devoted to consumption expenditures (58.1 percent) and net investment

expenditures (12.1 percent) have declined from a combined total of 70.2 percent of total expenditures in 1959 (nearly three-quarters of total government spending) to 44.3 percent of expenditures in 2015 (consumption expenditures were 43.0 percent and net investment expenditures were 1.3 percent).

Due to the slower growth in government consumption expenditures and net investment expenditures, these expenditures fell from 24.9 percent of the private economy in 1959 (20.6 percent for government consumption expenditures and 4.3 percent for net investment expenditures), to 19.4 percent in 2015 (18.8 percent for government consumption expenditures and 0.6 percent for net investment expenditures).

Concentrating on consumption expenditures (investment expenditures are examined at the end of this sub-section), Figure 6 illustrated that consumption expenditures are slightly declining relative to the size of the private economy – the private economy grew 3.1 percent per year adjusted for inflation between 1959 and 2015 while the growth in the consumption of public goods and services was 2.9 percent per year adjusted for inflation, see Figure 12. Similar trends are apparent on a per capita basis, see Figure 13 – Figure 13 also presents total government expenditures per capita as a reference.

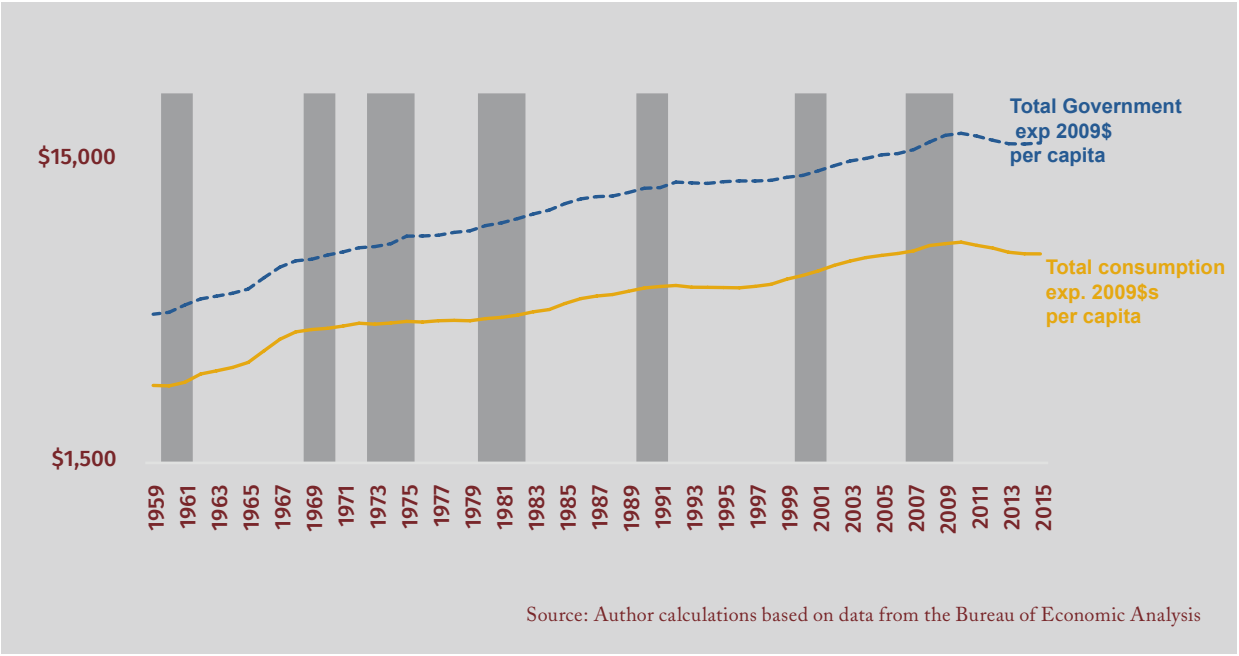
FIGURE 12. Consumption Expenditures on Public Goods and Services Adjusted for Inflation
($ 2009) — 1959 – 2015
(log scale)



Source: Author calculations based on data from the Bureau of Economic Analysis

FIGURE 13. Total Expenditures and Consumption Expenditures on Public Goods Per Capita Adjusted for Inflation ($ 2009)

1959 – 2015
(log scale)



Source: Author calculations based on data from the Bureau of Economic Analysis

Importantly, the composition of spending on public goods has changed over time. These trends are described in Table 1, and Figures 14 through 16.[16] While the trends in each one of the expenditure categories are reviewed below, it is important to note upfront that the expenditure figures do not include net investment for each category, and, therefore, the values examined equal what the BEA refers to as current expenditures. Gross investment trends are examined after the current expenditure figures because net investment figures are not available from the BEA for most expenditure categories (defense expenditures being an exception), but gross investment figures are. Current expenditures plus gross investment expenditures do not equal total expenditures because depreciation expenditures, which are not published in the required format, need to be netted out. The breakdown by current expenditures and gross investment expenditures provides perspective, however, regarding the budget prioritization across these major categories.

TABLE 1. Expenditures on Public Goods and Services Adjusted for Inflation ($ 2009) and Relative to the Size of the Private Economy

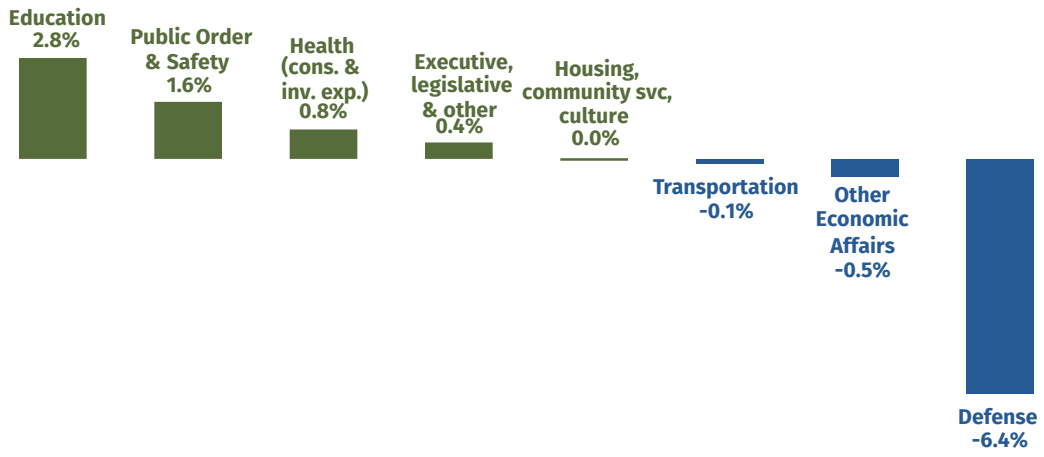
Selected Years 1959 - 2014

	BILLIONS $ 2009						
	1959	1970	1980	1990	2000	2010	2014
Defense	254.7	370.0	318.1	442.1	376.7	645.7	551.8
Transportation	33.6	54.7	76.2	85.7	113.1	159.0	159.8
Other Economic Affairs	33.6	49.9	75.3	85.0	103.9	136.0	117.0
Health consumption & investment expend.	N/A	24.5	51.5	80.5	106.6	91.0	98.6
Public Order & Safety	25.5	51.7	80.0	141.1	241.2	327.8	325.0
Education	85.1	216.8	296.3	412.9	599.7	806.5	785.3
Housing, community svc, culture	8.1	14.9	19.8	26.5	35.3	46.8	44.9
Executive, legislative & other	33.8	69.2	105.2	144.4	187.1	278.9	258.8
Total public goods and services consumption	**479.2**	**851.7**	**1,022.5**	**1,418.1**	**1,763.6**	**2,491.7**	**2,341.2**
	SHARE OF PRIVATE ECONOMY						
Defense	10.9%	10.6%	6.7%	6.8%	3.9%	5.9%	4.5%
Transportation	1.4%	1.6%	1.6%	1.3%	1.2%	1.5%	1.3%
Other Economic Affairs	1.4%	1.4%	1.6%	1.3%	1.1%	1.2%	1.0%
Health consumption & investment expend.	N/A	0.7%	1.1%	1.2%	1.1%	0.8%	0.8%
Public Order & Safety	1.1%	1.5%	1.7%	2.2%	2.5%	3.0%	2.6%
Education	3.6%	6.2%	6.3%	6.3%	6.3%	7.4%	6.4%
Housing, community svc, culture	0.3%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%
Executive, legislative & other	1.7%	1.7%	2.2%	2.2%	2.0%	2.6%	2.1%
Total public goods and services consumption	**20.5%**	**24.3%**	**21.6%**	**21.8%**	**18.4%**	**22.8%**	**19.1%**

Source: Author calculations based on data from the Bureau of Economic Analysis

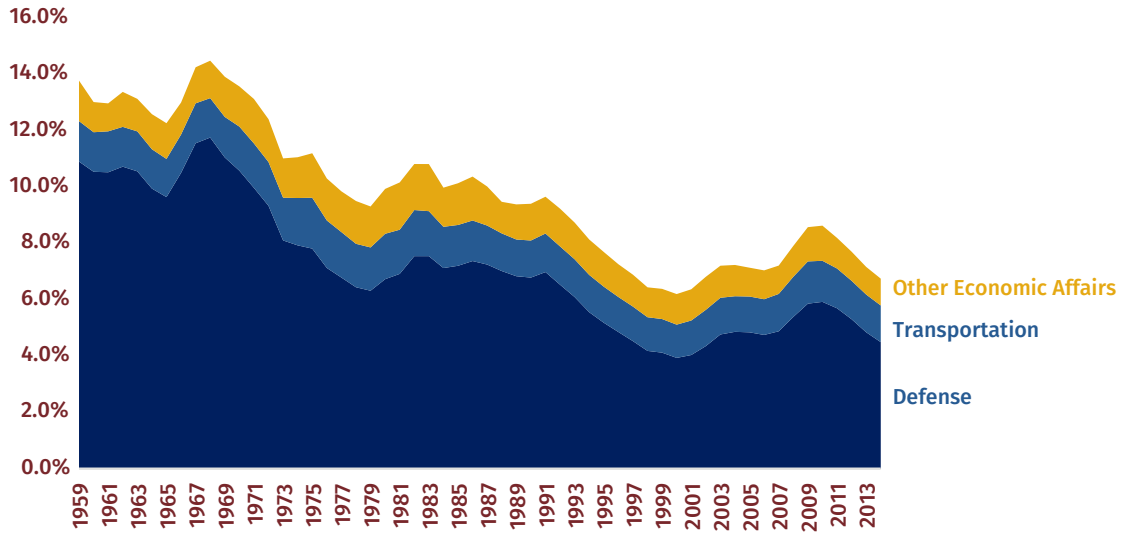
FIGURE 14. Change in Expenditures on Public Goods and Services Relative to the Size of the Private Economy - by Expenditure Category

Percentage Point Change between 1959 and 2014



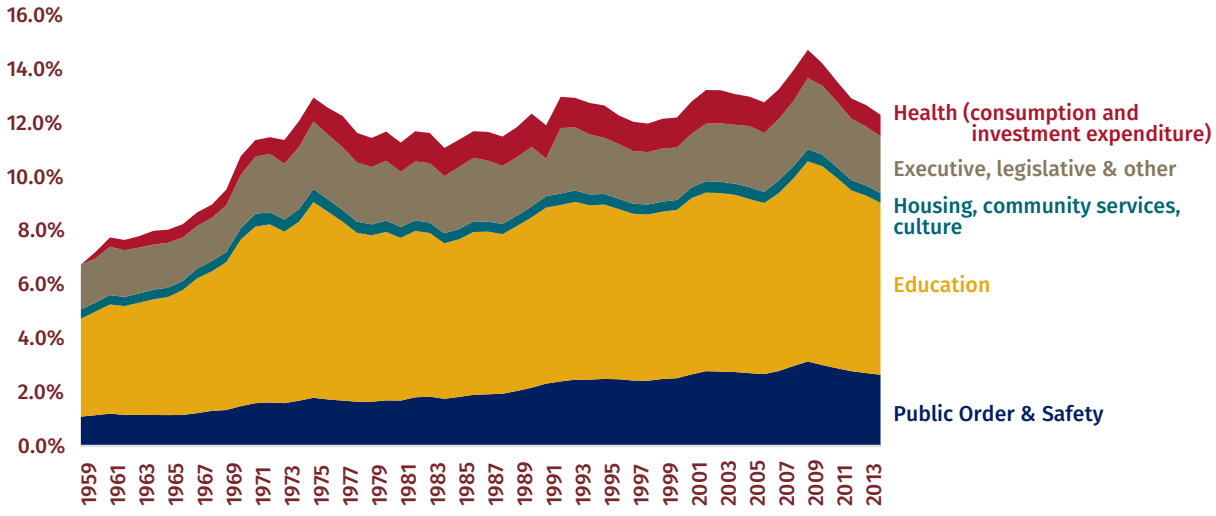
Source: Author calculations based on data from the Bureau of Economic Analysis

FIGURE 15. Expenditures on Public Goods and Services Relative to the Size of the Private Economy - Expenditure Categories Declining Relative to Private Economy
1959 - 2014



Source: Author calculations based on data from the Bureau of Economic Analysis

FIGURE 16. Expenditures on Public Goods and Services Relative to the Size of the Private Economy - Expenditure Categories Increasing Relative to Private Economy
1959 - 2014



Source: Author calculations based on data from the Bureau of Economic Analysis

The entire decline in consumption expenditures on public goods and services both as a share of the budget and relative to the private economy are due, on net, to the trend in defense expenditures. For the entire period, the growth rate in defense expenditures was smaller than the growth rate in all other spending categories, and the growth rate in the private economy.

Even though, adjusted for inflation, defense expenditures are higher in 2014 than 1959, defense expenditures relative to the private economy fell 6.4 percentage points between 1959 (10.9 percent of the private economy) and 2014 (4.5 percent of the private economy), see Figure 14. The declines were not linear due to surges in defense spending associated with the Vietnam War, the Reagan military buildup, and the War on Terrorism, which were followed by subsequent declines each time, see Figure 15. Overall, defense expenditures are a declining expenditure priority as measured by its share of the private economy and its share of total government expenditures.

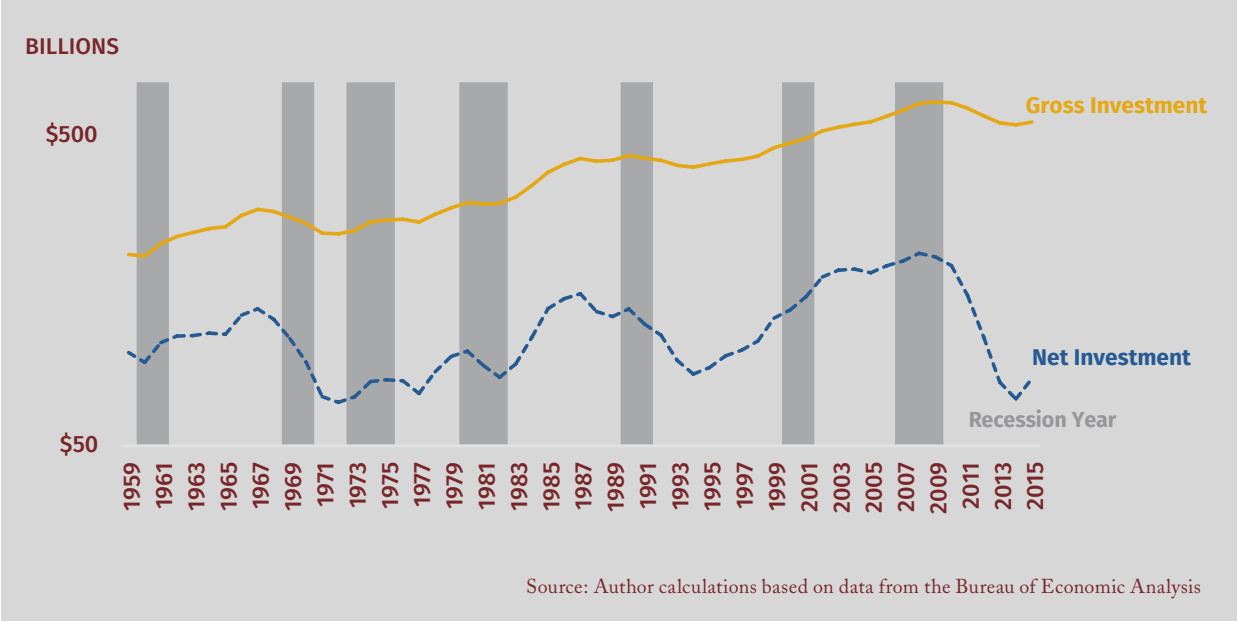
Overall, defense expenditures are a declining expenditure priority as measured by its share of the private economy and its share of total government expenditures.

The other spending categories that have been a declining priority are transportation expenditures and expenditures on other economic affairs programs, see Figures 14 and 15. Transportation expenditures, adjusted for inflation, have grown 2.9 percent per year on average, which was slower than the growth rate of the private economy (3.1 percent per year on average) and slower than the growth rate in total expenditures adjusted for inflation (3.5 percent per year on average), and consequently also represent a declining priority based on actual expenditure allocations. Inflation-adjusted expenditures on other economic affairs, which include programs areas such as agriculture, labor, and energy, grew slightly slower than expenditures on transportation programs (2.3 percent per year on average), and also represent a declining budgetary priority.

Consumption expenditures on the other categories of public goods have all increased relative to the private economy, see Figure 16. These include health consumption and investment expenditures (5.4 percent average annual growth rate adjusted for inflation), public order and safety (4.7 percent average annual growth rate adjusted for inflation), education (4.1 percent average annual growth rate adjusted for inflation), expenditures to support the executive, legislative, and other government expenditures (3.5 percent average annual growth rate adjusted for inflation), and housing & community services (3.2 percent average annual growth rate adjusted for inflation). Together, relative to the private economy, these expenditures increased 5.6 percentage points (from 6.7 percent in 1959 to 12.3 percent in 2014).

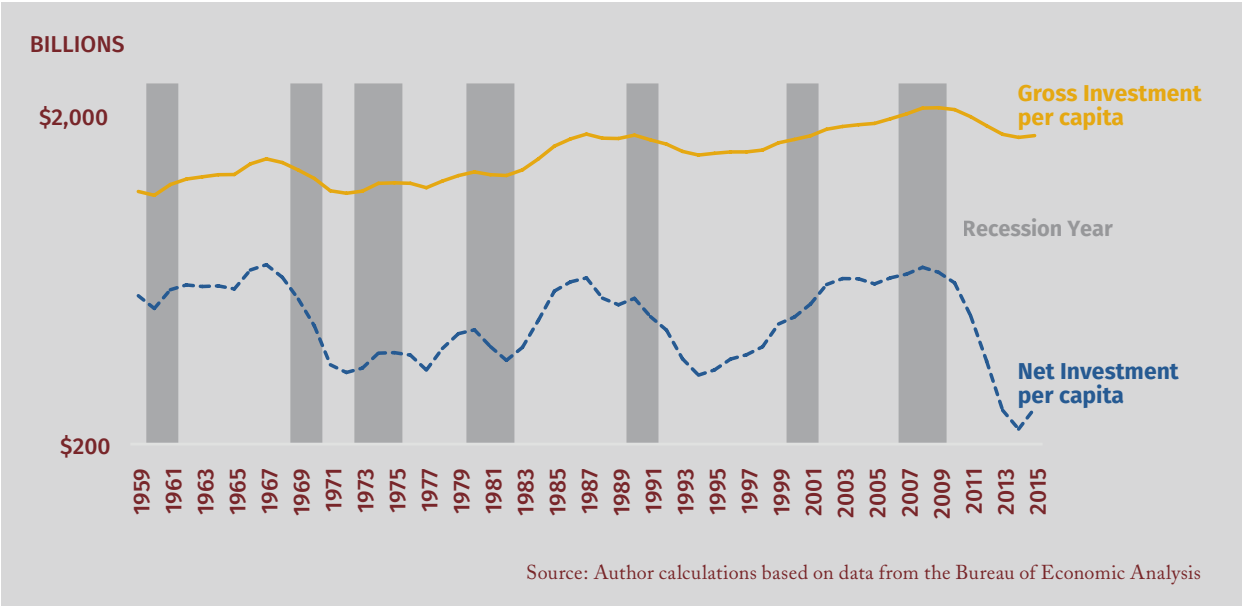
Turning to investment expenditures, which also include assets that support transfer payment programs, Figures 6 and 7 illustrate that investment in assets has been a declining priority. Net investment expenditures (gross investment expenditures minus depreciation) have been significantly more volatile, and adjusted for inflation, are now less than the net investment that occurred in 1959, see Figure 17. Adjusting for the growing U.S. population (net investment adjusted for inflation on a per capita basis), the decline has been even larger, see Figure 18.

FIGURE 17. Investment Expenditures Adjusted for Inflation ($ 2009)
1959 – 2015
(log scale)



Source: Author calculations based on data from the Bureau of Economic Analysis

FIGURE 18. Gross and Net Investment Expenditures Per Capita Adjusted for Inflation ($ 2009)
1959 – 2015
(log scale)

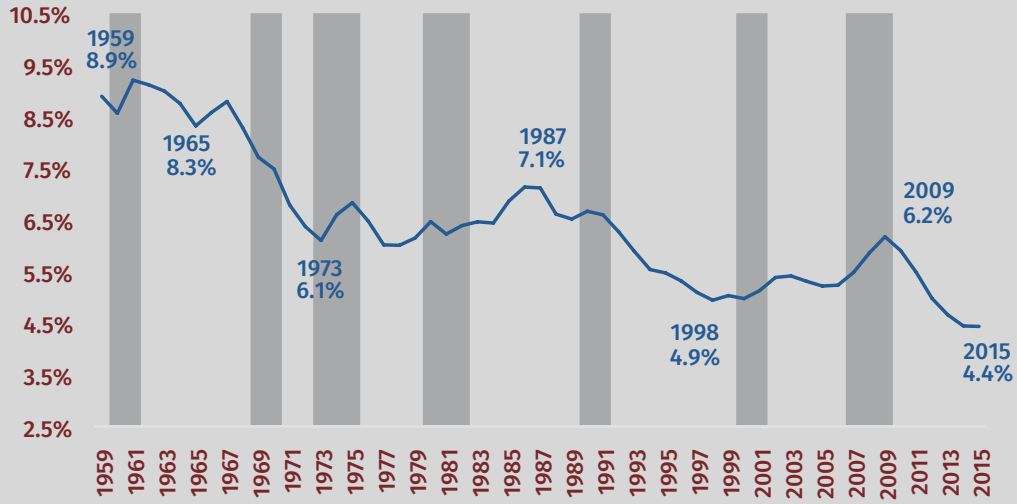


Source: Author calculations based on data from the Bureau of Economic Analysis

Also interesting from Figures 17 and 18 is the widening gap between gross investment and net investment expenditures. In inflation adjusted dollars and inflation adjusted dollars per capita, gross investment has grown over time, and the gap between gross investment and net investment (i.e. depreciation) has also widened. The widening gap is reflective of the changing asset base of government expenditures, particularly greater investment in assets (such as computers) with shorter economic lifespans.

The average annual growth rate in gross investment expenditures was 1.8 percent between 1959 and 2015, significantly slower than the growth in the private economy. As a consequence, gross investment expenditures relative to the private economy have been generally declining over the past 50 years.

FIGURE 19. Gross Investment Expenditures Relative to Private Economy
1959 - 2015

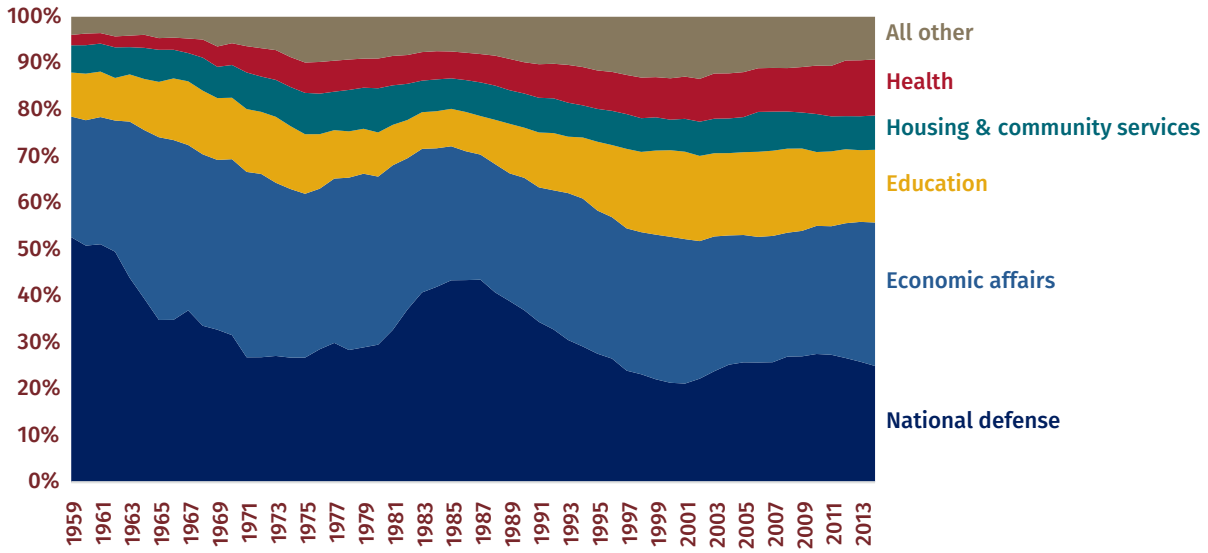


Source: Author calculations based on data from the Bureau of Economic Analysis

Similar to the consumption expenditures, the aggregate figures gloss over important compositional changes in government gross investment expenditures, see Figure 20. Defense expenditures, which accounted for more than 50 percent of total government gross investments, fell to a low of 21.2 percent in 2001, and now account for 25 percent as of 2014. The surges related to the Vietnam War, Reagan military buildup, and War on Terrorism were temporary interruptions in the otherwise downward trend in defense gross investment, however a baseline share of investment expenditures seems to have formed around the 25 percent level.

There has also been a dichotomy between consumption expenditures on transportation and other economic affairs, which have been declining as a share of the budget, and gross investments in these areas (noted as economic affairs in Figure 20), which generally maintained its share of the gross investment allocations over this time period (with a surge in gross investments in economic affairs that occurred during the 1970s). The other noteworthy trend has been the growth in gross investment for health expenditures, which matches the growth in consumption expenditures for health (discussed below).

FIGURE 20. Share of Gross Investment Expenditures by Expenditure Category
1959 - 2014



Source: Author calculations based on data from the Bureau of Economic Analysis

Having reviewed a wide array of data, it is beneficial to draw some general conclusions regarding the trends in government consumption and investment expenditures.

Consumption and investment expenditures for defense and transportation programs have been a declining priority, whereas consumption and investment expenditures in health, education, and public safety programs (and to a lesser extent executive & legislative costs, and the costs for housing, community services, and cultural services) have been an increasing priority. Overall, however, consumption and investment expenditures are a lower share of total government expenditures – the decline in defense and transportation expenditures was larger than the increase in the other expenditure areas.

Since the consumption of public goods and services relative to the private economy have been declining but, as discussed above, total government expenditures are growing faster than the private economy, this necessitates that growth in government expenditures has been driven by something else. That something else is transfer payments.

It obviously follows from these trends that the public goods and services provided by the federal, state, and local government is very different as of 2015 compared to 50 years ago. Whether this transformation has added value or not is an issue we address below. First, however, we present the data on the largest growing expenditure item for all levels of governments – transfer payments.

Transfer Payments

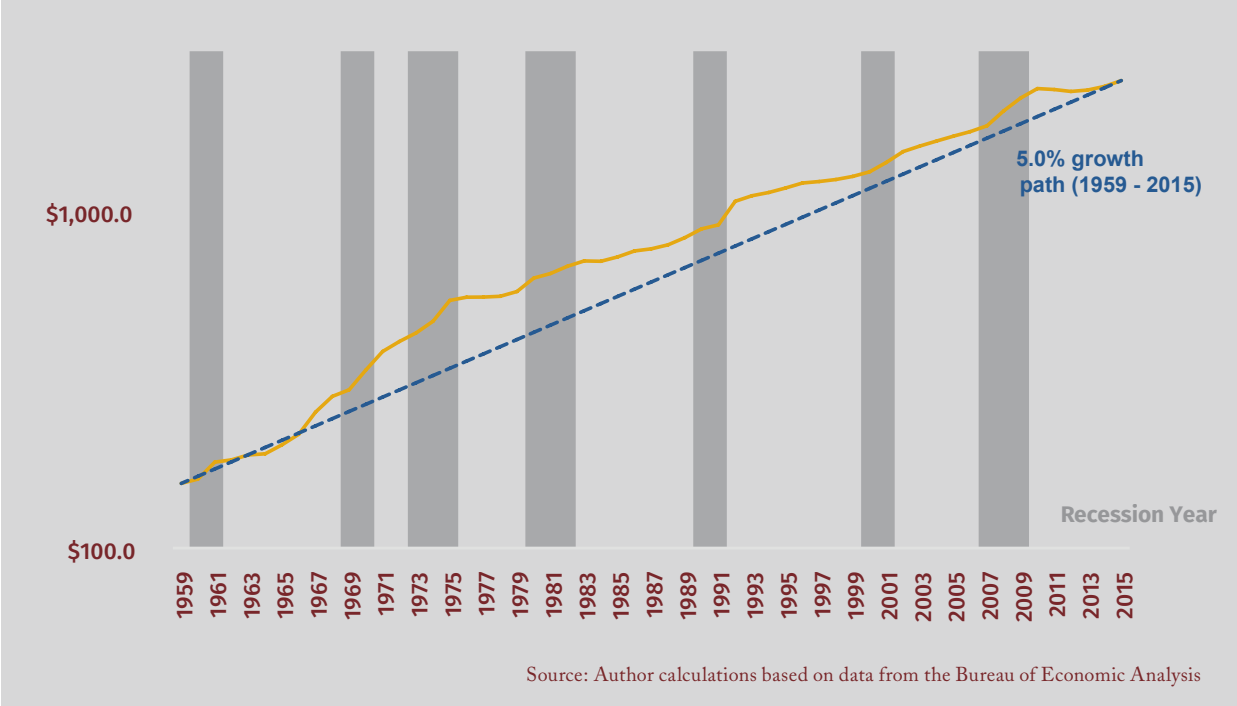
Transfer payments cover a wide range of programs from food stamps to Social Security. Their commonality is that the programs *transfer* money from taxpayers to program recipients; and as these examples illustrate, the justifications across the different transfer payment programs vary. Transfer payments are also not included as government spending in the calculation of GDP – these payments will typically show up as consumption expenditures when the recipients spend these resources.

As illustrated in Figures 6 and 7, transfer payments are driving the growth in government expenditures. If unchanged, transfer payments will continue to grow relative to the private economy and future government budgets. Transfer payments comprised 19.8 percent of total government expenditures (federal, state, and local) in 1959, but grew, to over 45.5 percent of total government expenditures as of 2015, see Figure 7.[17]

Looking at inflation adjusted dollars, expenditures on transfer payments grew 5.0 percent per year between 1959 and 2015, see Figure 21; significantly faster than either the growth in total expenditures (3.5 percent growth per year, adjusted for inflation) and the growth in the private economy (3.1 percent growth per year, adjusted for inflation).

Transfer payments cover a wide range of programs from food stamps to Social Security. Their commonality is that the programs transfer money from taxpayers to program recipients; and as these examples illustrate, the justifications across the different transfer payment programs vary.

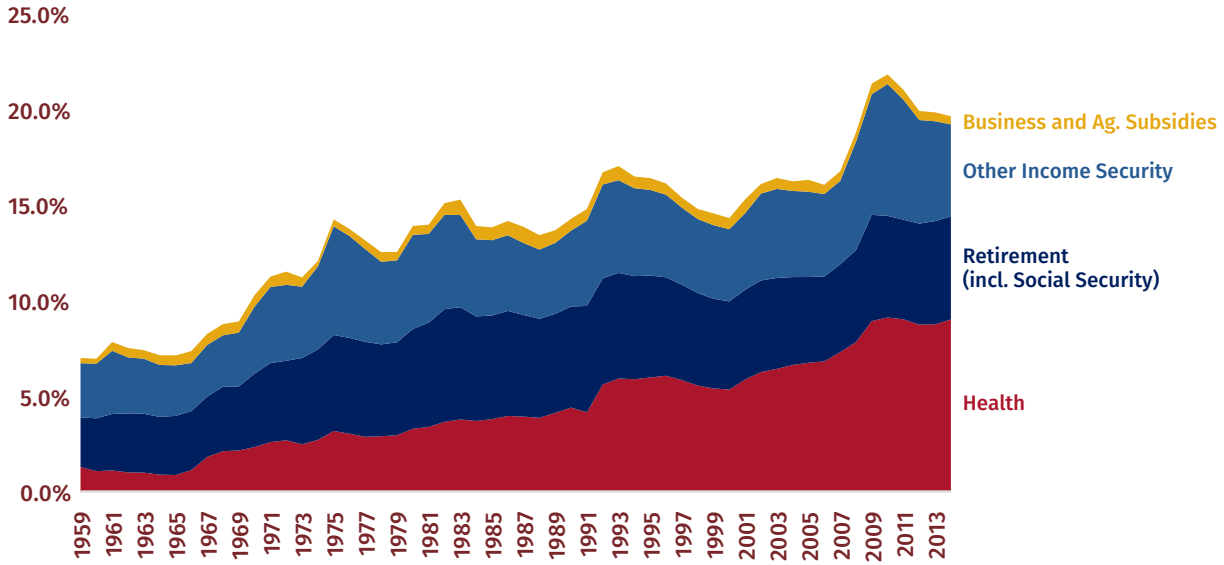
FIGURE 21. Expenditures on Transfer Payments Adjusted for Inflation ($ 2009)
1959 - 2015
(log scale)



Source: Author calculations based on data from the Bureau of Economic Analysis

Unlike with consumption expenditures of public goods and services, all transfer payments programs are growing, see Figure 22. Health care expenditures are growing the fastest at an average annual rate, adjusted for inflation of 6.8 percent. Retirement expenditures, including Social Security, were the second fastest growing transfer payment expenditure at 4.4 percent per year, followed by transfer payments for income security, which grew 4.1 percent per year, and finally business and agricultural subsidies, which grew 3.9 percent per year.

FIGURE 22. Transfer Payments Relative to Private Economy by Category
1959 - 2014



Source: Author calculations based on data from the Bureau of Economic Analysis

Broadly speaking, transfer payments are justified based on establishing a secure economic safety net and/or their role as automatic economic stabilizers during economic downturns. The value added of these transfer programs depends upon whether the goals of the specific transfer payment program are potentially valuable and whether the specific transfer payment programs are achieving their designated goals, and are, therefore, creating value in excess of their costs. As discussed above, and documented elsewhere,[18] transfer payments are the single largest expenditure category of the government. Consequently, whether government expenditures are, on net, enabling economic growth in the private economy, or detracting from growth in the private economy, depends upon the value created by these programs relative to the costs imposed in order to fund them. Accurately accounting for the net value of these programs requires metrics regarding the current costs, but also the off balance sheet debt for these programs as well (e.g. Medicare, Social Security, and student loan subsidies). This off balance sheet debt will be considered below in the revenue section.

Summarizing the trends in government expenditures

The review above illustrates that the budget prioritization of government spending has changed dramatically over time. Whether such budget prioritizations are warranted depends upon the specific needs for each particular public good, and the ability of the government programs to fulfill these needs. Are current defense expenditures appropriate relative to the current geo-political threats? Are police and fire services adequately funded given best practices and current needs? It also depends upon the costs of raising those revenues from the private sector – a subject addressed in the next section.

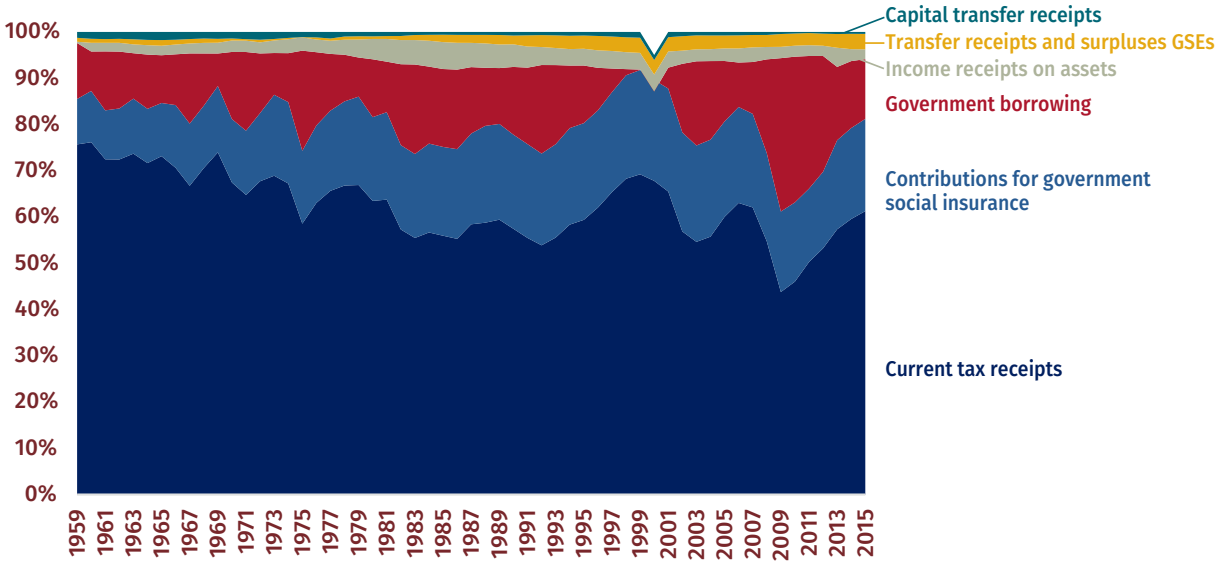
Section 3: Accounting for government revenues

This section identifies the government's spending priorities and illustrates how they have changed over time. Financing these priorities requires the government to divert resources from the private economy to the public economy. If the resulting expenditures are going to add value on net to the economy, then the value created by the spending must exceed the costs associated with raising the necessary revenues from the private sector. These costs vary depending upon the specific revenue source that the government relies upon.

Figure 23 below presents the composition of government revenue sources (federal, state, and local) between 1959 and 2015. As is clearly shown, the government raises the majority of its revenues from taxes and payroll contributions (e.g. Social Security and Medicare taxes, also referred to as contributions for government social insurance). Categorizing payroll contributions as a type of tax, approximately 80 percent of total government revenues come from taxes. The other major revenue source is government borrowing. Typically, between 10 percent and 15 percent of current public expenditures are funded by debt – a notable exception occurred during the late 1990s, when the government, on net, ran a surplus, and during the 2007-09 economic crisis when government debt funded over 30 percent of total public expenditures.

Approximately 80 percent of total government revenues come from taxes. The other major revenue source is government borrowing.

FIGURE 23. Government Revenue Sources as a Share of Total Government Revenues
1959 - 2015



Source: Author calculations based on data from the Bureau of Economic Analysis

Federal, state, and local governments also regularly make future spending commitments without properly accounting for the necessary revenues to fund those commitments. Such unfunded or unaccounted for commitments include the unfunded pension liabilities of state and local governments as well as the structural deficits associated with Social Security and Medicare. Although not contractual debt, these commitments are liabilities of the federal, state, and local governments.

The costs associated with taxes and debt differ slightly from one another. However, a commonality is that the value created by the government expenditure will need to exceed the dollar level of tax dollars collected, or the investment dollars borrowed, in order for the government expenditure to add value to the economy on net. Below we account for the specific costs imposed by these two major revenue sources.

Tax Revenues

Starting with taxes, the largest revenue source for the government, the composition of total federal, state, and local tax revenues has changed over the past 50 years. Personal income taxes, the largest tax revenue source, have accounted for 33 percent to 40 percent of total tax revenues throughout this time period. Sales taxes have also been stable over this period – comprising between 9 percent and 12 percent of total tax revenues. Corporate income tax revenues, on the other hand, have declined from the second largest source (nearly 18 percent of total tax revenues in 1965) to the fourth largest source today (around 10 percent of total tax revenues).

Similarly, the contribution from property taxes and taxes on production (i.e. excise taxes) have declined. These share declines were offset by the growth in the importance of social insurance taxes (i.e. social security taxes and unemployment insurance taxes) as a tax revenue source. Back in 1959 social insurance taxes accounted for around 12 percent of total tax revenues. By 2015, social insurance taxes accounted for nearly a quarter of all tax revenues.

FIGURE 24. Sources of Government Tax Revenue as a Share of Total Tax Revenues
1959 – 2015

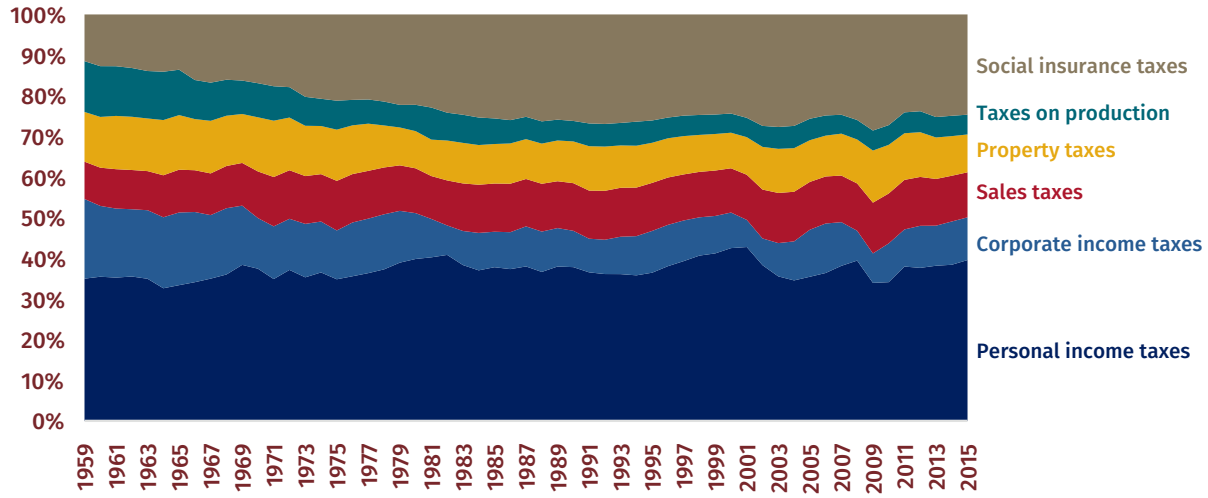


TABLE 2. Tax Sources as a Percentage of Total Tax Revenues
Selected Years 1960 - 2015

	1960	1965	1970	1975	1980	1985	1990	1995	2000	2005	2010	2015
Personal income taxes	35.5%	33.4%	37.4%	34.8%	39.8%	37.8%	37.8%	36.5%	42.5%	35.5%	34.1%	39.6%
Corporate income taxes	17.4%	17.9%	12.5%	12.0%	11.3%	8.7%	8.9%	10.3%	8.8%	11.6%	9.5%	10.5%
Sales taxes	9.4%	10.5%	11.5%	12.2%	11.0%	11.9%	11.7%	11.8%	10.9%	11.8%	12.3%	11.1%
Property taxes	12.5%	13.4%	13.3%	12.6%	9.2%	9.7%	10.3%	9.9%	8.8%	10.3%	12.0%	9.3%
Taxes on production	12.5%	11.2%	8.4%	7.1%	6.5%	6.3%	5.0%	5.5%	4.7%	5.3%	4.9%	4.9%
Social insurance taxes	12.7%	13.6%	16.9%	21.2%	22.2%	25.6%	26.2%	26.1%	24.4%	25.7%	27.2%	24.7%

Regardless of the source, raising revenues through taxation imposes costs, which include the opportunity cost of the funds not being available to the private sector, the direct costs associated with raising the revenue and enforcing the tax code, and the adverse impact on economic incentives.

Taxes, as with all economic activities, have an opportunity cost. The opportunity cost of taxes is the foregone use of the money in the private sector – when the government collects one dollar in taxes, that dollar is no longer available to the person or business (the taxpayer) from whom it is taxed away.[19] Had the government not imposed the tax, this dollar would have either been spent, saved, or invested by the taxpayer. The value that could have been gained had the taxpayer been allowed to spend, save, or invest that dollar is the opportunity cost of the tax.

To see why the opportunity cost is important when determining the net value of government spending, imagine the government imposed a tax of one dollar and then, upon collection, burned that dollar. Clearly, the economy would be poorer by one dollar under such a scenario. Therefore, every dollar of government expenditure must provide value of at least one dollar in order for the expenditures to be growth enhancing. However, the opportunity cost of raising taxes are not the only relevant cost. Therefore, government expenditures have an even higher value benchmark to meet.

In order to spend money, the federal, state, and local governments must first collect the revenues. Therefore, levying and collecting taxes creates taxpayer compliance costs, government's administrative costs, and the government's enforcement costs. The taxpayers' compliance costs consist of the time and expenditures taxpayers spend complying with the tax code. The government's administrative costs include the federal expenditures of the IRS (around $14 billion for FY 2016, which also include enforcement costs)[20] and the expenditures of the state and local governments administering their income, sales, and property tax systems. Enforcement costs refer to the costs that the federal, state, and local governments must spend to ensure that taxpayers are paying the taxes that are owed (e.g. the costs the federal government spends to conduct audits).

The value that could have been gained had the taxpayer been allowed to spend, save, or invest that dollar is the opportunity cost of the tax.

The total collection, enforcement, and compliance costs associated with the tax system can be quite substantial. Laffer, Winegarden, and Childs (2011) estimated that the sum of these costs just for the federal government was $431.1 billion as of 2008.[21] In the 2016 version of its annual publication, the National Taxpayers Union estimated the costs from the federal personal and corporate income tax was $234.4 billion.[22] In a review of the literature, the GAO (2005) reported that "combining the lowest available (and incomplete) estimates of individual and corporate compliance cost yields a total of $107 billion (roughly 1 percent of GDP) per year; however, other studies estimate costs 1.5 times as large."[23] The Tax Foundation (2016) estimates that total tax compliance costs were $409 billion.[24]

Incorporating the compliance costs for the state and local income, sales, and property taxes on top of the estimated federal costs, increase the total collection, enforcement, and compliance costs even further. However, there are fewer studies that have examined the administrative and compliance costs associated with these taxes.

Concerning the sales tax, Fox (2015) noted that "relatively little is known about sales tax compliance costs but some data are available from PriceWaterhouseCoopers (2007), which estimated that sales tax compliance costs were 13.5 percent of tax revenues for small retailers, 5.2 percent for medium retailers, and 2.2 percent for large retailers."[25] The Department of Revenue of Washington State similarly found that "for all retailers the total cost is 4.23 percent of total state and local sales tax collections when weighted by the number of taxpayers. The estimate weighted by number of taxpayers best describes the cost of sales tax collection for a typical Washington retailer. The total cost is 1.42 percent when weighted by dollar amount. The estimate weighted by dollar amount is best to use for any type of fiscal analysis."[26]

Based on the Tax Foundation (2016) estimate as well as the partial estimate of sales tax compliance costs, this partial accounting of the compliance and administrative costs of the tax system ($416.9 billion) equals 8.5 percent of the total tax and payroll tax receipts of $4.9 trillion in 2016.

Using the total cost weighted by dollar amount in the Washington State Department of Revenue analysis (1.42 percent), and the total state and local sales and gross receipts tax revenues from the U.S. Census as of 2013 ($496.4 billion), complying with the state and local sales and gross receipts taxes cost retailers $7.1 billion in 2013. Based on the growth in overall tax revenues, these values imply a total cost of $7.9 billion as of 2016. And, these costs do not include the costs of the state and local governments to collect sales tax revenues. Estimates for property tax revenues, which are generally viewed to have higher administrative costs, but lower compliance costs, and state income tax administrative costs are also not included.[27]

Even this partial accounting of the compliance and administrative costs show a large threshold that government expenditures must exceed. Based on the Tax Foundation (2016) estimate as well as the partial estimate of sales tax compliance costs, this partial accounting of the compliance and administrative costs of the tax system ($416.9 billion) equals 8.5 percent of the total tax and payroll tax receipts of $4.9 trillion in 2016. Put differently, if government expenditures are going to add value to the economy, then every dollar of government expenditures must create at least $1.09 of value (to compensate for the opportunity cost of the private expenditures plus the 8.5 percent cost of administration and compliance).

There are more costs to the tax system that also need to be taken into account. Taxes change economic incentives due to their impact on the after-tax returns to market transactions. People will, consequently, change their behavior in response to the changes in economic incentives, which reduces overall economic efficiency.

For instance, due to the imposition of "employer taxes" such as the employer-portion of the social security payroll taxes and unemployment insurance taxes, the labor costs paid by businesses exceed the labor income received by workers.[28] These costs are in addition to the actual total compensation paid. Workers, on the other hand, only receive the total actual compensation paid (including salaries and benefits) net of the income and payroll taxes that the government levies on workers. The total compensation package settled upon by businesses and workers will, therefore, reflect the tax and regulatory wedge created by the government. This wedge creates an efficiency cost to the economy. These efficiency losses are, perhaps, the greatest cost of all.

The total compensation package settled upon by businesses and workers will, therefore, reflect the tax and regulatory wedge created by the government.

A simplified example can illustrate these costs. A business that can afford to spend $30,000 a month on workers can employ 10 people paying each employee $3,000 a month if there is no employer tax on labor (i.e. employer payroll and unemployment insurance taxes). Imposing a 10 percent payroll tax changes the businesses' ability to hire employees at the same wage. With a 10 percent payroll tax, and without any economizing changes by the business, the businesses' labor costs will increase from $30,000 to $33,000. Since there is no offsetting increase in overall business revenue, the business cannot afford the extra $3,000 in costs. The business will, therefore, make behavioral changes in response to the tax. Perhaps the business will reduce its number of employees, raising economy-wide unemployment. Or, perhaps the business will lower its wages or other benefits paid to employees. In light of these changed opportunities, employees will possibly respond with changes in their behavior as well.

Regardless of the specific actions taken, due to the imposition of these payroll taxes, beneficial market opportunities that would have taken place without the imposition of the tax will no longer take place. These lost opportunities, and the resulting reduction in economic efficiency, are costs imposed by the tax system. The same principle also holds for state and federal personal income taxes, state and federal corporate income taxes, and other taxes on production. Due to these efficiency costs, the value benchmark that government spending must exceed in order for government spending to add value to the economy is even greater.

Importantly, these incentive and efficiency costs vary significantly depending upon a tax system's specific attributes. An economy with higher marginal tax rates (all other things equal)

imposes greater disincentives against working, saving, and investing than an economy with lower marginal tax rates. Greater disincentives against productive activities diminish economic growth, therefore, a tax system with higher marginal tax rates will create greater disincentives to growth than an economy with lower marginal tax rates.

A large literature has been devoted to measuring these efficiency costs from taxes, also referred to as the welfare cost of taxation.[29] Browning (1976), one of the first studies to examine this issue, estimated that the marginal welfare costs of taxation ranged between 9 percent and 16 percent per dollar of tax revenue.[30] These figures suggest that to cover the marginal welfare costs of taxation, government expenditures must be 9 percent and 16 percent more productive than private expenditures to produce a welfare gain (e.g. to promote economic growth).

Greater disincentives against productive activities diminish economic growth, therefore, a tax system with higher marginal tax rates will create greater disincentives to growth than an economy with lower marginal tax rates.

However, even according to Browning himself, these estimates under-estimate the "total and marginal welfare costs".[31] Correcting his previous estimates, Browning revises the costs to 15.3 percent and 21.2 percent of total revenues while noting that the actual impact could be significantly higher depending upon the economic assumptions made (e.g. there is a great deal of uncertainty regarding how high the estimates could actually be). These results were consistent with several other studies that examined this issue.[32] The Government Accountability Office (GAO) reviewed several studies that estimated the efficiency costs of the U.S. tax system as of 2005.[33] According to the GAO:

> The two studies with the broadest scopes among those that we reviewed were by Jorgenson and Yun and by Feldstein. The first set of authors estimated that the efficiency cost of federal taxes on capital and labor income in 1997 was equal to about 19.5 percent of the revenues collected from those taxes. Applying this percentage to federal corporate and personal income tax collections in 1997 would yield efficiency costs of about $200 billion or, roughly, 2.5 percent of GDP in that year. Feldstein examined the effects of several distortions caused by the federal personal income tax and payroll taxes, including those related to decisions about how much to work and what to consume. He estimated that these distortions resulted in efficiency costs of between $137 billion and $363 billion in 1994 (depending on his assumptions regarding the size of taxes effects on various decisions). Those estimates were roughly equivalent to between 2 and 5 percent of GDP in 1994.[34]

These results show that while significant, the efficiency costs from the tax system are difficult to precisely measure; however, the studies illustrate that it is possible to approximate these economic costs. Using the GAO estimated efficiency costs, and based on the U.S. GDP as of 2016 Q2 of $18.4 trillion, the range cited by the GAO implies a total efficiency cost of the U.S. tax system equal to $368.7 billion to $921.8 billion.

Combining these efficiency costs with the administration and compliance cost estimates of $416.9 billion, this partial accounting of the economic costs of taxes ranges between $785.6 billion and $1.3 trillion or between 16.0 percent and 27.2 percent of total tax revenues raised in 2016. These estimates imply that every dollar of government expenditures must create at least $1.16 to $1.27 of value in order for the spending to add value to the economy.

Debt Financing

When the federal, state, or local government issues debt, the government is imposing a tax increase on future taxpayers in order to repay the original amount of money borrowed (the principal) plus the interest costs of the debt. From this perspective, the cost threshold from debt is similar to the cost threshold for taxes – the proposed expenditures financed with debt must create at least $1.16 to $1.27 of value in order for the spending to add value to the economy. Due to the fact that issuing debt imposes tax increases on future taxpayers, however, additional considerations arise.

Just as with businesses or households, debt is the appropriate way to finance public capital goods that provide consumption services over time, assuming that the value of those services exceed the cost of funding. Take the example of a bridge. Bridges are designed for a lifespan of about 70 years.[35] Once completed, not only will people receive the benefits of the bridge in the near-term, future generations will also benefit from the expenditures. Due to the fact that the consumption services provided by a bridge extend over time, it makes sense that the financing of the expenditures extend over time as well (i.e. the project is financed using debt). In this case, and assuming the value of the bridge exceeds the cost threshold for taxes, the government expenditures to repay the debt for the bridge are adding value (on net) to the economy. The same logic holds for other capital goods such as roads and powerlines, and can also be applied to certain national defense expenditures (i.e. today we still reap the benefits from the expenditures made to win World War II).

Debt issued to finance public goods that provide near-term consumption services are a different matter, though – an important point given the common belief that deficit-financed consumption of non-durables is a viable means to stimulate economic growth. In this case the full value from the government expenditures are realized immediately, but the costs are deferred to the future. Deferring the costs of the government expenditures to the future, while enjoying the benefits from the expenditures in the present, distorts the demand for government services and imposes a large cost on future taxpayers.[36] There is also a direct impact on economic growth. As Tempelman states (in summarizing Nobel laureate James Buchanan's

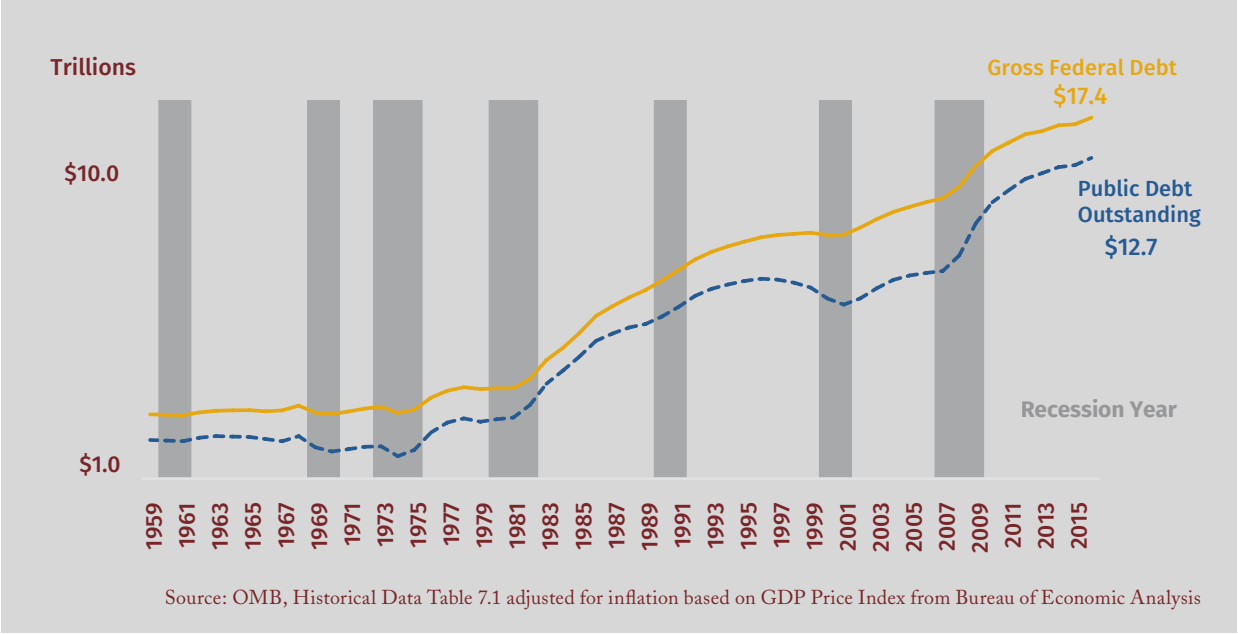
position on debt) "interest payment has a negative effect on net wealth because using debt to finance increased consumption in the present permanently reduces the borrower's standard of living in the future. As Buchanan phrases it, "By financing current public outlay by debt, we are, in effect, chopping up the apple trees for firewood, thereby reducing the yield of the orchard forever" ([1986] 2000e, 447)."[37]

> "By financing current public outlay by debt, we are, in effect, chopping up the apple trees for firewood, thereby reducing the yield of the orchard forever."
> —James Buchanan

The negative impact on growth occurs because people adjust their behavior, manifested through the consumption-investment decisions process, in order to minimize their future increased tax liabilities that present budget deficits will require. As noted by Brennan and Buchanan (1987), "since public debt is necessarily a tax on future income, and since future-period income is, in this model, determined by the individual's own decisions as to saving in the current period, it follows directly from elementary analysis that, when he fully discounts future taxes, the taxpayer will seek to shift income from the future to the present. The individual will save less under debt than under the current-period tax that generates equivalent revenues in current period terms."[38] This additional anti-growth incentive that arises when government debt finances current consumption is an additional cost of debt-financed expenditures compared to tax-financed expenditures.

Imposing costs on future taxpayers from past consumption services provides future taxpayers with no future economic benefit, but it reduces their ability to consume or invest in the future. Therefore, debt financing of present consumption services lowers future economic well-being. Figure 25 illustrates that except for a brief pause in the growth of the debt in the late 1990s, the total government debt and debt held by the public, both adjusted for inflation, have been growing since the late 1970s.

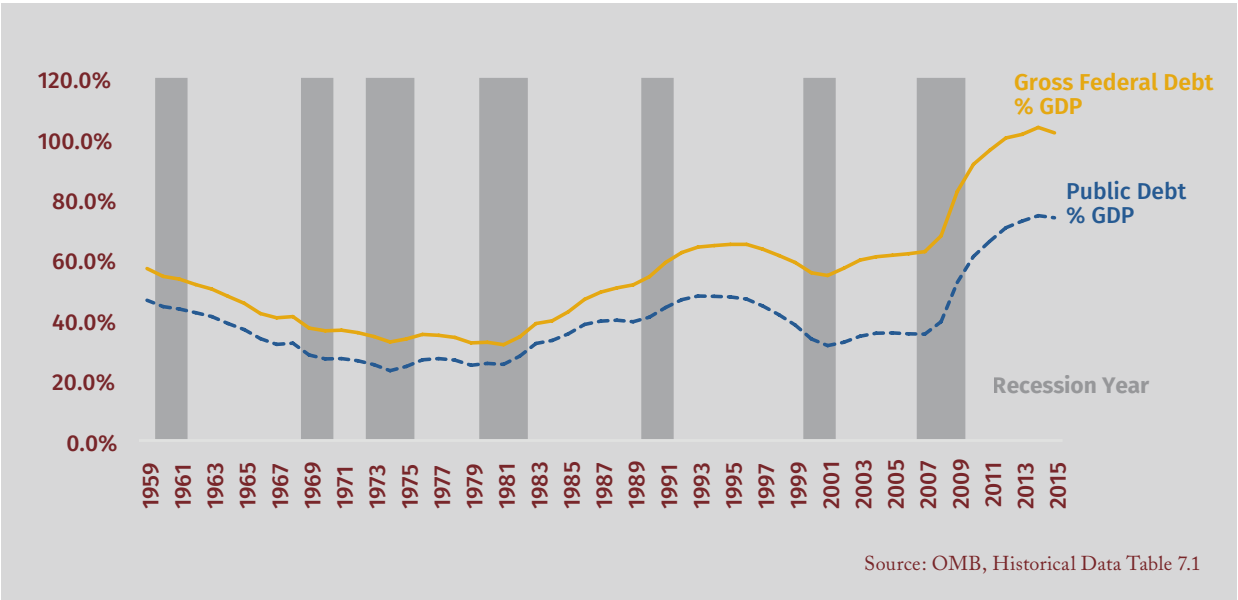
FIGURE 25. Total Federal Government Debt and Debt Held by the Public Adjusted for Inflation
1950 – 2015
(log scale)



Source: OMB, Historical Data Table 7.1 adjusted for inflation based on GDP Price Index from Bureau of Economic Analysis

Figure 26 presents the total federal government debt data relative to GDP, which is the typical measure used to assess the economy's ability to cover the costs of the debt. Relative to GDP, the growth of the debt follows a slightly different pattern, but overall has grown since the early 1970s.

FIGURE 26. Total Federal Government Debt and Debt Held by the Public as a Percentage of GDP
1950 – 2015



Source: OMB, Historical Data Table 7.1

Both Figures 25 and 26 also illustrate that the total debt of the federal government is at all-time highs both in inflation-adjusted terms and relative to the size of the economy (or the ability of the private sector to pay off the debt). The skewing of the federal budget toward current period consumption services (as illustrated above), when coupled with the size of the government debt being at all-time highs, are an indication that the net value provided from government expenditures is declining. If the official debt burden was the entire debt of the country that would be problematic enough. However, the full debt burden of the federal government is even larger than the official debt numbers.

Added to these costs, are the structural deficits associated with Social Security and Medicare. There are also other off the books liabilities, such as some portion of the federal guaranteed student loans that will likely default and the unfunded liabilities of the pensions of federal government workers. These promises, while not considered part of the official public debt, will require future tax increases if they are to be fulfilled.

However, the full debt burden of the federal government is even larger than the official debt numbers. Added to these costs, are the structural deficits associated with Social Security and Medicare.

With respect to Social Security, the Social Security Administration itself estimates that the present value of the 75-year actuarial deficit for the OASDI program is $11.4 trillion – nearly doubling the size of the total debt held by the public.[39] "To illustrate the magnitude of the 75-year actuarial deficit, consider that for the combined OASI and DI Trust Funds to remain fully solvent throughout the 75-year projection period: (1) revenues would have to increase by an amount equivalent to an immediate and permanent payroll tax rate increase of 2.58 percentage points to 14.98 percent,…."[40] Projected deficits from Medicare add to these costs. Specifically, "for the HI [Medicare] trust fund to remain solvent throughout the 75-year projection period, (i) the standard 2.90-percent payroll tax could be immediately increased by the amount of the actuarial deficit to 3.63 percent, or (ii) expenditures could be reduced immediately by 16 percent."[41]

The total estimates of the unfunded costs of the federal government's social promises are even larger once the unfunded pension costs of the federal government and more realistic assumptions regarding the present value of the future costs from these social promises are included. According to the U.S. Treasury, the total unfunded liabilities are $71 trillion; according to a 2012 analysis by former SEC chairman Chris Cox and former chairman of the House Ways & Means Committee Bill Archer, the total unfunded federal liabilities are $87 trillion; and, an analysis from Boston University professor Laurence Kotlikoff estimated the gap to be a much higher $222 trillion.[42]

Debt financing of current consumption services also occurs at the state and local level. For instance, according to the Pew Charitable Trusts, "the nation's state-run retirement systems had a $968 billion shortfall in 2013 between pension benefits governments have promised to their workers and the funding available to meet those obligations—a $54 billion increase from the previous year."[43] And, due to the complexity of valuing costs that are incurred in the future, the Pew's estimates could significantly understate the actual shortfall. Correcting for these issues, Rauh (2016) estimates that the unfunded liabilities of state and local pension plans that represent 97 percent of all public pension assets exceed $3.4 trillion.[44]

With respect to the net value creation of government expenditures, due to the exceptionally large use of debt to finance government consumption services, the value threshold that government expenditures have to exceed is likely to be even higher than the $1.16 to $1.27 per dollar of expenditures estimated above.

Section 4: An outcomes perspective on the public economy

While the previous sections evaluated the trends in government spending (Section 2) and the total costs of taxation (Section 3), this section discusses the importance of evaluating the net value created by government expenditures based on the public goals the spending is supposed to achieve, and the current ability of the expenditures to meet those goals.

Clearly there are some government expenditures whose goals do not add value to the economy and should never be undertaken – the $6.3 million in agricultural subsidies paid to 50 billionaires between 1995 and 2014 being an excellent example.[45] It is hard to envision that spending federal dollars on farm subsidies for billionaires creates economic value. Such activities (formally known as rent seeking in the economics literature) are certainly value destructive.

There are other government expenditures whose fundamental purpose and goals should add value to the economy – public safety and education expenditures, for instance. But, whether the incremental dollars spent add value is an empirical question. One possible outcome is that incremental expenditures demonstrably contribute toward the program's goals, and the goals are valued by citizens. This is an indication that the expenditures are adding value to the economy in excess of the cost threshold associated with collecting the necessary tax revenues.

Alternatively, the incremental expenditures may not meet these criteria. In these cases, the incremental expenditures are either not achieving (or only partially achieving) their designated goals, spending excessive amount of money in order to achieve their designated goal, or the established goals are inappropriate. These outcomes indicate that the expenditures are adding less value to the economy than the cost threshold associated with collecting taxes, and additional government expenditures in these areas are detracting from economic growth (they are value destructive).

Several problems obstruct this type of review, however. First, there is the problem of subjectivity. For instance, how do you measure the net value added provided by many government programs, such as defense expenditures? Second, there is a problem of data availability. For

instance, even when the net value added provided by expenditures are quantifiable in principle, such as transportation expenditures, data availability problems will make such calculations difficult to complete at best.

Insights can be gained, however, by first making clear the "value-added" objective each government program is supposed to achieve, and where possible, combining expenditure data with program outcomes data. Due to space limitations, the purpose of this section is not to perform a comprehensive review on this subject, however. Instead, we overview two major expenditure priorities (education and income support programs) to illustrate the outcomes methodology and provide a sense of whether increasing expenditures on these growing budgetary priorities are leading to improved outcomes.[46]

Due to the current expenditure level and composition of expenditures, incremental increases in government spending are unlikely to improve upon their purported goals and, therefore, unlikely to benefit the broader economy.

It is important to note upfront that the implications from the analysis are not that the specific public goods and services reviewed cannot (or should not) be provided by the public sector. Nor can any definitive conclusions be drawn regarding the amount of government expenditures that should be spent on these areas, or the most efficient allocations of these expenditures. Before such conclusions can be made, the analyses would need to perform a comprehensive examination of the appropriateness of the goal of the public expenditure program and the current effectiveness of the government in executing on this goal. For our purposes, the review confirms (for the two programs examined) that, due to the current expenditure level and composition of expenditures, incremental increases in government spending are unlikely to improve upon their purported goals and, therefore, unlikely to benefit the broader economy. The implications from these impacts are discussed in the conclusion.

Education Expenditures

Adjusted for inflation, education spending per pupil has grown over time, even after accounting for the decline in funding that occurred due to the recession of 2007-09, see Figure 27.

FIGURE 27. Total Inflation Adjusted Public Education Expenditures per Pupil
1969-70 through 2014-15

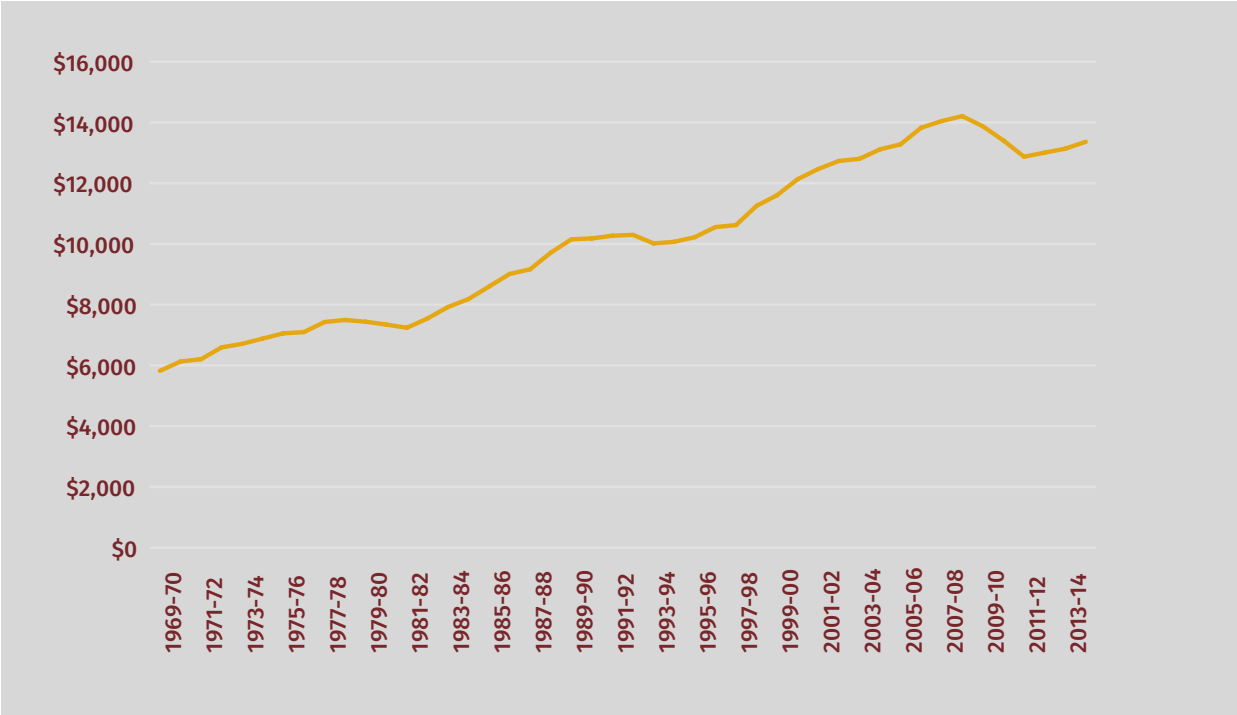


Figure 27 illustrates that, adjusted for inflation, education expenditures per pupil have more than doubled over the past 46 years. Despite this increased spending level, a large number of studies have failed to link increased education expenditures with higher education outcomes. What has come to be known as the Coleman Report (1966) is the first comprehensive study to examine the most important determinants of student performance.[47] The report found that a student's family background and his or her peer group were the most important factors in determining academic performance. School resources, on the other hand, accounted for very little of the variation in student performance.

Hanushek (1997) reviewed nearly 400 studies that examined the impact from increased educational expenditures on improving education outcomes.[48] Summarizing his findings, Hanushek claimed that "there is no strong or consistent relationship between school resources and student performance. In other words, there is little reason to be confident that simply adding more resources to schools as currently constituted will yield performance gains among students."[49] In a more recent review (2016) Hanushek similarly finds no relationship between education performance and dollars spent.[50] With respect to specific outcomes, Hanushek finds no correlation between increases in real per-pupil spending and: improvements in 4th grade reading achievement; improvements in 17-year olds reading and math performance on the National Assessment of Educational Progress tests in 2012 compared to the early 1970s; or, decreases in the achievement gap of black 12th graders relative to white 12th graders (which are still similar to the gaps identified in 1965).

Several other researchers have found similar results consistent with Hanushek's findings. For instance, a 2008 Heritage Foundation Report compared "real per-pupil expenditures with American students test scores on the long-term National Assessment of Educational Progress (NAEP) reading examination from 1970 to 2004. While spending per pupil has more than doubled, reading scores have remained relatively flat."[51] Similarly, the Heritage Foundation noted that high school graduation rates have remained flat, and the achievement gap across different ethnic groups continues to persist despite the more than doubling of resources devoted toward education. A 2012 report from State Budget Solutions also noted that "higher levels of funding do not ensure higher graduation rates, nor do they directly correlate to higher test scores on the ACT."[52]

As opposed to test scores, Betts (1999) also considered the future earnings of students as a measure of the quality of education.[53] Specifically, Betts notes that earnings may be a "more meaningful indicator of adult success than test scores."[54] And, on this measure, Betts concludes that "overall, existing work on the impact of school resources on earnings does not provide an overwhelming case for additional expenditures, especially in American schools."[55]

Comparing U.S. educational expenditures and outcomes on an international basis, Szafir and Lueken (2015) noted in Forbes that:

> In 2011, the U.S. spent $11,841 for every student enrolled in traditional primary and secondary public schools. This amount is 5th highest among all countries in the Organization for Economic Co-operation and Development (OECD) and $2,973 per pupil higher than the OECD average. At such an amount, it's very difficult to question our commitment to funding public education. Yet, despite these expenditures, we have failed to create a world-class education system. Among OECD countries, the U.S. ranks 27th in math, 17th in reading, and 20th in science. Less than one-third of all U.S. students are proficient in math and reading. We also struggle to educate poor children. More than half of the OECD countries had higher portions of resilient children, poor children who manage to perform in the top quartile of students in OECD countries, than the U.S.[56]

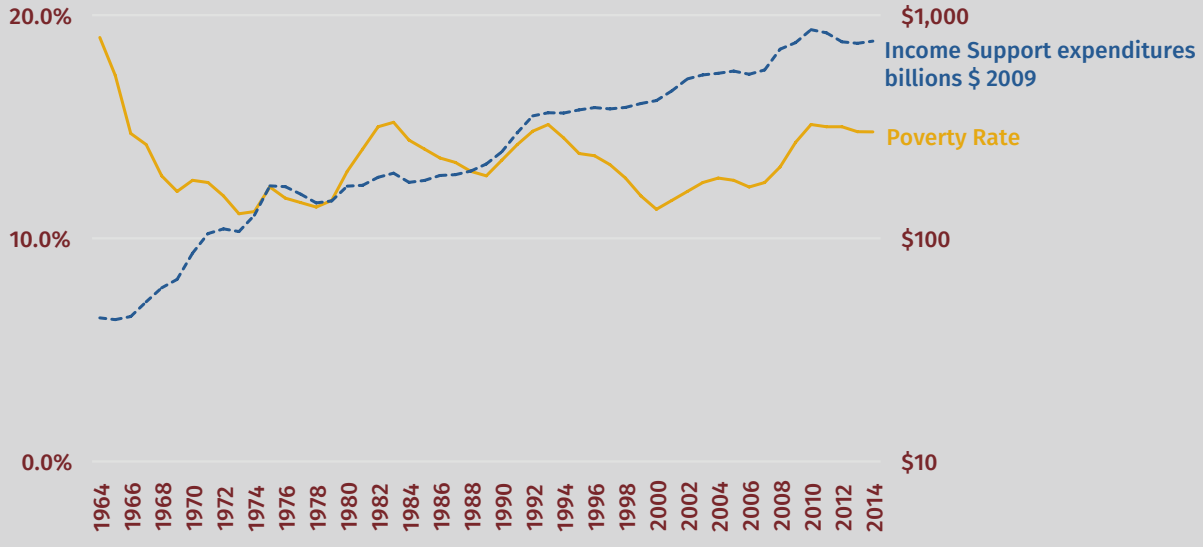
From an education policy perspective, the findings from these studies indicate that, above a certain threshold, how education expenditures are spent matters as much, perhaps more, than how much money is being spent. Furthermore, significant education reforms are necessary (and possible) that can increase the marginal value of education expenditures. For our purposes here, an economic growth perspective, the weak/negative relationship between greater education expenditures and greater education outcomes is an indication that the value added from incremental increases in education expenditures (based on the current resource allocation) are less than the cost of taxation – given the current size and manner in which education dollars are spent, increases in education spending do not add value to the private economy.

Income support

Most income support programs have their genesis in President Johnson's War on Poverty, which was *declared* in 1964. The goal of the War on Poverty was the elimination of poverty in the U.S. In response, and similar to the example of education expenditures, federal, state, and local expenditures for income support programs (excluding disability and retirement programs) have been growing over time.

Defining which expenditures should count as income support or welfare expenditures is itself a complex question. For instance, are federal education loans an income support program? What about earned income tax credits? We define income support expenditures based on the U.S. Bureau of Economic Analysis definition of government social benefits excluding payments for retirement and disability, see Figure 28.[57] Figure 28 illustrates that since the War on Poverty was declared in 1964, income support payments, which visibly surge and decline with the business cycle, have been generally growing over time – adjusted for inflation, income support expenditures have grown 5.9 percent per year between 1964 and 2014 compared to overall expenditures growth between 1964 and 2014 of 3.4 percent per year.[58]

FIGURE 28. Total Inflation Adjusted Income Support Expenditures Compared to Poverty Rate
1964 through 2014



Source: U.S. Census and U.S. Bureau of Economic Analysis

Despite the real growth in income support expenditures, there has been no underlying decline in the official poverty rate. Therefore, if the goal of these programs is the elimination of poverty (as envisioned by the program's creators), increasing expenditures on income support programs has not achieved their ultimate goal. However, according to the U.S. Census, "the official poverty definition uses money income before taxes and does not include capital gains or noncash benefits (such as public housing, Medicaid, and food stamps)."[59] Therefore, when government noncash support benefits are included, many families whose incomes are below the poverty threshold have an increased ability to consume more goods and services – the discomforts associated with being poor are lessened.

Undoubtedly, such a reduction is an important first step in poverty alleviation. However, based on the definition of income support expenditures from Figure 28, the federal, state, and local governments spent $16,396 per person in poverty as of 2014. Given that the poverty threshold for a one person family in 2014 was $12,071 (for a family of four people the poverty threshold was $24,230), government expenditures are more than enough to lift every household out of poverty. As a consequence, the underlying trends of rising expenditures combined with an inability to reduce poverty, are an indication that the additional expenditures are not providing great value. Several more in-depth studies provide further support.

The underlying trends of rising expenditures combined with an inability to reduce poverty, are an indication that the additional expenditures are not providing great value.

A 2012 Cato report by Michael Tanner noted that "we are spending more than enough money to have significantly reduced poverty. Yet we haven't. This should suggest that we are doing something wrong. This is not just a question of the inefficiency of government bureaucracies, although the multiplicity of programs and overlapping jurisdictions surely means that there is a lack of accountability within the system."[60] Instead of focusing on making poverty more comfortable, Tanner suggests reforms should focus on providing people with the tools necessary that will help them earn a higher standard of living.

A 2013 Brookings Institution article by Ron Hoskins noted the same trends:

> We already spend more than enough money on means-tested programs for poor and low-income people to bring them all out of poverty. There were about 46.5 million people in poverty in 2012, a year in which spending on means-tested programs was around $1 trillion. If that money were divided up among the poor, we could spend about $22,000 per person. For a single mother and two children, that would be over $65,000. The poverty level in 2013 for a mother and two children is less than $20,000. So this strategy would work, but giving so much money to young, able-bodied adults would not be tolerated by the public. Besides, if government gave this much cash to non-workers, many low-wage workers would quit work so they too could collect welfare.[61]

Similar to the Cato report, Hoskins emphasizes a reform to the welfare system that emphasizes education, family composition, and work.

A 2014 Heritage Foundation report similarly concludes that while income support expenditures have succeeded in raising the living standards of the poor, these programs have failed to achieve their designed goals.[62] Specifically, the Heritage Foundation notes that

> LBJ actually planned to reduce, not increase, welfare dependence. He declared, "We want to give the forgotten fifth of our people opportunity not doles." He claimed that his war would enable the nation to make "important reductions" in future welfare spending: the goal of the War on Poverty, he stated, would be "making taxpayers out of taxeaters" because he viewed the War on Poverty as a means to increase self-support, Johnson proclaimed that it would be an "investment" that would "return its cost manifold to the entire economy."[63]

Similar to the education expenditures' case study, reaching the goal of significantly less poverty in the U.S. depends more on the manner in which government expenditures on income support programs are allocated rather than increasing the amount of expenditures allocated toward the programs. From a value added perspective, because increased allocations toward income support programs do not help reach their goals, incremental increases in income support programs are unlikely to add additional value to the economy.

Summing up

The purpose of reviewing the education and income support programs case studies is to provide further perspective on whether the current size and composition of government expenditures are adding value to the private economy. Assuming that the program's goal accurately reflects desired value by citizens, then an indication that these government expenditures are creating value (on net) is that the programs are effectively meeting the stated goal – the quality of education is improving with additional dollars being spent, and structural poverty (the percentage of people living in poverty long-term) is declining with additional dollar spent.

Upon review of the outcomes and the inflation adjusted dollars spent on these programs, it is clear that, given the current size of government expenditures as well as the manner in which the revenues are raised, additional government expenditures are not contributing to economic growth (i.e. the value generated from government expenditures are not meeting the value threshold of $1.16 to $1.27).

The results for the income support programs are particularly troubling given the predominant role of transfer programs in the government's budget. Many other transfer programs, such as health care, exhibit a similar pattern – total spending as a share of the government's budget (and relative to the private economy) are growing, but metrics of quality are declining. While further analyses are certainly required to verify, these trends indicate that the spending programs prioritized by the government are not currently meeting a net value criterion. Stated alternatively, due to the current level and composition of government spending, increases in government expenditures are detracting from economic growth in the private sector.

Conclusion

The premise of PRI's *Beyond the New Normal* research program is that the slow economic growth experienced by the U.S. economy over the past decade and a half is not an uncontrollable phenomenon that we must accept. Instead, the weak economic growth is the logical result of the economic policies that have been implemented. One reason poor economic policies have been implemented, and have persisted, is due to economic measurement deficiencies that provide inaccurate signals regarding the health of the U.S. economy. The purpose of this paper is twofold.

The government sector should then be evaluated based on whether its expenditures add value to the economy in excess of the costs of raising these revenues through taxes and debt.

First, the paper illustrates that the common convention of combining together public expenditures and private expenditures provides misleading information regarding the health of the U.S. economy. This convention masks important knowledge about the economy due to the fundamental differences between private expenditures and government expenditures. Unlike private expenditures, which convey economic value, government expenditures only convey economic costs. Treating the costs of providing government goods and services as if they represent the value added from that spending creates a distorted view of the impact from government expenditures on the economy – it automatically assumes increasing the cost of government increases the value created for the private economy.

Instead of assuming that every dollar of government expenditures increases economic growth by one dollar (an assumption perpetuated by the way GDP is calculated), economic growth should be measured solely on the growth of the private sector. The government sector should then be evaluated based on whether its expenditures add value to the economy in excess of the

costs of raising these revenues through taxes and debt. A determination of the government's impact on the private economy can be best ascertained through a comprehensive examination of the size and composition of its expenditures, the costs that the tax system imposes in order to fund those expenditures, and an evaluation of whether the government expenditure programs are both pursing, and achieving, value added goals.

Section 2 illustrated that, over the past 50 years, the government sector has expanded faster than the private economy, and the public goods provided by the government sector has transitioned away from traditionally provided public goods (e.g. defense and transportation expenditures) toward transfer payment programs (e.g. health and income security). Since all economic goods, including public goods, exhibit diminishing marginal benefits, the large growth in government expenditures (both in absolute and relative to the private economy) is an indication that the marginal benefits from that spending has declined. The emphasis on transfer payments to the detriment of traditional public goods (and particularly capital goods) is another indication that the marginal value from government expenditures has declined.

Section 3 illustrated that a partial accounting of the costs of raising revenues under the current progressive tax system indicates a cost of at least 16 percent to 27 percent of the total revenues raised – government expenditures will only add value to the economy, on net, if every dollar of expenditures provides at least $1.16 to $1.27 of value. The threshold is even higher than this value estimate once the excessive levels of debt are taken into consideration. These higher debt levels are associated with past consumption of public goods and services, not toward investing in capital expenditures. The consequence is a bias against economic growth and a rising future tax burden that will not be associated with any potential public good or service.

The combination of the spending trends and estimated costs of taxes developed in Sections 2 and 3 raises questions regarding the net impact from an incremental increase in government spending – due to the current size and composition of government spending, additional government expenditures detract from growth in the private economy, they do not promote private sector economic growth.

Section 4 relied on two case studies on education expenditures and income support expenditures to address the question of whether the money the government is spending is achieving its goals. With respect to both programs, even though inflation adjusted expenditures have been growing robustly, there has not been significant progress on meeting the goals of either program (improved education or reduced poverty). The purpose of these case studies is to illustrate the importance of evaluating whether the goals of the government expenditures are valuable and whether additional expenditures help the government reach its goals more effectively.

Accounting for all of these perspectives provides a broader understanding of government spending. Government expenditures whose value exceeds their costs (including the opportunity cost from expropriating the resources from the private sector) enhance economic growth and should be pursued, regardless of business cycle considerations. This is similar to the concept in finance where a project with a positive "net present value" should be undertaken. Alternatively, government expenditures whose value is less than their costs should be cut, regardless of business cycle considerations.

With respect to the problem of slow economic growth, the evaluation of government expenditures and taxes provides a few important insights. First, an evaluation of the health of the economy needs to be based on metrics of the private economy only. Second, due to the costs of raising revenues, every dollar of government expenditures must meet a higher value threshold in order for the public goods and services to create a net value for the economy. As a consequence, third, a reevaluation of the impact from government expenditures on the economy is required. That reevaluation should recognize that incremental government expenditures will not always increase private sector economic growth. Finally, given the current size and composition of government expenditures, when coupled with the current government revenue sources, it is unlikely that increases in government spending will create value that is greater than the incremental cost of raising the revenues. Therefore, increases in government spending relative to the private economy is more likely to be a deterrent to economic growth rather than a promoter of economic growth.

The implications of these results for government fiscal policy are clear. Instead of attempting to promote growth through ever-higher increases in government spending, fiscal policy can best promote economic growth by improving how current expenditures are allocated, reducing the costs associated with the federal, state, and local tax system, and right-sizing the overall level of government expenditures. These topics will be addressed in future papers.

Endnotes

1 While the post-2000 policy environment has become particularly troubling, this does not imply that there were no developing policy distortions prior to 2000. There were. As is often the case with the influence of policy, lag times between a policy's implementation and the economic implications complicate the analyses.

2 The quote is from the isixsigma.com blog authored by James Considine; https://www.isixsigma.com/community/blogs/what-you-measure-what-you-get/.

3 It should be noted upfront that this review of the government sector will raise many issues that, due to space limitations, will not be fully addressed. These issues will be more fully developed in future papers.

4 For a more detailed review of the "bridge to nowhere" see: Utt, Ronald D. (2005). "The Bridge to Nowhere: A National Embarrassment." The Heritage Foundation, October 20; http://www.heritage.org/research/reports/2005/10/the-bridge-to-nowhere-a-national-embarrassment.

5 http://www.buzzfeed.com/jessicamisener/13-of-the-worst-product-flops-of-all-time#.mv9QBzeEm. The fish flavored bottled water was marketed under the name *Thirsty Cat*.

6 Schumpeter, Joseph A. (2011). *Capitalism, Socialism, and Democracy.* New York: Harper and Row (Original work published 1942).

7 These data are available at: http://bea.gov/iTable/index_nipa.cfm.

8 These data are available at www.whitehouse.gov/omb.

9 These data are available at www.federalreserve.gov.

10 It is important to note that a growing share of state and local expenditures are being funded through the federal tax system. This issue will be addressed in future analyses.

11 The private economy is measured as the total income earned by the private sector, gross of taxes, net of depreciation, and includes total compensation of all private sector employees, proprietors' income, corporate profits with inventory valuation and capital consumption adjustment, rental income, and net interest payments. See NIPA table 1.13, 1.14, and 7.5.

12 Using GDP as the base instead of private earnings minus depreciation does not alter the patterns or conclusions of the analysis. However, because government expenditures and private depreciation are added to the denominator, the percentages are smaller.

13 Author calculations based on data from the Office of Management and Budget (OMB).

14 Author calculations based on data from the Bureau of Economic Analysis, National Income and Product Accounts, Table 3.2.

15 Treasury Presentation to TBAC. *Treasury Department Office of Debt Management, FY 2015 Q4 Report;* https://www.treasury.gov/resource-center/data-chart-center/quarterly-refunding/Documents/Nov15%20TBAC%20Presentation.pdf.

16 As of September 2016, the detailed data on government expenditures were not available for 2015 from the Bureau of Economic Analysis, therefore the ending data is 2014 for the detailed government spending data.

17 The federal, state, and local government expenditure data are from the Bureau of Economic Analysis, National Income and Product Account Tables; www.bea.gov.

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27 "Standard on Property Tax Policy." International Association of Assessing Officers, January, 2010; http://www.iaao.org/media/standards/Standard_on_Property_Tax_Policy.pdf.

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29 The literature concentrates on measuring the marginal excess burden from taxes, or the incremental increase in total welfare costs associated with an incremental increase in the tax rate.

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