



CBO MEMORANDUM

AN ANALYSIS OF
CBO'S OUTLAY ESTIMATES
FOR APPROPRIATION BILLS,
FISCAL YEARS 1993-1997

October 1998

**CONGRESSIONAL BUDGET OFFICE
SECOND AND D STREETS, S.W.
WASHINGTON, D.C. 20515**



NOTE

Numbers in the text and tables may not add to totals because of rounding.

The report accompanying the House Legislative Branch Appropriations Bill for 1999 (Report 105-595) directs the Congressional Budget Office to provide a comparison of CBO's outlay estimates for discretionary appropriations with the actual outcomes. This memorandum summarizes CBO's response to that request.

The analysis of outlay estimates was prepared by Priscilla M. Aycock, Peter H. Fontaine, and the staff of the Budget Analysis Division. Kenneth Farris and David Sanders provided computer support. The memorandum was written by Robert A. Sunshine. Sherry Snyder edited the manuscript, and Liz Williams proofread it. Wanda Sivak prepared the manuscript for publication. Laurie Brown prepared the electronic versions for CBO's World Wide Web site (<http://www.cbo.gov>).

CONTENTS

SUMMARY	v
DISCRETIONARY SPENDING AND THE BUDGET PROCESS	1
ESTIMATING OUTLAYS FOR APPROPRIATION BILLS	2
ACCURACY OF THE ESTIMATES	4
ESTIMATES OF DEFENSE OUTLAYS	6
ESTIMATES OF NONDEFENSE OUTLAYS	10
ESTIMATES FOR RECENT YEARS	13
SIGNIFICANT OVERESTIMATES FOR INDIVIDUAL AGENCIES	15
ANALYSIS OF ESTIMATES FOR INDIVIDUAL ACCOUNTS	18
TABLES	
1. Comparison of Actual and Estimated Outlays for Appropriations Over the 1993-1997 Period	5
2. Comparison of Actual and Estimated Outlays for Defense Appropriations Over the 1993-1997 Period	7
3. Comparison of Actual and Estimated Outlays for Nondefense Appropriations Over the 1993-1997 Period	11
FIGURE	
1. Distribution of CBO's Errors in Estimating Outlays for Appropriated Accounts During the 1993-1997 Period	19

SUMMARY

At the direction of the House Committee on Appropriations, the Congressional Budget Office (CBO) has compiled its outlay estimates for the appropriation bills covering fiscal years 1993 through 1997 and compared them, account by account, with actual outlays in those years. This memorandum presents the results of that analysis.

In aggregate over the five-year period, CBO's estimates of outlays for appropriation bills have been almost identical to the actual totals—coming within 0.1 percent of discretionary outlays during that period. The yearly estimates have been off, in one direction or the other, by an average of less than 0.4 percent. Although the sources of errors vary from year to year, some overall patterns are apparent. In particular, CBO's estimates of defense spending tended to be too low, but its projections of nondefense outlays were too high in each of the five years.

Estimates for individual accounts were less accurate than the totals, and the small aggregate error each year was the result of deviations in both directions for hundreds of accounts. The median absolute error, which disregards whether the error was positive or negative, was about 6 percent for individual accounts of \$50 million or more.

DISCRETIONARY SPENDING AND THE BUDGET PROCESS

Permanent laws control most of the federal government's spending each year, largely for entitlements (like Social Security and Medicare) and interest payments on federal debt. Only about one-third of the budget—currently about \$550 billion—is controlled by the annual appropriation process. The funding usually takes the form of budget authority, which is the authority for agencies to commit money. Once budget authority has been obligated by the agencies, it results in outlays when the money is actually spent—generally, when checks are issued.

The Balanced Budget Act of 1997 specified caps on budget authority and outlays for appropriated spending for fiscal years 1998 through 2002. It provided separate sets of caps for defense, violent crime reduction, and other nondefense spending in fiscal years 1998 and 1999. The number of sets of caps under the Balanced Budget Act drops to two in 2000 (one for violent crime reduction and one for defense and other nondefense spending) and to one in 2001 and 2002. The recently enacted Transportation Equity Act for the 21st Century established new and separate caps for highway and mass transit spending from 1999 through 2002. The Congress enforces the various caps by allocating budget authority and outlays to the House and Senate Committees on Appropriations, which further allocate them among their 13 subcommittees.

ESTIMATING OUTLAYS FOR APPROPRIATION BILLS

To assist the Congress in adhering to its budget targets, CBO estimates the budgetary impact of every appropriation bill at each stage of the legislative process, providing estimates of both budget authority and outlays. In most cases, the budget authority for each account is specified in the legislation, but outlays always have to be estimated. In doing so, CBO takes into account both the amount of budget authority provided and any changes in program operation that would be mandated by the bill. Although appropriation bills do not routinely affect spending for mandatory programs, they do so occasionally, and CBO estimates those effects as well.

CBO projects outlays for each of the roughly 800 appropriation accounts in two components—outlays from new budget authority that would be provided by the bill, and outlays from budget authority that was provided in previous years (termed prior-year outlays). For most accounts, outlays from a given year's budget authority occur over a period of two or more years, depending on how quickly the funds are obligated and how long it takes for the funded activities to be completed. For accounts that consist largely of salaries and routine operating expenses of federal agencies, only a short time passes between the obligation of funds and their disbursement. As a result, almost all of the outlays occur in the year the funding is

provided. A much longer lag occurs for long-term construction or procurement programs, and outlays may continue for several years after funds have been appropriated.

The speed at which outlays from a particular appropriation will occur can be conveniently summarized by a set of spendout rates. Such rates indicate the percentage of an appropriation that is expected to be spent in the year for which the funds are appropriated and in each subsequent year. For example, an account that consists largely of personnel costs might have spendout rates of 90 percent in the first year and 10 percent in the second year. In contrast, appropriations for a construction account might be disbursed over a four-year period—for example, at the rate of 20 percent the first year, 40 percent the second year, 30 percent the third year, and 10 percent the fourth year. For accounts with a high first-year spendout rate, the outlays in any year are determined largely by the amount of funding for that particular year. Conversely, for accounts with a low first-year spendout rate, most of the outlays in a particular year are from appropriations made in prior years.

CBO estimates spendout rates and prior-year outlays by analyzing the historical track record for each account. Because the relationships between budget authority and outlays are generally not constant from year to year, CBO reviews the actual results each year so that its estimates reflect the most recent experience. CBO begins the process when it prepares its preliminary baseline projections in December

of each year and refines the estimates after it receives the Administration's budget in February. The projected spendout rates and prior-year outlays are used in CBO's analysis of the Administration's budget request and are usually reflected in the estimates underlying the budget resolution adopted by the Congress.

ACCURACY OF THE ESTIMATES

For fiscal years 1993 through 1997, CBO's estimates of total budget-year outlays for appropriation acts were very close to, and slightly lower than, actual outlays. (The budget year is the fiscal year for which the budget is being considered. The estimates discussed here are those that were made each year when the appropriation bills were enacted.) CBO's estimates of budget-year outlays over the five-year period totaled \$2,716 billion, compared with actual outlays of \$2,719 billion—a difference of 0.1 percent. Estimated outlays were too low for three years (1994, 1995, and 1997) and too high for the other two (see Table 1). The outlay estimates were within 0.7 percent of actual outlays in every year, and the average difference, disregarding the direction of the error, was 35 cents per \$100—less than 0.4 percent.

Outlays for national defense (budget function 050) account for about half of discretionary spending, and CBO's estimates in that area have tended to be too low.

TABLE 1. COMPARISON OF ACTUAL AND ESTIMATED OUTLAYS FOR APPROPRIATIONS OVER THE 1993-1997 PERIOD

Fiscal Year	Outlays (Billions of dollars)		Difference (Actual minus estimate)	
	Actual	Estimated	Billions of Dollars	Percentage of Actual
All Discretionary Appropriations				
1993	542.4	543.2	-0.8	-0.2
1994	544.9	543.3	1.6	0.3
1995	547.3	546.6	0.7	0.1
1996	535.6	538.1	-2.4	-0.5
1997	548.5	544.5	4.0	0.7
Defense Appropriations				
1993	292.4	292.8	-0.4	-0.1
1994	282.3	276.0	6.3	2.2
1995	273.5	270.2	3.3	1.2
1996	265.9	264.2	1.8	0.7
1997	271.6	265.1	6.5	2.4
Nondefense Appropriations				
1993	249.9	250.4	-0.4	-0.2
1994	262.6	267.3	-4.7	-1.8
1995	273.8	276.4	-2.6	-1.0
1996	269.7	273.9	-4.2	-1.6
1997	276.9	279.4	-2.5	-0.9

SOURCE: Congressional Budget Office.

In scoring the appropriation bills over the 1993-1997 period, CBO estimated budget-year defense outlays of \$1,368 billion, while actual outlays were \$1,386 billion—1.3 percent more than CBO projected. Defense outlays were above CBO's estimates in four of the five years but were always within about 2 percent of the projected figure. The average annual error, in absolute terms, was \$3.7 billion.

Recent estimates of nondefense outlays show the opposite pattern—CBO's estimates of discretionary nondefense outlays have been too high in each of the past five years. The budget-year estimates totaled \$1,347 billion from 1993 through 1997, compared with actual outlays of \$1,333 billion—a difference of \$14.5 billion, or 1.1 percent. The error was less than 2.0 percent in every year, and the average error was about \$3 billion.

ESTIMATES OF DEFENSE OUTLAYS

The largest estimating errors in the defense area have been in the procurement and operation and maintenance (O&M) accounts. Procurement spending exceeded CBO's estimates in each of the five years (see Table 2). The average annual difference was \$1.2 billion, or about 2 percent. Including the Department of Defense's (DoD's) working capital funds, which act as conduits for much of the department's O&M activities, outlays for O&M exceeded CBO's estimates in four of the five years. The average absolute error was \$2.4 billion, about 2.7 percent of O&M spending.

The procurement accounts, together with the working capital funds, represent the most difficult part of the budget to estimate because of the variability in programs and rates of spending. Analysts can easily come to different conclusions, and CBO's

TABLE 2. COMPARISON OF ACTUAL AND ESTIMATED OUTLAYS FOR DEFENSE APPROPRIATIONS OVER THE 1993-1997 PERIOD

Category	1993	1994	1995	1996	1997
Actual Minus Estimate (Billions of dollars)					
DoD (Military)					
Military personnel	-1.8	2.4	0.2	-0.5	-0.3
Procurement	2.3	0.6	0.1	0.6	2.4
O&M and working capital funds ^a	2.3	3.9	b	-3.0	2.9
RDT&E	-0.5	-1.2	-0.6	1.8	1.8
Other DoD	<u>-1.7</u>	<u>-0.2</u>	<u>2.2</u>	<u>1.7</u>	<u>-0.5</u>
Subtotal	0.5	5.5	1.9	0.6	6.3
Atomic Energy Defense	-0.8	0.8	1.4	1.2	0.2
Other	<u>-0.1</u>	<u>b</u>	<u>b</u>	<u>b</u>	<u>b</u>
Total	-0.4	6.3	3.3	1.8	6.5
Actual Minus Estimate (Percentage of actual)					
DoD (Military)					
Military personnel	-2	3	c	-1	c
Procurement	3	1	c	1	5
O&M and working capital funds ^a	3	4	c	-3	3
RDT&E	-1	-4	-2	5	5
Other DoD	-22	-2	21	15	-5
Subtotal	c	2	1	c	2
Atomic Energy Defense	-8	6	12	10	2
Other	-6	c	-7	-6	-2
All Defense Appropriations	c	2	1	1	2

SOURCE: Congressional Budget Office.

NOTE: DoD = Department of Defense; O&M = operation and maintenance; RDT&E = research, development, test, and evaluation.

a. The O&M accounts are the main customers of DoD's working capital funds. Thus, outlays in those accounts are related, and their sum is more meaningful for this analysis than their respective parts.

b. Less than \$500 million.

c. Less than 0.5 percent.

projections have differed noticeably from those of the Administration. Since the late 1980s, the law has required CBO and the Office of Management and Budget (OMB) to issue a joint report on the outlay rates and estimates of spending from prior appropriations that the agencies intend to use during the upcoming budget cycle. The clear purpose of the law is to minimize differences between CBO's and OMB's estimates. It has led to extensive discussions between analysts from CBO and the Administration, with the Administration's analysts consistently arguing for lower estimates and CBO's analysts arguing for higher estimates. The Administration has had a strong incentive to seek lower outlay estimates because the outlay caps in the Balanced Budget Act have been more constraining than the limits on budget authority. Thus, the lower the outlay estimate, the better the chance of obtaining the requested level of budget authority.

Between 1993 and 1997, CBO's estimates of outlays for DoD's budget request were higher than the Administration's but still too low. The difference with the Administration's estimates continued in 1998. CBO estimated that discretionary defense outlays for the 1998 budget request would be \$5.7 billion higher than the Administration's projection. (Although all the data for 1998 are not yet in, CBO's estimates appear to be on target.) CBO's estimate for the 1999 budget request is \$3.7 billion higher than the Administration's.

Two particular circumstances also affected the accuracy of defense outlay estimates during the 1993-1997 period. First, in 1994 DoD unexpectedly exercised its authority to issue paychecks to military personnel on September 30 instead of Saturday, October 1, thus shifting outlays between fiscal years. That decision raised DoD's 1994 outlays by \$2.4 billion, accounting for almost 40 percent of CBO's estimating error for that year. (The policy change did not significantly affect outlays in fiscal year 1995 because the payment shift at the beginning of the year was offset by a similar shift of outlays from 1996 into 1995.)

Second, CBO initially overestimated and later underestimated expenditures for base closure activities. Having no historical experience to support its initial estimates, CBO relied on spendout rates for military construction accounts to estimate outlays from those appropriations. But those rates proved to be too fast, as spending occurred much more slowly in the initial years. By 1994, however, the financial logjam had broken, and outlays grew rapidly before CBO (or DoD) could adjust its estimates. That example illustrates another phenomenon relevant to evaluating outlay estimates—occasionally an account or program will reach a point at which outlays either speed up or slow down unexpectedly. Because estimates for a particular fiscal year are generally based on actual outlays that were made two or more years earlier, the same error can occur over two years before analysts have the data and the opportunity to make an adjustment.

ESTIMATES OF NONDEFENSE OUTLAYS

CBO has regularly overestimated nondefense outlays in recent years, usually by between 1 percent and 2 percent, but the sources of the errors have varied significantly from year to year. For example, one very large error—a \$2.3 billion overestimate of outlays for the Federal Emergency Management Agency (FEMA)—accounted for almost all of the variance for 1995. In contrast, there were a number of much smaller overestimates for 1994, and FEMA outlays in that year were substantially higher than anticipated.

The misestimates of nondefense outlays affect many accounts and go in both directions. The deviations have no clear unifying theme, but CBO's experience suggests one factor that may contribute to overestimates of nondefense outlays. It appears that nondefense agencies are sometimes overly optimistic about what they will accomplish and spend in the coming year and that various events and circumstances tend, more often than not, to delay actions necessary to obligate and disburse funds. That tendency may lend an upward bias to both the agencies' and CBO's estimates. It is particularly evident in relation to new or rapidly expanding programs, which frequently expend funds more slowly than expected.

CBO's estimates have been consistently too high or too low, however, for a number of agencies or programs (see Table 3). In particular, CBO has tended to

TABLE 3. COMPARISON OF ACTUAL AND ESTIMATED OUTLAYS FOR NONDEFENSE APPROPRIATIONS OVER THE 1993-1997 PERIOD

Agency	1993	1994	1995	1996	1997
Actual Minus Estimate (Billions of dollars)					
Legislative Branch	0.1	a	-0.2	a	a
Judicial Branch	0.1	-0.1	a	0.1	a
International Assistance Programs	0.5	-0.8	-0.6	-1.1	-0.6
Department of Agriculture	-0.2	-0.1	-0.2	-0.5	-0.4
Department of Commerce	a	-0.2	-0.1	0.1	a
Department of Health and Human Services	-1.3	-1.3	-0.4	-0.3	-1.3
Department of the Interior	a	-0.2	-0.1	-0.2	-0.1
Department of Justice	a	-0.1	-0.6	-1.5	-0.5
Department of Labor	a	-0.2	-0.3	-0.3	a
Federal Emergency Management Agency	-0.2	0.8	-2.3	a	0.5
Department of State	0.1	a	a	-0.3	0.1
Department of the Treasury	0.1	-0.1	0.2	-0.1	-0.1
Social Security Administration	0.1	-0.1	-0.1	-0.5	-0.5
National Science Foundation	-0.1	-0.2	-0.1	a	-0.2
Department of Education	0.9	-0.5	-0.8	-0.3	-0.3
Department of Energy	0.3	a	0.5	0.2	a
Environmental Protection Agency	-0.4	-0.6	0.3	-0.3	-0.5
Department of Transportation	-0.4	0.8	0.9	0.9	1.1
General Services Administration	-0.4	-0.2	-0.3	0.4	0.7
Corps of Engineers	-0.3	-0.4	0.1	0.3	0.1
Department of Housing and Urban Development	0.5	a	2.1	0.3	-0.5
National Aeronautics and Space Administration	0.7	-0.8	-0.7	-0.1	0.5
Small Business Administration	-0.1	-0.2	0.1	0.1	a
Department of Veterans Affairs	0.1	0.1	0.3	-0.4	-0.5
Other Agencies	<u>-0.4</u>	<u>-0.2</u>	<u>-0.3</u>	<u>-0.6</u>	<u>0.3</u>
Total	-0.4	-4.7	-2.6	-4.2	-2.5

Continued

TABLE 3. CONTINUED

Agency	1993	1994	1995	1996	1997
Actual Minus Estimate (Percentage of actual)					
Legislative Branch	5	-2	-9	-1	b
Judicial Branch	3	-3	1	4	b
International Assistance Programs	4	-7	-5	-10	-6
Department of Agriculture	-1	-1	-1	-3	-3
Department of Commerce	b	-6	-4	3	b
Department of Health and Human Services	-5	-4	-1	-1	-4
Department of the Interior	-1	-3	-1	-3	-2
Department of Justice	b	-1	-5	-13	-4
Department of Labor	b	-2	-3	-3	b
Federal Emergency Management Agency	-8	20	-91	1	17
Department of State	3	1	b	-7	1
Department of the Treasury	1	-1	2	-1	-1
Social Security Administration	1	-3	-3	-11	-11
National Science Foundation	-4	-7	-4	-1	-5
Department of Education	4	-2	-4	-1	-1
Department of Energy	4	b	6	3	b
Environmental Protection Agency	-7	-10	4	-4	-8
Department of Transportation	-1	2	2	2	3
General Services Administration	-93	-63	-51	56	76
Corps of Engineers	-8	-12	3	9	4
Department of Housing and Urban Development	2	b	7	1	-2
National Aeronautics and Space Administration	5	-6	-6	b	3
Small Business Administration	-13	-14	5	7	-5
Department of Veterans Affairs	1	1	2	-2	-3
Other Agencies	-6	-3	-4	-10	4
All Agencies	b	-2	-1	-2	-1

SOURCE: Congressional Budget Office.

a. Less than \$50 million.

b. Less than 0.5 percent.

overestimate spending for the Department of Health and Human Services (HHS), the Department of Justice, foreign aid, the Department of Agriculture, the Environmental Protection Agency (EPA), the Department of Education (mostly Pell grants), and administrative costs of the Social Security Administration. In contrast, estimates of outlays have generally been too low for the Department of Transportation and the Department of Housing and Urban Development.

ESTIMATES FOR RECENT YEARS

The major estimating errors for nondefense outlays in each of the five years are summarized below.

Fiscal Year 1993. CBO's estimate of total nondefense outlays was almost exactly correct, exceeding the actual amount of \$250 billion by \$0.4 billion, an error of 0.2 percent. Outlays for Pell grants (to undergraduate students), activities of the National Aeronautics and Space Administration (NASA), and foreign military assistance grants were higher than CBO anticipated. But spending for programs of HHS, EPA, the Federal Highway Administration, and the General Services Administration (GSA) fell below CBO's projections.

Fiscal Year 1994. CBO overestimated nondefense outlays by \$4.7 billion, or 1.8 percent. The overestimates spanned a variety of programs and agencies, including HHS, foreign aid, NASA, EPA, the Army Corps of Engineers, Pell grants, and the Export-Import Bank. Spending was higher than CBO projected for FEMA and for transit and highway programs.

Fiscal Year 1995. CBO's estimates were too high by \$2.6 billion, or 1.0 percent, largely because FEMA spent \$2.3 billion less than CBO anticipated. (Court disputes delayed the spending of funds appropriated in 1994 to deal with the effects of the Northridge earthquake.) The outlay estimates were also too high for NASA and the Pell Grant program but were too low for subsidized housing, transit, and aviation programs.

Fiscal Year 1996. Nondefense outlays were below CBO's projections by \$4.2 billion, or 1.6 percent. Outlays were overestimated for the Justice Department, foreign aid, Social Security administrative costs, and veterans' health programs.

Fiscal Year 1997. CBO's outlay projections exceeded actual nondefense spending by \$2.5 billion, or 0.9 percent. Most of the difference resulted from overestimates of spending for the National Institutes of Health, Social Security administrative costs, subsidized housing, foreign aid, EPA, and veterans' health programs. CBO's estimates were too low for FEMA and GSA.

SIGNIFICANT OVERESTIMATES FOR INDIVIDUAL AGENCIES

Cumulatively, over the five-year period, CBO's estimates of outlays for the Department of Health and Human Services, the Department of Justice, and foreign aid accounted for a significant share of the overestimates. The reasons for the estimating errors vary, however. They include an agency's accounting problems (which made historical data unreliable), a rapid change in the scope and magnitude of agency operations, and actions and decisions involving a number of foreign countries and international organizations.

Department of Health and Human Services. HHS distributes grant funds for a variety of programs from one pool of funds. The grants, totaling about \$15 billion annually, are funded through the Health Resources and Services Administration, the Indian Health Service, the National Institutes of Health, the Centers for Disease Control and Prevention, the Administration for Children and Families, and other arms of HHS. Until late in 1997, when HHS implemented a new information system, the department could not accurately track which account to charge when grant recipients were paid from the pool. Therefore, it used a formula to allocate outlays to its agencies.

Without valid historical outlays for individual programs and activities, CBO could not accurately estimate spendout rates or project future outlays. Its estimates

of spending from HHS appropriations exceeded actual outlays over the 1993-1997 period by \$4.5 billion, or 2.9 percent. Much of the overestimate may have resulted from the assumption that all of the appropriated funds would eventually be spent. It appears, however, that some agencies left unspent as much as 5 percent of their grant funds because they could not determine exactly how much budget authority remained unobligated. It is also likely that spendout rates were lower than CBO had assumed. Now that more accurate outlay data are available, CBO has begun to refine its estimates of HHS spending so as to avoid similar estimating errors in the future.

Department of Justice. The overestimates of the Justice Department's spending occurred for a different reason. Appropriations for the department's activities, which had grown at an average rate of about 4 percent a year from 1991 through 1994, rose rapidly beginning in 1995. Nondefense discretionary funding increased from \$9.4 billion in 1994 to \$12.2 billion in 1995, to \$14.5 billion in 1996, and to \$16.2 billion in 1997—an increase of 73 percent in three years.

In general, substantial increases in funding lead to growth in outlays with a significant lag because agencies take time to develop and implement new programs or to greatly expand existing ones. To account for that phenomenon, CBO reduced its usual spendout rates and projected outlays that were lower than those estimated by the Administration. The estimating task was complicated by the creation of a number of new budget accounts for activities related to the initiative to reduce violent

crime. Despite its precautions, CBO still overestimated the rate at which the new funds would be obligated and spent, projecting nondefense outlays for the Department of Justice that were \$2.7 billion, or 5.3 percent, higher than actual spending from 1993 through 1997.

Foreign Aid. A variety of factors led to overestimates of outlays for several foreign aid programs. Egypt's purchases under the Foreign Military Sales program plummeted unexpectedly, and outlays fell from between \$1.6 billion and \$1.8 billion a year in the early 1990s to below \$1 billion in 1995 through 1997. Outlays from the Economic Support Fund dropped more rapidly than CBO expected because, for some countries, unconditional payments were replaced with assistance that is disbursed only after the recipients take specific actions. In 1993 and 1994, spending for aid to the newly independent states of the former Soviet Union began more slowly than CBO anticipated, and outlays for aid to Eastern Europe and the Baltic states also were below expectations. Finally, between 1993 and 1996, the World Bank, the Asian Development Bank, and the African Development Bank undertook a process of reform and restructuring. They canceled projects and made fewer loans, thus reducing outlays from U.S. contributions.

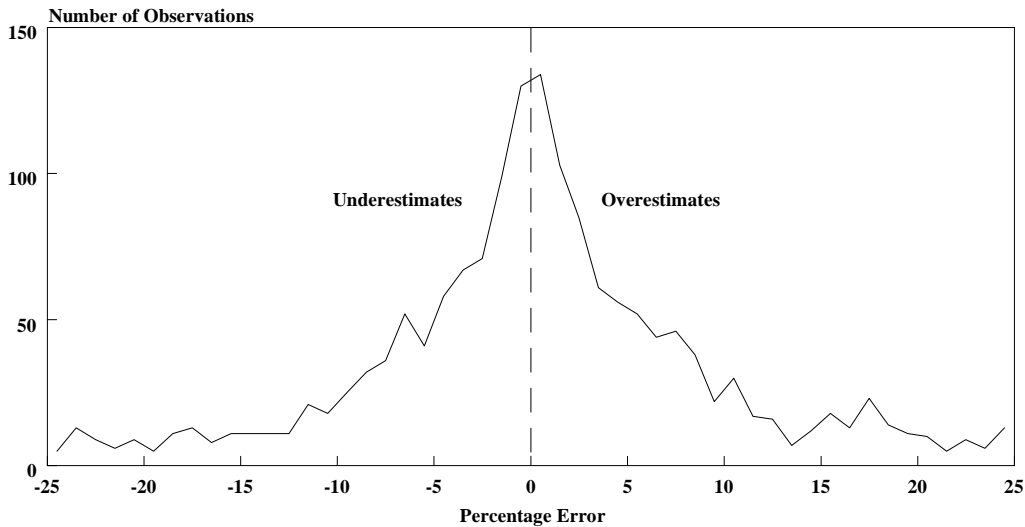
ANALYSIS OF ESTIMATES FOR INDIVIDUAL ACCOUNTS

CBO has compared its estimates with actual results for each account for the past five years. For accounts with outlays of \$50 million or more, which make up the bulk of discretionary spending, one-third of CBO's estimates were within 3 percent of actual outlays, another third were off by between 3 percent and 10 percent, and the remaining third missed by 10 percent or more. Thus, CBO's estimates for individual accounts were within 10 percent of actual outlays about two-thirds of the time. The median error was about 6 percent.

The estimates contained no substantial overall bias—51 percent of the estimates were too high, 45 percent were too low, and 4 percent were precisely correct (to the nearest million dollars). The distribution of errors has been nearly symmetric around zero. For example, actual outlays are about as likely to be between 0 and 3 percent more than the CBO estimate as they are to be between 0 and 3 percent less (see Figure 1).

In general, CBO's estimates for larger accounts tend to be more accurate, on a percentage basis, than those for smaller accounts. For example, 41 percent of the estimates for accounts of \$1 billion or more were within 3 percent of actual outlays,

FIGURE 1. DISTRIBUTION OF CBO'S ERRORS IN ESTIMATING OUTLAYS FOR APPROPRIATED ACCOUNTS DURING THE 1993-1997 PERIOD



SOURCE: Congressional Budget Office.

NOTES: Data are for accounts with outlays greater than or equal to \$50 million in at least one year. In this figure, the percentage error for underestimates is shown as a negative number.

Only observed errors between plus and minus 25 percent are shown above; those observations account for 86 percent of the approximately 1,900 observations for the 1993-1997 period. In an additional 6 percent of the cases, the CBO estimate was lower than actual outlays by 25 percent or more; and in 8 percent of the cases, the CBO estimate was higher than actual outlays by 25 percent or more.

compared with 30 percent for accounts between \$50 million and \$1 billion. A total of 79 percent of the estimates for the larger accounts came within 10 percent of actual outlays, while 62 percent of the smaller accounts did.

Outlays for individual accounts are difficult to predict for a variety of reasons. The estimates used for appropriation bills are developed seven to 10 months before the budget year begins. At that time, the most recent annual data for each account are for the fiscal year that is two years before the budget year. Thus, numerous uncertainties remain about how a program will operate, both during the rest of the

current year and in the budget year. Although outlays for personnel costs are relatively predictable, spending for procurement and grant programs can be sporadic. In many cases, such spending is from budget authority provided two or three years earlier, and the exact timing of the outlays depends on a variety of factors that are difficult for agencies to predict: How long will it take the agency to make certain decisions? When will contractors complete certain tasks or produce required products? What administrative actions will be taken that will speed up or slow down spending? How many potential recipients will apply for grants or loans, and how long will it take to process their applications? What unanticipated events might delay program activity or cause an unexpected burst of spending? Sometimes, a small change involving only a few days or weeks at the beginning or end of a fiscal year can shift substantial outlays from one year to another.

Some programs have characteristics that make them particularly hard to project. FEMA's disaster relief account, for example, is subject to huge swings in spending, depending on the occurrence of hurricanes, earthquakes, and other natural disasters and on the often uncertain timing of payments for long-run relief efforts. In some cases, changes in program management or policy will result in estimating errors (for example, changes in NASA's plans for the space station). Or changes in financial markets may have a significant effect (on the mortgage guarantee programs

of the Federal Housing Administration, for instance). Spending for new activities, for rapidly growing programs, or for budget accounts that have been restructured to include new combinations of programs is also difficult to forecast.

Rarely can an estimating error for a particular account be attributed to a clearly identifiable event or circumstance. Rather, errors result because hundreds of events, decisions, and responses occur continually in each program, thus ensuring that spending will not follow a routine and predictable pattern that can be precisely forecast by a standard formula or estimating technique. CBO necessarily relies on long-term trends and patterns, along with some specific information from agency analysts and managers, to make its projections. Deviations from those trends are inevitable, and estimates will be accurate in the aggregate if the deviations in various accounts occur in both directions so that the estimating errors offset each other.

The data used in this analysis sometimes differ from the scoring of the appropriation bills when they were enacted. The data include only accounts that are currently considered discretionary and thus exclude changes in mandatory accounts resulting from provisions in appropriation bills. In addition, they exclude a few accounts that were previously categorized as discretionary but currently are not.

Meaningful comparisons of actual and estimated outlays at the account level over a period of several years are difficult to prepare, especially because of changes

that occur in the structure of the budget. Each year, some new budget accounts are created, a number of old accounts are eliminated, account numbers are changed, and programs are shifted from one account to another. The Office of Management and Budget routinely adjusts the historical data to reflect such changes, but CBO's original scorekeeping estimates, which are the basis for this analysis, are not necessarily consistent with the current structure of accounts. CBO has tried, where possible, to reconfigure its original estimates to match the present structure, but such changes are not straightforward, and some inconsistencies undoubtedly remain.

Some programs and activities have characteristics that make analyzing outlay estimates for individual accounts especially difficult. First, every year the appropriation bills contain transfer authority that allows DoD and some other agencies to transfer funds between accounts. For DoD, that amount is usually between \$1.5 billion and \$2.5 billion. Thus, without careful adjustments for the amount and timing of transfers, a comparison at the account level can be misleading. Because CBO's estimates for appropriation bills do not reflect subsequent transfers, some of the apparent estimating errors may simply be the effects of such administrative transfers.

Second, in addition to the general transfer authority, funding is frequently appropriated to a specific account with the intention that all funding in that account will be transferred to another account for obligation and subsequent spending. In

such cases, outlays in the receiving account may be higher than originally estimated, and because no outlays are recorded for the original account, the estimate of its outlays will appear too high.

Third, accounts can have other interactions that cloud any conclusions about the accuracy of individual estimates. Such interactions occur frequently in nondefense programs, but the largest involves the defense O&M accounts and working capital funds (in recent years, referred to collectively as the Defense Business Operations Fund). DoD's working capital funds cover an extraordinarily wide range of items and activities—from labor and materials associated with overhauling naval vessels to medical supplies. The working capital funds buy goods and services from the private sector with money obtained through sales to customers in other parts of DoD. Those customers usually pay the revolving funds with appropriations for O&M. Thus, an outlay from O&M to the working capital funds is immediately negated by a receipt in the other government account; a net government outlay occurs only when the working capital fund pays a private-sector supplier. As a consequence, an apparent error in the outlay estimate for an O&M account may reflect a corresponding variance in the estimate for a working capital fund, with no net impact on the totals. An analysis of outlays for the individual accounts would miss the effects of those interactions.

Finally, a number of accounts appear in more than one budget function, and the allocation of actual outlays among the various functions may differ from the allocation used for the scorekeeping estimates. Accounts that are partly discretionary and partly mandatory pose a similar problem; identifying the discretionary portion of the actual outlays can be difficult.