

The Cost of Government

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By way of introduction, direct government costs are cash expenditures by federal, state, and local governments; the costs of future promised or expected expenditures are not included until the money is spent. Indirect costs are expenditures or the equivalent incurred by individuals and businesses in complying with government regulations and mandates, again at all levels of government. The pros and cons of these expenditures is beyond the scope of this article, which is concerned solely with the actuarial exercise of projecting future costs based on an analysis of historical experience in the light of present and anticipated conditions.

The number-rich exhibit that accompanies this article (See Figure 9, p. 7, which is referred to herein as “the exhibit”). traces the cost of government over 150 years. The first twenty rows show the cost of government in quinquennial years in the 20th Century. Some of the numbers differ somewhat from the earlier articles, both because of different categorization of some expenditures and because of data availability improvements over the past decade. This 20th Century part of the exhibit traces the substantial rise of total government cost, expressed as a percentage of the gross domestic product (GDP), from under ten percent at the beginning of the century to over 40 percent at the end (See Figure 1). There are two notable observations. First, the high point wasn’t reached in 2000, but rather in 1945, when the tab for prosecuting World War II reached 41 percent of GDP, pushing total government costs to a century-high total of about 54 percent. Second, the final 20 years of the century were quite stable, in the low 40’s percent of GDP. The bottom eleven rows of the exhibit project the cost of government during the still-young 21st Century. Actually, the first four rows of this part of the exhibit (2000, 2005, 2010, and 2015) are now history, so those entries are either facts or supported estimates. The new century has had some surprises, of course, most of which have had the effect of increasing the cost of government, in some cases dramatically, generally leading to higher projections for the remaining one-third of the century. This will be discussed further as we examine the components of that cost.

YEAR	GVT
1900	9%
1905	8%
1910	9%
1915	11%
1920	14%
1925	13%
1930	15%
1935	22%
1940	22%
1945	54%
1950	25%
1955	29%
1960	31%
1965	30%
1970	35%
1975	39%
1980	40%
1985	41%
1990	43%
1995	43%

Figure 1

Entries in the GDP column of the exhibit are in trillions of dollars, and all subsequent columns are expressed as percentages of that GDP. Historical data (1900-2015) is from the comprehensive database available at USGS (www.usgovernmentpending.com), which is compiled almost entirely from various US government sources. GDP projections (2020-2050) are from the 2015 report *Long-Term Projections for Social Security*, developed by the Congressional Budget Office (CBO). The other projections (to the right of the GDP column and below the 2015 row) are my own, supported by review of historical statistics, analysis of turn-of-the-century and more-recent data and events, and judgment (also discussed below) reflective of trends in the data and news of the day. *A major purpose of this article is to encourage the reader to replace my projections, and conclusions, with his or her own.*

National defense (DEF) historical data (See Figure 2) is from USGS (see above), as are the following six columns, and the eighth (DIR). Alone among the various itemized categories, defense costs may be well characterized as having been volatile. They accounted for 10% or less of GDP throughout the 20th Century, except during World War I (1919 hit 22%), World War II (1945 reached 41%), and the Cold War (1955 defense costs consumed 11% of GDP). Pursuing the Cold War for nearly 45 years cost an average of 8% of GDP, after which the country experienced a decade free of perceived enemies during which proportional defense costs were cut in half. The events of September 11, 2001 showed that this perception was an illusion and, in 2010, defense costs were back up to 6% (although back down to 4% in 2015). The fight against the Soviet Union lasted three generations, during the first of which that opponent was misperceived to be our ally. The fight against violent jihad may last another several generations, as the Islamists believe, or it may not. It may cost as much, or more, or less, to fight terrorists and others intent on destroying us, as it did to fight the Nazis and Communists, and those fights may not yet be over. On the other hand, there may well be room to reduce defense costs to some extent without impairing the core purpose of protecting the country. For our purpose, the assumption is that national defense costs will return to 6% of GDP for the foreseeable future, and that volatility will be held at bay.

YEAR	DEF
1900	2%
1905	1%
1910	1%
1915	1%
1920	5%
1925	1%
1930	1%
1935	2%
1940	3%
1945	41%
1950	8%
1955	11%
1960	10%
1965	8%
1970	9%
1975	7%
1980	6%
1985	7%
1990	6%
1995	4%
2000	3%
2005	5%
2010	6%
2015	4%
2020	6%
2025	6%
2030	6%
2035	6%
2040	6%
2045	6%
2050	6%

Figure 2

Essential government services (ESS) other than defense include protection (police, fire, prisons) and transportation (highway construction and maintenance, air/water/ground travel regulation). This category and education are the only ones for which government expenditures are predominantly at the local level, rather than at the state and, especially, federal levels. While this category has held steady at 4% during the early years of the 21st Century, recent and expected trends in crime and social unrest make an increase to 5% seem more likely (See Figure 3).

Public debt interest (INT) costs grew from a negligible amount (under \$100 million) at the beginning of the 20th Century to about 4% of GDP near the end (See Figure 4). Since then that proportion has declined to about 2%, however, due substantially to government-driven low interest rates.

YEAR	ESS
1900	1%
1905	1%
1910	2%
1915	2%
1920	2%
1925	3%
1930	3%
1935	4%
1940	4%
1945	2%
1950	3%
1955	3%
1960	3%
1965	3%
1970	3%
1975	3%
1980	3%
1985	3%
1990	3%
1995	3%
2000	3%
2005	4%
2010	4%
2015	3%
2020	5%
2025	5%
2030	5%
2035	5%
2040	5%
2045	5%
2050	5%

Figure 3

YEAR	INT
1900	1%
1905	
1910	
1915	1%
1920	1%
1925	1%
1930	1%
1935	2%
1940	2%
1945	2%
1950	2%
1955	1%
1960	2%
1965	1%
1970	2%
1975	2%
1980	2%
1985	4%
1990	4%
1995	4%
2000	3%
2005	2%
2010	2%
2015	2%
2020	3%
2025	5%
2030	5%
2035	6%
2040	6%
2045	6%
2050	6%

Figure 4

Debt has continued to grow, however, and interest rates may be expected to increase as well, probably substantially. The exhibit reflects this expectation, with interest costs growing to 6% of GDP by the end of our projection period. Looking further ahead, it may be more reasonable to expect that debt service costs will decline, gradually or precipitously, and eventually be eliminated. One way this could come about is for the US to become a debt-free nation should creditors, foreign and domestic, abandon US government (federal, state, municipal) debt securities in favor of other, less-risky investments. Another is for the public to become unwilling (due to the trauma of paying off 20th Century debt) or unable (due to declining opportunities for capital formation and thus employment) to support *any* level of government debt. There are other, worse, interest projections than the relatively-orderly one here being discussed. The unsupported expansion of the money supply could very well lead to

uncontrolled or hyper inflation, or the government at all levels, including federal, could default on its debts. More insidiously, interest payments could continue to grow, thereby crowding out other direct costs of government. Other, better, interest projections than the ones in this paragraph can be imagined, but don't seem grounded in plausibility. For our current purposes, however, projection to 2050 is enough.

The pension (PEN) component of direct government costs consists of Social Security beneficiary payments (OAS, but not DI), and retirement income (but not healthcare) benefits to federal/state/municipal retirees, among other, lesser costs (See Figure 5). These costs don't even show up in the exhibit until 1955, but thereafter increase steadily through 2050, except for a plateau around the end of the last century reflective of the (relatively) low birth rates during the Depression. The pace quickens during the early years of the current century, due to retirement of the Baby Boomers, who were born during the generation immediately following World War II. Thereafter, it seems reasonable, based substantially on the work of the Social Security Actuary, to expect steady increases in the projection part of the exhibit.

The healthcare (HTH) component of direct government costs consists of federal payments to healthcare providers on behalf of Medicare beneficiaries, and state payments (substantially subsidized by federal grants) to such providers on behalf of Medicaid providers, among other, lesser costs (See Figure 6). These costs hovered at about 1% of GDP until the 1965 passage of Medicare and Medicaid legislation, after which they have grown steadily at an increasing rate, due recently in part to the influence of the Affordable Care Act on Medicaid costs. Significant increases should be expected, and are reflected, in the projection part of the exhibit, based on the work of the Medicare Actuary, with adjustments set forth in his Statement of Actuarial Opinion. Unlike the Social Security debt problem, however, the Medicare and Medicaid debt problem can be resolved by the (theoretically) simple expedient of rationing of medical services, with or without a political thumb on the scale, as is done or anticipated in many countries. This potential solution is also beyond the scope of this article.

The welfare (WEL) category consists of Supplemental Security Income (SSI), food stamps (SNAP), housing subsidies, earned income credits, and a portion of unemployment

YEAR	PEN
1900	
1905	
1910	
1915	
1920	
1925	
1930	
1935	
1940	
1945	
1950	
1955	1%
1960	2%
1965	2%
1970	3%
1975	4%
1980	5%
1985	5%
1990	5%
1995	6%
2000	5%
2005	5%
2010	6%
2015	7%
2020	8%
2025	8%
2030	8%
2035	8%
2040	9%
2045	9%
2050	9%

YEAR	HLTH
1900	
1905	
1910	
1915	
1920	
1925	
1930	1%
1935	1%
1940	1%
1945	
1950	1%
1955	1%
1960	1%
1965	1%
1970	2%
1975	3%
1980	3%
1985	3%
1990	4%
1995	5%
2000	5%
2005	6%
2010	7%
2015	8%
2020	9%
2025	10%
2030	11%
2035	12%
2040	13%
2045	14%
2050	15%

Figure 5

Figure 6

compensation costs (See Figure 7). It showed a slow increase over the course of the previous century, but has been somewhat volatile in the early years of the current century. The projection for the balance of the exhibit is for costs to plateau at a somewhat higher level than historical (while recognizing that more people out of the workforce would mean more cost in this category).

The education category (EDU) consists of public expenditures for primary/secondary/tertiary (higher) education, plus other related items (See Figure 8). It grew from one or two percent of GDP at the beginning of the past century to a fairly consistent 5% over the final generation of the century. It has been at 6% in recent years, and may perhaps be expected to stay there in spite of political pressures because of competition for scarce public funds coupled with the perception of poor results by the category.

The final category of direct government costs is miscellaneous (MSC), which consists of executive/legislative/court and other expenses (See Figure 9). Since total direct government costs (DIR) is a relatively unambiguous quantity developed by USGS, the miscellaneous category is developed as a balancing item in the history part of the exhibit. It is then projected on its own to reflect the expansion of such services in a growing government, at all levels.

The 20th century history of these eight categories of itemized costs, including the cash costs of social insurance programs, is thus growth from 8% of GDP at the beginning, to 23% at the midpoint, to 32% at the end of the century. It's interesting to look at the trends in these itemized components of direct government spending. There are long-term upward trends in pensions, health, and welfare cash expenditures, with flattening toward the end of the 20th Century

YEAR	WEL
1900	
1905	
1910	
1915	
1920	
1925	
1930	
1935	1%
1940	2%
1945	1%
1950	2%
1955	1%
1960	2%
1965	2%
1970	2%
1975	3%
1980	4%
1985	3%
1990	3%
1995	3%
2000	2%
2005	2%
2010	5%
2015	3%
2020	3%
2025	4%
2030	4%
2035	4%
2040	4%
2045	4%
2050	4%

Figure 7

YEAR	EDU
1900	1%
1905	1%
1910	1%
1915	2%
1920	2%
1925	2%
1930	2%
1935	3%
1940	3%
1945	1%
1950	3%
1955	3%
1960	4%
1965	4%
1970	5%
1975	6%
1980	5%
1985	5%
1990	5%
1995	5%
2000	5%
2005	6%
2010	6%
2015	6%
2020	6%
2025	6%
2030	6%
2035	6%
2040	6%
2045	6%
2050	6%

Figure 8

mainly for demographic reasons (relatively few people were born during the Depression and World War II). The education and debt interest categories also show long-term upward trends during the century, albeit less pronounced, whereas public safety and transportation expenditures are relatively flat as a percentage of GNP. As discussed above, defense costs are best described as volatile. The early years of the 21st Century have seen continued volatility in defense costs, along with increases in expenditures for pensions and health; decreases in interest and miscellaneous costs; and with the other categories staying essentially flat.

As developed above, these eight itemized categories of direct government costs are projected, as discussed above, to increase from 36% of GDP at present (2015) to 55% in the middle of the present century (2050). The predominant increase category is Health (HTH), with significant increases as well in Interest (INT), Pensions (PEN), Defense (DEF), and Essential Government Services (ESS). This leaves the question of indirect government costs.

The indirect cost of government (IND) shown in the exhibit can only be estimated, consisting as it does of the unreported costs of compliance, by millions of businesses and families across the land, with thousands of regulations and other government mandates. (See Figure 9) Those who study these costs seem generally to take a dim view of much regulation, while those who favor more regulation seem to prefer to criticize the studies of others rather than to look too deeply into the matter on their own. For the purpose of preparing the exhibit, my approach has been to develop estimates based on the studies, the criticism, and my own extensive experience (by no means unique among actuaries, nor unusual within other professions) as a recipient of mandatory compliance costs.

The subject of regulatory cost compliance studies was discussed in the earlier articles in this series (COG 2000 and COG 2008). I have reduced my estimations of indirect costs of government to exclude costs not included in the GDP, so as to maintain consistency between the numerator and denominator in the quantity GDP%. Such excluded costs include, for example, the cost to you of preparing your own tax returns (rather than hiring a tax-preparer, whose income is part of the GDP). I believe the 9% estimate for 2000 to be reasonable as defined, and the subsequent increase to 13% in 2015 to be dramatic, but not surprising in the light of regulation-breeding events such as the Enron debacle, the September 11 attacks, and the 2008 financial collapse and ensuing Great Recession. Further increases in regulation, and thus in compliance costs, may also be expected in the future due to legislation concerning financial oversight, health care financing, and global warming, among others. It is also to be expected that government will turn increasingly to regulation to accomplish its goals as direct spending funds become scarce. Accordingly, the assumption used in the exhibit is that the cost of compliance with government regulations will continue to grow to an estimated 20% of GDP in 2050.

A few more words about regulation, and the GDP. Few would argue against the need for regulations, by which laws (such as not ignoring traffic lights) may be made more specific and capable of being enforced. Some (perhaps most) would argue that the current levels of regulation and laws are inadequate, and that both should be increased. The purpose of this article is not to argue about the optimum size of government, however, but to identify and estimate the costs of government. The exhibit below presents an approach to this process, but note that it does not necessarily cover most or all government costs (such as your preparing your own tax returns). Recent studies have indicated that regulations can have a severe dampening impact on GDP which, if true, in turn increases the proportional cost of government (because of the nature of benefits and other government expenditures). It can also be questioned whether we as a people will work as hard as we used to when faced with an average tax rate of 75 percent (an almost inescapable conclusion from the exhibit). If the GDP falls short of the projection, there will be upward pressure on the proportional costs in all of the subsequent columns of the exhibit.

It is nowhere written, on the other hand, that the cost of government can only increase. For evidence of this, note from the exhibit that the total proportional cost of government dropped by half from 1945 to 1950. In our own time, there has been a groundswell of public concern over government spending and the national debt, although this is arguably offset or more by those who consider attention to the numbers on the exhibit to be an impediment to their goals for the country. While reducing the national debt from current and projected levels will doubtless require taxes to be increased from current levels (not addressed in the exhibit), budget cuts and government spending reductions (at least, relative to GDP) will also be required. The national books eventually will be balanced, of course, and it remains at least plausible that this will take place in a controlled and orderly manner, rather than by catastrophe and collapse.

Again, supported alternatives for the estimates in the exhibit are solicited. The national debate has been joined, for all levels of government, leading to hope that the country may chart its future, rather than merely succumb to the tyranny of uncontrolled trends, or tyrants. Some will be dismayed by the future implied by the exhibit, feeling less free than indentured to be left with just one quarter out of each dollar earned. Others will find hope in the exhibit, feeling that government is the most humane and efficient means of distributing the majority of national earnings. The political process has worked in recent years to confound attempts to analyze and project, much less to control, the cost of government. The projections in *Figure 9* illustrates that continuation of this process is unlikely to end well.

Figure 9: COST OF GOVERNMENT, RELATIVE TO GDP

NOTE: GDP in trillions of dollars and rest of numbers are percentages of the GDP												
YEAR	GDP	DEF	ESS	INT	PEN	HTH	WEL	EDU	MSC	DIR	IND	GVT
1900	\$0.019	2	1	1				1	4	8	1	9
1905	\$0.026	1	1					1	4	7	1	8
1910	\$0.032	1	2					1	4	8	1	9
1915	\$0.036	1	2	1				2	4	10	1	11
1920	\$0.087	5	2	1				2	3	13	1	14
1925	\$0.091	1	3	1				2	4	11	2	13
1930	\$0.092	1	3	1		1		2	5	13	2	15
1935	\$0.074	2	4	2		1	1	3	7	20	2	22
1940	\$0.103	3	4	2		1	2	3	5	20	2	22
1945	\$0.228	4	2	2			1	1	5	52	2	54
1950	\$0.300	8	3	2		1	2	3	4	23	2	25
1955	\$0.426	11	3	1	1	1	1	3	5	26	3	29
1960	\$0.543	10	3	2	2	1	2	4	4	28	3	31
1965	\$0.744	8	3	1	2	1	2	4	5	26	4	30
1970	\$1.076	9	3	2	3	2	2	5	4	30	5	35
1975	\$1.689	7	3	2	4	3	3	6	5	33	6	39
1980	\$2.863	6	3	2	5	3	4	5	5	33	7	40
1985	\$4.347	7	3	4	5	3	3	5	4	34	7	41
1990	\$5.980	6	3	4	5	4	3	5	5	25	8	43
1995	\$7.664	4	3	4	6	5	3	5	4	34	9	43
2000	\$10	3	3	3	5	5	2	5	6	32	9	41
2005	\$13	5	4	2	5	6	2	6	4	34	10	44
2010	\$15	6	4	2	6	7	5	6	4	40	11	51
2015	\$18	4	3	2	7	8	3	6	3	36	13	49
2020	\$22	6	5	3	8	9	3	6	2	42	14	56
2025	\$28	8	5	5	8	10	4	6	2	46	15	61
2030	\$34	6	5	5	8	11	4	6	2	47	16	63
2035	\$42	6	5	6	8	12	4	6	2	49	17	66
2040	\$52	6	5	6	9	13	4	6	2	51	18	69
2045	\$64	6	5	6	9	14	4	6	3	53	19	72
2050	\$80	6	5	6	9	15	4	6	4	55	20	75

Figure 9 - COLUMNAR HEADING DEFINITIONS AND DESCRIPTIONS

- YEAR:** Calendar year of payment of cost element.
- GDP:** Gross domestic product.
- DEF:** National defense.
- ESS:** Other essential government services. Protection and transportation sub-elements.
- INT:** Interest payable on all government debt (federal, state, local).
- PEN:** Pension payments to Social Security beneficiaries and public plan retirees.
- HTH:** Payments to healthcare providers under government plans such as Medicare.
- WEL:** Welfare benefits under programs such as SSI, SNAP, UI, and others.
- EDU:** Public expenditures for primary, secondary, and tertiary education.
- MSC:** Miscellaneous costs including executive and legislative general expenses.
- DIR:** Direct government expenditures; the sum of the preceding eight columns.
- IND:** Indirect costs; the costs spent complying with regulations.
- GVT:** Total government costs; the sum of the two preceding column entries.