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The Size and Role of Government: Economic Issues

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Summary

The size and role of the government is one of the most fundamental and enduring debates in American politics. Economics can be used to analyze the relative merits of government intervention in the economy in specific areas, but it cannot answer the question of whether there is "too much" or "too little" government activity overall. That is not to say that one cannot find many examples of government programs that economists would consider to be a highly inefficient, if not counterproductive, way to achieve policy goals. Reducing inefficient government spending would benefit the economy; however, reducing efficient government spending would harm it, and reducing the size of government could involve either one. Government intervention can increase economic efficiency when market failures or externalities exist. Political choices may lead to second-best economic outcomes, however, and some argue that, for that reason, market failures can be preferable to government intervention. In the absence of market failures and externalities, there is little economic justification for government intervention, which lowers efficiency and probably economic growth. But government intervention is often based on the desire to achieve social goals, such as income redistribution. Economics cannot quantitatively value social goals, although it can often offer suggestions for how to achieve those goals in the least costly way.

The government intervenes in the economy in four ways. First, it produces goods and services, such as infrastructure, education, and national defense. Measuring the effects of these goods and services is difficult because they are not bought and sold in markets. Second, it transfers income, both vertically across income levels and horizontally among groups with similar incomes and different characteristics. Third, it taxes to pay for its outlays, which can lower economic efficiency by distorting behavior. Not all taxes are equally distortionary, however, so there are ways of reducing the costs of taxation without changing the size of government. Furthermore, deficit spending does not allow the government to escape the burden of taxation since deficits impose their own burden. Finally, government regulation alters economic activity. The economic effects of regulation are the most difficult to measure, in terms of both costs and benefits, yet they cannot be neglected because they can be interchangeable with taxes or government spending.

There are many different ways to measure the size of the government, making its economic effects difficult to evaluate. Budgeting conventions are partly responsible: tax expenditures, offsetting receipts and collections, and government corporations are all excluded from the budget. But some governmental functions, like regulation, simply cannot be quantified robustly. Discussions about the overall size of government mask significant changes in the composition of government spending over time. Spending has shifted from the federal to the state and local level. Federal production of goods and services has fallen, while federal transfers have grown significantly. In 2009, nearly two-thirds of federal spending is devoted to Social Security, Medicare, Medicaid, and national defense. Thus, there is limited scope to alter the size of government without fundamentally altering these programs. The share of federal spending devoted to the elderly has burgeoned over time, and this trend is forecast to continue.

The size of government has increased significantly since the financial crisis of 2008 as a result of the government's unplanned intervention in financial markets and subsequent stimulus legislation. Much of the increase in government spending is temporary and could be reversed when financial conditions return to normal, although many question how easy it will be for the government to extricate itself from new commitments it has made.

Contents

How Does the Government Affect the Economy? 1
How Large Is the Government? 1
Effect of the Government on Economic Efficiency 12
What Is a Market Failure? 13
Public Goods 13
Common Resources 14
Monopoly Power 14
Externalities 15
Asymmetric Information 16
Failure to Optimize 16
How Do Taxes Affect Economic Efficiency? 17
Balancing Economic Efficiency With Other Goals 18
Effect of the Government on Economic Growth 19
Effect of Spending 20
Effect of Transfers 22
Effect of Taxes 23
Effect of Regulation 24
Concluding Remarks 24

Figures

Figure 1. Federal Outlays and Receipts, 1950-2009 3
Figure 2. Federal Spending by Function, 1962-2009 5
Figure 3. Government Purchases and Transfers, 1950-2009 6
Figure 4. Federal and State and Local Outlays, 1950-2009 9
Figure 5. Public Investment Spending, 1950-2009 21

Tables

Table 1. Estimated Revenue Loss from Income Tax Expenditures Exceeding $10 Billion in FY2011 7
Table 2. Offsetting Receipts and Collections by Type, FY2009 9

Contacts

Author Information 26

The appropriate size and role of the government is one of the most fundamental and enduring debates in American politics. What role does the state play in economic activity? How is the economy affected by government intervention? Many of the arguments surrounding the proper size of government are economic in nature, and these are discussed in this report.

How Does the Government Affect the Economy?

Government activity affects the economy in four ways:

- The government produces goods and services, including roads and national defense. Less than half of federal spending is devoted to the production of goods and services.
- The government transfers income through both the tax system and outlays. Popular perception typically focuses on transfers across income classes through the progressive income tax system and means-tested benefits, referred to as vertical redistribution. But vertical redistribution is dwarfed by horizontal redistribution, transfers unrelated to income class. The largest beneficiaries of transfers are the elderly, through programs such as Social Security.
- The government collects taxes, and that alters economic behavior. For instance, taxes on labor change the incentives to work, while taxes on specific goods (e.g., gasoline) change the incentive to consume and produce those goods.
- The government regulates economic activity for a number of reasons, including environmental protection, workplace safety, and consumer protection. The economic impact of regulation is probably the hardest and most contentious to measure of the four types of government economic activity.[1]

How Large Is the Government?

Before assessing how the government affects economic activity, it is necessary to agree upon how to measure the size of the government. For a number of reasons, this exercise is less straightforward than it may seem.

- **The size of government can be expressed in a number of different units of measurement. Should the size of government be measured in dollars, on a per capita basis, by total employees, or as a percentage of GDP?**

Each measurement has its advantages, but some measurements have more shortcomings than others. If measured in dollars, then those dollars should be adjusted for inflation. The purpose of measurement is to gauge the resources at the government's disposal, and a dollar of tax revenue in 1946 would buy $11 of goods and services in 2009 because of inflation.[2] Measuring the size of government by the number of employees is imprecise because the government can substitute capital for labor over time to accomplish the same tasks with fewer employees. For example, the government's purchase of computers has rendered many clerical jobs obsolete. The federal government can also pay workers in the private labor force through contracts and grants or allow

[1] The term regulation is used in this report in the popular sense to encompass laws, mandates, and government regulations that affect commerce.

[2] Federal Reserve Bank of Minneapolis, "What is a Dollar Worth?," http://www.minneapolisfed.org.

state and local government workers to deliver federal programs in place of federal public servants. One estimate puts the number of private and state and local government workers working for the federal government at more than seven times the size of the federal workforce.[3] Comparisons over time that do not incorporate demographic change are arguably misleading because government spending per capita is more meaningful than total government spending: $458.4 billion in federal spending in 1946 amounted to $3,242 per person then, but would only finance $1,493 per person in 2009.

But over long periods of time, because of the power of compounding, any level of government spending will appear to be insignificant unless it is expressed as a fraction of gross domestic product (GDP) (a measurement that incorporates inflation and population growth). In 1944, at the height of World War II, federal spending was about one-third of today's federal budget in constant (inflation-adjusted) dollars. Yet outlays in 1944 accounted for 43.7% of GDP, whereas the budget in 2008 accounted for a little more than half that (24.7% of GDP).[4] Nevertheless, some argue that stating the size of government as a percentage of GDP understates increases in government spending in the short term, particularly in years when growth is high. For example, those who claim that government spending increased sharply in 2000 point to the fact that it increased by 2.5% in constant dollars. Those who claim the increase was modest point to the fact that it fell by 0.2 percentage points of GDP. Because this report focuses on long-term trends, all measurements are made as a percentage of GDP.

- **The size of the government can be measured by expenditures (outlays) or revenues (receipts).[5]**

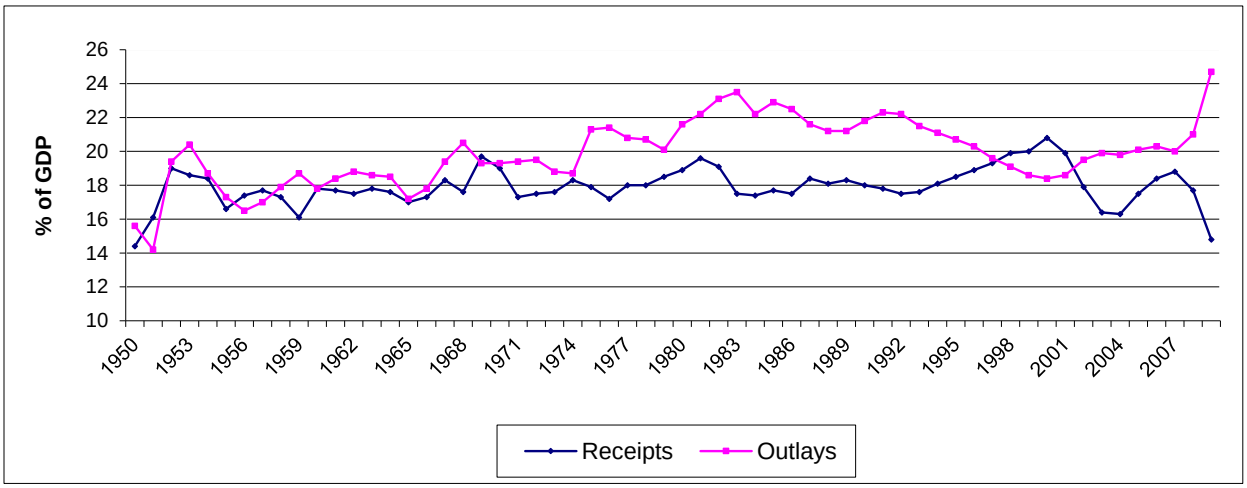
At times when the budget deficit is large, the difference between the two measures is significant, as seen in **Figure 1**. Measured by receipts, the size of government in the post-war period peaked in 2000. Measured by outlays, the size of government peaked in 1983. In 2000, the peak year as measured by receipts, outlays were at their lowest level since 1966. Government has grown since 2000 when measured by outlays, and shrunk measured by receipts.

[3] Paul Light, *The True Size of the Government* (Washington: Brookings Institution Press, 1999).

[4] All budget data are measured on a fiscal year basis unless otherwise noted.

[5] The data reported in budget documents are net receipts and net outlays, and do not include offsetting receipts and collections, which are described below. This report will follow the standard convention of defining receipts and outlays as net measurements, unless otherwise noted.

Figure 1. Federal Outlays and Receipts, 1950-2009



Source: OMB, Budget of the U.S. Government, *Historical Tables*, Table 1.2

Note: Data measured on a fiscal year basis.

There are two main reasons why outlays might be considered a better measure of the size of government than receipts. First, receipts are more volatile than outlays and are only indirectly controlled by legislators. They are particularly sensitive to economic conditions. Receipts did not peak in 2000 because of changes in the tax code, but because of the interaction between the tax code and the rapid growth in (taxable) income.

Second, outlays and revenues can temporarily diverge because of budget deficits. But eventually, the budget must be brought back into balance. Therefore, cutting taxes without corresponding spending cuts does not permanently reduce the size of government, and measuring the size of government by revenues gives the misleading impression that government is smaller than it is. Furthermore, although people often refer to the burden of high taxes, that burden cannot be avoided in the long run through deficits because deficits impose a burden that is every bit as real as taxes.[6] In other words, a given level of spending requires the resources of individual taxpayers, whether deficit financed or tax financed; all that changes is the timing of its incidence.

Although it is sometimes argued that deficits hold down the growth in spending for political reasons, deficits directly increase the outlays needed to maintain a fixed level of government services in the future by increasing interest payments on the national debt. In other words, if spending is constant over time, a $1 tax cut today will lead to a tax increase of $1 plus compounded interest in the future. This raises a further question: if interest payments are the direct result of deferring payments for past spending to the present, should they be included in comparisons of the size of government over time? Including net interest payments, as current practice does, makes the government appear to be larger following periods of large deficits relative to the period before the deficits. Excluding them gives a different budget picture: for example, high interest payments in the 1990s and 2000s obscure the fact that other outlays at the time were as small as they had been in the 1960s.

Because this report focuses on long-term trends, it measures the size of government by spending. When measured by outlays, the size of government followed an upward trend until 1983, and followed a downward trend until 2000. Outlays rose from 14.7% of GDP in 1947 to 23.5% in

[6] See also CRS Report RL30520, *The National Debt: Who Bears Its Burden?*, by Marc Labonte, and CRS Report RL31775, *Do Budget Deficits Push Up Interest Rates and Is This the Relevant Question?*, by Marc Labonte.

1983. They then fell to 18.4% of GDP in 2000, and have increased since. Outlays were below 20% of GDP from 1947 to 1974 (with the exception of 1953 and 1968), above 20% of GDP from 1975 to 1996, and were below 20% of GDP from 1997 to 2002, but have been above 20% of GDP again in 2006 and since 2008.

- **A look at total spending masks large compositional changes in spending over the post-war period.**

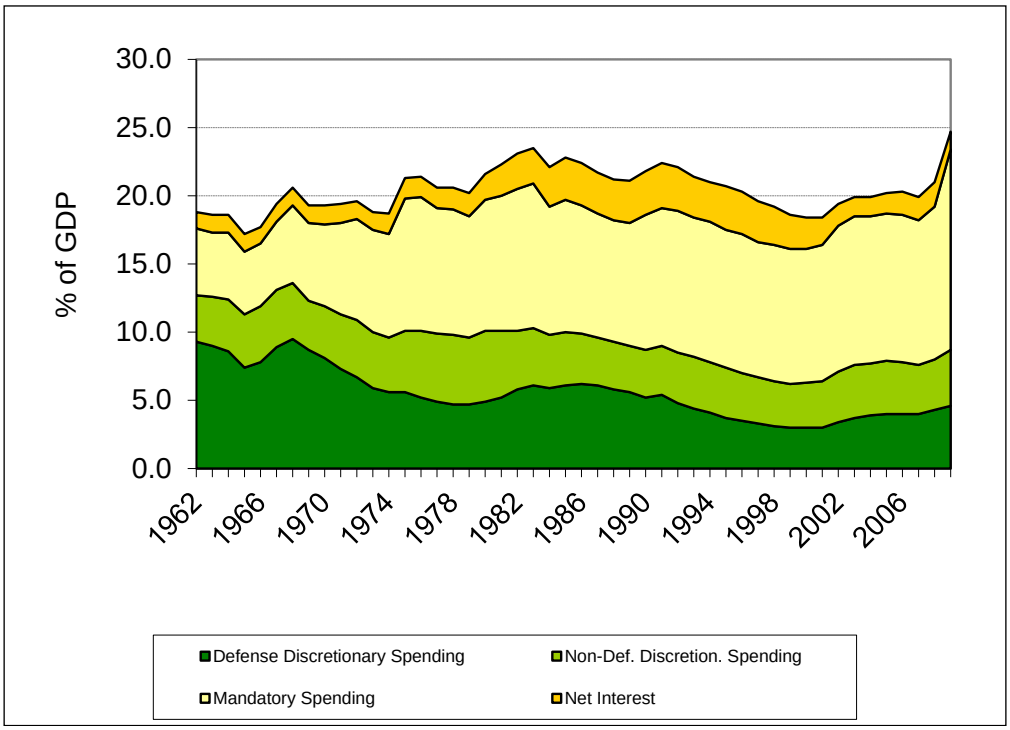
In a nutshell, the government's largest activity has gone from national defense in the 1960s to transfers to the elderly today. Defense spending peaked at 9.5% of GDP in 1968, and then fell to 4.7% of GDP in 1978. It then rose to 6.2% of GDP in 1986, before beginning a sharp decline to 3.0% of GDP in 2001. It began rising again and stood at 4.6% of GDP in 2009. At the same time, mandatory spending (excluding net interest) has risen from 4.9% of GDP in 1962 to 14.7% in 2009. In the long run, much of the growth in mandatory spending has been in programs for which the elderly are major beneficiaries.[7] Non-defense discretionary spending, which includes spending on transportation, education, the environment, and numerous other government activities, grew from 3.4% of GDP in 1962 to 5.2% in 1980. It has been below 4% of GDP since 1984, and stood at 4.1% of GDP in 2009. Net interest on the publicly held national debt grew significantly in the 1980s and 1990s because of the government's budget deficits. In the post-war period to the 1980s, it had always been below 2% of GDP; in the 1980s and early 1990s, it exceeded 3% of GDP.[8] The surge in the deficit since 2008 has not led to a significant increase in net interest to date because of unusually low interest rates.

It is useful to remember that federal spending is overwhelmingly devoted to a handful of activities. Defense spending, Social Security, Medicare, and Medicaid accounted for nearly two-thirds of all federal outlays in 2009. Thus, any proposal to reduce the government's size would be unlikely to make much of a dent in overall spending unless it reduced one or more of these programs.

[7] Mandatory spending programs for which the elderly are major beneficiaries include Social Security, Medicare, Supplemental Security Income, veterans benefits, and federal (civilian and military) pensions. In addition, Medicaid finances long-term care.

[8] Data in this paragraph can be found in OMB, Budget of the U.S. Government, *Historical Tables*, Table 8.4.

Figure 2. Federal Spending by Function, 1962-2009



Source: OMB, Budget of the U.S. Government, *Historical Tables*, Table 8.4.

Note: Data measured on a fiscal year basis. This data series not available before 1962.

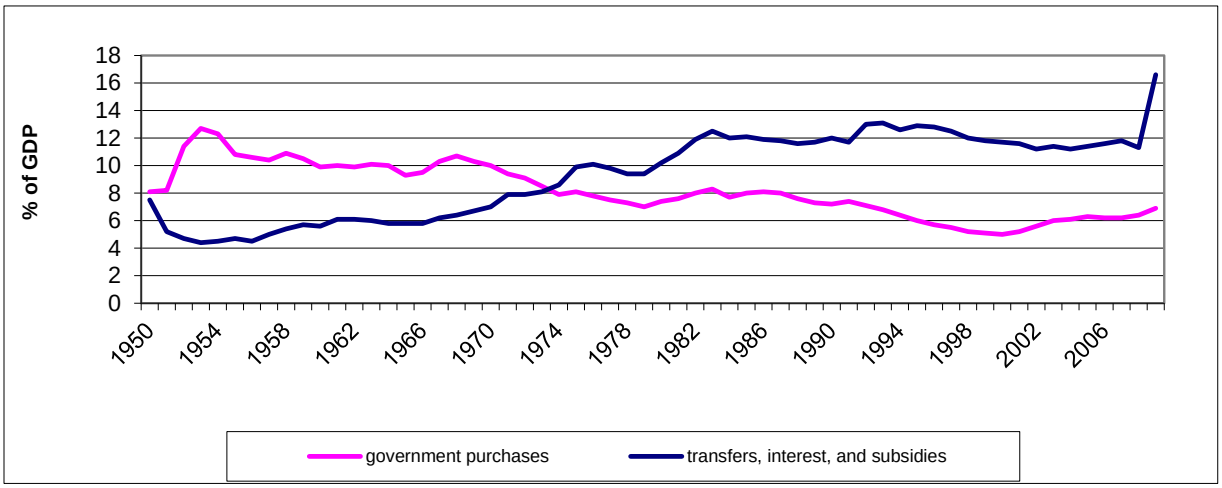
- **Government transfers and government purchases of goods and services have different and distinct effects on the economy.**

Economists draw a distinction between government outlays spent on goods and services (purchased from the private sector or produced directly by the government) and outlays that transfer resources from one set of private individuals (taxpayers) to another. Because a significant portion of government spending is devoted to government transfers to individuals, much of the revenue collected through taxation is ultimately spent by the private sector on private sector goods and services (after it is transferred by the government). Government transfers do not employ U.S. capital and labor (except to administer those transfers) in the same way as government production of goods and services. Government transfers basically shift private sector spending from one group of private individuals to another.[9] By shifting income from its market allocation, government transfers still have an effect on the economy, however, because the transfers and taxes to finance them alter the incentives to work and save.

The merits of government transfers cannot typically be evaluated on the basis of economic efficiency alone, because they often pursue social goals. By contrast, government production of goods and services falls comfortably within the framework of economic efficiency based on whether the spending addresses a market failure, as explained in the next section.

[9] Most transfers are from U.S. taxpayers to other Americans. Some transfers go to foreigners, however, because of federal debt service paid to foreigners and foreign aid. See BEA, National Income and Product Accounts, Table 3.2.

Figure 3. Government Purchases and Transfers, 1950-2009



Source: OMB, Budget of the U.S. Government, *Historical Tables*, Table 14.2.

Note: Data measured on a fiscal year basis. Grants to state and local government not included. Interest is defined as net interest paid on the national debt. Subsidies are measured as net outlays to government corporations.

Transfers can result in vertical redistribution, transfers among income classes, or horizontal redistribution, transfers unrelated to income class. Most transfers on the spending side of the budget result in horizontal redistribution. For example, the largest portion of government transfers are directed to the elderly, notably through Social Security. (Social Security contains an element of vertical redistribution in that the tax-benefit formula is more favorable as income declines, but its main function is horizontal redistribution.) Another large category of transfers is devoted to interest on the national debt, which represents a transfer from taxpayers to bondholders. Transfers also include net subsidies to government corporations, which are discussed below. The largest portion of government production is directed to national defense.[10]

The distinction between government transfers and government production of goods and services becomes important when making historical comparisons. Total federal outlays have remained in the range of 20% with a slow upward trend for most of the post-war period, but this masks large changes in the composition of federal outlays. Since the 1950s, outlays for federal production and transfers have moved in the opposite direction. While government production was nearly three times as large as government transfers in the early 1950s, production is only half as large as transfers today.

- **Measuring the size of government by receipts or outlays omits tax expenditures.**

Tax expenditures are defined in the Congressional Budget Act of 1974 (P.L. 93-344) as "revenue losses attributable to provisions of the Federal tax laws which allow a special exclusion, exemption, or deduction from gross income or which provide a special credit, a preferential rate of tax, or a deferral of liability." They take many forms and cover many policy areas; a Senate Budget Committee compendium identifies 186 corporate or income tax expenditures in current

[10] Data on federal production of goods and services and transfers does not include grants to state and local governments. A non-comparable data series on grants to state and local governments from OMB suggests that grants for transfers are about twice as large as grants for production in recent years.

law.[11] Revenue loss attributable to these tax expenditures totaled $1.2 trillion in FY2008.[12] This is larger than total discretionary spending (defense and non-defense) in FY2008, yet tax expenditures do not show up directly on the outlay or revenue side of the budget.[13] **Table 1** lists the largest tax expenditures. As a comparison, the tax expenditure for the deduction of mortgage interest is larger than the entire FY2008 appropriation for the Department of Housing and Urban Development (HUD).

Table 1. Estimated Revenue Loss from Income Tax Expenditures Exceeding $10 Billion in FY2011

(projection, in billions of dollars)

	FY2011	FY2011-FY2015 (cumulative)
Exclusion of employer medical insurance premiums and medical care	$177.0	$1,0543.8
Deductibility of mortgage interest of owner-occupied housing	$104.5	$638.0
401(k) plans	$67.1	$360.8
Deductibility of non-business state and local taxes other than owner-occupied homes	$46.5	$300.1
Step-up basis of capital gains at death	$44.5	$282.8
Capital gains (except agriculture, timber, and coal)	$44.3	$270.9
Deductibility of charitable contributions, other than education and health	$43.9	$223.9
Employer plans	$44.6	$247.5
Exclusion of net imputed rental income	$37.6	$223.9
Deferral of income from controlled foreign corporations (normal tax method)	$32.7	$35.8
Capital gains exclusion on home sales	$31.3	$215.9
Exclusion of interest on public purpose state and local bonds	$28.7	$180.4
Treatment of qualified dividends	$26.9	$26.9
Deductibility of state and local property tax on owner occupied loans	$23.1	$151.2
Exclusion of interest on life insurance savings	$23.1	$132.3
Social Security benefits for retired workers	$20.2	$115.2
Child Credit	$18.6	$60.3
Keough Plans	$15.1	$95.8
Making work pay tax credit	$14.2	$14.1
Individual Retirement Accounts	$14.1	$78.9

Source: OMB, Budget of the U.S. Government, *Analytical Perspectives*, Table 16.3.

[11] U.S. Congress, Senate Committee of the Budget, *Tax Expenditures: Compendium of Background Material on Individual Provisions*, committee print 110-667, 110th Cong., 2nd sess. (Washington: GPO, 2008).

[12] According to the compendium, this is the sum of the estimated revenue gains from repealing each tax expenditure individually. It is not the estimated revenue gain from repealing all tax expenditures simultaneously since that would lead to interactions among the repeal of different expenditures.

[13] Generally, the refundable portion of a tax expenditure is counted as an outlay, but very few expenditures are refundable so only a small proportion of total tax expenditures is counted as outlays. Refundable credits are tax credits which are paid when the taxpayer has no tax liability.

Note: Data measured on a fiscal year basis.

Economists would argue that, in many ways, tax expenditures are equivalent to government spending, and which is preferable depends on which is a more effective or efficient way of achieving any particular goal. For example, a $1,000 child tax credit is equivalent to the government sending a check for $1,000 to parents who have eligible children and meet the credit's income requirements. Similarly, a tax deduction for mortgage interest for a taxpayer in the 33% marginal income tax bracket is equivalent to the government sending the taxpayer a check for 33 cents for every dollar of mortgage interest paid. From a revenue perspective, the equivalence comes from the fact that marginal rates must be raised to the same extent to finance an expenditure whether it is a tax expenditure or an outlay. Because tax provisions are permanent (unless they include an expiration date), however, revenue loss from specific expenditures may rise over time automatically without congressional action, unlike appropriated spending. If this equivalence argument is correct, measures of the size of government that omit tax expenditures drastically underestimate its size.

- **Measuring the size of government by receipts or outlays omits offsetting receipts and collections.**

The outlay and revenue totals discussed here and in the federal budget are net measures, and do not include offsetting receipts and collections. These are the income that the government receives, primarily from business-like activities (many are user fees). Mostly, the offsetting receipts and collections go directly toward the provision of those activities for which they were collected, in some cases without appropriation. These include receipts collected directly by the government for health care premiums through Medicare, national park user fees, and proceeds from the sale of government resources. They also include receipts collected by government corporations (defined below) such as the Postal Service, the Export-Import Bank, and the Federal Deposit Insurance Corporation. The receipts and collections are not included in revenues, and the outlays that they fund are subtracted from total outlays.

OMB justifies the exclusion of offsetting receipts and collections from the budget on the grounds that "[t]he budget focuses on ... outlays and receipts that measure governmental activity rather than a combination of governmental and market activity."[14] What should be realized is that even if offsetting collections and receipts are not included in the budget as revenues because they represent choices made in the marketplace (i.e., they are not compulsory like taxes), removing them from revenues also causes the activities that they finance to be removed from the outlay side of the budget. Some budget analysts argue that this keeps many of the financed activities outside the oversight and deliberation of the annual appropriation process.

Regardless of whether offsetting receipts and collections finance "public goods" or (government-provided) "private goods," when thinking about the size of the government in relation to private economic activity, it may be sensible to include them, and they are not an insignificant sum. In 2009, offsetting collections and receipts totaled $424 billion, about 12% as large as outlays included in the budget. **Table 2** lists the largest offsetting receipts and collections in 2008. To the extent that offsetting collections and receipts have grown over time, removing them from the budget arguably underestimates the growth in the size of government.[15]

[14] OMB, *Analytical Perspectives*, Budget of the U.S. Government, FY2004, Ch. 21.

[15] For example, the Government Accountability Office estimates that the user fees it studied increased by 27% in real terms from 1991-1996. See GAO, *Federal User Fees: Budgetary Treatment, Status, and Emerging Management Issues*, AIMD-98-11, December 1997.

Table 2. Offsetting Receipts and Collections by Type, FY2009

(in billions of dollars)

Postal Service	69
Medicare premiums	57
Military assistance program sales	25
FDIC fees and recoveries	21
Energy-related	19
Other	233

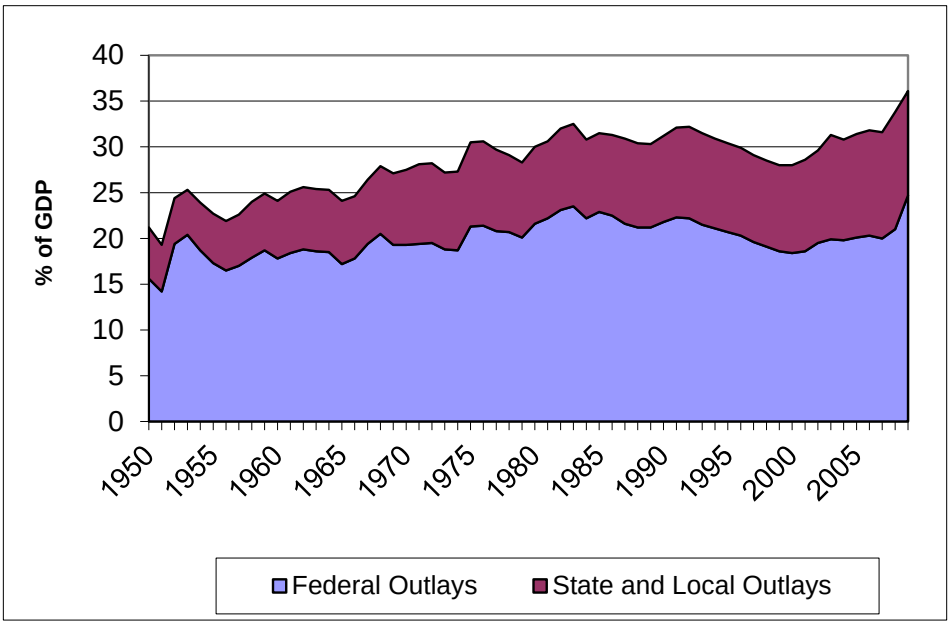
Source: OMB, Budget of the U.S. Government, *Analytical Perspectives*, Table 18.5.

Note: Data measured on a fiscal year basis.

- **When considering government's influence on the economy, it is best to include government spending at the state and local level.**

When state and local government spending is included, the decline in the size of the government since 1983 is smaller because of the corresponding increase in the size of state and local government. State and local government outlays grew from 7.1% of GDP in 1950 to 9.8% in 1983.[16] But unlike the federal government, state and local outlays have grown since 1983, equaling 11.4% of GDP in 2009. The growth in state and local government is larger (and the growth in the federal government is smaller) if one includes federal grants to state and local governments, which have grown from 0.7% of GDP in 1950 to 3.8% of GDP in 2009. In contrast to the federal government, at the state and local level government purchases significantly exceeds government transfers.

Figure 4. Federal and State and Local Outlays, 1950-2009



Source: OMB, Budget of the U.S. Government, *Historical Tables,* Table 15.3.

[16] These figures refer to own-source state outlays, and do not include state outlays financed by grants from the federal government. Those grants are included in federal outlays.

Note: Data measured on a fiscal year basis. State and local outlays include own-source outlays only. State and local outlays from federal grants are included in federal outlays.

- **Should government corporations be included in discussions involving the size of government? Should government-sponsored enterprises be included?**

Government corporations are government agencies that provide market services and raise revenue that partly or fully cover their expenses. The Postal Service, AMTRAK, and the Federal Deposit Insurance Corporation are prominent examples. For the most part, their revenues and expenses occur outside of the budget. Surpluses are returned to the Treasury and the corporation may receive appropriated subsidies or loans from general revenues. The activities of these agencies are recorded in the federal budget only in-so-far as they receive subsidies or federal loans, or generate surpluses. They do not have shareholders, and raise capital through the Treasury's Federal Financing Bank. Some raise capital independently of the government; for example, the Tennessee Valley Authority issues its own bonds.

In economic terms (business decisions, budgets, products, and so on), these corporations may more closely resemble private businesses, and have little input from the executive branch or legislature in day-to-day decision making. Nevertheless, the organizations are part of the government, and not privately owned. In that way, the major difference between them and the rest of the government is that they provide goods and services that are sold in the market, whereas typically the government provides non-market goods (e.g., education, defense, and highways). Sometimes the government corporations compete with private corporations (e.g., package delivery by the Postal Service), and sometimes they have a monopoly (e.g., letter delivery by the Postal Service).[17] Government corporations account for about 1% of national income, a fraction that has stayed relatively constant over time.[18]

In addition, there are "quasi-government" organizations with more distant ties to the government than government corporations, but distinct from the private sector. These include RAND, the Smithsonian Institution, and government sponsored enterprises (GSEs), such as Fannie Mae and Freddie Mac.[19] What they have in common are legal characteristics that in some way link them to the government. For example, the GSEs were federally chartered by the government and have special borrowing privileges from the U.S. government. However, they are shareholder-owned corporations with management structures independent of the government and did not receive government appropriations (although their ties to government increase the firms' market value.) In 2008, Fannie Mae and Freddie Mac were taken into conservatorship by the federal government and began to receive direct financial support. To many critics, this outcome confirmed that quasi-governmental organizations should be viewed as fundamentally governmental in nature.[20]

- **The focus on an annual cash flow budget neglects the fact that policy decisions made today can have long-run consequences that are not reflected in today's budget.**

This can occur in a number of ways. Many recent tax cuts and spending programs are being phased in over a number of years. For example, under P.L. 107-16, signed into law in 2001, the

[17] For more information on government corporations, see CRS Report RL30365, *Federal Government Corporations: An Overview*, by Kevin R. Kosar.

[18] BEA, National Income and Product Accounts, Table 1.13.

[19] Some analysts argue that the primary motivation for the creation of certain GSEs was to remove their costs from the federal budget. For example, see Roy Meyers, *Strategic Budgeting* (Ann Arbor: University of Michigan Press, 1996), pp. 72-79.

[20] For more information on the quasi-government, see CRS Report RL30533, *The Quasi Government: Hybrid Organizations with Both Government and Private Sector Legal Characteristics*, by Kevin R. Kosar.

estate tax will not be eliminated until 2010. Spending on multi-year projects can lead to implicit future spending commitments even if explicit commitments are not made. For example, once a military hardware investment project begins, it may be highly impractical to stop funding the project before it has been completed. Nevertheless, defense spending, like all discretionary spending is assumed to grow at the rate of inflation in the budget baseline, and future budget totals are not adjusted for multi-year spending projects.

Mandatory spending can increase with no change in law when the number of eligible beneficiaries increases. The example of this phenomenon that dwarfs all others under current policy is entitlement spending on the aged. Under current policy, the retirement of the baby boomers and the increase in life expectancy are projected to cause spending on Social Security, Medicare, and Medicaid to increase from 7.4% of GDP in 2000 to 18.5% of GDP in 2050.[21] While the spending increase will not occur until the future, the promises to increase spending have already been made. These promises are not reflected in the current year budget, and unlike a private pension plan, the payroll taxes being collected from baby boomers while they work are not set aside to fund the future obligations they have secured under current law. In all, one recent study estimated that the government's total future unfunded liabilities equaled $44.2 trillion in present value terms.[22] Some budget analysts have argued that the budget should be measured using a different accounting method (e.g., accrual accounting) so that liabilities incurred today are recorded in today's budget. Different accounting methods might tell a significantly different story about changes in the size of government over time.[23] The shortcoming of cash flow budgeting as a measure of size of government can be expressed in the question: does the more than doubling of elderly entitlement spending as a percentage of GDP projected under current policy really imply any growth in the size of government when the benefits any individual is entitled to remain the same?

- **Economic conditions can temporarily alter the size of government.**

In the absence of policy changes, economic conditions cause mandatory spending and revenue levels to automatically change, a phenomenon known as "automatic stabilizers." For example, when the economy enters a recession, benefits paid under certain mandatory spending programs such as unemployment insurance automatically rise and revenues automatically fall as taxable income falls. CBO estimates that the recession automatically reduced revenues by $222 billion and increased outlays by $85 billion in 2009.[24]

Changing economic conditions may also lead to policy changes that temporarily alter outlays or revenues. In 2009, economic stimulus legislation (P.L. 111-5) was enacted that increased spending by $575 billion and decreased revenues by $212 billion over 10 years. About 90% of the costs occur in the first three years. The 2008 financial crisis led to the authorization of $700 billion for the Troubled Assets Relief Program (TARP; P.L. 110-343) and government conservatorship of Fannie Mae and Freddie Mac.[25] Because of government accounting

[21] OMB, Budget of the U.S. Government, *Analytical Perspectives*, FY2011, Table 5-1.

[22] Jagdeesh Gokhale and Kent Smetters, *Fiscal and Generational Imbalances* (Washington: American Enterprise Institute Press, 2003).

[23] See Mario Blejer and Adrienne Cheasty, "The Measurement of Fiscal Deficits: Analytical and Methodological Issues," *Journal of Economic Literature*, vol. XXIX, December 1991, p. 1644.

[24] Note that if measured by outlays, a recession automatically increases the size of government, but measured by revenues, it decreases the size of government.

[25] Although these programs are recorded as new spending in the budget and are new from a legal perspective, an economic argument can be made that these programs should be considered as existing implicit, contingent liabilities that were made explicit as a result of the financial crisis. Although there was previously no explicit government safety

conventions, the ongoing budgetary costs of these actions were largely recorded in 2009. Although this spending is scheduled to wind down as economic conditions improve, some commentators argue that government programs that are introduced on a temporary basis tend to ultimately result in permanent increases in government spending.

- **Spending and tax revenue are not the only ways to think about the size of the government.**

The government can arguably have a bigger (smaller) role in the economy without spending more (less). Government regulation (in the form of laws, regulations, or mandates) undoubtedly has an economic impact every bit as real as spending or taxation, but the cost of regulation is difficult to quantify and is not measured overall by any official source.[26] Recent policy debates on health care reform, financial regulatory reform, and offshore oil drilling illustrates that regulation can have a large influence over economic activity. And yet to ignore it in discussions of the size of government could be misleading. For example, consider a government proposal to reduce the consumption of a product (gasoline, cigarettes, alcohol, and so on). The government could reduce consumption by paying people not to use the product or paying them to use an alternative, which would be counted as an increase in government outlays. The government could tax the product to reduce its use by making it more costly, which would be counted as an increase in government revenues. Or it could pass regulations forbidding or restricting its use, which would not show up on either side of the budget's ledger. Yet all three proposals could be crafted to have the exact same effect on the quantity of the good consumed.

Effect of the Government on Economic Efficiency

How can policymakers determine the appropriate role of the government in the economy? Most economists judge the economic merit of any government program based on its effect on economic efficiency. Does larger government raise economic efficiency or lower efficiency? The only overarching answer that can be offered is: it depends. Economic theory is clear that government intervention has the potential to improve efficiency when market failures exist, but is likely to reduce efficiency when markets are already "perfect," which is defined below. In reality, government intervenes both in cases of market failure and in cases where markets are already operating relatively efficiently.

As a result, some government policies raise economic efficiency and some lower efficiency. By no means are all spending decisions made by the government today justified on efficiency grounds. If it were possible to isolate and eliminate all actions that lowered efficiency, economic welfare could hypothetically be improved by reducing the size of government. Likewise, one could identify areas where government intervention could improve currently uncorrected market failures and a larger government would theoretically improve economic efficiency.

Before discussing what constitutes a market failure, it is useful to define economic efficiency, which differs from popular parlance. As opposed to its popular usage, economic efficiency does not involve economic growth, wealth, or productivity. In fact, there are examples where efficiency is at loggerheads with these goals. Generally, an outcome is economically efficient if

net protecting the financial sector from a crisis, because the government never intended to allow large parts of the financial system to collapse, it was inevitable that a program such as TARP would be created in response to a financial crisis. By that logic, it could be argued that the creation of TARP did not increase the true size of government.

[26] The most comprehensive official estimate of the costs and benefits of regulation is probably found in Office of Management and Budget, *Draft 2005 Report to Congress on the Costs and Benefits of Federal Regulations*, March 2005. It finds that the 10-year cost of regulations reviewed by OMB was $34.8 billion to $39.4 billion.

the marginal cost of producing one more unit of a good is equivalent to the marginal benefit of consuming one more unit of the good. When markets function perfectly, which is defined as a market with many buyers and sellers, no barriers to entry, perfect information, and the costs and benefits of the transaction are completely borne by the buyer and seller, an economically efficient outcome will occur and government intervention can only reduce efficiency. When there are market failures, government intervention has the potential to improve efficiency by moving away from the economically inefficient outcome produced by the market.

Although economic efficiency is easy to define theoretically, discord arises when applied to actual government policies. Typically, an efficiency-enhancing measure cannot be produced without being accompanied by efficiency-reducing side effects. For example, without our criminal justice system markets could not operate, but a criminal justice system cannot be operated without taxes that are likely to take a efficiency-reducing form. While there is a broad consensus that a tax-financed criminal justice system is efficiency-improving on net at some level, there is likely to be disagreement as to whether the benefit derived from a marginal increase in resources devoted to criminal justice from current levels would exceed the costs of a marginal increase in taxation to finance it.

Furthermore, the democratic process is conducive to compromises that include a mixture of efficiency-enhancing and efficiency-reducing measures. Judging the balance between the two is unlikely to produce wide consensus. Economic theory can describe the economic benefits (and costs) of a broad policy approach, but cannot predict how the compromise that emerges from the legislative process will differ from the policy as originally conceived. Measuring efficiency gains and losses of any proposal is more difficult when other policies are also distorting a market. (Personal differences in opinion on these matters go a long way toward explaining the wide ideological diversity within the economics profession.)

What Is a Market Failure?

To understand when government intervention in the economy can increase economic efficiency, it is necessary to define a market failure. Before doing so, it is useful to give examples of what is not a market failure: inequality, poverty, fraud, discrimination, bankruptcy, layoffs, high prices, and so on are not market failures, as defined by economic theory. While they are undesirable phenomena which may be valid targets of public policy, they are problems that either are not economic in nature, or do not meet the definition of economic inefficiency: they do not involve a mismatch between marginal cost and marginal benefit. Economic theory has identified the following major types of market failures:

Public Goods

Some beneficial goods will not be provided by the market because they are "non-excludable" (people cannot be prevented from using the good) and they are "non-rival" (one person's use of the good does not diminish another's use). For those two reasons, a private producer has no incentive to supply the good. Economists refer to goods meeting these two criteria as "public goods," which are often provided only by the government.[27] The classic example of a public good is national defense. Although private armies might be capable of defending the country, there is no incentive to form a private army because nobody would voluntarily pay for its services as a result of the "free rider problem": once an army is in place, it has no means to defend its

[27] Private producers have found ways to provide some public goods. For instance, broadcast television and radio is non-rival and non-excludable, but can nevertheless be privately financed by advertising.

customers from attack without also defending non-customers. Only government, with the power of taxation, can raise the funds to finance an army. Similar public goods include basic knowledge, which once discovered can be enjoyed by all, and the civil and criminal justice system, much of which (e.g., property rights, dispute settlement, contract enforcement) makes market transactions possible.[28]

Because public goods are not transacted through the marketplace, it is difficult to determine whether government overspends or underspends on their provision. The value of any given public good is different for different people, and the political process rather than the marketplace must sort their preferences. For example, could an acceptable level of national defense be attained at lower cost? Or is the nation not secure enough at current levels of spending? During peacetime, these questions cannot be definitively answered.

Common Resources

Another type of good that cannot be efficiently provided by the market is a common resource, such as the environment, ocean fishing, and certain water supplies. Unlike public goods, these resources are rival—a fish or glass of water consumed by one person cannot be consumed by another. But the resources are not excludable because they cannot be assigned property rights. For that reason, they may be overconsumed and can be depleted or even exhausted over time in the absence of government intervention. As a result, government control or regulation is necessary for an efficient and sustainable use of the resources. It is no coincidence that some of the common resources in danger of "depletion" are those such as ocean fishing and the environment that do not fall within the exclusive jurisdiction of a single national government—with no single sovereign entity, over-consumption is harder to prevent.

Although the government has the potential to achieve economic efficiency through the regulation of common resources, its intervention may not move the resource closer to efficient use in practice. For example, many governments have subsidized the fishing industry, potentially exacerbating the depletion of ocean fisheries. Because common resources also cannot be valued through the marketplace, estimating the appropriate level of government intervention is difficult.

Monopoly Power

One reason perfect competition leads to economically efficient outcomes is because any one producer does not have enough market power to push prices above marginal cost. Monopoly producers can do so to earn "economic rents" (excess profits) by reducing production to an inefficiently low level. (Theoretically, there could also be buyers with monopoly power, in which case the outcome would be economically inefficient because price would be driven below marginal cost.)

Monopoly can occur for many reasons, including barriers to entry—legal or natural—and economies of scale. In the narrowest definition of the word, a market with a single producer, monopolies tend to exist only when marginal cost is continually declining (producing one more good is always less expensive than producing the previous good). This special case, known as a natural monopoly, tends to occur in markets where consumption of a good is non-rival (one

[28] To clarify the economic meaning of public good, which may differ from popular usage, it is useful to point out one government service that does not meet the economic definition of a public good, education. Education is an excludable good: a school could conceivably close its doors to keep individuals out if it wished. Education is also a rival good: a book used by one student cannot be used by another.

person's consumption does not come at the expense of another's); utilities (such as electricity, water, cable, telephone) are the most common examples.

In most markets, neither a natural monopoly nor perfect competition exists. The best description for what does exist is termed monopolistic competition, where each company makes a product that is distinct but highly substitutable with its rival (e.g., the Big Mac vs. the Whopper in the fast-food hamburger market), so that each company has some market power. In monopolistic competition, production is still inefficiently low, but closer to the efficient point than in a pure monopoly, and economic rents do not exist. As the number of firms increases and difference between products decreases, the monopolistic competition outcome approaches the perfect competition case.

Economic theory suggests that governments can increase economic efficiency by increasing a monopoly's production to its efficient point through regulation or direct ownership. Both approaches have been used historically for utilities. Over the past three decades, questions have been raised whether government intervention can truly raise economic efficiency even in the case of natural monopolies, given the political intervention, complexity, lack of profit motive, and distorted incentives that regulation produces for the monopoly.[29] Some economists have argued that even when significant market concentration exists, with the exception of the natural monopolies, the potential for competition is powerful enough to deter producers from maximizing monopoly rents even when robust competition does not currently exist. It is noteworthy that government has rarely attempted to intervene to improve efficiency in monopolistic competition, even though a theoretical case could be made to do so. In cases where it has, such as the airline and trucking industries, economic regulation has widely been deemed a failure and largely eliminated.

Monopolies are not always less efficient than perfect competition, and sometimes they are fostered by the government for that reason. For example, as required by the Constitution, the government grants patents and copyrights so that inventors and authors can enjoy monopoly profits for their work. Without these government-created monopolies, there would frequently not be sufficient incentive to undertake those activities.

Externalities

In the market for many goods and services, all the costs and benefits inherent in the consumption and production of a good are borne by the buyer and seller. But some goods also create "externalities" in their consumption or production. Positive externalities are benefits enjoyed by third parties, negative externalities are costs borne by third parties. Again, it is difficult to determine how much government intervention is required to correct an externality since the externality cannot be valued in the marketplace.

Pollution is the classic case of a negative externality. Society as a whole bears the cost of environmental degradation, and there is no incentive for the consumer or producer to take these societal costs into account. As a result, from a societal perspective the good is overproduced and overconsumed in the free market outcome. If a good generates a negative externality, it does not mean that good should not be consumed. It means that to maximize social welfare, the consumption of the good should be reduced to the level that reflects its social costs.

Vaccines are an example of a positive externality. When someone is vaccinated against a communicable disease, society as a whole benefits since that person can no longer contract the

[29] For example, see Richard Posner, "The Social Costs of Monopoly and Regulation," *Journal of Political Economy*, vol. 83, no. 4, August 1975, p. 807.

disease and spread it to others. From a societal perspective, vaccines would be underproduced and underconsumed in the absence of government intervention.

Some social goals are often popularly justified on the grounds that they generate positive externalities, but the criteria to qualify as an externality are strict and economists are divided if social goals qualify. For example, home ownership is often viewed as generating positive externalities because home owners are viewed as having higher incomes, having higher rates of civic participation, and committing fewer crimes than renters. However, it is not clear that home ownership causes incomes and civic participation to be higher and crime to be lower or if it just happens to be correlated with other personal attributes that cause these outcomes.[30] Similar arguments apply to education.

Asymmetric Information

Competitive markets only work efficiently when both buyer and seller are well-informed. In some markets, the buyer may be more informed than the seller, or vice versa. When this happens, the market outcome is inefficient. For example, in insurance markets, buyers know more about their riskiness than sellers. As a result, only buyers with higher risks will tend to purchase more insurance because they are more certain that the benefit of the insurance will exceed the cost. This pushes up the price of insurance and hampers insurers' efforts to pool risk. When government is able to provide information to the uninformed party or make participation mandatory, it can move the market back to an efficient outcome. For auto insurance, many state governments make (some) insurance mandatory to avoid the problem of asymmetric information. For employment insurance, the government provides the insurance directly. The insurance market is also distorted by moral hazard, which occurs when the insured party acts more recklessly as a result of the insurance. For example, some drivers may be more likely to speed or run red lights when they become insured, pushing up the price of automobile insurance.

Asymmetric information is also used as a rationale for financial regulation. Referred to as the principal-agent problem, the manager of a company or bank may not have the same incentives (e.g., the costs of risk-taking) as shareholders or depositors. Information disclosure and accounting laws can increase the information available to monitor the behavior of managers.

Failure to Optimize

Finally, the assumption in economic theory that people make rational, optimal economic decisions that maximize their well-being may be invalid in many cases. Without this assumption, an array of possible government interventions has the potential to improve well-being. An assumption that individuals do not optimize underlies diverse arguments such as Social Security is necessary because people do not save enough, primary education should be mandatory, the Federal Reserve should prevent financial bubbles, and drug use should be illegal.

By its nature, the failure to optimize in any given market is the hardest to prove or disprove. Much economic analysis is based on the construction of theoretical models based on optimizing individuals, which are then tested against empirical evidence. In many cases, the models may be a good approximation of reality not because everyone is rational, but because any individuals making different mistakes nearly cancel each other out. A failure of the evidence to match the model is not necessarily proof that individuals are not optimizing; the model could simply be mis-

[30] See Edward Leamer and Jesse Shapiro, *The Benefits of the Home Mortgage Interest Deduction*, NBER, Working Paper no. 9284, October 2002.

specified. Thus far, robust, testable models in which individuals do not optimize have not attained widespread use.

How Do Taxes Affect Economic Efficiency?

Economic theory characterizes taxes as reducing economic efficiency by "distorting" (changing) the behavior being taxed relative to all other behavior, thus moving behavior away from the efficient market allocation where marginal benefit equals marginal cost. (This is the case if the behavior being taxed does not result in negative externalities; if it does, then the market allocation was not efficient to begin with.) Thus, a sales tax on a specific good (e.g., passenger air travel) changes the choice between the taxed good and non-taxed goods, as well as the relationship between taxed goods and saving. Likewise, a wage tax shifts a worker's allocation of his time between labor and leisure away from an efficient balance (the balance that maximizes his welfare).[31] (In the real world, there is also the possibility that taxes on labor inefficiently shift behavior from taxable compensation to non-taxable compensation, such as non-taxable benefits.)[32]

Is economic efficiency reduced on balance by taxation? That question cannot be answered in isolation of the other side of the government balance sheet. Taxes finance government, and, as described above, certain government interventions can increase economic efficiency.[33] Whether any given policy increases or decreases economic efficiency depends on whether the efficiency cost of the taxes needed to finance it outweighs the policy's benefits. Furthermore, efficiency losses are difficult to estimate, particularly in the presence of other policies that change the market outcome. This is why no broad statement can be made about whether the overall size of government is inefficiently large or small. Economic theory suggests that the efficiency loss from a tax increases geometrically as the tax increases.[34] This suggests that as government gets larger (and tax rates get higher), fewer new government programs would generate efficiency gains large enough to offset the efficiency losses caused by their financing.[35]

And yet, the efficiency losses of high taxes should not be overstated. That is because not all taxes distort behavior. For example, a capitation tax (a fixed dollar tax that everyone must pay) results in no efficiency loss no matter how high taxes are set because there is no way to avoid the tax, short of death or emigration. While the example of a capitation tax is extreme, in general economists assert that the efficiency losses from taxation could be much lower than they are in our current system if the tax base were broadened so that an equivalent amount of revenue could

[31] The tax on labor is not inefficient because it reduces labor supply. Theoretically, the tax could result in less labor supply because the reward to work has diminished or more labor supply because more work is needed to reach a given income level. It is the change in the relationship between consumption and leisure—and not the direction of the change—that makes the tax economically inefficient. These effects are called substitution and income effects, respectively, and are discussed in detail below in the section on *The Size of Government and Economic Growth*.

[32] See Martin Feldstein, *Tax Avoidance and the Deadweight Loss of Income Taxation*, NBER, Working Paper no. 5055, March 1995.

[33] The link between taxes and spending can be temporarily broken through deficit financing. Deficit-financed tax cuts do not necessarily raise efficiency, however. A $1 deficit-financed tax cut in effect is a promise that taxes will be raised or spending will be cut by more than $1 in the future, because of interest costs. Unless inefficient spending is cut in the future, deficit financing results in a net loss in economic efficiency over time.

[34] See, for example, N. Gregory Mankiw, *Principles of Microeconomics* (Fort Worth: Dryden Press, 1997), p. 167.

[35] When the government provides "private goods," goods and services that are exclusive and rival, it is more economically efficient for them to be purchased directly by the consumer than financed through taxation. Many government-provided "private goods" are already financed through user fees and are omitted from the budget (see the section above on offsetting receipts and collections).

be raised with lower marginal tax rates.[36] It is exemptions, deductions, tax credits and the like that narrow the tax base and require marginal tax rates to be as high as they are; if the tax base were broadened, spending could be judged more on its own merits than on the costs of financing it. Unlike the case for a smaller government, where economists are sharply divided, the case for a broader tax base garners wide consensus among economists. This suggests that considering the optimal size of government is best done on the spending side. The efficiency case against taxes is more a case for tax reform than tax reduction.

The case for broadening the tax base raises a further point: putting aside the spending side of the budget, not all tax cuts increase economic efficiency. From an economic perspective, unless they correct for an externality, tax expenditures (credits, exemptions, exclusions, deductions, preferential rates, or deferrals) reduce efficiency by creating distortions in economic behavior. In many ways, they are economically equivalent to spending, and the economic distortions they create are no different than the distortions created by an equivalent spending policy.[37] A $1,000 child tax credit is no different than the government paying every eligible parent $1,000 per child. Likewise, the mortgage interest deduction is no different than paying every mortgage-holder in the 15% tax bracket $0.15 for every dollar in mortgage interest they pay. It is only reductions in marginal rates that increase economic efficiency. Just like spending, tax expenditures increase economic efficiency only if they distort behavior that suffers from a market failure, and they are not generally better or worse than an equivalent spending provision at doing so. If tax expenditures are not aimed at correcting a market failure, they can divert economic resources from efficient production to the inefficient pursuit of the economic rents that the tax code creates, such as "tax shelters." Other tax expenditures cause marginal rates to be higher without any meaningful change in the targeted behavior. For example, there is little evidence that more children are born as a result of the child tax credit. If that is the case, the credit mainly serves as a transfer to parents from taxpayers—in economic terms, a "windfall" since parents need not change anything to receive the credit.

The case for tax simplification is also based on the goals of minimizing administrative cost, complexity, and evasion, all of which create economic costs in addition to the efficiency costs discussed above.

Balancing Economic Efficiency With Other Goals

It is crucial to remember that any policy also has non-economic costs and benefits. Economic efficiency is certainly not the only criterion for public policy. Equity, fairness, and justice are just a few social goals that economists cannot judge quantitatively. There are many social goals that policymakers may wish to pursue, and they often consider whether social benefits outweigh the efficiency loss. For example, a civil and criminal justice system is not maintained primarily for its effect on economic efficiency, but for its effect on justice, equity, morality and fairness. A progressive income tax system is less economically efficient than a capitation tax. But economics says nothing about whether the capitation tax is more socially desirable because it cannot weigh the efficiency loss against the equity motive for having a progressive tax system. No economist

[36] Most economists view the Tax Reform Act of 1986 (P.L. 99-514) as a good example of a tax reform that followed this principle.

[37] Tax expenditures raise distributional issues compared to spending. Unless they are refundable, income tax expenditures are only available to entities with taxable income, which excludes many lower income households. Furthermore, when tax expenditures take the form of tax deductions, they are regressive because the value of the deduction increases as taxable income increases as the taxpayer's marginal tax bracket increases.

can offer a precise estimate of whether the economic costs and benefits of any proposal will outweigh its social costs and benefits.[38]

Economists can, however, evaluate how to achieve a social goal in the least economically costly way. For example, economists generally applauded the government's decision to deal with the social costs of worker displacement from NAFTA by coupling free trade with worker retraining programs and extended unemployment benefits for displaced workers. This was viewed by economists as more economically efficient than preventing worker displacement through trade barriers, so that the gains from trade to consumers can still be enjoyed.[39] In some cases public sector provision of a social goal may be more economically efficient than private sector provision. For example, it may not be possible for the private sector to efficiently provide unemployment insurance because of the asymmetric information problems described above. Government provision of unemployment insurance can potentially achieve efficiency while simultaneously contributing to the social goal of preventing economic hardship. Likewise, some economists have argued that income redistribution can only be carried out at an efficient level by the state because it is a public good prone to under-provision in the marketplace because of the free-rider problem.[40]

Effect of the Government on Economic Growth

Arguments surrounding the size of government are often posed in terms of their effects on economic growth. Like the section on efficiency, this section argues that the effect of government spending on economic growth can only be judged on a case-by-case basis. But more generally, the problem with using growth as a policy evaluation criterion is that it tells nothing about overall welfare, which includes non-economic benefits, such as quality of life. Unlike efficiency, economists view growth, at best, as one effect of a policy to be considered and not a goal in and of itself. Even in cases where the effect on growth is positive, society may be made worse off. As a thought experiment, consider the effects of a mandatory 80-hour work week: it would be expected to increase economic growth, but society would be worse off. Nonetheless, since economic efficiency cannot be easily measured, growth will often be the best alternative criterion available.

The question of the relationship between the size of government and economic growth is of a long-term nature. Thus, it is useful to make a distinction between short-term fluctuations in growth due to the business cycle and the long-term, sustainable growth rate of the economy. For that reason, arguments for or against larger government cannot be based on the ability of an increase in the budget deficit to increase aggregate spending in the economy in the short run. Notice that these short run effects are consistent with certain definitions of both larger

[38] Many economists have devised sophisticated theories for achieving optimum income redistribution based on various social principles. For example, economists have developed different redistribution schemes based on an equal sacrifice principle that tax rates should be set by income status such that taxes reduce the welfare of all taxpayers equally (so that high income individuals pay higher taxes). But there is no way to use economic theory to judge which theory of redistribution is most fair. For an introduction and bibliography, see Richard Musgrave, "Fairness in Taxation," in Joseph Cordes et al., *The Encyclopedia of Taxation and Tax Policy* (Washington: Urban Institute Press, 1999), p. 117.

[39] See CRS Report RL32059, *Trade, Trade Barriers, and Trade Deficits: Implications for U.S. Economic Welfare*, by Craig K. Elwell.

[40] See Harold Hochman and James Rodgers, "Pareto Optimal Redistribution," *American Economic Review*, vol. 59, no. 4, September 1969, p. 542.

government (higher spending with constant taxes) and smaller government (constant spending with lower taxes).[41]

Long-term growth (increases in output) is caused by increases in the labor supply (hours worked or number of workers), the physical capital stock, or productivity. When the size of the labor force grows with the population, there would be no effect on per capita growth, however. Growth in the physical capital stock is made possible by national savings (or borrowing from abroad). For the size of the government to affect long-term growth, it must affect one of these three sources of growth. All four types of government behavior (spending, transfers, taxes, and regulation) have the potential to influence these three sources of growth.

Effect of Spending

A portion of gross domestic product (GDP) is produced by the government. Like a private firm, the government purchases inputs from the private sector (e.g., the military purchases tanks and airplanes from private defense contractors) and labor (e.g., soldiers) to produce a final good or service (e.g., national defense). But unlike a firm, most government goods and services, like defense, are not bought and sold in the private market, and so there is no way to value them. Nevertheless, these goods and services are part of the nation's GDP. To prepare the GDP accounts, the Bureau of Economic Analysis values government production, unlike private production, by measuring the inputs rather than the output. This makes it difficult to measure the effect of government production on the economy empirically, even if there are good empirical reasons for believing it to have an effect.

There is little reason to believe government spending has any direct effect on increases in the labor force since the number of jobs available expands to accommodate increases in the labor force over the long run, but it may affect productivity gains over time. Some have argued that the lack of competition and the profit incentive in the government sector leads to less innovation and lower productivity gains over time.[42] Empirical tests of the proposition may yield little meaningful information, however, because of the way that government GDP is recorded. In the private sector, productivity growth occurs when the same inputs yield higher output than previously. Since government GDP is based on inputs and output is not measurable (because it is not bought and sold in the marketplace), there is no direct way to tell how much government productivity is growing over time.[43]

There is also the question of magnitude: are differences between public and private sector productivity growth rates significant enough to have a meaningful effect on economic growth? As a thought experiment, consider that government output (including state and local) accounted for

[41] An argument has been made by Fatas and Mihov that larger governments can more effectively stabilize the business cycle in the short run because they have relatively larger automatic stabilizers. Automatic stabilizers are changes in spending and revenue that increase the deficit, thereby boosting aggregate demand, and occur without policy changes. The authors offer international evidence supporting this theory. This argument can be criticized, however, on the grounds that there is nothing preventing smaller governments from using discretionary monetary and fiscal policy effectively, mitigating the reliance on automatic stabilizers. See Antonio Fatas and Ilian Mihov, "Government Size and Automatic Stabilizers: International and Intranational Evidence," *Journal of International Economics*, October 2001.

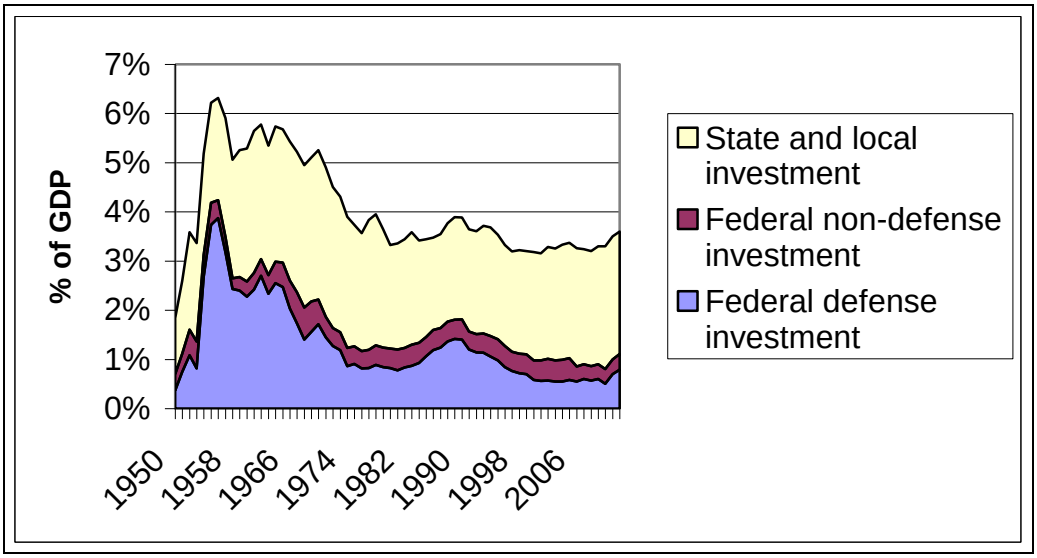
[42] See, for example, William Niskanen, *Bureaucracy and Representative Government* (Chicago: Aldine-Atherton Publishers, 1971).

[43] For a description of a BLS program that attempted to measure government productivity, see Bureau of Labor Statistics, "The Federal Productivity Measurement Program," *Monthly Labor Review*, May 1997, p. 19. By its estimate, government productivity rose 1.1% a year from 1967-1994, compared to 1.5% non-farm business productivity growth over that period. (The article lists several reasons why the government and business productivity are non-comparable.) This program has been discontinued.

about 20% of GDP in 2008. If private sector productivity growth is 2% and government productivity growth is only half as high, total output growth will only be 0.2 percentage points lower a year than if productivity were the same in both sectors. In that case, reducing government production by half would only raise productivity growth by 0.1 percentage points. (Likewise, if the government's productivity growth rate were higher than the private sector's, the effect would be too small to make much of an impact on the overall productivity rate.) If anything, this calculation may overstate the productivity differential since some government output is produced by private sector contractors who presumably have productivity growth rates similar to the rest of the private sector.

Finally, some government goods and services, while possibly subject to lower productivity growth in their production, alter private sector productivity growth. For example, government enforcement of property rights may lead to more entrepreneurial activity, and a new road may reduce the costs of shipping private sector goods to market. In these cases, reducing government spending could lower total productivity growth (by lowering private sector productivity growth) even if government productivity growth is lower than private sector productivity growth. Increasing other government goods and services could lower private sector productivity growth.

Figure 5. Public Investment Spending, 1950-2009



Source: BEA, National Income and Product Accounts, Table 3.9.5.

Note: Data measured on a calendar year basis.

Thus far, this section has focused on government spending on consumption goods and services. But government spending can also finance public capital goods, which increases the national capital stock in the same way as private investment. Government spending on capital investment (roads, structures, ports, and so on) increases output by increasing the nation's capital stock in the same way that private capital investment does. As seen in **Figure 5**, annual non-defense capital investment spending has stayed relatively constant in recent decades at less than 0.5% of GDP at the federal level, and 2% of GDP at the state level (which is partly financed by federal grants). Defense capital investment has followed a downward trend in peacetime, from about 3% of GDP in the 1960s to less than 1% of GDP since the 1990s; in war times, defense investment has increased above the trend (although not in recent years). It is less clear that defense investment has the same positive effect on measured GDP growth as non-defense investment since it is an investment in the intangible good "security."

Some would argue that government spending on research and development (R&D) should be included in measures of investment spending, and some would include spending on education and training because it increases the nation's "human capital stock." Federal spending on R&D has trended down from about 2% of GDP in the 1960s to about 1% of GDP today; throughout this period, it has been split about evenly between defense and non-defense.[44]

Whether an additional dollar of spending on government output directly increases or decreases growth depends on what it is replacing. To the extent that government capital spending replaces private consumption, there will be a net increase in economic growth through a higher capital stock. Conversely, to the extent that government consumption spending replaces private investment, there will be a net decrease in growth. Whether government or private investment yields a higher rate of return for the economy will vary on a case-by-case basis, and both are prone to diminishing returns to investment as investment spending is increased.[45]

Effect of Transfers

Government spending on transfers to individuals has no direct effect on the level of aggregate private output, aside from administrative costs. Transfers only affect the distribution of private output: the transfer recipient uses transfer funds to buy goods and services from the private sector or to save rather than the taxpayer who finances the transfers.

The effect on economic growth of transfers comes from the distortion in incentives caused by the transfer, both on the taxpayer, as discussed in the next section, and the recipient. Since the largest recipients of transfers are retirees, it is useful to consider the effects on that group. Social Security payments and other government pensions and age-based transfers may reduce the private saving rate by replacing private saving for retirement (although the offset would not be one for one since some retirees do not save adequately for their retirement). Since these transfers are financed on a pay-as-you-go basis, there is arguably no public saving to offset the reduction in private saving, reducing national saving. The programs may also lead to earlier retirement than would otherwise occur, reducing output through a smaller labor force. Transfers for the elderly also incorporate a number of insurance-like functions, protecting the elderly against the risk of disability, outliving their assets, spousal death, and so on. These insurance-like functions may reduce the need for private precautionary saving.[46]

Are transfers to the elderly ill-advised because they may reduce economic growth? This example illustrates why efficiency is a better economic criterion for judging programs than growth. The relevant question is not whether the insurance-like qualities of these transfers reduce private saving, but whether the government can provide insurance more efficiently than the private sector because of market failures in the private insurance market (adverse selection, moral hazard, and incomplete markets.) In other words, market failures in the insurance market can lead to individuals saving too much, and government intervention has the potential to make them better off by reducing the risky contingencies for which they were previously saving. As a result of

[44] Government also influences private R&D spending through the R&D tax credit. For an introduction to the evidence on R&D and economic growth, see Zvi Griliches, "Productivity Puzzles and R&D: Another Nonexplanation, *Journal of Economic Perspectives*, vol. 2, no.4, autumn 1988, p. 9.

[45] Some research suggests that public investment can have a higher rate of return than private investment or increase the rate of return on private investment. See Alicia Munnell, ed., *Is There A Shortfall in Public Capital Investment*, Federal Reserve Bank of Boston, Conference Series 34, June 1990; and David Aschauer, "Is Public Expenditure Productive?" *Journal of Monetary Economics*, vol. 23, no. 2, p. 177.

[46] For more information, see CRS Report RL31498, *Social Security Reform: Economic Issues*, by Jane G. Gravelle and Marc Labonte.

government intervention, saving (and economic growth) would fall, but economic efficiency would increase.

Another major category of transfers are means-tested transfers. Means-tested transfers can potentially reduce growth by creating an incentive for recipients to keep income or wealth or hours worked below the point where benefits are phased out. The incentive can be reduced by phasing transfers out more slowly as income increases. The effect of means-tested transfers on economic growth are often weighed against their effect on non-economic goals.

Economists are least fond of transfers that are economically inefficient and do not serve any broad social goal. For example, subsidies to specific industries or sectors of the economy may reduce economic efficiency by causing over-production in those industries. The introduction of an industrial subsidy would be expected to lead to a one-time reduction in GDP as the economy's resources are reallocated to a less efficient outcome. (It is less clear if industrial subsidies would reduce economic growth on an ongoing basis; they may do so if they reduce competition and the incentive to innovate.) At the same time, the benefits of the subsidy are highly concentrated and generally do not accrue to broad groups on a non-discriminatory basis. For example, workers in the industry being subsidized are made better off even though their income level and employment situation may be superior to those in other industries that are not being subsidized.

Effect of Taxes

By changing economic behavior, taxes have the potential to affect overall growth. Taxes on saving could change saving rates, and thereby investment rates, and taxes on labor could change the labor supply. Theoretically, income tax reduction, which affects saving and labor, could increase or decrease economic growth. That is because a tax cut affects behavior in two ways. First, it increases the rewards to work or save relative to leisure or consumption, respectively, giving the worker an incentive to work or save more. This is known as the substitution effect. Second, it increases the worker's after-tax income, such that he must work or save less to achieve a given standard of living. This gives him an incentive to work or save less, and is known as the income effect. Theoretically, there is no way to know whether the substitution or income effect dominates for any given tax; it is an empirical question.

Empirically, the evidence is divided on the size and even direction of the effects on saving and labor.[47] Some studies have concluded that labor supply increases in response to tax cuts, others that it falls. In any case, most studies find the response to be small. There is evidence that the response of certain demographic groups are greater than others. Working-aged male adults are overwhelmingly already employed full-time, so there is relatively little scope for them to enter the labor market or greatly increase their hours in response to a tax cut. On the other hand, female employment rates are lower, and there is some evidence that there is a larger labor supply response to tax cuts among females in high-income households. The labor supply of workers near the beginning or end of their career may also be more sensitive to changes in tax rates.[48] Casual observation is consistent with small overall effects on labor. The average work week declined through the 1960s and 1970s, and has stayed relatively constant since, despite the decline in marginal income tax rates since the 1980s. The male labor force participation rate has followed a

[47] For more extensive treatment of the issues discussed in this section, see CRS Report RL31949, *Issues in Dynamic Revenue Estimating*, by Jane G. Gravelle.

[48] See Orley Ashenfelter and Richard Layard, *Handbook of Labor Economics* (Amsterdam: Elsevier Science Publishers, 1986), Ch. 1-2.

downward trend since the 1960s, and the female participation rate rose dramatically for much of the post-war period, but has been relatively constant since the 1990s.

The effect of a change in taxes on labor supply is likely to be a one-time effect: once individuals have adjusted their labor supply in response to a tax cut, they will not continue to increase or decrease it in the future. Thus, a change in taxes is expected to have only a one-time effect on growth through the labor supply channel.

The empirical evidence on saving is particularly inconclusive. At a glance, one can see that the household saving rate has been in steady decline over the past few decades—and was close to zero in the past several years—despite a downward trend in marginal income tax rates and taxes on capital, and a dramatic expansion in tax-favored savings accounts since the 1980s. Because saving is not motivated solely by tax rates, a simple comparison between the two cannot be made. To explain the empirical behavior of saving requires matching the data to some theoretical notion of why people save. Because the motives for saving are complex, the theoretical models used by economists become very complex even under simple assumptions.

Not only the level of taxes, but also the structure of the tax code affects economic growth. To the extent that "loopholes" in the tax code do divert resources from the pursuit of efficient market activity, this too lowers economic growth, although it is difficult to estimate the size of this effect, and whether there is a one-time reduction in growth when the loophole is introduced or an ongoing reduction in growth.

Evaluating the effects of tax cuts on growth cannot be done in isolation. To finance a tax cut, spending must be reduced, other taxes must be raised, or the government must borrow. If a tax cut is financed through lower spending or raising other taxes, then the effect of those changes on long-run growth (which could be negative or positive, depending on the policy change) would need to be weighed against the tax cut. If the tax cut is financed through borrowing, its effect on long-run growth is likely to be negative because borrowing reduces national saving, unless the positive effects on private saving and labor supply are large enough to offset the reduction in national saving.

Effect of Regulation

Estimating the effect of regulation on growth is difficult, and can only be done on a case-by-case basis. Some regulations reduce output by diverting resources to non-economic compliance costs. Undoubtedly, other regulations enhance growth, such as the positive effects of the rule of law on commerce. Some regulations may reduce a firm's output directly, such as environmental regulations, but be offset (partially or wholly) by indirect positive economic effects, such as through an improvement in public health.

It is important to distinguish between a regulation's one-time effect on output (and growth), and its permanent effect on growth. In the long run, most one-time effects are swamped by the compounding of growth. For example, if environmental regulations raise firms' production costs, reducing the demand for their product, their output will fall. But after the one-time fall, the regulation may have little effect on how much their output grows in the future.

Concluding Remarks

The government affects economic activity through four primary channels: government production of goods and services, transfer payments, taxation, and regulation. Measuring the size of government is not a straightforward exercise. Relying on annual federal outlays excludes several

types of government intervention including state and local outlays, tax expenditures, government corporations, and offsetting receipts and collections; as a result, the government appears to be smaller than it is in reality. Annual measures of government also neglect future unfunded liabilities implicit in current policy. Measuring the economic impact of regulation is difficult, and is not done comprehensively or consistently.

Government intervention increases economic efficiency when it rectifies market failures and reduces efficiency when it distorts perfectly competitive markets. Political choices may lead to second-best outcomes, however, and some therefore argue that accepting market failures can be preferable to government intervention in some cases. To be efficiency-enhancing, government spending must have greater benefits than only efficiency-reducing taxes that finance it.

Likewise, tax cuts will only increase overall efficiency if they are financed by reductions in relatively less efficient spending or increases in relatively less efficient taxes. In general, marginal tax reductions tend to be efficiency increasing, while many tax expenditures are efficiency decreasing. Deficit-financed tax cuts do not increase efficiency if they are financed by larger tax increases in the future.

Not all government spending is created equally. Economists universally agree that some government spending, on a well-functioning legal system, for example, increases economic efficiency and growth. Agreement is nearly as universal that some government spending, on subsidies to industries, for example, reduces economic efficiency or growth. In between are policies that are a jumble of efficiency-enhancing and efficiency-reducing provisions. For this reason, no general conclusions can be drawn about the overall size of the government's effect on the economy. It is conceivable that a very large government could devote all of its spending on efficiency-enhancing policies and a very small government could devote all of its spending on efficiency-reducing policies, or vice versa.

Many policies that reduce economic efficiency or growth may meet social or non-economic goals (equity, fairness, and so on) that make them worthwhile. Currently, government transfers to individuals are nearly twice as large as government spending on goods and services, and the primary goal of most transfers is probably not economic efficiency.

Government intervention increases (decreases) long-term growth with policies that foster (hinder) greater work effort, capital accumulation, and technological innovation. Economic growth is not a clear normative goal such as economic efficiency, however. Some growth-enhancing policy measures may reduce economic welfare. In any case, economic growth has historically been stable over long periods of time, suggesting that market forces tend to be stronger than the growth effects of policy changes.

In sum, there is not an economic rationale for either "big" or "small" government, per se. It is not so much the size of government as what government does with its spending, transfer, tax, and regulatory policies that affects economic efficiency and growth.

The financial crisis of 2008 led to a sharp but temporary increase in government outlays as a share of GDP. Because of government accounting conventions, the ongoing costs of TARP and government conservatorship of Fannie Mae and Freddie Mac were mostly counted in the 2009 budget. Fiscal stimulus legislation led to a significant increase in spending from 2009 to 2011, with minimal effects after 2011. Assuming these programs are allowed to expire as scheduled, spending will fall from its recent peak under current policy. Overall spending will not fall all the way back to pre-crisis levels, however, because it will be offset by growth in other spending, notably growth in net interest and entitlement spending as a result of the aging of society. The increase in the government's influence on the economy through recent or proposed regulatory changes is more difficult to quantify.

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