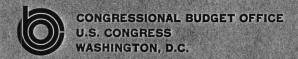
An Analysis of Congressional Economic Forecasts and Budget Estimates for Fiscal Year 1979

Staff Working Paper

February 1980



AN ANALYSIS OF CONGRESSIONAL ECONOMIC FORECASTS AND BUDGET ESTIMATES FOR FISCAL YEAR 1979

Congressional Budget Office The Congress of the United States

NOTES

Unless otherwise indicated, all years referred to are fiscal years. For 1976 and before, fiscal years ran from July 1 through June 30 and were referred to by the years in which they ended. The Congressional Budget Act of 1974 changed the fiscal year to begin on October 1 and end on September 30. The interim between the old and new fiscal years, July 1 through September 30, 1976, is called the transition quarter; fiscal year 1977 began on October 1, 1976.

Details in the text, tables, and figures of this report may not add to totals because of rounding.

PREFACE

This paper was prepared as part of CBO's ongoing responsibility under the Congressional Budget Act to tabulate the progress of Congressional action on the budget in comparison to the targets and limits specified in the annual budget resolutions. It analyzes the reasons for the differences between actual revenues and outlays for fiscal year 1979 and the revenue and outlay assumptions used for the second and revised second budget resolutions adopted by the Congress. It also discusses the accuracy of the Congressional Budget Office economic forecasts for fiscal year 1979 that were used for the resolution budget estimates. The results of the analysis are used by CBO to update its revenue and outlay estimating methods.

CBO prepared similar studies of outlay estimates for fiscal years 1977 and 1978 at the request of Senators Edmund S. Muskie and Henry Bellmon, the Chairman and Ranking Minority Member, respectively, of the Senate Committee on the Budget. This study for fiscal year 1979 includes an analysis of revenue estimates as well as outlay estimates.

The report was written by the staff of the Budget Analysis, Fiscal Analysis, and Tax Analysis Divisions, under the supervision of James Blum, William Beeman, and James Verdier. Francis Pierce edited the report, and Thelma Jones prepared it for publication.

Alice M. Rivlin Director

February 1980

		
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The federal budget deficit for fiscal year 1979 once again fell short of the level specified by the second Congressional budget resolution. Outlays were \$6.2 billion higher than approved, but the overrun was more than offset by a \$17.2 billion overrun in revenues. This marked the fourth year in a row that the deficit had been less than the amount approved by the Congress. This time, however, the shortfall was the result of unexpectedly high revenues rather than of unexpectedly low outlays.

REASONS FOR THE 1979 SHORTFALL

This paper analyzes the causes of the overruns and shortfalls in 1979. Misestimates of revenues and outlays are of several kinds. Some are the result of unforeseeable changes in the economy, which operate to raise or lower the government's receipts and expenditures. A second category of misestimates are caused by unanticipated legislative or executive actions. A third category, important on the outlay side, result from abnormal weather conditions or natural disasters that affect programs such as agricultural price supports. Some misestimates of both revenues and outlays can be laid to inaccurate estimating methods. Finally, a large share of the underestimate of tax receipts in 1979 resulted from underwithholding in calendar year 1978, which led to higher than normal tax payments when returns were filed in 1979, and overwithholding in 1979 after the withholding tables were changed in January 1979.

Economic Uncertainties

Changes in the economy affect government spending and revenues in several ways. Higher rates of inflation increase taxable income, and also increase government spending on benefit programs that are automatically adjusted for increases in the Consumer Price Index. An increase in unemployment, on the other hand, lowers taxable income and results in higher federal spending on unemployment compensation and welfare benefits. To the extent that economic forecasts fail to anticipate such changes, the estimates of revenues and outlays used for the Congressional budget resolutions will be inaccurate. The CBO forecasts of real gross national product for fiscal 1979 were close to the actual performance of the economy as a whole. But the forecasts were less accurate with respect to They overestimated expenditures on major components of GNP. consumption, inventory, and state and local government, while seriously Along with most other underestimating investment and exports. forecasters, CBO badly underestimated the rapid acceleration of inflation in fiscal 1979.

SUMMARY TABLE. REASONS FOR THE DIFFERENCES BETWEEN ACTUAL REVENUES AND OUTLAYS AND THOSE ESTIMATED FOR THE SECOND CONGRESSIONAL BUDGET RESOLUTION FOR FISCAL YEAR 1979: IN BILLIONS OF DOLLARS

	Overrun/Shortfall (-)			
Reason	Revenues	Outlays		
Inaccurate Economic Assumptions	2.0	5.9		
Unexpected Legislative and Administrative Actions	1.0	0.3		
Abnormal Weather Conditions and Disasters		-0.6		
Inaccurate Estimating Methods	4.0	0.6		
1978 Underwithholding	3.0			
1979 Overwithholding and Possible Other Causes	6.0			
Miscellaneous	1.2			
Total Overrun or Shortfall (-) from Second Budget Resolution	17.2	6.2		

The effect of unanticipated economic developments was to add about \$2 billion to 1979 tax revenues above what had been forecast, and to increase outlays by about \$5.9 billion (including \$3.0 billion from higher interest charges and \$2.5 billion from the effects of inflation on various federal programs such as pensions and health benefits).

Unanticipated Legislative or Executive Actions

In drafting a budget resolution, the House and Senate Budget Committees must make assumptions about the timing and likely effects of pending tax legislation and spending proposals. These assumptions may prove to be inaccurate. The actions taken by the Congress may occur later than assumed, or involve larger or smaller amounts than provided for in the budget resolution. Federal agencies are authorized to take various independent actions that can cause unexpected increases or decreases in revenues and outlays.

Uncertainties of this kind accounted for perhaps \$1.3 billion of the \$11.1 billion by which the federal deficit fell short of the amount assumed in the September 1978 budget resolution. About \$1 billion of the difference stemmed from the fact that the tax cut enacted in the Revenue Act of 1978 was \$1 billion below the \$13.7 billion tax cut assumed in the resolution. Unexpected administrative actions by the executive agencies added about \$1.5 billion to the outlay levels assumed in September. This was offset, however, by a shortfall of \$1.2 billion in outlays resulting from differences between anticipated and actual Congressional decisions.

Acts of God and Nature

Abnormal weather conditions and natural disasters caused actual 1979 outlays to be \$0.6 billion lower than estimated in September 1978. A large overrun in agricultural credit insurance outlays was more than offset by shortfalls in expenditures on farm price support programs.

Inaccurate Estimating Methods

Errors in estimating accounted for about \$4.6 billion of the difference between the actual deficit and the amount assumed in September. About \$4.0 billion of the overrun in revenues can be attributed to potentially correctable errors in estimating individual income tax receipts. In making its estimate for fiscal year 1979, for example, CBO assumed a 1978 level of individual income tax receipts that was \$5 billion lower than actual receipts. Since estimates for the coming year are based in part on data for the preceding year, this resulted in an underestimate of about \$2 billion in receipts for fiscal year 1979.

On the outlay side, potentially correctable errors include inaccurate cost models and programmatic assumptions. These estimates caused an overestimate of total budget outlays in 1979 by about \$0.6 billion.

Timing of Tax Payments

The new withholding tables introduced for the federal income tax in January 1979 led to substantial overwithholding from employees' paychecks. There was also underwithholding in calendar year 1978, which led to higher final payments early in 1979, increasing collections for the fiscal year above what would normally be expected. If withholding rates are not subject to frequent changes, this kind of underestimation should not occur in the future.

THE REVISED SECOND BUDGET RESOLUTION

Changes in the national economy forced the Congress to revise the second budget resolution in May 1979, eight months after the beginning of the fiscal year. Increases in the rate of inflation and the upward surge in interest rates meant that outlays on mandatory items such as interest on the national debt would have breached the spending limits imposed by the second resolution. The estimates used for the revised second resolution proved to be much closer to the actual budget totals for 1979. The revenue overrun was reduced from \$17.2 billion to \$4.9 billion, and the outlay overrun from \$6.2 billion to a shortfall of \$0.8 billion. The actual budget deficit for the year was \$27.7 billion, more than \$11 billion lower than estimated in September and still almost \$6 billion lower than estimated in May.

This study discusses the accuracy of the estimates underlying the Congressional budget resolutions for fiscal year 1979. 1/ It includes not only a discussion of the budget outlay estimates but an analysis of the revenue estimates as well, since unexpectedly high tax collections represented a major estimating problem in 1979. In addition, a chapter on economic forecasts analyzes the accuracy of CBO's economic forecasts for the year.

The estimation of federal revenues and outlays in advance of the fiscal year is important to Congress because of the procedures established by the Congressional Budget Act of 1974. This requires the Congress to set binding limits on spending and revenues before the beginning of each fiscal year. After September 15, no legislation can be considered that would cause these limits to be breached. Any bill that would do so is subject to a point of order.

Budget estimates are, however, inherently uncertain. They are based on assumptions as to the performance of the economy, conditions in the financial markets, and Congressional actions on tax and spending measures that may not be borne out. Moreover, estimating methods based on past experience with tax collections and spending rates may no longer be accurate as new trends develop. To be sure, the law of large numbers suggests that many particular estimating errors will tend to offset each other, so that if there are no systematic biases in the assumptions and methodology the errors in total revenues and outlays may be small. But the possibility remains that particular errors may not offset each other fully enough to prevent sizable errors in the totals.

One way of dealing with this uncertainty is to pass a revised budget resolution raising or lowering the enacted limits of the second budget resolution. The two Budget Committees are generally reluctant to propose such revisions. It was done in May 1979, however, two-thirds of the way

^{1/} The Congressional Budget Office has published two previous reports on the accuracy of outlay estimates used for the budget resolutions. See: Estimates of Federal Budget Outlays (February 1978) and Analysis of the Shortfall in Federal Budget Outlays for Fiscal Year 1978 (March 1979).

through the fiscal year, because of changes in the economy that would obviously require higher outlays on certain mandatory spending items-notably interest on the public debt. Hence, this study deals with two budget resolutions--that of September 1978 and the revised resolution adopted in May 1979.

CONGRESSIONAL BUDGET RESOLUTION ESTIMATES FOR FISCAL YEAR 1979

Table 1 shows the revenues and outlays called for in the 1979 budget resolutions and compares them with actual outcomes. The principal reason why the budget deficit was lower than expected was that actual revenues proved to be substantially higher than had been estimated at the beginning of the fiscal year. Although outlays under the second resolution were \$6.2 billion higher than specified, revenues exceeded the mark by \$17.2 billion, resulting in a deficit that was \$11.1 billion lower than approved.

TABLE 1. CONGRESSIONAL BUDGET ESTIMATES AND ACTUAL TOTALS FOR FISCAL YEAR 1979: IN BILLIONS OF DOLLARS

				Overrun/Shortfall (-)			
	Second Resolution	Revised Second Resolution	Actual	Second Resolution	Revised Second Resolution		
Revenues	448.7	461.0	465.9	17.2	4.9		
Outlays	487.5	494.45	493.7	6.2	-0.8		
Deficit	38.8	33.45	27.7	-11.1	-5.7		

The revisions in the second budget resolution made in May 1979 brought the estimates much closer to the actual totals, as shown in Table 1. Actual revenues exceeded the revised second resolution estimate by \$4.9 billion, or 1.1 percent, while actual outlays fell short of the revised resolution ceiling by \$0.8 billion, or 0.2 percent. The overrun in revenues and the shortfall in outlays both had the effect of lowering the budget deficit, so that the deficit for 1979 turned out to be \$5.7 billion (or

17 percent) below the level specified in the revised second resolution. The improvement in the estimates of the totals did not hold for all of the revenue or outlay items making up the totals. This is apparent in Table 2, which compares actual outlays by function with the estimates in the budget resolutions. The major outlay overruns from the second budget resolution occurred in the functions of national defense (\$5.3 billion), interest (\$4.7 billion), and health (\$1.5 billion). Smaller overruns in five other

TABLE 2. CONGRESSIONAL BUDGET ESTIMATES AND ACTUAL OUTLAYS FOR FISCAL YEAR 1979, BY FUNCTION: IN BILLIONS OF DOLLARS

		D		Overrun,	/Shortfall (-)
Function	Second Resolution	Revised Second Resolution	Actual	Second I Resolution	Revised Second Resolution
National Defense	112.4	114.4	117.7	5.3	3.3
International Affairs	7.2	7.5	6.1	-1.1	-1.4
General Science, Space and	i				
Technology	5.0	5.2	5.0	*	-0.2
Energy	8.1	7.4	6.9	-1.3	-0.6
Natural Resources and					
Environment	11.6	11.4	12.1	0.4	0.7
Agriculture	7.5	6.2	6.2	-1.3	*
Commerce and Housing					
Credit	2.8	2.9	2.6	-0.2	-0.4
Transportation	17.4	17.1	17.5	*	0.4
Community and Regional					
Development	9.4	9.7	9.4	*	-0.3
Education, Training, Emplo)V-				
ment and Social Services		29.7	29.8	-0.6	0.1
Health	48.1	49.7	49.6	1.5	-0.1
Income Security	159.3	161.1	160.1	0.8	-1.0
Veterans Benefits and					
Services	20.8	20.3	19.9	-0.8	-0.3
Administration of Justice	4.3	4.3	4.2	-0.1	-0.1
General Government	4.3	4.3	4.2	-0.1	-0.1
General Purpose Fiscal					**-
Assistance	8.8	8.75	8.4	-0.4	-0.4
Interest	47.9	52.4	52.6	4.7	0.2
Undistributed Offsetting	****	·-··			· · -
Receipts	-18.0	-18.1	-18.5	-0.5	-0.4
Total	487.5	494.45	493.7	6.2	-0.8

^{*} Less than \$50 million.

functions totalled \$1.3 billion. These \$12.7 billion of outlay overruns were partially offset by \$6.5 billion of shortfalls in ten functions, for a net outlay overrun of \$6.2 billion. The largest shortfalls occurred in the energy (\$1.3 billion), agriculture (\$1.3 billion), and international affairs (\$1.1 billion) functions.

The revisions to the second budget resolution improved the accuracy of the outlay estimates for eight functional categories, but decreased it for seven functions. Although estimated outlays for national defense were raised by \$2.0 billion for the revised resolution, the estimate still fell short of actual outlays by \$3.3 billion, or by 2.8 percent. Other major misestimates were for international affairs (overestimated by \$1.4 billion, or over 20 percent), income security programs (\$1.0 billion--less than 1 percent), and energy programs (\$0.6 billion or 8 percent).

The sum of the relative outlay estimating errors for budget functions, regardless of sign and after weighting to reflect relative shares, is 3.9 percentage points for the second resolution and 2.0 percentage points for the revised resolution—well above the relative forecast error for the budget outlays as a whole. These relative estimating errors reflect the uncertainties involved in making outlay estimates, and also demonstrate how many estimating errors tend to be offsetting. A detailed analysis of the reasons for the differences between resolution estimates and actual performance is presented in Chapter III (revenues) and Chapter IV (outlays).

ADMINISTRATION BUDGET ESTIMATES FOR FISCAL YEAR 1979

The Administration budget estimates for fiscal year 1979 were about as accurate as the Congressional estimates. Table 3 shows the estimates submitted to the Congress by the Office of Management and Budget (OMB)

TABLE 3. ADMINISTRATION BUDGET ESTIMATES AND ACTUAL TOTALS FOR FISCAL YEAR 1979: IN BILLIONS OF DOLLARS

				Overrun/Shortfall (-)		
	July 1978 Estimate	March 1979 Estimate	Actual	1978 Estimate	1979 Estimate	
Revenues	448.2	461.8	465.9	17.7	4.1	
Outlays	496.6	495.0	493.7	-2.9	-1.3	
Deficit	48.5	33.2	27.7	-20.8	-5.5	

in July 1978 and March 1979 shortly before the second and revised second resolutions were formulated and adopted. The Administration estimate of total revenues before the start of the fiscal year was virtually the same as the Congressional--\$\\$48.2\$ billion compared to \$\\$48.7\$ billion. The two were also about the same eight months later, \$\\$461.8\$ billion compared to \$\\$461.0\$ billion. For outlays the story was different. The Administration's July 1978 outlay estimate was \$9.1 billion higher than the level specified for the second budget resolution in September. By spring, however, the estimates were about identical. Figure 1 shows how the outlay estimates changed over the months.

CBO BUDGET ESTIMATES FOR FISCAL YEAR 1979

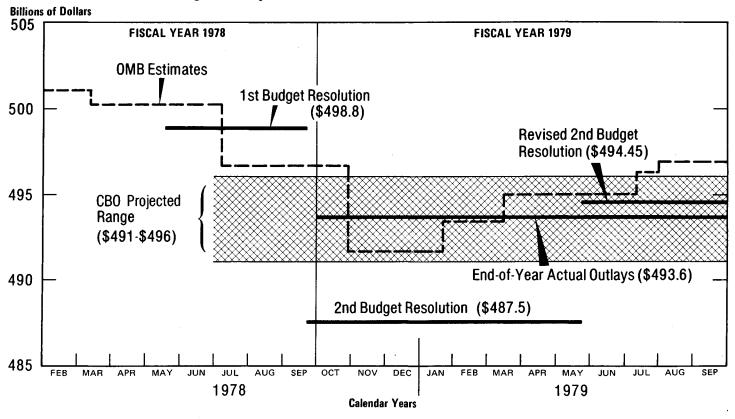
Under the Budget Act, the Congressional Budget Office (CBO) is required to prepare up-to-date tabulations of Congressional taxing and spending actions, showing how they compare to the most recent budget resolution. These tabulations or scorekeeping reports are provided to the Congress periodically. After the adoption of the second budget resolution, which sets binding limits on revenues and spending, the CBO advises the two Budget Committees daily as to the current levels of revenues and spending, based on Congressional actions already completed and on estimates of future appropriations for items that are mandatory under existing law. These daily reports are used by the committees to advise the parliamentarians of each House as to whether a point of order could be sustained against legislative proposals that would cut taxes or increase spending.

The CBO scorekeeping estimates are not projections of total revenues and outlays until the Congress completes action on all taxing and spending bills. Final Congressional action on the budget is usually not complete until shortly before the end of the fiscal year. For example, final action on 1979 appropriation bills was not completed until July 1979, or less than three months before the end of the fiscal year.

The final CBO scorekeeping estimates for 1979 were \$466.4 billion for revenues and \$496.2 billion for outlays. The final revenue estimate was within \$500 million of the actual total, but the outlay estimate was too high by \$2.5 billion (0.5 percent). Further details on the final CBO scorekeeping estimate for outlays are provided in Appendix A.

For purposes of economic forecasting, CBO also makes occasional projections of total outlays and revenues before Congressional budget actions are completed. These projections generally are based on current taxing and spending policies, scorekeeping tabulations, and recent experience with tax collections and spending as reported monthly by the

Figure 1. Estimates of Federal Budget Outlays for Fiscal Year 1979



The figure shows how the estimates by the Administration and the Senate and House Budget Committees of federal outlays changed over the course of time. In July 1978 the Office of Management and Budget (OMB) estimated total budget outlays for fiscal year 1979 at \$496.6 billion. The second budget resolution set outlays at \$487.5 billion. By spring, however, when the second resolution was revised, the OMB and Budget Committee estimates were virtually identical at about \$495 billion. Actual outlays proved to be \$493.6 billion. Estimates by the Congressional Budget Office were more stable: CBO projected in July 1978 that outlays would fall within the range of \$491 to \$496 billion.

Department of the Treasury. Table 4 shows the projections used during fiscal year 1979. The projections of total outlays were very stable and quite close to the actual outcome. Before the beginning of the fiscal year, CBO projected that total federal outlays for 1979 would fall within the range of \$491 to \$496 billion (see Figure 1). The revenue projections, however, increased significantly for each forecast. The final CBO projections for both revenues and outlays were very close to the actual totals.

TABLE 4. UNIFIED BUDGET ASSUMPTIONS FOR FISCAL YEAR 1979 USED FOR CBO ECONOMIC FORECASTS: IN BILLIONS OF DOLLARS

	July 1978	January 1979	July 1979	Actual
Outlays	495.0	493.8	495.0	493.6
Revenues	446.0	453.3	467.0	465.9
Deficit	49.0	40.5	28.0	27.7

HISTORICAL PERSPECTIVE

It is instructive to compare the budget aggregates (budget authority, revenues, outlays, budget deficits, and public debt limits) specified in Congressional budget resolutions for 1976 through 1979 with the actual outcomes. Table 5 shows that total outlays, the budget deficit, and the total amount of public debt subject to statutory limit have fallen short of the final resolution estimates for each year. Revenues and budget authority, on the other hand, have sometimes run over and sometimes fallen short of the final budget resolutions. For the last two years, however, actual revenues have exceeded the final resolution figures.

The smallest estimating errors in the budget resolutions during the past four years have been for the level of public debt subject to statutory limit. Recently, the House of Representatives voted to change its rules to merge its actions on setting statutory limits on the level of public debt with the adoption of annual budget resolutions. If the past estimating record continues, no serious procedural problems should occur as a result of this merger.

TABLE 5. CONGRESSIONAL BUDGET RESOLUTIONS AND ACTUAL BUDGET TOTALS, FISCAL YEARS 1976-1979: IN BILLIONS OF DOLLARS

Fiscal Year	Budget Authority	Revenues	Outlays	Deficit	Public Debt Subject to Limit
Fiscal Year 1976			_		
First resolution	395.8	298.18	367.0	68.82	617.0
Second resolution	408.0	300.8	374.9	74.1	622.6
Actual	413.8	299.2	364.8	65.6	621.6
Overrun/Shortfall (-)	5.8	-1.6	-10.1	-8.5	-1.0
Transition Quarter (July 1 to	Septembe	r 30, 1976)			
First resolution	91.1	86.0	101.7	15.7	641.0
Second resolution	96.3	86.0	102.0	16.2	647.2
Actual	90.9	81.7	94.4	12.7	635.8
Overrun/Shortfall (-)	-5.4	-4.3	-7.8	-3.5	-11.4
Fiscal Year 1977					
First resolution	454.2	362.5	413.3	50.8	713.1
Second resolution	451.55	362.5	413.1	50.6	700.0
Third resolution	472.9	347.7	417.45	49.75	718.4
Third resolution amended	470.2	356.6	409.2	52.6	701.3
Actual	464.4	356.9	401.9	45.0	700.0
Overrun/Shortfall (-)	-5.0	0.3	-7.3	-7.6	-1.3
Fiscal Year 1978					
First resolution	503.45	396.3	460.95	64.65	784.9
Second resolution	500.1	397.0	458.25	61.25	775.45
Actual	500.4	401.1	449.9	48.8	772.7
Overrun/Shortfall (-)	0.3	4.1	-8.4	-12.5	-2.8
Fiscal Year 1979					
First resolution	568.85	447.9	498.8	50.9	849.1
Second resolution	555.65	448.7	487.5	38.8	836.0
Revised second resolution		461.0	494.45	33.45	834.2
Actual	556.7	465.9	493.7	27.7	827.6
Overrun/Shortfall (-)	-2.5	4.9	-0.8	-5.7	-6.6

NOTE: The overruns/shortfalls (-) shown in this table are the differences between the actuals and the final budget resolution. Actual totals have been adjusted where necessary to agree with the budgetary treatment of various items used for the budget resolutions.

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Unemployment, inflation, and other measures of economic performance have a two-way relationship with the federal budget. In one direction, the government's fiscal policy decisions influence the level of economic activity achieved, as well as the distribution of resources among competing uses. In the opposite direction, the state of the economy affects total government spending and revenues.

The second relationship plays an especially important role in making budget estimates. For example, an increase in unemployment results in more spending for unemployment compensation and other programs that assist the jobless. Increased unemployment has an even greater impact on government revenues, which fall as layoffs rise. Conversely, an acceleration in the rate of inflation tends to increase taxable income, thus raising the government's tax receipts. Higher inflation also results in higher federal spending for various benefit programs, which are tied to increases in the Consumer Price Index (CPI).

In order to develop estimates of what the government's revenues and outlays will be during the coming year, it is necessary to make a forecast of economic conditions. If the economic forecast proves inaccurate, the estimates of revenues and outlays used for the Congressional budget resolution will also be inaccurate, unless there are offsetting errors.

This chapter analyzes the accuracy of two CBO forecasts for fiscal year 1979: the first presented in July 1978 (for the second budget resolution) and the second in January 1979 (for the revised second budget resolution). Forecasting is, of course, an imprecise art, and there are many sources of error. Perhaps most important, any projection of economic activity depends heavily on the assumptions made about monetary and fiscal policies. In each forecast, CBO assumed a continuation of the tax and spending policies spelled out in the most recent concurrent resolution. The monetary policy assumption was based on the past behavior of the Federal Reserve System and the statements of Federal Reserve authorities. Policies, of course, can change, with significant consequences for the economy.

Other sources of forecast error include projection methodology and data revisions. The latter type of error is often overlooked but can be quite important. For example, capacity utilization rates in manufacturing for the fourth quarter of 1978 have been revised up sharply from the

estimates available to CBO at the time the January 1979 outlook was prepared. The early estimates provided a misleading picture of the pressure on factory capacity and, therefore, the upward pressure on prices. No attempt has been made to apportion the causes of the CBO forecast errors for fiscal 1979 among the three sources of error.

THE CONSTANT-DOLLAR GNP FORECASTS

The most important part of an economic forecast is its projection of gross national product (GNP), because this is a measure of total economic activity to which all other variables are related. Table 6 presents the July 1978 and January 1979 CBO projections of constant-dollar GNP and its major components along with recent estimates of the actual behavior of each sector.

The July 1978 Forecast

As can be seen, the forecast of real GNP prepared by CBO late in the second quarter of 1978 is close to the current Department of Commerce estimate. CBO projected GNP (in 1972 dollars) as averaging \$1,434 billion in fiscal 1979, or 0.4 of a percentage point above its actual level. But total GNP includes federal government purchases; as noted above, this component is projected with a different methodology than the rest of the economy. Thus, the economic forecast can be more accurately expressed as total GNP minus federal purchases (as shown in Table 6). Once federal purchases are eliminated, the projection is quite close to the actual performance of the economy; the relative error is only 0.05 of one percentage point, or less than a billion dollars. 1/

To an important extent, however, this exceptional accuracy is the result of offsetting errors in forecasting the components of national output. Table 6 shows that CBO was too high in its projection of consumption, inventory, and state and local government expenditures; its forecast was too low on business fixed investment and net exports. After weighting them to reflect the shares of the various sectors in total output, the sum of the relative forecast errors--regardless of sign--is 1.7 percentage points, well above the relative forecast error for GNP as a whole.

I/ Indeed, if the full effect of the projection error for federal purchases were removed, the error would likely be even smaller. This is because the higher than realized federal spending would tend to raise the projection of total income and, consequently, increase other types of spending that make up GNP.

TABLE 6. FORECAST AND ACTUAL LEVELS OF CONSTANT-DOLLAR GNP AND ITS MAJOR COMPONENTS, FISCAL YEAR 1979: IN BILLIONS OF DOLLARS

	Forecast	Actual	Difference
JULY 1978 FORECAST FOR THE SECOND	BUDGET RESOLUTION	······································	
Gross National Product	1,433.9	1,428.5	-5.4
Personal Consumption			
Expenditures	923.3	920.8	-2.5
Gross Private Domestic			
Investment	212.1	218.0	5.9
Nonresidential fixed			
investment	141.2	147.6	6.4
Residential investment	57.2	57.8	0.6
Change in inventories	13.8	12.6	-1.2
Net Exports	11.4	15.7	4.3
Government Purchases	287.2	274.1	-13.1
State and local government	183.4	175.0	-8.4
Federal government	103.8	99.1	-4.7
Gross National Product minus			
Federal Government Purchases	1,330.1		
JANUARY 1979 FORECAST FOR THE REV	VISED SECOND BUDGE		
			7.7
Gross National Product Personal Consumption	1,420.8	1,428.5	7.7
Gross National Product Personal Consumption Expenditures Gross Private Domestic Investment	1,420.8	1,428.5	7.7
Gross National Product Personal Consumption Expenditures Gross Private Domestic Investment Nonresidential fixed	1,420.8 913.4 214.7	1,428.5 920.8 218.0	7.7 7.4 3.3
Gross National Product Personal Consumption Expenditures Gross Private Domestic Investment Nonresidential fixed investment	1,420.8 913.4 214.7 144.7	1,428.5 920.8 218.0 147.6	7.7 7.4 3.3 2.9
Gross National Product Personal Consumption Expenditures Gross Private Domestic Investment Nonresidential fixed investment Residential investment	1,420.8 913.4 214.7 144.7 56.8	1,428.5 920.8 218.0 147.6 57.8	7.7 7.4 3.3 2.9 1.0
Gross National Product Personal Consumption Expenditures Gross Private Domestic Investment Nonresidential fixed investment	1,420.8 913.4 214.7 144.7	1,428.5 920.8 218.0 147.6	7.7 7.4 3.3 2.9 1.0
Gross National Product Personal Consumption Expenditures Gross Private Domestic Investment Nonresidential fixed investment Residential investment	1,420.8 913.4 214.7 144.7 56.8	1,428.5 920.8 218.0 147.6 57.8	7.7 7.4 3.3 2.9 1.0
Gross National Product Personal Consumption Expenditures Gross Private Domestic Investment Nonresidential fixed investment Residential investment Change in inventories Net Exports Government Purchases	1,420.8 913.4 214.7 144.7 56.8 13.2 12.4 280.3	1,428.5 920.8 218.0 147.6 57.8 12.6 15.7 274.1	7.7 7.4 3.3 2.9 1.0 -0.6 3.3
Gross National Product Personal Consumption Expenditures Gross Private Domestic Investment Nonresidential fixed investment Residential investment Change in inventories Net Exports Government Purchases State and local governments	1,420.8 913.4 214.7 144.7 56.8 13.2 12.4 280.3 178.0	1,428.5 920.8 218.0 147.6 57.8 12.6 15.7 274.1 175.0	7.7 7.4 3.3 2.9 1.0 -0.6 3.3 -6.2 -3.0
Gross National Product Personal Consumption Expenditures Gross Private Domestic Investment Nonresidential fixed investment Residential investment Change in inventories Net Exports Government Purchases State and local governments Federal government	1,420.8 913.4 214.7 144.7 56.8 13.2 12.4 280.3 178.0 102.4	1,428.5 920.8 218.0 147.6 57.8 12.6 15.7 274.1 175.0 99.1	7.7 7.4 3.3 2.9 1.0 -0.6 3.3 -6.2 -3.0 -3.3
Gross National Product Personal Consumption Expenditures Gross Private Domestic Investment Nonresidential fixed investment Residential investment Change in inventories Net Exports Government Purchases State and local governments	1,420.8 913.4 214.7 144.7 56.8 13.2 12.4 280.3 178.0 102.4	1,428.5 920.8 218.0 147.6 57.8 12.6 15.7 274.1 175.0 99.1	7.7 7.4 3.3 2.9 1.0 -0.6 3.3 -6.2 -3.0 -3.3

The January 1979 Forecast

It would have been difficult to improve on the overall accuracy of the July 1978 CBO projection of real GNP minus federal government purchases, and the forecast prepared late in the fourth quarter of 1978 failed to do so. Indeed, in terms of total production, the accuracy of the later forecast was somewhat less. As shown in part 2 of Table 6, CBO projected GNP (net of government purchases) as averaging \$1,318 billion in fiscal 1978, or 0.8 of one percentage point below the current BEA estimate of this period.

Two points about the accuracy of this forecast are noteworthy. First, its overall deterioration results wholly from the existence of fewer offsetting errors in the projections of the major components of GNP. Reflecting this, the sum of the weighted relative forecast errors by sectors without regard to sign is 1.4 percentage points, somewhat below the 1.7 percentage points of the July 1978 projection.

Second, while CBO correctly discounted the rapid growth of the economy at the time the forecast was being prepared, the projected slowdown was a bit deeper than what actually occurred. The unanticipated strength occurred mainly in personal consumption spending and net exports; in addition, the forecast error resulted wholly from greater than expected growth in output during the third quarter of 1979. During this period, volatile net exports were up sharply, and consumption spending was fueled by automobile rebates and widespread buying in advance to beat inflation. The personal rate hit 4.3 percent in 1979:3--a very low rate compared to the average postwar experience. 2/ These factors suggest that the strength of the third quarter was borrowed from the future and temporarily masked the forces generating an economic slowdown in the United States.

FORECASTS OF PRICE, FINANCIAL, AND LABOR-MARKET DATA

The most conspicuous forecast error in both July 1978 and January 1979 was in the projection of the Consumer Price Index (CPI). Along with most other forecasters, CBO badly underestimated the rapid acceleration of inflation in fiscal 1979. This section reviews the accuracy of the CBO forecasts of price, financial, and labor-market data.

^{2/} Another way of showing this surprisingly low saving rate is to note that, despite being too low on consumption spending, the CBO forecast of disposable wage and salary income was 0.3 percent too high.

The July 1978 Forecast

As can be seen in Table 7, the CBO forecast of the jobless rate for fiscal 1979 prepared late in the second quarter of 1978 was close to its actual behavior. The forecast error is less than one-tenth of a percentage point.

TABLE 7. FORECAST AND ACTUAL VALUES OF PRICE, FINANCIAL, AND LABOR MARKET DATA, FISCAL YEAR 1979

	Forecast	Actual	Difference
JULY 1978 FORECAST FOR THE SE	COND RESO	LUTION	
Unemployment Rate (percent)	5.7	5.8	0.1
90-Day Treasury Bill Rate (percent)	7.4	9.2	1.85
Nominal Wage and Salary Income <u>a/</u> Corporate Profits Before Tax <u>a/</u>	1,195 197	1,198 233	3 36
Consumer Price Index <u>b/</u> GNP Deflator <u>b/</u> Compensation per Hour <u>b/</u>	6.6 6.5 9.1	11.8 8.8 9.1	5.2 2.3 0
JANUARY 1979 FORECAST FOR TH	ie revised	SECOND RE	SOLUTION
Unemployment Rate (percent)	6.0	5.8	-0.2
90-Day Treasury Bill Rate (percent)	9.4	9.2	-0.1
Nominal Wage and Salary Income a/ Corporate Profits Before Tax a/	1,202 208	1,198 233	-4 25
Consumer Price Index <u>b</u> / GNP Deflator <u>b</u> / Compensation per Hour <u>b</u> /	8.3 8.3 9.8	11.8 8.8 9.1	3.5 0.5 -0.7

a/ In billions of current dollars.

b/ Percent change from 1978:3 to 1979:3

By contrast, the projection of the 90-day Treasury bill rate was quite wide of the mark. The forecast error for this short-term interest rate is 1.85 percentage points. CBO recognized the hazards of attempting to anticipate the behavior of the Federal Reserve when the forecast was published. The outlook for monetary policy was carefully identified as an assumption, and a very uncertain one at that. The July report stated: "As emphasized earlier, this course of monetary policy is only an assumption. The dilemma of the Federal Reserve, with accelerating inflation on one hand and the prospect of recession on the other, makes the outlook for monetary policy particularly uncertain." 3/

The inflation rate was badly underestimated by CBO. The CPI rose by nearly 12 percent during fiscal 1979--more than 5 percentage points more than forecast. The more comprehensive GNP deflator also rose more rapidly than projected, although the error here is less dramatic. The deflator increased by 8.8 percent during fiscal 1979--some 2.3 percentage points more than forecast. 4/

During the postwar period, inflation has tended to move closely with unit labor costs. This factor, however, was not the source of the forecast errors on prices. As shown in Table 7, compensation per hour rose by 9.1 percent in fiscal 1979, as projected in the CBO forecast. Rather, the unanticipated acceleration of inflation was caused largely by the sharp jumps in energy prices, mortgage interest rates, housing prices, and beef prices. The impact of the first two influences will be assessed in more detail below.

The January 1979 Forecast

The projected unemployment rate for fiscal 1979, prepared late in the fourth quarter, proved to be somewhat higher than the actual rate. The forecast error of two-tenths of one percentage point is consistent with the underestimation of real output growth analyzed above (Table 6). The projected 90-day Treasury bill rate (9.36) differed little from the actual average rate (9.25).

^{3/} CBO, Inflation and Growth: The Economic Policy Dilemma (July 1978), p. 26.

^{4/} For an analysis of some of the sources of the difference between the CPI and the deflator, see CBO, Entering the 1980s: Fiscal Policy Choices (January 1980), Appendix, pp. 95-101.

The inflation forecast was somewhat better than the CBO projection six months earlier, but it still badly underestimated the rate of price increase, especially for the CPI. As presented in Table 7, the CPI was forecast to rise by 8.3 percent during fiscal 1979—or 3.5 percentage points below the actual rate. The projection of the broader-based GNP deflator was more satisfactory, falling one-half percentage point short of the actual rise.

Even as late as January 1979, the outlook for inflation was quite uncertain. The President had only recently announced his new wage-price guidelines with the prediction that inflation would average 6 to 6.5 percent over the next year. In addition, the effects of the turmoil in Iran and the tightening home-mortgage market on prices were very unclear. CBO correctly assessed that the Administration's wage-price program would be unable to prevent continuing rapid inflation. 5/ But CBO did not accurately project the dramatic jump in consumer energy prices (34.7 percent in fiscal 1979) and mortgage interest costs (28.7 percent in fiscal 1979). The CBO forecast error for the CPI can be traced largely to these two sectors. Without them, the CPI in fiscal 1979 rose by 8.4 percent, which compares favorably with the projected rate of 8.3 percent.

^{5/} See CBO, The Fiscal Policy Response to Inflation (January 1979), Appendix A, pp. 71-77.

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CHAPTER III. REVENUE ESTIMATES

Federal revenues for fiscal year 1979 totaled \$465.9 billion, or \$17.2 billion more than the estimate made in September 1978 for the second budget resolution and \$5.9 billion more than the estimate made in May 1979 for the revised second resolution. This chapter discussses the reasons why revenues were underestimated.

The extent of the difference between estimated and actual receipts was much larger for some revenue sources than for others. Table 8 shows the differences for each revenue source. The widest discrepancy was for individual income tax revenues: actual income tax receipts for the fiscal year 1979 were about \$217.8 billion, as against estimates of \$201.8 billion in September 1978 and \$208.0 billion in May 1979. Smaller differences occurred between estimated and actual receipts for corporation income taxes; while the estimate of September 1978 was very close to the final outcome, it was revised upward in May to an estimated \$2.7 billion in excess of actual revenues.

REASONS FOR ESTIMATING ERRORS

CBO estimates revenues by using a series of equations that seek to capture the relationships between taxpayers' incomes and tax collections. The equations are based largely on past experience, and must be frequently adjusted to take new developments into account.

Actual revenue collections may differ from the estimates for four major reasons:

- o The economic assumptions on which an estimate is based may be inaccurate;
- o The timing of tax payments may differ from previously established patterns;
- o Legislative actions may differ from what is assumed in the estimate; and
- o There may be errors in the basic estimating equations.

TABLE 8. ESTIMATED AND ACTUAL RECEIPTS FOR FISCAL YEAR 1979: IN BILLIONS OF DOLLARS

				Overrun/S	hortfall (-)
Revenue Source	Second Resolution <u>a</u>	Revised Second / Resolution	Actual	Second Resolution	Revised Second Resolution
Individual Income					
Tax	201.8	208.0	217.8	16.0	9.8
Corporate Income					
Tax	65.5	68.4	65.7	0.2	-2.7
Social Insurance					
Taxes	142.3	143.7	141.6	-0.7	-2.1
Excise Taxes	18.8	18.8	18.7	-0.1	-0.1
Estate and Gift					
Taxes	5.8	5.8	5.4	-0.4	-0.4
Customs	6.8	7.5	7.4	0.6	-0.1
Miscellaneous	7.8	8.8	9.2	1.4	0.4
Total	448.7	461.0	465.9	17.2	4.9

Note: Entries may not add to totals because of rounding.

a/ The Second Concurrent Resolution for Fiscal Year 1979, approved in September 1978, provided for a tax cut of \$13.7 billion, but did not allocate it by revenue source. The Revenue Act of 1978, which was approved in the following month, provided for a fiscal year 1979 tax cut of \$12.6 billion. This column includes the \$13.7 billion tax cut, but allocates it by source in a way that parallels the allocation of the tax cut actually approved.

Inaccurate Economic Assumptions

CBO's revenue forecasts depend to a large extent on the estimates of personal income, corporate profits, and other economic data in CBO's economic forecast. If any of these elements of the forecast is inaccurate, it is likely to throw off the revenue estimates, unless there are offsetting errors elsewhere.

Timing of Tax Payments

The relationship between income levels and individual and corporate tax liabilities--what taxpayers actually owe--is relatively stable. But there is considerable uncertainty as to exactly when taxpayers will pay the taxes they owe. Corporations have a good deal of flexibility in determining the amount of their quarterly estimated tax payments, for example, and taxes withheld during the year for most individual taxpayers represent only a rough approximation of their actual tax liabilities. Since budget resolutions are based on fiscal year tax receipts rather than on calendar year tax liabilities, it is important for revenue estimating purposes to make some estimate of when these liabilities will actually be paid. But because individual income tax withholding tables have changed frequently in recent years, and because corporations have so much leeway in the timing of their tax payments, there is a significant potential for error in estimating actual future tax receipts.

Unexpected Legislative Actions

In estimating revenues, it is sometimes necessary to make assumptions as to the final outcome of pending or future tax legislation. These assumptions sometimes turn out to be incorrect, so that final tax receipts differ from what has been estimated.

Inaccurate Estimating Equations

If the foregoing sources of error could be eliminated, any remaining difference between estimated and actual tax receipts would be due to errors in the underlying estimating equations, and the equations could then be corrected for those errors. That, in fact, is what CBO seeks to do. The information needed to make these corrections is, however, often available only with considerable lags. For example, much of the information needed to determine the sources of the inaccuracy in CBO's estimates of fiscal year 1979 revenues will not be available until the income tax returns for calendar year 1979 have been filed and tabulated—later in 1980. This chapter, therefore, is not the final word on the accuracy of CBO's fiscal year 1979 revenue estimate.

Correctable and Inherent Sources of Errors

Some sources of error in revenue estimates are potentially correctable through improved estimating assumptions or with additional data. Other estimating errors are introduced by events outside the economic forecast, or result from normal fluctuations in tax relationships from one year to the next. In 1979, overwithholding from paychecks contributed significantly to the need to revise estimates of revenues. This large source of error should be smaller for years in which withholding rates remain unchanged.

Sources of error that are expected to remain include unexpected legislative actions and incorrect economic forecasts. Inaccurate estimating equations can be improved with the help of additional data from the existing tax rate structure, but there will always be some margin of uncertainty.

The remainder of this chapter reviews the CBO estimates for each revenue source in an effort to explain the differences between estimates and reported receipts, to the extent that this can be done with the information currently available.

INDIVIDUAL INCOME TAX REVENUES

The September 1978 estimate for individual income tax collections of \$201.8 billion was revised upward to \$208.0 billion in May 1979. Actual receipts reported in October 1979 showed much higher collections of \$217.8 billion.

A number of possible explanations can be advanced for this \$16 billion difference between the initial CBO estimate and actual final receipts. Table 9 summarizes the factors contributing to the difference, to the extent this is possible with the data available thus far.

Inaccurate Economic Assumptions

Recent Commerce Department revisions of data on 1978 incomes, especially for nonwage personal income, suggest that actual 1978 income gains for small businessmen and recipients of interest income were higher than was assumed in the CBO economic forecast. This higher 1978 income, which affected fiscal year 1979 tax receipts, accounts for about \$2 billion of the amount by which actual fiscal year 1979 receipts exceeded the CBO estimate.

The Commerce Department data on personal incomes for 1979 are not yet final. Further revisions are likely to occur in July of 1980, 1981, and 1982, although the revisions after July of 1980 are likely to be fairly small. It is thus not possible to tell precisely how much of the error in the CBO revenue estimate for fiscal year 1979 is due to inaccurate assumptions about 1979 personal incomes. The problem is discussed further below.

Timing of Tax Payments

Withholding rates for individual income taxes were too low in calendar year 1978, resulting in higher than normal tax payments when final 1978 returns were filed in January-April 1979. This increased fiscal year 1979 receipts by about \$3 billion in payments that would normally have been made in fiscal year 1978.

TABLE 9. REASONS FOR DIFFERENCES BETWEEN THE SEPTEMBER 1978 ESTIMATE OF FISCAL YEAR 1979 INDIVIDUAL INCOME TAX RECEIPTS AND ACTUAL REPORTED RECEIPTS: IN BILLIONS OF DOLLARS

Reason	Revenue Effect
Inaccurate Economic Assumptions Personal income above forecast levels	+2.0
Timing of Tax Payments 1978 underwithholding	+3.0
Unexpected Legislative Actions Smaller tax cut enacted than assumed	+1.0
Inaccurate Estimating Equations Underestimate of 1978 receipts Reduced growth of personal deductions	+2.0 +2.0
Combination of Causes 1979 overwithholding, future income revisions, and/or equation error	6.0
Total Revision of Individual Income Tax Estimate, September 1978 to October 1979	+16.0

Unexpected Legislative Actions

About \$1 billion of the increase in fiscal year 1979 revenues over what was assumed in September 1978 stemmed from the fact that the tax cut enacted in the Revenue Act of 1976 was approximately \$1 billion below the \$13.7 billion tax cut expected in September.

Inaccurate Estimating Equations

Income tax collections data late in 1978 indicated that 1978 individual income tax receipts were coming in at an annual rate about \$5 billion higher than CBO's estimating equations had projected. CBO estimated at that time that only about \$3 billion of the unanticipated higher

receipts reflected causes that would continue into 1979, so only that amount was carried into the estimate of 1979 receipts. As further information was received on actual 1978 collections, it became clear that the entire \$5 billion should have been carried into 1979 receipts. This accounts for \$2 billion of the underestimate of 1979 receipts.

The growth rate of individual income tax deductions has also slowed temporarily following recent increases in the standard deduction. This was reflected in an increase in the elasticity of tax receipts with respect to income in 1979. That is, more taxes were collected on a given income gain than in prior years. The higher elasticity raised 1979 receipts by about \$2 billion.

Combination of Causes

It appears likely that the new withholding tables placed in use in January 1979 resulted in significant overwithholding from employees' paychecks during 1979. It is also possible that the Commerce Department estimates of 1979 personal incomes used in the CBO economic forecast were too low. The degree of overwithholding will remain uncertain until 1979 incomes have been reported by taxpayers, 1979 tax liabilities have been calculated, and refunds have been processed. This will not be completed until later this year. Revised Commerce Department estimates of 1979 personal incomes will be available this coming July.

Until this information becomes available, it will not be possible to determine exactly how much of the CBO underestimate of fiscal year 1979 individual income tax revenues was due to overwithholding, how much to errors in the forecast of personal incomes, and how much to errors in the basic estimating equations. The combination of these factors, however, accounts for about \$6 billion of the underestimate, with overwithholding probably the predominant cause.

CORPORATE INCOME TAX REVENUES

CBO's September 1978 estimate of fiscal year 1979 corporate tax receipts (after retroactive adjustment for the effects of the Revenue Act of 1978), was \$65.5 billion. This is very close to the actual corporate tax receipts level of \$65.7 billion reported in October 1979. Developments in the early part of the year, however, led to an upward revision of the estimate to \$68.4 billion for the May 1979 revised second resolution. This interim misestimate stemmed from a combination of revised information on corporate profits, difficulties in predicting the timing of corporate tax payments, and possible errors in the underlying estimating equations.

Actual corporate tax collections had been unexpectedly high through March 1979, and forecasts of corporate profits for the remainder of the year were quite favorable. CBO's forecast of full-year corporate profits for 1979, for example, rose from \$200.6 billion in the fall of 1978 to \$211.8 billion in January 1979. It was to rise again, to \$223.8 billion, in June 1979. The May 1979 estimate reflected these trends.

Beginning in June 1979, however, corporate tax payments began to drop off. Receipts in that month were only 7 percent above those of June 1978, despite much higher profit levels. In September 1979, payments were actually 1 percent below the level of September 1978. The dropoff is hard to explain, since corporate profits for the third quarter of 1979 were reported at an annual rate of \$243 billion, well above the levels of the year before and significantly higher even than the June 1979 forecast for the third quarter. Thus, while both the CBO forecast and actual reported corporate profits were going up, corporate tax payments were falling well below what CBO's estimating equations suggested they should be for profits at those levels. Some receipts that would normally have been received in late 1979 out of 1979 profits may be received later, however.

Part of the explanation for this delay might be that the composition of profits shifted somewhat from corporations that pay most of their taxes on a current basis, such as auto companies, to corporations that can defer a significant portion of their tax payments to future years, such as oil companies. In making their quarterly estimated tax payments, corporations may also have been reacting to weakening economic forecasts and the prospect of lower profit levels. Corporate managers sometimes try to anticipate changes in profit levels to avoid making tax payments that will merely be refunded later. Rising interest rates in the fall of 1979 may have tempted them to err on the side of underpayment in September.

CBO's revenue estimating procedure has not been designed to anticipate such shifts in corporate tax payment strategy. As more data on actual profit levels become available, and as final tax returns for 1979 are filed and analyzed, it may be possible to further refine CBO's tax estimating equations so as to capture these changes in actual effective corporate rates. But this will only help estimate future tax liabilities; estimates of actual payments will still be subject to the uncertainties inherent in trying to predict partly discretionary corporate behavior that seems to vary over the business cycle.

SOCIAL INSURANCE TAX REVENUES

In September 1978, CBO estimated social insurance collections for fiscal year 1979 at \$142.3 billion. The social insurance estimate was raised to \$143.7 billion in May 1979. The actual figure reported in October 1979

was \$141.6 billion, \$0.7 billion below the initial estimate, and \$2.1 billion below the revised May 1979 estimate. The upward revision in May was motivated by higher-than-expected first quarter Social Security receipts, which may actually have represented overwithholding of income taxes that were misassigned to Social Security taxes when first received by the Treasury.

The net \$0.7 billion by which the September 1978 estimate exceeded actual social insurance receipts may be accounted for by a combination of errors: a \$0.5 billion overestimate for Social Security taxes, a \$0.4 billion overestimate for unemployment insurance taxes, and a \$0.2 underestimate for other social insurance taxes.

The largest single category of social insurance collections is Social Security payroll taxes, which account for about 85 percent of the total. These collections depend almost entirely on wage levels throughout the year; if wage level forecasts are accurate, estimates of receipts should be accurate as well. Some uncertainty is inherent in estimating monthly collections of Social Security taxes. When the Treasury Department receives withheld taxes from employers each month, it allocates them between employee income taxes and Social Security taxes on the basis of prior-year proportions. The precise allocation is not known until April, when final employer reports are tabulated. At that point, the allocation reported earlier may be revised as much as \$500 million per quarter.

Actual fiscal year 1979 Social Security tax receipts were \$0.5 billion below CBO's September 1978 estimate, and \$1.4 billion below its May 1979 estimate. This may reflect either some error in the estimating equations or a Treasury overallocation of tax receipts to income tax withholding. It will not be known for certain until final Social Security receipt reconciliations are made in April 1980.

Actual unemployment insurance receipts were about \$0.4 billion below the September 1978 estimate, and \$0.4 below the May 1979 estimate. This was because unemployment insurance trust fund balances held up better than expected and did not require large new revenues. Accordingly, the state payroll tax rates necessary to maintain unemployment insurance fund balances were not as high as expected, resulting in 1979 receipts that were below estimated levels.

OTHER REVENUES

Actual revenue in fiscal year 1979 from excise taxes, estate and gift taxes, customs duties, and miscellaneous receipts totalled \$40.8 billion. This was \$1.5 billion above the September 1978 estimate of \$39.3 billion and

\$0.2 billion below the estimate of May 1979. Excise tax receipts were \$0.1 billion below the initial and revised 1978 estimates, estate and gift taxes \$0.4 billion below the initial and revised estimate, and customs duties \$0.6 billion above the September 1978 estimate and \$0.1 below the May 1979 estimate, reflecting higher duties on oil imports during 1979. CBO underestimated miscellaneous receipts, primarily Federal Reserve Board profits, by a significant amount—\$1.4 billion—because interest rates rose to unanticipated levels during 1978 and 1979. The May 1979 estimate was still \$0.4 billion below the actual miscellaneous receipts level of \$9.2 billion.

These small revenue sources are influenced by specific factors that cannot be captured in an overall economic forecast, such as asset values for estate taxes, trade volume and tariff changes for customs duties, and monetary transactions in the case of Federal Reserve profits. Accordingly, they may be subject to wider percentage variations than the larger revenue sources. At times when monetary policy is changing, for example, the 18-months-in-advance estimate of Federal Reserve Board earnings may be in error by as much as 20 percent, while Social Security receipts can usually be estimated within 1 percent of the actual number.

Actual outlays for 1979 totaled \$493.7 billion, \$6.2 billion more than was specified for the second resolution, and \$0.8 billion less than specified by the revised second resolution. This chapter discusses the reasons for the differences.

REASONS FOR ESTIMATING ERRORS

Actual outlays may be greater or less than specified in a Congressional budget resolution for a number of reasons. They may be classified for purposes of this analysis into four basic sets of reasons.

Inaccurate Economic Assumptions

Some spending programs are particularly sensitive to economic conditions, and the accuracy of the outlay estimates for these programs depends to a great extent on the accuracy of the economic assumptions upon which they are based. For example, payment of unemployment benefits depends largely on the level of unemployment. Budget outlays for interest on the public debt are sensitive to the level of interest rates, particularly short-term interest rates. Benefit payments for such programs as Social Security and federal employee retirement, which are automatically adjusted for increases in the cost of living, are sensitive to the rate of inflation. The costs for certain other entitlement programs, such as Medicare and Medicaid, are also sensitive to the rate of inflation in particular sectors of the economy. To the extent that economic forecasts fail to anticipate developments, the estimates of outlays used for the Congressional budget resolutions will be inaccurate. The accuracy of the CBO economic forecasts prepared for the 1979 budget resolutions is discussed in Chapter II. This chapter presents estimates of the extent to which the budget outlay estimates were affected by inaccuracies in the forecasts.

Unanticipated Legislative or Executive Actions

The outlay estimates used for a budget resolution cannot allow for unanticipated actions or inactions by the Congress or for unexpected administrative actions by the Executive Branch. For example, Congress may fail to act on legislation for which provision was included in a budget resolution, or it may complete action on a spending bill months later than expected. In addition, federal agencies are authorized under current law to take various independent actions, such as the sale of loan assets, that can cause increases or decreases in outlays.

Acts of God and Nature

Weather conditions or natural disasters can affect federal outlays by billions of dollars. The outlay estimates used for budget resolutions usually assume that weather conditions will be normal and that the run of natural disasters will not differ greatly from previous years.

Inaccurate Estimating Methods

The estimating methods used by Congressional staff may prove to be inaccurate. CBO has developed its own estimating models for particular spending programs that account for about 50 percent of total outlays. These models are often quite sophisticated; they relate federal spending to various economic, demographic, and programmatic variables. While they generally are very accurate, estimating errors do occur.

In estimating outlays for most annually appropriated programs, CBO now uses spend-out rates based largely on historical relationships between outlays and budget authority, sometimes calculated by statistical time series methods. These accounts represent about 40 percent of total outlays. Spending rates fluctuate from year to year for many programs, so actual spending patterns must be closely monitored to minimize estimating errors. In the past, agencies tended to overestimate what they could accomplish each year; when not corrected, this gave an upward bias to the spending rates used for budget estimates.

Estimates for the remaining portion of total outlays--about 10 percent--are developed by a variety of means, including staff judgments based on experience and information provided by the agencies. Many of these accounts are particularly volatile, or are difficult to model. Estimating errors for them occur frequently.

While further improvements can be made in estimating techniques, it is unlikely that much can be done about the other sources of error described above. Complete accuracy in outlay estimates is clearly not attainable, except by chance. Nevertheless, if there are no systematic biases in the assumptions and methodology employed, individual estimating errors are likely to be offsetting; the statistical law of large numbers suggests that the overall estimating error for total budget outlays before the start of a fiscal year could be as small as 1 to 2 percent.

Comparisons for 1979 and 1978

Table 10 summarizes the differences between actual outlays and the levels specified by the second and revised second budget resolutions for fiscal year 1979, in terms of the four basic sets of reasons for estimating errors. The table also shows the estimating errors for the second budget resolution for fiscal year 1978, for purposes of comparison.

TABLE 10. REASONS FOR THE DIFFERENCES BETWEEN ACTUAL OUTLAYS AND CONGRESSIONAL BUDGET RESOLUTIONS FOR FISCAL YEARS 1978 AND 1979: IN BILLIONS OF DOLLARS

	Overrun/Shortfall (-)				
Reason	Second Resolution 1978	Second Resolution 1979	Revised Second Resolution 1979		
Inaccurate Economic Assumptions	0.1	5.9	-0.8		
Unexpected Legislative and Administrative Actions	-0.7	0.3	-1.4		
Inaccurate legislative assumptions	-1.4	-1.2	-1.6		
Unexpected administrative actions by the executive branch	0.7	1.5	0.2		
Abnormal Weather Conditions and Disasters	2.0	-0.6	0.5		
Inaccurate Estimating Methods	-9.7	0.6	1.0		
Inaccurate models and programmatic assumptions Inaccurate spending rates	0.9	-0.7	-0.8		
and other estimating problems	-10.6	1.3	1.8		
Total overrun or shortfall(-) from budget resolutions	-8.4	6.2	-0.8		

Second Resolution for 1979. The largest source of outlay estimating error for the second resolution for 1979--some \$5.9 billion--was inaccurate economic assumptions. The revisions to the second resolution were based on a new set of economic assumptions that were more accurate, and slightly overcorrected the previous errors.

Also contributing to the \$6.2 billion outlay overrun from the second resolution for 1979 were several unexpected administrative actions by the Executive Branch that added about \$1.5 billion to outlays. These were almost fully offset by a \$1.2 billion shortfall resulting from inaction on several spending proposals that the second resolution assumed would be passed. A shortfall of \$0.6 billion in outlays may be attributed to abnormal weather conditions and disasters. The use of inaccurate estimating methods by Congressional budget staff also accounted for \$0.6 billion of the \$6.2 billion total outlay overrun from the 1979 second resolution.

Revised Second Resolution for 1979. The errors in the outlay estimates used for the revised second resolution for 1979 tended to be smaller and to offset each other more than under the second resolution. This is not surprising since the revised resolution was adopted during the eighth month of the fiscal year, and much more was known about economic conditions and actual spending patterns. The major improvement in estimates can be attributed to more accurate economic assumptions. Estimating errors because of other reasons had about the same net effect as for the initial second resolution.

Comparison with 1978 Experience. The 1979 experience contrasts sharply with that of 1978 in several respects. First, the magnitude of the estimating error for total outlays was greater for the 1978 second resolution than for either the 1979 second resolution or the revised second resolution. Actual outlays for 1978 fell short of the level specified by the second resolution by \$8.4 billion, or 1.8 percent. For 1979, actual outlays were \$6.2 billion, or 1.3 percent, above the second resolution level, and \$0.8 billion (0.2 percent) below the revised second resolution estimate.

Second, the 1978 second resolution outlay level was misestimated largely because of the use of inaccurate spending rates reflecting an upward bias in agency outlay plans. This upward bias was effectively removed from the outlay estimates used for the 1979 budget resolutions; in fact, the adjustments made by the CBO and the Budget Committees overcorrected to some extent for the upward bias in the 1978 estimates. As a result, the spending rates used for the 1979 resolutions tended to underestimate outlays, although by less than 1 percent. Moreover, these underestimates were partially offset by errors produced by inaccurate models and programmatic assumptions.

Third, outlay misestimates because of inaccurate economic assumptions were much greater in 1979 than for 1978. Estimating errors attributed to inaccurate economic assumptions for 1978 largely offset one another. On the other hand, abnormal weather conditions and disasters led to greater misestimates of outlays in 1978 than in 1979. Inaccurate legislative assumptions accounted for about the same level of outlay misestimates in both fiscal years.

The following sections provide further details on the reasons for the differences between actual outlays and the estimates used for the 1979 budget resolutions. The figures shown in Tables 11-16 are CBO estimates based on the two Budget Committees' reports on the 1979 resolutions, on the conference reports, and on other information. The assignment of outlay shortfalls and overruns to various reasons should be considered approximate. Appendix A provides the underlying data base used for the analysis presented in this chapter.

INACCURATE ECONOMIC ASSUMPTIONS

Inaccurate economic assumptions were the major reason why actual outlays for 1979 exceeded the level specified by the second budget resolution. As shown in Table 11, net interest outlays were \$3 billion greater than estimated for the second resolution, largely because short-term interest rates during fiscal year 1979 were significantly higher than assumed. The revisions to the second budget resolution were based on higher interest-rate assumptions that proved to be slightly too high, particularly for longer-term rates. This resulted in an estimated \$0.6 billion shortfall in net interest outlays from the revised resolution levels.

TABLE 11. MISESTIMATES OF FISCAL YEAR 1979 OUTLAYS BECAUSE OF INACCURATE ECONOMIC ASSUMPTIONS: IN BILLIONS OF DOLLARS

Major Program	Overrun/Shortfall (-)		
	Second Resolution	Revised Second Resolution	
Net interest	3.0	-0.6	
Medicare and Medicaid	1.2	0.5	
Social Security	0.7		
Unemployment compensation	0.3	-0.6	
Other income security programs	0.4	-0.1	
All other	<u>0.2</u>	*	
Total overrun or shortfall(-) from budget resolutions	5.9	-0.8	

Higher than expected inflation during fiscal year 1979 added \$2.5 billion in outlays for various benefit payment programs (largely Social Security, Medicare, Medicaid, and federal military and civilian employee retirement benefits) to the levels assumed for the second budget resolution, and \$0.4 billion to the revised second resolution. The average unemployment rate during the fiscal year was slightly above the rate assumed for the second resolution (by 0.1 percentage point), but below the rate assumed for the revised resolution (by 0.2 percentage points). As a result, outlays for unemployment compensation benefits were an estimated \$300 million above the level assumed for the second resolution, but \$600 million below the level assumed for the revised resolution.

UNEXPECTED LEGISLATIVE AND ADMINISTRATIVE ACTIONS

In formulating a budget resolution, the Budget Committees must make assumptions about possible Congressional and executive actions that will affect spending. These anticipated actions, however, may occur later than the time assumed for a resolution, be substantially different than assumed, or never happen. Also, the Congress may act on unanticipated legislation. $\underline{1}/$

Inaccurate Legislative Assumptions

The differences between anticipated and actual Congressional actions in 1979 resulted in an outlay shortfall of \$1.2 billion from the second resolution and a shortfall of \$1.6 billion from the revised second resolution. In 1978, a similar shortfall of \$1.4 billion occurred. Table 12 provides a summary of these outlay misestimates for fiscal year 1979.

The Second Budget Resolution. The assumptions made by the House Budget Committee for the second resolution included outlays of \$1.6 billion for legislative initiatives that were not enacted: \$550 million for a proposed supplementary fiscal assistance program to continue antirecession financial assistance to states and localities; \$331 million for fiscal relief payments to states for public assistance costs (such as would have been authorized by H. R. 13335); \$237 million for proposed public assistance amendments

Under the budget act procedures, the Congress is prohibited from considering any legislation that would cause the spending totals for budget authority and outlays to be exceeded or the revenue total to be reduced. If a particular proposed spending action were estimated to have the effect, if enacted, of causing total outlays to exceed the level specified in a second resolution, a point of order could be raised against the measure, which would prevent further action.

(H.R. 7200) and for the elimination of work disincentives under the supplementary security income program (H.R. 12972); \$300 million for the proposed international grain reserve; and \$149 million for an expansion of trade adjustment assistance for workers and firms (H.R. 11711). 2/

TABLE 12. MISESTIMATES OF FISCAL YEAR 1979 OUTLAYS BECAUSE OF UNEXPECTED LEGISLATIVE AND ADMINISTRATIVE ACTIONS: IN BILLIONS OF DOLLARS

	Overrun/Shortfall (-)		
Reason and Major Program	Second Resolution	Revised Second Resolution	
Inaccurate Legislative Assumptions	-1.2	-1.6	
Defense programs	0.9	0.1	
International security programs	*	-0.5	
Farm price supports	-0.6	-0.3	
SBA disaster loans		-0.5	
Income security programs	-0.4	-0.1	
Veterans pensions	-0.6		
Antirecession financial assistance	-0.6	-0.2	
All other	-0.1	-0.2	
Unexpected Administrative Actions by			
the Executive Branch	1.5	0.2	
Defense procurement	0.3	0.1	
Farm price supports	0.7	0.2	
Rural housing programs	0.3	*	
All other	0.2	-0.1	
Total, overrun or shortfall(-)		•	
from budget resolutions	0.3	-1.4	

^{2/} Source: Congressional Record, pp. H 10272-74.

The second resolution also assumed that there would be 100 percent participation in the proposed reform of the veterans' pension program which had not yet been enacted when the resolution was adopted in September 1978. After the Veterans' and Survivors' Pension Improvement Act was enacted in October, the participation rate was revised downward to 33 percent, which had the effect of lowering the outlay estimates by about \$600 million. The second resolution also included an allowance of over \$200 million to implement anticipated agricultural programs that did not materialize.

Partially offsetting these estimating errors were higher than anticipated appropriations for defense programs, which added over \$900 million in outlays to the second resolution estimates; the unanticipated enactment of a low-income energy assistance program, which added almost \$200 million in outlays; and no Congressional action on \$117 million of assumed legislative savings for various entitlement programs.

The Revision of the Second Budget Resolution. The revisions adopted in May 1979 provided funds for several legislative initiatives that were not enacted, including \$300 million for the proposed international grain reserve and \$150 million for the proposed supplementary fiscal assistance program. The revised second resolution also assumed earlier enactment of the 1979 supplemental appropriations bill than actually happened. Enactment at the end of July resulted in lower obligations and disbursements than expected for SBA disaster loans and for Middle East security supporting assistance, reducing outlays by approximately \$700 million from the level estimated. In addition, the resolution assumed that only two of the four destroyers being constructed for Iran would be purchased for the U.S. Navy after Iran cancelled its order. The 1979 supplemental appropriations, however, provided funds for all four ships. The purchase of two additional destroyers added an estimated \$315 million in receipts to the foreign military sales trust fund above the level assumed for the resolution. (A surplus of receipts in the trust fund has the effect of reducing outlays, since receipts are treated as negative expenditures in the budget.)

Unexpected Administrative Actions by the Executive Branch

Federal agencies may take various independent actions that affect budget outlays, and these may not be anticipated by a budget resolution. Unexpected administrative actions by the Executive Branch in fiscal 1979 had the effect of adding \$1.5 billion to the outlay levels assumed for the second budget resolution and about \$200 million to the revised second resolution (see Table 12).

<u>Farm Price Supports</u>. The Department of Agriculture changed the sugar price support program and increased the interest rate for storage facility loans after March 21, 1979, causing a surge in loan disbursements prior to that date. These actions added over \$700 million in outlays for farm price supports and related programs above the level assumed for the second budget resolution, and almost \$200 million to the level assumed for the revisions to the second resolution.

Rural Housing. Net outlays from the Farmers Home Administration public enterprise funds were \$1.4 billion in fiscal year 1979, compared to -\$0.3 billion and -\$0.1 billion assumed for the second and revised second budget resolutions respectively. The outlay levels for these funds each year are largely determined by administrative decisions regarding the sale of assets to the private sector or the Federal Financing Bank (FFB), an off-budget agency. The budget impact of these asset sales is difficult to predict because their timing and volume are determined by the Farmers Home Administration, which can change its plans on very short notice. Consequently, the practice of CBO and the Budget Committees is to use administration outlay estimates for these funds. For the 1979 budget resolutions, it was assumed that two of the three funds would have negative net outlays; that is, the sale of assets would exceed loan disbursements. This proved to be inaccurate; loan disbursements exceeded asset sales for all three funds, causing outlays to be higher than assumed for the resolutions.

The largest outlay overrun for the Farmers Home Administration funds in 1979 was for agricultural credit insurance (\$1.4 billion). An extraordinarily large volume of natural disaster and economic emergency loans made by the Farmers Home Administration overburdened the processing capability of the administrative staff, leaving the agricultural credit insurance fund with over a billion dollars in assets that otherwise would have been sold to the FFB. This outlay overrun is attributed in Table 10 to the category of abnormal weather conditions and disasters. A similar overrun of more than \$300 million for the rural housing insurance fund above the level assumed for the second budget resolution is attributed in Table 12 to the category of unexpected administrative actions by the Executive Branch.

ABNORMAL WEATHER CONDITIONS AND DISASTERS

Abnormal weather conditions caused actual 1979 outlays to be \$0.6 billion lower than estimated for the second resolution, but \$0.5 billion higher than estimated for the revised resolution (Table 13). The \$1.4 billion outlay overrun for agricultural credit insurance has already been discussed. Offsetting this outlay overrun, significant shortfalls occurred in farm price supports and related programs from the outlays estimated for the 1979 budget resolutions. Good weather conditions in the United States led to a

record feed grain harvest; this depressed price expectations from the resolution estimate, but unusually poor weather in the Soviet Union resulted in dramatic increases in wheat and feed grain exports.

TABLE 13. MISESTIMATES OF FISCAL YEAR 1979 OUTLAYS BECAUSE OF ABNORMAL WEATHER CONDITIONS AND DISASTERS: IN BILLIONS OF DOLLARS

	Overrun/Shortfall (-)		
Major Program	Second Resolution	Revised Second Resolution	
Farm price supports Agricultural credit insurance All other	-2.0 1.4 *	-1.1 1.4 0.1	
Total overrun or shortfall(-) from budget resolutions	-0.6	0.5	

INACCURATE ESTIMATING METHODS

Some errors in estimating total budget outlays are potentially correctable. These include errors caused by inaccurate cost models, inaccurate programmatic assumptions, and upwardly biased spending rates. The removal of such systematic biases should produce more accurate total outlay estimates through the working of the statistical law of large numbers. In 1979 these errors largely offset each other, as shown in Table 10. Their net dollar magnitude was \$0.6 billion for the second resolution and \$1.0 billion for the revised resolution, compared to almost \$10 billion for the 1978 second resolution.

Inaccurate Models and Programmatic Assumptions

CBO estimates that some outlays assumed for the 1979 second budget resolution and the revised resolution were too high (by a net total of less than \$1 billion) because of inaccurate estimating models and programmatic assumptions. Benefit payment programs accounted for only a small part of these outlay shortfalls. Most of them involved financial transactions, particularly the foreign military sales trust fund. Table 14 summarizes the 1979 outlay misestimates caused by inaccurate models and programmatic assumptions.

Benefit Payment Programs. Outlay estimates for federal benefit payment programs usually assume that the relationships between outlays and demographic and other economic and programmatic factors will behave in the future in more or less the same manner as in the past. These relationships often can be expressed in mathematical terms, and a number of errors can result from using these models. Assumptions about future economic conditions can prove to be inaccurate, as discussed earlier. Some programmatic assumptions can also be inaccurate, such as the number of

TABLE 14. MISESTIMATES OF FISCAL YEAR 1979 OUTLAYS CAUSED BY INACCURATE MODELS AND PROGRAMMATIC ASSUMPTIONS: IN BILLIONS OF DOLLARS

	Overru	n/Shortfall (-)
Major Program	Second Resolution	Revised Second Resolution
Benefit Payment Programs	0.4	-0.4
Medicare and Medicaid Social Security Food stamps and other	0.5 -1.2	-0.3 -0.3
income security programs Other	1.1 0.1	0.2 *
Financial Transactions	-1.2	-0.7
Foreign military sales trust fund Exchange Stabilization Fund Mortgage credit and thrift insurance OCS rents and royalties SBA disaster loan fund DoD revolving funds Export-Import Bank Other	-1.4 0.4 -0.6 0.1 -0.4 0.3 0.2	-1.0 0.6 -0.3 -0.5 0.3 0.1
Other Programs Net interest Farm price supports Other	0.1 0.9 -0.9 0.1	0.3 0.7 -0.3 -0.1
Total shortfall(-) from budget resolutions	-0.7	-0.8

school lunches that will be served during the year, or the date when new program regulations will be implemented. Finally, the relationships between outlays and factors that held in the past, such as program participation rates, may change inexplicably in the future.

Actual outlays in 1979 for Social Security benefits were very close to the resolution estimates. The estimating error for the second resolution was 0.5 percent and for the revised resolution only 0.3 percent. The former assumed a 7.5 percent cost-of-living adjustment on July 1, 1979, whereas a 9.9 percent adjustment was actually made. Had the assumed adjustment and other economic assumptions been accurate, the second resolution estimate would have been \$0.7 billion higher. Offsetting this underestimate, which is attributed to inaccurate economic assumptions and is shown in Table 11, were \$1.2 billion of overestimates that can be attributed to inaccurate models and programmatic assumptions.

Disability payments proved to be \$0.4 billion lower than estimated for the second resolution because of tighter administrative procedures. The estimating models for old age and survivors insurance (and to a lesser extent disability insurance) outlays also did not reflect the most recent program trends because of normal lags in reporting data and updating models. There were also some random errors in the models. These effects accounted for the remaining \$0.8 billion shortfall from the second resolution shown in Table 13. The estimates for the revised second resolution were based on the correct cost-of-living adjustment and on more recent program trends, reducing estimating error to \$0.3 billion--well within the expected range of error for any statistical estimating model.

Other income security programs were underestimated for the second resolution by \$1.1 billion for similar reasons. The estimate for the food stamp program assumed a gradual nine-month phase-in of the liberalizing provisions of the legislative amendments enacted in January 1979. This took only three months, adding almost \$0.5 billion to the outlay level estimated for the second resolution. The revisions to the second resolution reflected this more rapid implementation, so that actual outlays deviated only slightly from the revised resolution estimate for food stamps.

Another inaccurate programmatic assumption for both resolutions was the approval rate for claims under the Black Lung Benefits Act. A 3 percent approval rate was assumed for the resolution estimates; the actual rate was closer to 40 percent, adding \$244 million to the second resolution level and over \$300 million to the revised resolution level. The second resolution also underestimated nutrition program outlays by \$162 million, largely because more school lunches were served than projected.

The second resolution estimate for Medicaid benefits was \$1.3 billion below the actual level in 1979. Almost \$0.4 billion of this can be attributed to inaccurate economic assumptions (the actual change in the CPI being 3.4 percentage points greater than had been assumed in September 1978). The remaining difference can be attributed to the failure of HEW and the states to achieve assumed savings in their efforts to reduce error, fraud, and abuse (\$300 million), and to problems in estimating the percentage change in recipients and unit costs. Some of these estimating errors were corrected in the revisions to the second resolution, so that the overrun was reduced to less than \$500 million. Of this amount, \$185 million can be attributed to inaccurate economic assumptions as to the rate of inflation, and about \$300 million to inaccurate programmatic assumptions.

Medicare benefits were also underestimated for the second resolution (by \$450 million), largely because of an inaccurate programmatic assumption that significant cost savings would be achieved through efforts to reduce error, fraud, and abuse. An underestimate for the effects of inflation was about offset by problems in estimating the number of recipients and unit costs. These estimating problems also affected the estimates for the revised resolution. Higher than expected inflation had the effect of adding to Medicare costs, but inaccurate programmatic assumptions more than offset this. As a result, actual 1979 Medicare costs were about \$300 million below the revised second resolution estimate.

<u>Financial Transactions.</u> The net budget impact of various financial transactions during any fiscal year may be positive or negative, depending upon whether receipts exceed or are less than outlays. These transactions include new loans, which add to outlays, and loan repayments, which are treated as offsetting receipts. Asset sales, such as the sales of leases of off-shore oil lands, and sales of loan portfolios, also have the effect of reducing outlays. Certain other budget accounts record the results of various business-like transactions, such as the sale of military equipment and services to foreign countries.

As shown in Table 14, the net effect of such financial transactions in 1979 was to reduce outlays below the levels assumed for the second resolution by \$1.2 billion, and below the revised second resolution estimates by \$0.7 billion. The most significant shortfall effect occurred in the foreign military sales trust fund. Both resolutions assumed that trust fund receipts would approximately equal outlays, in accord with the objective of a new centralized management system within the Defense Department. Despite the assurances of the Administration that the trust fund would be managed so as to yield no change in the balance of working capital, the fund collected over \$1 billion more from foreign countries than was disbursed to military contractors.

The Secretary of the Treasury is authorized to deal in gold and foreign exchange and other instruments of credit and securities as he deems necessary to protect the value of the dollar in foreign markets. These transactions are recorded in the Exchange Stabilization Fund, which prior to the 1980 budget resolutions was treated as an off-budget entity by the Budget Committees. Beginning with the 1980 budget, the estimated administrative expenses and interest income of this revolving fund have been included in the budget totals. Because it is impractical to forecast fund transactions in gold, foreign currency, and foreign investment, projections of net gains or losses are not made for the resolutions. The net effect during fiscal year 1979 was outlays of over \$400 million. Interest income of approximately \$200 million, recorded as a negative outlay, was more than offset by a loss of \$618 million due primarily to the repayment of Roosa bonds. 3/ The 1979 second resolution did not include any estimate for the Exchange Stabilization Fund. The revisions to the second resolution, adopted as part of the first resolution for 1980, included estimated outlays for the fund but only for administrative expenses and interest income. As a consequence, net outlays by the fund exceeded the second resolution assumptions by over \$400 million, and the revised resolution estimate by almost \$600 million.

The net outlay effect of various mortgage credit and thrift insurance activities was overestimated for the 1979 budget resolutions, as shown in Table 14. Net outlays by the Government National Mortgage Association (GNMA) were less than expected (\$265 million below the second resolution estimate and more than \$100 million below the revised resolution estimate). The principal reason for the shortfall appears to have been an overestimate of the rate of mortgage deliveries to GNMA pursuant to commitments issued in past years. This has been a continuing estimating problem, especially for GNMA's emergency mortgage purchase program.

Net receipts to the Federal Deposit Insurance Corporation and to the Federal Savings and Loan Insurance Corporation were higher than estimated for the 1979 resolutions, probably because of the impact of inflated deposits on fee/premium income. This had the effect of reducing net outlays by close to \$300 million below the level estimated for the second resolution, and by about \$200 million below the level estimated for the revised resolution.

Roosa bonds are Swiss franc-denominated obligations issued to Swiss authorities during the 1960s and early 1970s in order to forestall purchases of U.S. gold. The Exchange Stabilization Fund has borne the U.S. share of the exchange risk associated with redemptions of these securities.

Developing accurate estimates for receipts from the sale of oil and gas leases on the Outer Continental Shelf (OCS) continues to be a problem. In 1978, these receipts were underestimated by over \$700 million, primarily because two assumed sales did not occur. In 1979, actual receipts were fairly close to the second resolution estimate (within \$100 million), but were about \$500 million higher than estimated for the revised resolution. Actual 1979 OCS receipts were generally higher than anticipated for most sales, except for the Middle Atlantic sale which produced less than 10 percent of expected receipts. The revisions to the second resolution incorporated the actual results of sales through February 1979, but receipts from the final two sales during the fiscal year were about \$400 higher than anticipated. This had the effect of lowering budget outlays, since the receipts are treated as negative outlays in the budget. Table 15 summarizes the results for OCS receipts for 1979.

TABLE 15. OUTER CONTINENTAL SHELF RECEIPTS FOR FISCAL YEAR 1979: IN MILLIONS OF DOLLARS

Sale	Second Resolution Estimate	Revised Resolution Estimate	Receipts	
42 North Atlantic	440		Delayed	
65 Eastern Gulf of Mexico	120	61	61	
51 Gulf of Mexico	730	871	871	
49 Middle Atlantic	620	40	40	
48 Southern California		340	272 a/	
58 Gulf of Mexico	440	200	666 b /	
Rents and Royalties	1,000	1,288	1,357	
Total	3,350	2,800	3,267	

a/ Sale total was \$574 million, but over \$300 million was put into escrow until state claims are resolved.

Net outlays from the Small Business Administration (SBA) disaster loan fund were about \$350 million lower than estimated for the second resolution because substantial net outlays in the last two months of the

b/ Sale total was \$1,247 million, but almost \$600 million was put into escrow pending settlement of state claims.

previous fiscal year reduced the level of funds carried into 1979. This misestimate of the amount of 1978 loans that would be disbursed in fiscal year 1979 was corrected for the revised resolution.

It was assumed for both resolutions that the net budgetary effect of various Defense Department revolving funds would be zero. These funds are used to finance various defense activities that perform industrial or commercial-type functions on a reimbursable basis, and also the purchase of consumable materials for resale to the military services and other authorized customers. Actual outlays from these funds in 1979 exceeded receipts by about \$300 million.

Net outlays by the Export-Import Bank in 1979 were \$200 million, \$160 million above the level estimated for the second budget resolution and \$135 million above the revised resolution estimate. There were two primary causes for the overrun. The resolution estimates were based on inaccurate programmatic estimates of the product mix of the Bank's credit authorizations. In addition, loans for nuclear technology projects were disbursed at a faster pace than historical trends had indicated.

Other Programs. Aside from the effects of inaccurate interest rate assumptions, estimated net interest payments were too low for the second resolution by over \$900 million, and for the revised resolution by over \$700 million.

The model used by CBO for estimating interest on the public debt did not capture the large interest rate differential between new and expiring issues. In addition, the budget deficit assumptions used for the estimates proved to be too high, which partially offset the modeling error. The net effect of the model error and the inaccurate budget deficit assumption was an underestimate of \$1.4 billion for interest on the public debt for the second budget resolution. This estimating error was reduced to \$900 million for the revised resolution.

The estimating errors for interest on the public debt were partially offset by inaccurate estimates of interest receipts from federal agencies that have borrowed funds from the Treasury. Actual interest receipts were almost \$800 million higher than estimated for the second resolution, of which about \$300 can be attributed to inaccurate interest rate assumptions and the remainder to inaccurate estimating models. The revised resolution estimates for interest receipts proved to be more accurate; actual receipts were within \$100 million of the resolution estimates.

Misestimates of farm price supports for 1979 that can be attributed to inaccurate programmatic assumptions were over \$900 million for the second resolution and about \$300 million for the revised resolution. These programmatic assumptions include estimates of commodity market conditions and farmers' behavior in response to these conditions.

Inaccurate Spending Rates and Other Estimating Problems

Misestimates of outlays in past budget resolutions have been attributed largely to the use of inaccurate spending rates. As noted in CBO's analysis of the shortfall in federal budget outlays for fiscal year 1978, federal agencies have had a tendency to overestimate what they can accomplish each year, thus giving an upward bias to the spending rates used for outlay estimates. CBO estimated that the use of inaccurate spend-out rates accounted for over 90 percent of the estimating error for the 1978 second resolution outlay assumptions. 4/

During the past two years, CBO has monitored closely actual outlay trends in order to determine more realistic spending rates. In fiscal year 1978, CBO was largely successful in removing the upward bias, as may be seen by the relative accuracy of the final scorekeeping estimate for 1978.

The spending rate assumptions used for the 1979 budget resolutions were also more realistic. While outlays for individual programs were misestimated by varying amounts, these errors tended to offset each other as would be expected in the absence of systematic biases. As shown in Table 16, the net estimating error attributable to inaccurate spending rates is \$1.3 billion for the second resolution and \$1.8 billion for the revised resolution. This compares very favorably with the \$10.6 billion error attributable to this cause in the estimates for the 1978 second resolution.

The net estimating error attributable to inaccurate spending rates increased slightly for the 1979 revised resolution for two reasons. First, overestimates of spending in the second resolution were corrected somewhat more than underestimates. Thus, while the magnitude of the individual estimating errors diminished between the two resolutions, the net estimating error attributable to inaccurate spending rates increased by \$0.5 billion. Second, actual spending trends during the first part of fiscal year 1979 were somewhat lower than during later months. Thus, the higher spending rates for such programs as defense procurement were not fully incorporated into CBO estimates until after the revised resolution was adopted in May.

Major Overruns. Many programs that have had outlay shortfalls in the past had outlay overruns in 1979 from the budget resolution estimates. For example, defense spending, which had fallen short of resolution estimates during the previous three years, was significantly higher in 1979 than had been expected. Most of the outlay overrun in 1979 occurred in the defense procurement programs. Defense procurement outlays were

^{4/} See Congressional Budget Office, Analysis of the Shortfall in Federal Budget Outlays for Fiscal Year 1978, Staff Working Paper (March 1979).

27 percent greater in 1979 than for the previous year, compared to the second resolution growth assumption of 7 percent which was increased to 15 percent for the revised resolution. The unexpectedly large rate of increase is due to greater than estimated progress by weapons system contractors. Some of the growth in progress payments may be attributable to the effects of higher inflation.

TABLE 16. MISESTIMATES OF FISCAL YEAR 1979 OUTLAYS BECAUSE OF INACCURATE SPENDING RATES AND OTHER ESTIMATING PROBLEMS: IN BILLIONS OF DOLLARS

	Overru	n/Shortfall (-)
Major Program	Second Resolution	Revised Second Resolution
Major Overruns	5.3	4.3
Defense procurement	3.3	2.3
Other national defense programs	0.3	0.5
EPA construction grants Corps of Engineers and other	0.4	0.4
water resources programs	0.4	0.3
Federal highway programs	0.3	0.5
Community development block grants	0.3	0.2
HEW education programs	0.2	0.2
Major Shortfalls	-4.0	-2.6
Strategic petroleum reserves and		
other energy programs	-1.0	-0.4
CETA employment and training programs Foreign economic and financial	-1.2	*
assistance programs	-0.5	-0.7
HEW health programs	-0.3	-0.3
Veterans' hospitals and medical care	-0.3	-0.3
Civilian space program	-0.2	-0.2
Rail transportation programs	-0.2	-0.2
Economic development programs	-0.1	-0.2
Other	-0.2	-0.5
Total overrun from		
budget resolutions	1.3	1.8

Other programs that experienced outlay shortfalls in 1978 but were underestimated in 1979 included Environmental Protection Agency (EPA) grants for the construction of municipal waste treatment facilities, federal highway construction grant programs, community development block grants, and HEW education programs. For these programs, it appears that CBO overcorrected its spending rate assumptions in adjusting for the overestimates for the previous year.

Major Shortfalls. Outlays for the strategic petroleum reserve program continued to fall short of budget resolution estimates in 1979. The total 1978 outlay shortfall for this program was \$1.4 billion. For 1979, the shortfalls were \$1.4 billion for the second resolution and \$0.5 billion for the revised resolution. The second resolution outlay estimate assumed that 116 million barrels of oil would be purchased and put into the reserves. This assumption was reduced to 80 million barrels for the revised resolution, but the actual fill for the year was only 44 million barrels. The Administration stopped purchases after the first quarter of the fiscal year as oil supplies became very tight, and was unable to reenter the market later. These outlay shortfalls for the strategic petroleum reserves were partially offset by outlay overruns for energy supply research and development programs.

The \$1.2 billion outlay shortfall from the second resolution for Comprehensive Employment and Training Act (CETA) programs is the result primarily of lower than expected employment in public service jobs. The second resolution outlay estimate assumed that an average of 665,000 public service employment jobs would be filled during 1979. In fact, the average level of employment was 557,000, largely because of an unexpected drop in unemployment in these jobs during the last quarter of 1978. The outlay estimates for the revised resolution were adjusted for this drop in employment, and actual outlays for CETA programs were virtually equal to the resolution estimate.

There were a number of other outlay shortfalls in various federal programs as shown in Table 16, but these tended to be of relatively small dollar magnitude. Appendix A contains a listing of all the resolution estimates and actual outlays for 1979 that served as the underlying data base for the analysis in this chapter.

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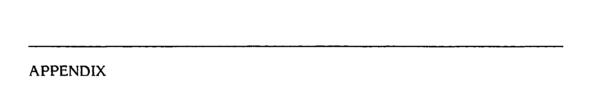


Table A-1 summarizes the data base used for the analysis of the outlay estimates of the second and revised second budget resolutions for fiscal year 1979, contained in Chapter IV of this study. The data base is organized by function and by 112 major program categories.

The figures for the second and revised second budget resolution assumptions represent CBO estimates based on the reports by the two Budget Committees presenting their recommendations for the two resolutions, the conference reports on the resolutions, the committee allocations of the spending totals included in the conference reports, various floor statements by managers of the resolutions, and other materials provided by the Budget Committees. The figures for the second budget resolution have been further altered to reflect accounting adjustments made for the revised second resolution. Allowances for new legislative initiatives for spending increases and savings included in the budget resolutions were assigned to related program categories. The allowances for federal civilian pay raises contained in the resolutions also have been spread among the various salary and expense accounts in proportion to the actual appropriations for this purpose.

The final CBO estimates shown in Table A-1 are derived from the data used for CBO's Scorekeeping Report No. 7 for fiscal year 1979, tabulating Congressional budget actions as of August 3, 1979. Actual outlays for 1979 are based on the September Treasury Statement, released October 25, 1979, adjusted to include the administrative expenses and interest receipts of the Exchange Stabilization Fund.

TABLE A-1. ESTIMATED AND ACTUAL OUTLAYS FOR FISCAL YEAR 1979, BY FUNCTION AND MAJOR PROGRAMS: IN MILLIONS OF DOLLARS

Function and Major Program	Second Resolution Assumptions	Revised Second Resolution	Final CBO Estimate	Actual
		Assumptions		
NATIONAL DEPENCE (050)				
NATIONAL DEFENSE (050) Department of Defense-Military				
Military personnel	27,884	28,085	28,385	28,407
Retired military pay	10,123	10,270	10,242	10,279
Operations and maintenance	36,289	36,451	36,473	36,424
Procurement	21,337	22,977	24,978	25,404
Research, development, test	21,557	22,911	24,770	23,404
and evaluation	11,539	11,319	11,294	11,152
Military construction	•	1,744	1,943	2,080
Family housing	1,720 1,436	1,415	1,415	1,468
Revolving funds and other	•	-425	-323	-201
	-528 100, 800			
Subtotal, DoD-Military	109,800	111,836	114,407	115,013
Atomic energy defense activities	2,418	2,417	2,583	2,541
Other national defense	188	152	<u> 152</u>	127
Total, national defense	112,404	114,404	117,142	117,681
INTERNATIONAL AFFAIRS (150)				
Security supporting assistance	2,014	2,485	2,370	1,786
Multilateral development assistance	1,168	1,175	1,062	883
Bilateral development assistance	815	767	² 767	839
Foreign assistance program,				
Agriculture (P.L. 480)	948	949	896	976
Export-Import Bank	40	65	135	200
Other economic and financial		• •		
assistance	97	55	-8	645
Foreign military sales trust fund	0	-115	-430	-1,434
Military assistance	548	522	521	532
Other international affairs	1,594	1,621	1,624	1,665
Total interpational offices	7 225	7 522	(02((001
Total, international affairs	7,225	7,522	6,936	6,091
GENERAL SCIENCE, SPACE AND TECHNOLOGY (250)				
General science and basic research	1,246	1,288	1,304	1,298
Civilian space program	3,783	3,937	3,713	3,743
Total, general science, space				
and technology	5 029	5 225	5 017	5.061
and technology	5,029	-5,225	5,017	5,041

TABLE A-1. (Continued)

Function and Major Program	Second Resolution Assumptions	Revised Second Resolution Assumptions	Final CBO Estimate	Actual
ENERGY (270)				
TVA and power marketing activities	1,504	1,559	1,572	1,619
Naval petroleum reserve receipts	-552	-620	-700	-718
Energy supply, Department of Energy	2,994	3,203	3,327	3,610
Other energy supply activities	472	485	413	389
Energy conservation	484	399	237	252
Strategic petroleum reserves and				
other energy preparedness	2,415	1,530	1,175	1,021
Other energy programs	813	870	805	
Total, energy	8,129	7,426	6,829	6,856
NATURAL RESOURCES AND ENVIRONMENT (300)				
Corps of Engineers	2,633	2,679	2,901	2,898
Other water resources	901	869	922	[^] 999
Forest Service	1,636	1,508	1,545	1,536
Conservation and land	2,000	-,	-,	-,
management receipts	-811	-787	-887	-760
Other conservation and land	V	, -,		
management	1,152	1,161	1,144	1,109
Land and water conservation fund	622	566	566	600
Other recreational resources	981	959	958	913
EPA construction grants	3,400	3,400	3,700	3,756
Other pollution control and	3,100	3,	2,, 00	-,
abatement	1,008	1,023	953	950
Receipts from other natural	1,000	1,025	,,,	,,,
resources programs	-1,178	-1,252	-1,252	-1,183
Other natural resources and	-1,170	-1,272	1,252	1,102
environment programs	1,299	1,294	1,280	1,273
Total, natural resources and				
environment	11,644	11,426	11,831	12,091
environment	11,044	11,420	11,001	12,071
AGRICULTURE (350)	Z 250	5 077	2 707	2 572
Price supports and related programs	6,349	5,077	3,707	3,572
Agricultural credit insurance	-339	-383	743	1,017
Other farm income stabilization	299	281	247	261
Agricultural research and services	1,213	1,243	1,284	_1,388
Total, agriculture	7,521	6,218	5,981	_6,238

TABLE A-1. (Continued)

Function and Major Program	Second Resolution Assumptions	Revised Second Resolution Assumptions	Final CBO Estimate	Actual
COMMERCE AND HOUSING CREDIT (370)				
Rural housing programs	-127	186	186	184
Federal Housing Administration fund Government National Mortgage	290	159	159	193
Association	491	350	210	225
Housing for the elderly or handicapped Other mortgage credit and thrift	475	475	475	459
insurance	-1,455	-1,561	-1,793	-1,737
Postal Service	1,785	1,788	1,785	1,787
Small Business Administration	599	779	739	674
Other commerce programs	739	<u>748</u>	<u>732</u>	<u> 781</u>
Total, commerce and housing credit	2,797	2,923	2,494	2,565
TRANSPORTATION (400) Federal aid highways Other highway programs Rail transportation Urban mass transportation Federal Aviation Administration Other air transportation Coast Guard	6,600 587 2,159 2,514 2,926 552 1,437	6,505 528 2,185 2,329 2,947 552 1,435	6,800 546 2,026 2,588 2,939 555 1,430	6,876 616 1,962 2,542 2,850 543 1,424
Maritime Administration	519	518	515	547
Other transportation	128	108	123	99
Total, transportation	17,423	17,108	17,521	17,459
COMMUNITY AND REGIONAL DEVELOPMENT (450)				
Community development block grants	2,921	2,994	3,080	3,234
Other community development	854	793	734	759
Rural development programs	<i>55</i> 7	619	638	667
Economic development programs	2,324	2,327	2,147	2,172
Indian programs	407	456	384	478
Other area and regional development	523	518	509	513
SBA disaster loan fund Other disaster relief	1,310 509	1,446 568	890 <u>588</u>	957 654
Total community and				
Total, community and regional development	9,403	9,720	8,969	9,434

TABLE A-1. (Continued)

Function and Major Program	Second Resolution Assumptions	Revised Second Resolution Assumptions	Final CBO Estimate	Actual
EDUCATION, TRAINING, EMPLOY-				
MENT AND SOCIAL SERVICES (500)				
Elementary and secondary education	6,494	6,541	6,661	6,688
Higher education	4,375	4,599	4,839	4,528
Research and general education aids	1,260	1,256	1,256	1,232
CETA employment and training programs	10,542	9,460	9,737	9,443
Other employment and training	1,422 472	1,437 512	1,431 511	1,477 488
Other labor services	2,997	3,069	3,107	3,091
Social services grants Human development services and other		2,849	2,839	2,825
numan development services and other	<u>2,821</u>		2,837	2,827
Total, education, training, employ-				
ment, and social services	30,384	29,722	30,382	29,772
HEALTH (550)				
Medicare	28,693	29,462	29,389	29,147
Medicaid	11,100	11,939	12,234	12,407
Other health programs	8,353	8,339	8,186	8,060
Total, health	48,146	49,740	49,809	49,614
INCOME SECURITY (600)	103,112	102,883	103,048	102,596
Social security (OASDI) Railroad retirement	4,267	4,316	4,282	4,279
Other general retirement and	4,207	4,510	7,202	7,2//
disability	1,383	1,314	1,697	1,617
Federal employee retirement	1,505	1,22.	2,027	-,
and disability	12,060	12,418	12,418	12,379
Unemployment compensation	10,504	10,950	11,115	10,654
Food stamp program	6,186	6,896	6,775	6,822
Supplemental security income	5,678	5,525	5,525	5,471
Public assistance (AFDC)	6,678	6,789	6,672	6,611
Earned income tax credit	841	941	941	773
Nutrition programs	3,762	3,928	3,954	3,965
Housing assistance	4,466	4,465	4,423	4,367
Other income security programs	406	687	<u>720</u>	576
Total, income security	159,342	161,112	161,570	160,110

TABLE A-1. (Continued)

				
Function and Major Program	Second Resolution Assumptions	Revised Second Resolution Assumptions	Final CBO Estimate	Actual
VETERANS BENEFITS AND SERVICES (700)	*			
Compensation and pensions	11,125	10,543	10,543	10,442
Insurance programs	294	280	280	338
Readjustment benefits	2,808	2,816	2,816	2,811
Hospital and medical care	5,945	5,885	5,844	5,611
Other veterans benefits and services	601	739	837	726
Total, veterans benefits and				
services	20,773	20,264	20,321	19,928
ADMINISTRATION OF JUSTICE (750)				
Federal law enforcement activities	2,029	2,044	2,045	1,992
Law enforcement assistance	721 -	697	697	710
Federal litigative and judicial activities	1,175	1,166	1,163	1,130
Other administration of justice programs	338	347	347	321
Total, administration of justice	4,263	4,255	4,252	4,153
GENERAL GOVERNMENT (800)				
Legislative Branch	998	991	987	913
Internal Revenue Service	2,133	2,119	2,134	2,079
	•			
Other general government programs	1,184	$_{1,225}$	<u>1,177</u>	1,208
Total, general government	4,316	4,335	4,298	4,200
GENERAL PURPOSE FISCAL ASSISTANCE (850)				
General revenue sharing	6,859	6,859	6,859	6,854
Antirecession fiscal assistance	552	152	2	
Other general purpose fiscal	1 200	1 720	1 725	1 517
assistance	1,389	1,739	1,735	1,517
Total, general purpose fiscal	_			
assistance	8,800	8,750	8,597	8,372

TABLE A-1. (Continued)

Function and Major Program	Second Resolution Assumptions	Revised Second Resolution Assumptions	Final CBO Estimate	Actual
INTEREST (900) Interest on the public debt Interest from the Federal Financing Bank	54,400	59,600	60,000	59,837
and other off-budget agencies Other interest	-4,098 -2,400	-4,130 -3,070	-4,130 -3,200	-4,042 -3,239
Total, interest	47,901	52,400	52,670	52,556
UNDISTRIBUTED OFFSETTING RECEIPTS (950) Employer's share, employees retirement Interest received by trust funds OCS rents and royalties	-5,400 -9,250 -3,350	-5,300 -10,000 -2,800	-5,320 -10,000 -3,100	-5,271 -9,950 -3,267
Total, undistributed offsetting receipts	-18,000	-18,100	-18,420	-18,488
TOTAL, ALL FUNCTIONS	487,500	494,450	496,197	493,673