

# FIVE-YEAR BUDGET PROJECTIONS AND ALTERNATIVE BUDGETARY STRATEGIES FOR FISCAL YEARS 1980—1984

*Technical Background*

*Staff Working Paper*

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Congress of the United States  
Congressional Budget Office  
Washington, D.C.



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## NOTES

Unless otherwise indicated, all years referred to are fiscal years.

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

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## PREFACE

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The staff working paper provides technical background on the methodologies used for making the projections published in the CBO report, Five-Year Budget Projections and Alternative Budgetary Strategies for Fiscal Years 1980-1984. The analysis was prepared under the direction of the Projections Unit of the Budget Analysis Division. Major contributors were the Natural Resources, Human Resources, and National Security cost units of the Budget Analysis Division, the Tax Analysis Division, and the Fiscal Analysis Division. The Budget Data Systems Unit of the Budget Analysis Division provided computer support. The Human Resources, Natural Resources, National Security, and Management Programs Divisions also assisted in the preparation of estimates. Jane Gilbert and Paula Spitzig assisted in drafting the manuscript and supervised its production. Further assistance was provided by a number of individuals, who are listed in Appendix B.

Questions concerning either the report referred to above or the background material in this paper should be addressed to the analysts listed in Appendix B or to either Jane Gilbert or James Capra of the Projections Unit.

Alice M. Rivlin  
Director

March 1979



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## CHAPTER I. OVERVIEW

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This paper provides the technical background for Five-Year Budget Projections and Alternative Budgetary Strategies for Fiscal Years 1980-1984, Part II of a Congressional Budget Office (CBO) report released January 29, 1979 to the Senate and House Committees on the Budget. That report presented major economic assumptions and budget projections in summary form. This paper presents further details and a discussion of methodology.

### THE PURPOSE OF THE PROJECTIONS

Section 308(c) of the Congressional Budget Act of 1974 states:

As soon as practicable after the beginning of each fiscal year the Congressional Budget Office shall issue a report projecting for the period of 5 fiscal years beginning with such fiscal year--

- (1) total new budget authority and total outlays for each fiscal year in such period;
- (2) revenues to be received and the major sources thereof, and the surplus or deficit, if any, for each fiscal year in such period; and
- (3) tax expenditures for each fiscal year in such period.

The act itself gives no guidance concerning the basic philosophy or purpose of the projections. On the basis of the use of previous projections, it would appear that their major purposes are:

- o To provide a baseline against which to measure budget options, including the President's budget;
- o To provide an estimate of the budget's ability to accommodate new initiatives involving additional spending or tax cuts; and
- o To inform the Congress about the costs of continuing existing laws and about the flexibility that exists for considering new budget options.

## OVERVIEW OF METHODOLOGY

The budget projections in the five-year report were calculated in three steps. First, a set of assumptions were made about the economy, including future rates of growth and price levels. Next, the budget implications of the economic assumptions were derived, given the continuation of existing laws and policies implicit in the Second Concurrent Resolution on the Budget for Fiscal Year 1979. This step involved estimating revenues for fiscal years 1980-1984 if existing laws were to remain in effect and projecting current policy outlays over the same period. Finally, the fiscal policy changes were estimated. This offset represents the tax cuts or spending increases that would most likely be needed to counteract the restrictive influence of current policy budgets and to allow the economy to grow at the assumed rates.

### Economic Assumptions

The economic assumptions used for the five-year projections report represent one of many possible economic scenarios. For 1979 and 1980, the assumptions are based on the economic forecast produced by CBO in January 1979.<sup>1/</sup> The most salient feature of the assumptions is an economic slowdown in late 1979, with a recovery beginning in 1980. The real rate of growth for the economy, as measured by the rate of growth in the gross national product (GNP) in constant dollars, is assumed to be 3.1 percent for 1979 and 2.4 percent for 1980. The assumptions for 1981-1984 are based on a target of a 5.5 percent unemployment rate for 1984; they reflect a 4.5 percent average annual rate of real economic growth. More detail on the economic assumptions and the methodology for deriving budget aggregates, such as income shares and unemployment rates, can be found in Chapter II of this paper. That chapter also contains a discussion of the CBO methodology for deriving specialized price indexes used for making projections of current policy spending.

### Budget Implications of the Economic Assumptions: Current Policy Projections

For revenues, the concept of current policy is defined as the continuation of existing tax laws, including the effects of the provisions of

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<sup>1/</sup> Congressional Budget Office, The Fiscal Policy Response to Inflation, A Report to the Senate and House Committees on the Budget, Part I (January 1979).

the Revenue Act of 1978, the Energy Act of 1978, and miscellaneous tax bills passed during the second session of the 95th Congress. The revenue projections also include the effects of scheduled increases in social security taxes that result from the 1977 amendments to the Social Security Act. Further details on the methodology for revenue projections are contained in Chapter IV.

The definition of current policy for spending is somewhat more complex than that for revenues. For entitlement programs that provide benefits to individuals and for programs like general revenue sharing, in which the budget authority for future years has already been set, current policy means the maintenance of existing laws. For discretionary programs that are subject to annual appropriations, such as defense procurement, current policy means the maintenance of the current level of resources available to meet continuing needs. In other words, the projections hold constant in real terms the 1979 budget authority provided for these programs. The major exceptions to this interpretation are one-time programs (for instance, temporary study commissions) and programs that are designed to meet temporary needs (such as the antirecession local public works program approved in 1977).

It should be noted that for those areas (such as national security, energy research, and law enforcement) where current policy means maintenance of a constant level of resources, the projections are essentially devoid of program detail and, as such, do not contain funding for specific needs, such as the MX mobile strategic missile and an additional aircraft carrier for the Navy. Rather, they hold constant the resources devoted to general needs such as national security. The goods and services that can be bought with these resources is a separate question, and is not addressed in the CBO five-year projections report or in this technical background paper. A detailed discussion of the methodology used in projecting major spending programs can be found in Chapter III.

### Fiscal Policy Changes

Under current policy assumptions, the federal government would be removing money from the economy faster than it would be returning it in the form of wages, purchases, and transfer payments. Current policy revenues rise at an average annual rate of 13.4 percent, while current policy outlays increase at a rate of 8.9 percent per year. The higher growth rate of receipts would exert a restrictive influence on the economy and would tend to inhibit economic growth. Consequently, for the economic assumptions to be realized, fiscal and monetary policy would, in all likelihood, have to be used to offset the restrictive influence implicit in current policy

budgets. The estimated fiscal policy changes represent a rough estimate of the size of the tax cuts or spending increases that would be needed. Further details on these fiscal policy changes are contained in Chapter V.

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## CHAPTER II. ECONOMIC ASSUMPTIONS

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Because revenues and expenditures are highly sensitive to economic events and conditions, a projection of the federal budget is necessarily predicated on a set of assumptions describing the state of the economy. The CBO projections utilize a combination of aggregate economic assumptions and specialized price indexes. This chapter will describe some of the basic steps used to generate these assumptions and indexes.

### AGGREGATE ASSUMPTIONS

The aggregate economic assumptions used in Five-Year Budget Projections and Alternative Budgetary Strategies for Fiscal Years 1980-1984 were generated in a two-step process with the use of two quarterly models of the U.S. economy.

The first step in this procedure was the preparation of a short-run forecast. Exogenous assumptions made by the Congressional Budget Office regarding food and fuel prices, exports, and monetary policy, as well as the federal budget, were used in producing the forecast. These assumptions, which were constrained to be consistent with the "current policy" of the federal government, were based on predictions made by a variety of other forecasters and on analyses produced by CBO staff members. Given the uncertainty involved in predicting economic events the forecast did not extend beyond the end of calendar year 1980.

The second step involved the development of an economic projection for fiscal years 1981-1984, based on assumptions about future rates of growth in real gross national product (GNP). A quarterly model estimated by CBO was used to generate a consistent set of economic projections. The model requires only assumptions about real GNP, potential GNP, total population, and the wholesale price indexes for farm products (WPI 01) and for fuel and related products and power (WPI 05). Given these assumptions, the model can be used to produce all remaining variables endogenously.

A flow chart showing the model linkages is seen in Figure 1. Once potential and real GNP are known, the unemployment rate is projected with Okun's Law, an estimated equation that relates the unemployment rate to the gap between potential and actual GNP. The civilian labor force is determined with an equation that relates the labor force participation rate to the unemployment rate and real GNP. Given the unemployment rate and

[illegible]

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components--wages and salaries, corporate profits, and adjusted personal income (the sum of wages and salaries and nonwage income 1/)--are generated with three distributed lag income share equations. Long- and short-term interest rates are projected judgmentally through calendar year 1984, based on the short-run forecast pattern and on the long-run growth rate. A list of the variables projected follows.

Consumer price index

Corporate profits before tax, excluding inventory valuation adjustment

Total employment

Federal government purchases deflator

Gross national product, 1972 dollars

Gross national product, current dollars

Implicit price deflator, gross national product

Index of compensation per manhour, private nonfarm economy

Civilian labor force

Nonwage income

Unemployment rate, civilian workers

Wage and salary disbursements

Total population

Potential gross national product, 1972 dollars

Wholesale price index

Wholesale price index, farm products

Wholesale price index, fuels and related products and power

The projected economic path is shown in Table 1 and Figure 2. The assumptions for 1979 and 1980 are consistent with the CBO economic forecast of January 26. The assumptions for 1981-1984 are a set of internally consistent long-range economic targets that are reasonable in light of the near-term performance of the economy.

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1/ Nonwage income is defined as the sum of personal rental income, dividends, personal interest income, and proprietors' income.

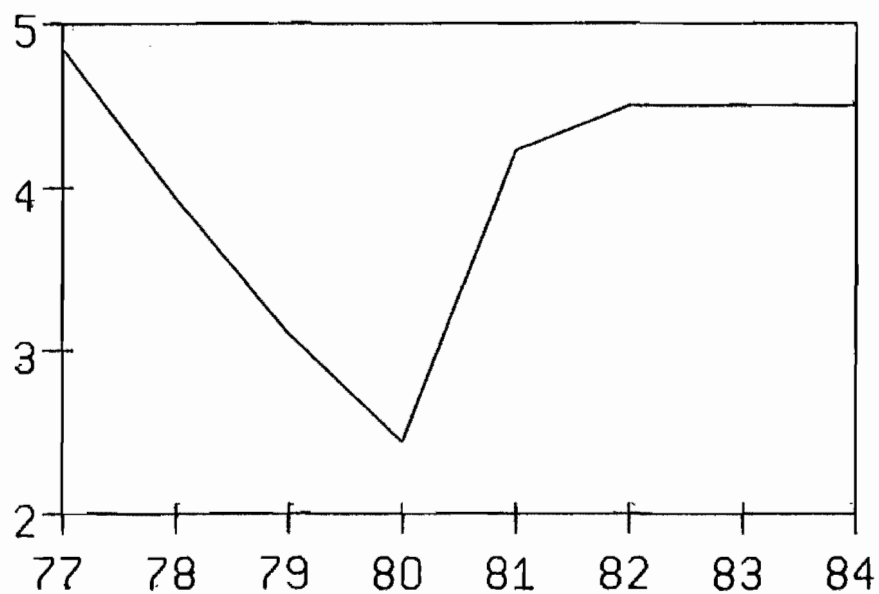
TABLE 1. AGGREGATE ECONOMIC ASSUMPTIONS: BY CALENDAR YEARS

Selected Economic Variables		1978	1979	1980	1981	1982	1983	1984
∞	Gross National Product (GNP)							
	Nominal GNP (in billions of dollars)	2,106.6	2,351.6	2,595.3	2,892.6	3,227.8	3,593.3	3,987.5
	Real GNP (in billions of 1972 dollars)	1,385.1	1,428.1	1,462.8	1,524.7	1,593.3	1,665.0	1,739.9
	Growth rate of real GNP	3.9	3.1	2.4	4.2	4.5	4.5	4.5
	Unemployment Rate (percent)	6.00	6.19	6.75	6.47	6.14	5.80	5.45
	Consumer Price Index (all urban, percent change)	7.6	8.4	7.8	7.1	6.7	6.4	6.1
	Interest Rate (91-day Treasury bills)	7.22	9.11	7.60	8.31	7.15	6.47	6.31

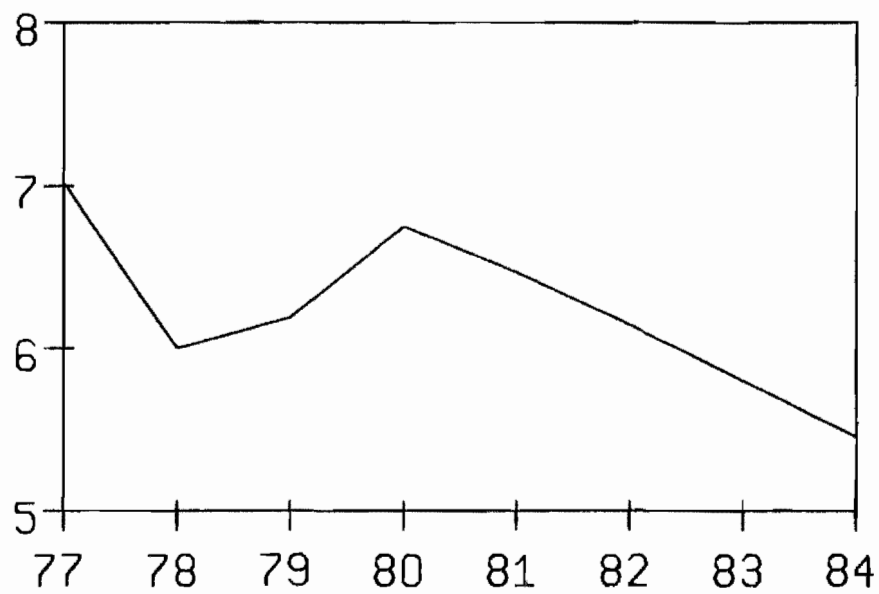


FIGURE 2. KEY ECONOMIC VARIABLES: BY CALENDAR YEAR

CHANGE IN REAL GNP  
Percent



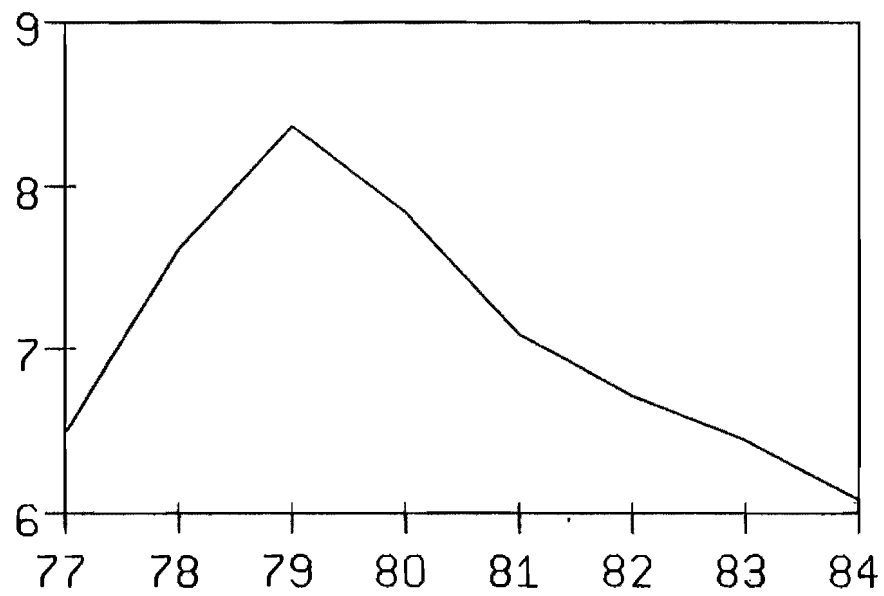
UNEMPLOYMENT RATE  
Percent



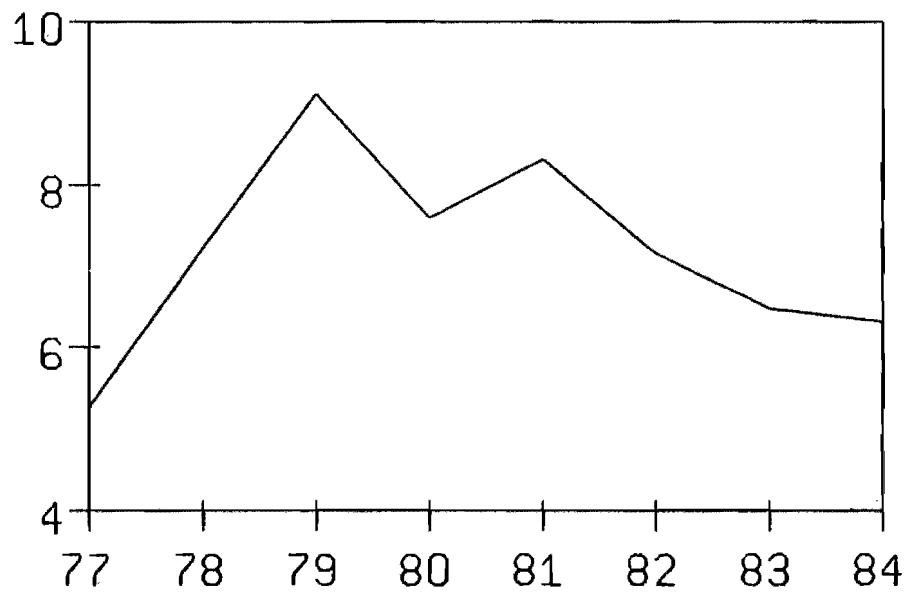
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FIGURE 2. CONTINUED

CHANGE IN CPI (ALL URBAN)  
Percent



90-DAY TREASURY BILL RATE  
Percent



## SPECIALIZED PRICE INDEXES

Aggregate measures of economic activity provide only a general indication of the price movements in particular markets. For example, the CPI for medical services has tended to increase at a faster rate than the CPI for all items. Whether aggregate indexes or specialized price indexes are used for projections probably has little effect on budget totals, since indexes that increase faster than the aggregate are offset by those that increase at slower rates. The use of a specialized index rather than an aggregate one, however, is important for the projection of individual accounts and functions. Since the purpose of the projections is not restricted to producing budget totals, but also includes the projection of the details that comprise the totals, it becomes necessary to obtain a clearer picture of specific price changes than is provided by the CPI, the WPI, or the GNP implicit price deflator. Appendix A. to this paper contains the values assumed for the specialized price indexes used for the five-year budget projections.

A portion of unified budget expenditures are categorized as federal purchases of goods and services, as defined in the National Income and Product Accounts (NIPA). This category is divided into compensation of employees, structures, durable goods, nondurable goods, and services. To project the compensation of employees, an index of federal pay increases was used. Several implicit price deflators and construction cost indexes were used in the projection of purchases of structures. Durable goods, nondurable goods, and services (and their components) were inflated with detailed price indexes constructed especially for this purpose, and will be discussed later in this chapter. Defense and nondefense splits were made wherever applicable.

Among the types of expenditures that are not classified as purchases of goods and services are transfer payments, grants, intragovernmental receipts, and subsidies. Numerous series were available for projecting different expenditures including a variety of macroeconomic variables (implicit price deflators, disposable income, and so forth), certain consumer price indexes, detailed wholesale price indexes for many commodities, prices of agricultural commodities, selected earnings and compensation series for the private sector, and some special price indexes (such as the one for higher education).

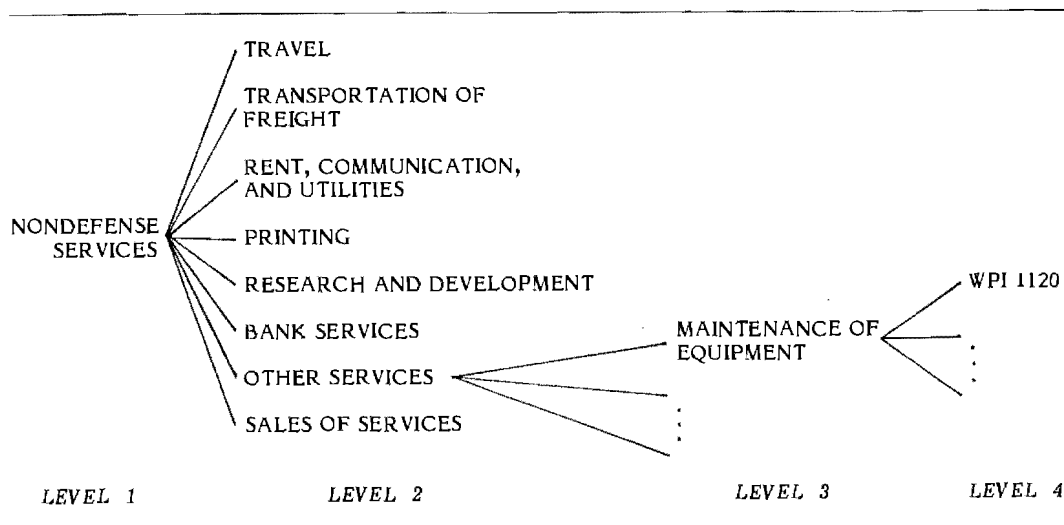
The series outlined above were provided by the economic forecasting models of Data Resources, Incorporated (DRI), and some estimating equations developed at CBO. The solutions of the DRI models and the CBO equations were consistent with the macroeconomic assumptions described earlier.

## Price Indexes of Federal Purchases

As previously mentioned, an index of federal pay increases was used to project compensation of employees, and several implicit price deflators and construction cost indexes were used in projections of purchases of structures.

Price indexes for federal purchases of durables, nondurables, and services were formed at three or more levels of detail. The more detailed indexes were aggregated to generate the broader indexes. This is illustrated in Figure 3, using the price index for nondefense services and its components as an example. The wholesale price index for construction machinery and equipment (WPI 1120) is a component at the lowest level of aggregation (level 4). Wholesale price indexes comprise the majority of level 4 aggregates. WPI 1120 and other indexes were combined to form the index for maintenance of equipment (level 3), which in turn was an input to the index for "other services" (level 2). (The indexes for travel; transportation of freight; rent, communication, and utilities; printing; research and development; bank services; and sales of services were also aggregations of detailed indexes.) The level 2 indexes combine to generate the price index for federal purchases of nondefense services (level 1).

FIGURE 3. THE DETAILED STRUCTURE OF THE PRICE INDEX FOR FEDERAL PURCHASES OF NONDEFENSE SERVICES



The value of a particular index was calculated as the weighted average of its components. For instance, an index  $Y$ , with components  $x_1$  and  $x_2$  whose weights are  $w_1$  and  $w_2$ , could be expressed as:

$$Y = \frac{w_1 x_1 + w_2 x_2}{w_1 + w_2}$$

Or, after normalizing the component weights so they summed to one, the expression for  $Y$  would be

$$Y = \bar{w}_1 x_1 + \bar{w}_2 x_2$$

where

$$\bar{w}_1 = \frac{w_1}{w_1 + w_2}$$

$$\bar{w}_2 = \frac{w_2}{w_1 + w_2}$$

In general, the projected indexes and weights used to form the federal purchases price indexes were those used by the Bureau of Economic Analysis (BEA) in deflating current dollar estimates of federal purchases of goods and services.<sup>2/</sup> Some of the BEA deflators, however, were not projected by the system of models and equations previously mentioned. In most of these cases, proxies were found.<sup>3/</sup> In the cases where no suitable substitute was available, the weights were renormalized to account for the omission.

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<sup>2/</sup> Compensation of employees and purchases of structures are deflated with implicit prices. BEA provided information about explicit deflators and weights for durable goods, nondurable goods, and services.

<sup>3/</sup> Some series used were not price indexes in the strict sense that they maintained constant amounts and quality of the items affecting the index. It was assumed, however, that any compositional changes had a minimal effect on the rates of increase in the series.

### Other Price Indexes

Equations developed by CBO were used for price indexes other than the federal purchases price indexes. Some of the equations were estimated using multiple regression techniques; others were estimated using time trend and time series methods. Finally, several indexes were merely composites of relevant price and earnings series. The component series and their weights were based on information obtained from a variety of sources. The higher education price index, for example, was patterned after an index developed at the U. S. Department of Health, Education, and Welfare.

In addition, a number of defense operations and maintenance related "cost escalation" indexes (by department) are projected using econometric relationships developed by DRI under contract with the Army, Navy, and Air Force.

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## CHAPTER III. PROJECTION OF CURRENT POLICY SPENDING

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The purpose of this chapter is to provide details on the components of current policy spending projections and on the methodologies used in making those projections. The chapter begins with a discussion of some general considerations affecting projections of current policy for spending. Next, an overview of methodologies is presented. The majority of the chapter is devoted to a discussion of specific methodologies for each of the 19 budget functions used in the preparation of annual budget resolutions.

### GENERAL CONSIDERATIONS

A broad outline of current policy for spending was given in Chapter I. Current policy projections assume that all programs will continue except those that are clearly temporary; that open-ended claims on the federal Treasury, such as social security payments and interest on the public debt, respond to economic and demographic changes in essentially the same way they have responded in the past; and that for federal programs in which funding levels are discretionary, funding is held constant in real terms. Two major considerations in making the projections are the definition of the projections base and the estimation of inflation adjustments.

### The Projections Base

The base for the projections was the Second Concurrent Resolution on the Budget for Fiscal Year 1979. To reflect the most recent economic outlook, expenditures for programs that are responsive to changes in economic conditions were reestimated subsequent to enactment of the second concurrent resolution. Because of these reestimates, the projections base, with outlays of \$493.8 billion for fiscal year 1979, exceeds the outlay ceiling of \$487.5 billion in the second resolution (see Table 2). 1/

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1/ A small number of additional reestimates (not related to a changing economic outlook) were also made--for national defense, the Commodity Credit Corporation, and the Department of Health, Education, and Welfare. The net impact of these reestimates was zero.

TABLE 2. INCREASES IN OUTLAYS CAUSED BY REESTIMATES FOR FISCAL YEAR 1979: IN BILLIONS OF DOLLARS

Second Concurrent Resolution	487.5
Net Interest	4.2
Unemployment Insurance	1.2
Federal Civilian and Military Retirement Benefits	0.4
Social Security	0.3
Other	0.2
Second Concurrent Resolution with Revised Economic Forecast	493.8

The projections base includes all enacted legislation plus expenditures for anticipated legislation included in the 1979 second resolution. Anticipated legislation accounted for \$13.3 billion in budget authority and \$7.2 billion in outlays for fiscal year 1979. Table 3 itemizes, by function, the anticipated legislation included in the projections base.

TABLE 3. ANTICIPATED LEGISLATION INCLUDED IN THE PROJECTIONS BASE: BY FUNCTIONAL PROGRAM, IN MILLIONS OF DOLLARS

National Defense (050)		
Department of Defense - Military	BA	1,695.4
Procurement	O	110.2
Retired Military Personnel	BA	156.2
	O	156.2
Allowances	BA	1,874.0
	O	1,869.0
Subtotal	BA	3,725.6
	O	2,135.4

(Continued)



TABLE 3. (Continued).

<hr/>		
International Affairs (150)		
Export-Import Bank of the United States	BA	0.0
	O	0.5
		<hr/>
Subtotal	BA	0.0
	O	0.5
Energy (270)		
Atomic Energy (Energy Supply)	BA	665.0
	O	59.85
Energy Conservation Loans	BA	100.0
	O	4.5
Atomic Energy (Energy Conservation)	BA	175.0
	O	15.0
Nuclear Regulatory Commission	BA	55.0
	O	18.0
		<hr/>
Subtotal	BA	995.0
	O	97.35
Natural Resources and Environment (300)		
Soil Conservation Service (watershed and flood prevention)	BA	30.0
	O	18.0
Bureau of Reclamation	BA	51.4
	O	5.0
Water Resources Council	BA	48.6
	O	12.0
Forest Service	BA	138.4
	O	138.4
National Parks	BA	100.0
	O	7.5
Soil Conservation Service (non-point pollution control)	BA	100.0
	O	11.0
Oil Pollution Liability and Compensation	BA	50.0
	O	50.0
		<hr/>
Subtotal	BA	644.4
	O	264.6
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(Continued)

TABLE 3. (Continued).

Agriculture (350)		
Federal Crop Insurance Corporation	BA	0.0
	O	0.3
Commodity Credit Corporation (wheat reserves)	BA	959.0
	O	300.0
Subtotal	BA	959.0
	O	300.3
Commerce and Housing Credit (370)		
Federal Home Loan Bank Board	BA	0.0
	O	0.6
Subtotal	BA	0.0
	O	0.6
Transportation (400)		
Federal-Aid Highways	BA	0.0
	O	150.0
Grants to National Railroad Passenger Corporation	BA	70.0
	O	70.0
Urban Mass Transportation Fund	BA	375.0
	O	120.0
Railroad Rehabilitation and Improvement	BA	50.0
	O	5.0
U.S. Railway Association	BA	300.0
	O	300.0
Coast Guard	BA	60.0
	O	3.0
Other	BA	0.0
	O	0.8
Subtotal	BA	855.0
	O	648.8

(Continued)

TABLE 3. (Continued).

<b>Community and Regional Development (450)</b>		
Unspecified Initiatives	BA	639.0
	O	98.0
Economic Development Assistance Programs	BA	80.0
	O	8.0
Subtotal	BA	719.0
	O	106.0
<b>Education, Training, Employment, and Social Services (500)</b>		
Elementary and Secondary Education	BA	251.5
	O	36.2
Student Assistance	BA	291.0
	O	27.0
Grants to States for Social Services and Children	BA	156.0
	O	156.0
Subtotal	BA	698.5
	O	219.2
<b>Health (550)</b>		
Federal Hospital Insurance Trust Fund	BA	0.0
	O	-591.9
Grants to States for Medicaid	BA	762.0
	O	715.7
Subtotal	BA	762.0
	O	123.8
<b>Income Security (600)</b>		
Federal Old-Age and Survivors Insurance Trust	BA	0.0
	O	58.9
Railroad retirement account	BA	0.0
	O	1.2
Civil service retirement and disability fund	BA	8.4
	O	10.0
Food Stamp Program	BA	93.0
	O	143.0

(Continued)

TABLE 3. (Continued)

Supplemental Security	BA	60.0
Income Program	O	60.0
Public Assistance	BA	119.8
Payments	O	19.8
Earned Income Tax	BA	500.0
Credit	O	500.0
Nutrition Programs (Child Nutrition)	BA	112.7
	O	4.0
Refugee Assistance	BA	36.0
	O	36.0
Subtotal	BA	929.9
	O	832.9
Veterans' Benefits and		
Services (700)		
Compensation and Pensions	BA	989.4
	O	581.0
Readjustment Benefits	BA	484.4
	O	334.2
Other 700	BA	9.85
	O	9.4
Subtotal	BA	1,483.65
	O	924.6
Administration of Justice (750)		
U.S. Customs Service	BA	10.0
	O	8.0
Judiciary	BA	43.0
	O	34.0
Other 750 (salaries, expenses and receipts)	BA	42.9
	O	33.9
Subtotal	BA	95.9
	O	75.9

(Continued)

TABLE 3. (Continued)

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General Government (800)		
Legislative Branch	BA	9.0
	O	9.0
		<hr/>
Subtotal	BA	9.0
	O	9.0
General Purpose Fiscal Assistance (850)		
Antirecession Financial Assistance Fund	BA	550.0
	O	550.0
Federal Payment to D.C.	BA	65.0
	O	65.0
Other 850	BA	-2.6
	O	-2.6
		<hr/>
Subtotal	BA	612.4
	O	612.4
Allowances (920)		
Civilian Pay Raises	BA	800.0
	O	800.0
		<hr/>
Subtotal	BA	800.0
	O	800.0
		<hr/>
Total	BA	13,289.35
	O	7,151.35

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### Inflation Adjustments

Adjustments for inflation are a critical part of projections. Three types of projections have been produced, and these vary by the type of program that has been adjusted for inflation.

#### Types of programs

Federal spending programs can be divided into three broad categories--indexed benefit programs that, under existing law, respond automatically to inflation; programs that are sensitive to inflation but that do not respond automatically; and programs that are not sensitive to inflation.

Type A--Indexed Benefit Programs. Under existing law there are many federal programs that respond automatically to inflation. Virtually all entitlement programs providing direct benefit payments to individuals are "indexed," so that cost-of-living adjustments occur automatically. (Veterans' benefits are a notable exception.) Certain other federal programs, such as medicare and medicaid, are indirectly indexed for inflation, since the federal government pays a fraction of the costs. In other cases, benefit levels for some programs, such as public assistance and unemployment insurance, are set by state and local governments under federal guidelines.

Type B--Nonindexed Federal Programs that are Sensitive to Inflation. This category includes federal spending programs that are not indexed but are, nevertheless, affected by inflation. Most federal purchases fall into this category since, as prices rise, higher spending is required to maintain the same level of purchases. Increases to maintain the same real level of purchases are not, however, automatically provided, and are therefore characterized as discretionary inflation adjustments.

Type C--Programs that are not Sensitive to Inflation. For certain parts of the budget, the rate of inflation is either not important or is only indirectly related to budget levels. For example, some programs have statutory ceilings that have been fixed for some time and are not assumed to change. For other programs, such as the general revenue sharing program, the level is fixed by law through all or part of the projections period. Finally, many budget accounts are for loan guarantees and only outlay upon default of the loans. Inflation is not important for such accounts, except insofar as it may contribute in some indirect way to defaults.

Interest on the public debt is also included in this category. As described in the section of this chapter dealing with the interest function, this interest payment is related to the size of the federal debt and to interest rates. To the extent that interest rates respond in an indirect way to inflation, interest on the public debt might properly belong in a separate category.

#### Types of projections

An important reason for developing projections is to produce a neutral baseline against which to evaluate budget options. Since, however, different baselines are needed for different kinds of evaluations, CBO has

produced three types of projections. These projections differ by the types of programs that have received inflationary adjustments (see Figure 4). <sup>2/</sup>

FIGURE 4. INFLATION ADJUSTMENTS BY PROGRAM TYPE AND PROJECTION TYPE

	Program Type		
	<u>A</u>	<u>B</u>	<u>C</u>
Current Policy	Yes	Yes	No
Current Law	Yes	No	No
Decoupled	No	No	No

The current policy projections (summarized in the five-year projections report) include inflation adjustments for all federal programs except those that are not sensitive to inflation (Type C). Thus, current policy projections, which include both discretionary and automatic inflation adjustments, show the future cost of holding constant the 1979 level of resources available for federal activities.

Because of the widespread interest in the cost of discretionary inflation adjustments (those for Type B programs), current law projections were produced. This projection path includes inflation adjustments for all programs that, under existing law, respond automatically to inflation; it does not include discretionary inflation adjustments. Indexed benefit programs are adjusted; federal spending for procurement, operating expenses, and nonindexed programs generally is not adjusted.

Federal payraises fall somewhere between a discretionary and nondiscretionary inflation adjustment. Wage board (blue collar) payraises are for all practical purposes nondiscretionary. Unless the Congress changes the law these raises go into effect at the level estimated by wage board surveys. For general schedule and military raises, the situation is somewhat different. The President can recommend a number different from the result of the survey of professional, administrative, technical, and clerical personnel. Also, either House of Congress can disagree with the President's number if it differs from the survey recommendation. However, since it

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<sup>2/</sup> It should be emphasized that all three projections are based on identical economic assumptions.

takes positive action on the part of the President or the Congress to limit or increase the payraise, payraises are treated as nondiscretionary and are included in the current law projections.

A comparison of current policy and current law projections shows the cost of discretionary inflation adjustments for programs that do not respond automatically to inflation. Table 4 shows the cost, by function, of these adjustments.

TABLE 4. THE COST OF DISCRETIONARY INFLATION ADJUSTMENTS, BY FUNCTION: BY FISCAL YEARS, IN BILLIONS OF DOLLARS

		1980	1981	1982	1983	1984
National Defense (050)	BA	5.3	11.0	17.1	23.9	31.1
	O	2.1	5.8	10.6	16.2	22.5
International Affairs (150)	BA	0.8	2.0	2.8	3.8	5.1
	O	0.3	0.8	1.3	2.0	2.8
General Science, Space, and Technology (250)	BA	0.3	0.7	1.2	1.6	2.0
	O	0.2	0.6	1.0	1.4	1.8
Energy (270)	BA	0.4	0.8	1.2	1.7	2.2
	O	0.1	0.4	0.8	1.2	1.7
Natural Resources and Environment (300)	BA	0.7	1.7	2.4	3.5	4.7
	O	0.3	0.8	1.3	1.9	2.5
Agriculture (350)	BA	a/	0.2	0.2	0.3	0.4
	O	a/	0.1	0.2	0.3	0.4
Commerce and Housing Credit (370)	BA	0.2	0.4	0.8	1.0	1.2
	O	0.1	0.2	0.4	0.6	0.7
Transportation (400)	BA	0.4	1.0	1.9	2.5	3.6
	O	0.2	0.5	0.9	1.4	2.0
Community and Regional Development (450)	BA	0.6	1.1	1.7	2.3	3.0
	O	0.1	0.4	0.7	1.2	1.7
Education, Training, Employment, and Social Services (500)	BA	2.1	4.3	6.4	8.8	11.0
	O	1.2	3.0	5.1	7.3	9.5

(Continued)



TABLE 4. (Continued).

		1980	1981	1982	1983	1984
Health (550)	BA	0.6	1.0	1.8	2.5	3.2
	O	0.3	0.9	1.5	2.3	3.0
Income Security (600)	BA	2.8	6.3	8.8	12.0	15.1
	O	0.1	0.3	0.5	0.9	1.4
Veterans' Benefits and Services (700)	BA	1.1	2.1	3.0	3.9	4.9
	O	1.0	2.0	3.0	3.9	4.8
Administration of Justice (750)	BA	0.2	0.3	0.5	0.7	0.9
	O	0.1	0.2	0.5	0.6	0.8
General Government (800)	BA	0.1	0.2	0.3	0.4	0.5
	O	<u>a/</u>	0.2	0.3	0.4	0.5
General Purpose Fiscal Assistance (850)	BA	<u>a/</u>	0.5	1.1	1.7	2.4
	O	<u>a/</u>	0.4	1.0	1.6	2.2
Interest (900)	BA	<u>a/</u>	--	--	--	--
	O	<u>a/</u>	--	--	--	--
Allowances (920)	BA	--	--	--	--	--
	O	--	--	--	--	--
Undistributed Offsetting Receipts (950)	BA	--	--	--	--	--
	O	--	--	--	--	--
Total	BA	15.9	33.3	51.0	70.8	91.4
	O	6.3	16.6	29.1	43.2	58.4

a/ Less than \$50 million.

As discussed in Chapter II of the five-year projections report, inflation adjustments for indexed benefit programs comprise a large share of the projected increase in federal spending. To ascertain the cost of these programs, a so-called "decoupled" projection was produced. This projection includes no inflation adjustments whatsoever; any increase in these projections is caused by real increases in the cost of a program. For example, even without automatic cost-of-living adjustments, the cost of social

security is expected to increase because of a growth in the recipient population. For the decoupled projections, no federal payraises are assumed for fiscal years 1980-1984. Table 5 shows, by function, the difference between the current law and the decoupled projections. This difference is largely due to the cost of automatic inflation adjustments and federal payraises.

TABLE 5. THE COST OF AUTOMATIC INFLATION ADJUSTMENTS, BY FUNCTION: BY FISCAL YEARS, IN BILLIONS OF DOLLARS

		1980	1981	1982	1983	1984
National Defense (050)	BA	3.5	8.0	13.2	18.7	24.2
	O	3.3	8.0	13.1	18.5	24.0
International Affairs (150)	BA	0.3	0.7	1.1	1.5	1.9
	O	<u>a/</u>	<u>a/</u>	<u>a/</u>	<u>a/</u>	0.2
General Science, Space, and Technology (250)	BA	<u>a/</u>	<u>a/</u>	0.1	0.2	0.2
	O	<u>a/</u>	<u>a/</u>	0.1	0.1	0.2
Energy (270)	BA	<u>a/</u>	-0.2	-0.1	<u>a/</u>	0.2
	O	<u>a/</u>	-0.2	-0.1	<u>a/</u>	<u>a/</u>
Natural Resources and Environment (300)	BA	<u>a/</u>	0.1	0.1	0.5	0.8
	O	-0.1	<u>a/</u>	<u>a/</u>	0.2	0.5
Agriculture (350)	BA	<u>a/</u>	<u>a/</u>	<u>a/</u>	0.1	0.2
	O	<u>a/</u>	<u>a/</u>	<u>a/</u>	0.1	0.2
Commerce and Housing Credit (370)	BA	<u>a/</u>	<u>a/</u>	0.1	0.2	0.2
	O	<u>a/</u>	<u>a/</u>	-0.1	-0.1	-0.1
Transportation (400)	BA	<u>a/</u>	0.3	0.6	0.9	1.2
	O	<u>a/</u>	0.3	0.5	0.8	1.0
Community and Regional Development (450)	BA	<u>a/</u>	0.2	0.3	0.5	0.6
	O	<u>a/</u>	0.1	0.3	0.4	0.5
Education, Training, Employment, and Social Services (500)	BA	0.2	0.3	0.5	0.7	0.9
	O	0.2	4.0	0.4	0.6	0.8
Health (550)	BA	4.2	9.5	15.5	21.7	29.6
	O	4.0	8.8	14.0	19.9	26.5

(Continued)

TABLE 5. (Continued).

		1980	1981	1982	1983	1984
Income Security (600)	BA	11.3	24.7	39.9	56.1	74.7
	O	4.8	17.9	31.5	45.6	60.6
Veterans' Benefits and Services (700)	BA	0.3	0.9	1.6	2.3	3.0
	O	0.3	0.9	1.5	2.2	3.0
Administration of Justice (750)	BA	a/	0.2	0.4	0.6	0.8
	O		0.2	0.3	0.5	0.8
General Government (800)	BA	a/	0.2	0.4	0.7	0.9
	O	a/	0.2	0.4	0.6	0.9
General Purpose Fiscal Assistance (850)	BA	a/	0.1	0.2	0.3	0.4
	O	a/	0.1	0.2	0.3	0.4
Interest (900)	BA	-0.2	-0.3	-0.5	-0.7	-0.8
	O	-0.2	-0.3	-0.5	-0.7	-0.8
Allowances (920)	BA	1.5	1.5	1.8	1.9	1.8
	O	1.4	1.5	1.8	1.9	1.8
Undistributed Offsetting Receipts (950)	BA	-0.2	-0.5	-1.1	-1.5	-1.9
	O	-0.2	-0.5	-1.1	-1.5	-1.9
Total	BA	21.0	46.0	74.4	104.5	138.9
	O	13.6	40.7	62.5	89.8	118.7

a/ Less than \$50 million.

#### OVERVIEW OF PROJECTIONS METHODOLOGY

From the standpoint of projections methodology, the budget can be partitioned into five pieces: accounts projected using the simple inflation method, supply-oriented revolving funds, loan and loan guarantee accounts, accounts for programs that are designed to meet one-time or temporary needs, and accounts projected using special methodologies.

### The Simple Inflation Method

The most frequently used technique for projecting budget authority and outlays is the simple inflation method. Approximately one-third of outlays in fiscal year 1980 is projected by simple inflation. Table 6 shows by function the percent of current policy outlays for fiscal year 1980 that were projected by the simple inflation method.

TABLE 6. PERCENT OF FISCAL YEAR 1980 CURRENT POLICY OUTLAYS PROJECTED BY THE SIMPLE INFLATION METHOD: BY FUNCTION

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National Defense (050)	90
International Affairs (150)	68
General Science, Space, and Technology (250)	84
Energy (270)	80
Natural Resources and Environment (300)	75
Agriculture (350)	45
Commerce and Housing Credit (370)	79
Transportation (400)	42
Community and Regional Development (450)	51
Education, Training, Employment, and Social Services (500)	69
Health (550)	16
Income Security (600)	1
Veterans' Benefits and Services (700)	33
Administration of Justice (750)	96
General Government (800)	100
General Purpose Fiscal Assistance (850)	3
Interest (900)	--
Allowances (920)	--
Undistributed Offsetting Receipts (950)	--

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This method involves inflating fiscal year 1979 budget authority to arrive at projected budget authority for fiscal years 1980 through 1984. The inflation rates used for each account were based on the specialized price indexes discussed in Chapter II and listed in Appendix A. Each account has a unique price index associated with it that is a weighted average of indexes

listed in that appendix. Account-specific indexes were constructed using the Budget Appendix 3/ for the fiscal year 1979 budget.

The upper right corner of figure 5 shows the information that is utilized to construct an account specific index for a hypothetical account that is composed of pay (50 percent) and construction costs (50 percent). In the current policy projections (with discretionary inflation) inflation adjustments are made for all spending components. In this example, 50 percent of the budget authority would be inflated with the index for federal payraises (06) while the remaining 50 percent would be inflated with the index for building construction costs (10). Since federal payraises are treated as nondiscretionary while construction costs would most generally be subject to only discretionary adjustments, the account is weighted somewhat differently for the current law projection. As Figure 5 shows, the current law projection (without discretionary inflation) involves inflating 50 percent of the account with the index for federal payraises and holding the remaining 50 percent of the account constant. In the decoupled path, all components (including federal pay) are held constant. Utilizing these methods provides the ability to produce account specific projections of budget authority for each projection path.

Outlays from budget authority for fiscal years 1979 through 1984 were estimated using multiyear spendout rates developed by CBO through consultation with government agencies and review of historical spending patterns. Outlays from budget authority approved prior to 1979 were more difficult to estimate and various methods were used. The most frequently used technique was to assume that the same percentage of unexpended balances (budget authority that has not yet been spent) would be spent in 1980 and later years as in 1979. For example, suppose unexpended balances for an account at the beginning of fiscal year 1979 were \$100 million and outlays from prior authority were estimated to be \$40 million, so that 40 percent of the unexpended balances were assumed to be spent in fiscal year 1979. This leaves \$60 billion in balances from budget authority approved prior to fiscal year 1979. For fiscal year 1980, estimated outlays from this prior authority would be \$24 million (40 percent of \$60 million).

Figure 5 resembles the reports used to review projections for accounts that were estimated using the simple inflation method. The upper right corner shows the specialized price indexes associated with the account and their weights for both the current policy and current law projections.

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3/ Appendix to the Budget of the United States Government, Fiscal Year 1980, January 1979.

The row of numbers directly below the years shows budget authority for fiscal years 1979 through 1984. The next row designates outlays in fiscal years 1979 through 1984 from authority approved prior to fiscal year 1979. The third row contains estimated outlays in fiscal years 1979 through 1984 from budget authority approved in fiscal year 1979, and similarly for succeeding rows until the last one, which contains projected total outlays.

FIGURE 5. SAMPLE COMPUTER REPORT

FIVE-YEAR PROJECTION SYSTEM AUDIT REPORT									
			Inflatons	Weights With Discretionary Inflation		Weights Without Discretionary Inflation			
			06-federal pay	0.5		0.5			
			10-building						
			construction cost	0.5		0.0			
			40-constant	0.0		0.5			
ACCOUNT NUMBER: 80 0108 0 1 255 00 (2700)									
			UNEXP	1979	1980	1981	1982	1983	1984
TITLE:			BAL						
Research and development									
(Supporting space activities)									
BUREAU:	BA		294,066	318,203	345,192	373,605	400,965	432,612	
National Aeronautics and	O	133599	89,300	29,638	14,661	0	0	0	
Space Administration	79		194,928	72,896	17,495	8,747	0	0	
AGENCY:	80			210,014	79,551	19,092	9,546	0	
National Aeronautics and	81				227,827	86,298	20,712	10,356	
Space Administration	82					246,579	93,401	22,416	
BA TYPE:	83						264,637	100,241	
HOUSE COM: IH	84							285,524	
SENATE COM: IH		Total Outlay	284,228	312,548	339,534	360,716	388,296	418,537	

### Revolving Funds

The budget contains approximately 200 accounts that are revolving funds. These funds are for business-type enterprises operated by the federal government. Revolving funds generally serve one of two functions. Either they are loan or insurance funds that make loans and receive payments, such as the Special Assistance Functions Fund of the Government National Mortgage Association, or they supply goods and services, such as the Naval Industrial Fund or the Navy Stock Fund.

Supply-oriented Revolving Funds. For supply-oriented revolving funds, budget authority was projected to be zero. In all three types of projections, outlays were also projected at zero unless the account showed unexpended balances at the end of fiscal year 1979, in which case these balances were spent out in fiscal years 1980 through 1984. These funds are projected at zero, since in most cases they are designed to make zero profit, with receipts matching expenditures. Generally, budget authority and outlays for these accounts would become positive in two situations. A revolving fund would seek budget authority if it were dramatically increasing the scope of its activities, or if it were increasing its shelf stock of goods in response to longer production lead times (the time between the placing of an order with a commercial manufacturer and the receipt of the good from the manufacturer). Neither of these two situations, an increase in the scope of activity or increases in production lead times, were assumed in the projections.

Loan and Loan Guarantee Accounts. The projections for these accounts are based on the Congress' explicit method of control. In general, the Congress controls loan accounts by one of two methods. Either it sets a ceiling on the amount of new loans for accounts that have permanent indefinite borrowing authority or it provides funds for new loans through direct appropriation. For accounts with permanent indefinite borrowing authority, the Congress sets a ceiling on the amount of new loans or the total loan balance. If the ceiling is set annually or is subject to annual review, the current policy projection was based on a ceiling that increases with inflation. If the ceiling is not reviewed annually but is set on a multiyear basis, the current policy projection was based on a ceiling that was held constant until the next scheduled review, when the ceiling was projected to increase based on inflation. In general, current law and decoupled projections hold constant the 1979 ceiling on new loans. Therefore, any inflation in these programs is assumed to be discretionary.

For many of the loan accounts of this type, budget authority is derived using the following formula:

$$BA = \text{new loan commitments} - \text{net income}$$

where net income represents the sum of loan repayments and interest receipts less the sum of interest payments and administrative expenses. (Implicit in the equation is the assumption that net income is used for new loan commitments.) Outlays are disbursements of new loan commitments minus net income. Disbursements, in turn, are the sum of disbursements of budget authority and disbursements of net income:

$$\text{Outlays} = \text{Disbursements from BA} + \text{Disbursements from Net Income} \\ - \text{Net Income}$$

In the absence of better information, it was assumed that disbursements from net income equal net income, since commitments from net income probably have been planned well in advance and consequently should disburse quickly.

For some loan accounts, budget authority is based on outlays incurred in previous years. For these accounts,

$$\text{Outlays} = (\text{Assets Purchased} - \text{Asset Sales} - \text{Loan Repayments}) \\ + \text{Net Income}$$

It was generally assumed that assets purchased equal the sum of asset sales. This assumption removes asset management as a factor in the projections, and is reasonable for constructing a long-run, neutral base for the budget. It should be noted, however, that in any given year an agency that deals heavily in loans, such as the Farmers Home Administration, can effect large changes in its outlays through asset management without substantially changing its program.

Loan guarantee accounts represent the government's guarantees against loans made by private lending institutions or the Federal Financing Bank. For example, for a Veterans' Administration (VA) mortgage loan, a private lender makes the loan, but the VA guarantees the loan against default. The meaning of budget authority for these accounts varies. In some cases, it is the full amount of the loan guarantee or some part of the guarantee that is a reserve against default; in other cases, it is net losses (default payments less recoveries). In general, the fiscal year 1979 budget authority was inflated for the current policy projection and held constant for the other projection paths. Outlays for loan guarantee accounts occur when there are defaults on the loans. Loan defaults are obviously difficult to predict. If they were judged to be an unusual occurrence, they were projected at zero. If defaults were not judged to be an unusual occurrence, explanatory models were used where possible. For example, Federal Housing Administration home loan defaults were projected by means of a model that relates defaults to the cost of home ownership and per capita income.

#### Accounts for Programs to Meet Temporary Needs

Certain federal programs are designed to meet temporary needs. Some programs, such as temporary employment assistance (Title VI of the



Comprehensive Employment and Training Act), are assumed to be tied to the current employment situation and are assumed to phase down over the five-year period as the unemployment rate decreases. Other programs, such as the Northeast Corridor improvement program and the program for strategic petroleum reserves, represent one-time projects, the funding for which is assumed to terminate as they are completed.

#### Accounts Projected Using Special Methodologies

Some accounts were projected using special methodologies not yet discussed. Many of these accounts are for entitlement programs that provide benefit payments for individuals and are found in the health, income security, and veterans' functions. <sup>4/</sup> The general approach used for projecting outlays for these entitlement accounts is to project the number of beneficiaries and average benefit payment levels. (Outlays are the product of the number of beneficiaries and average benefit payments.) Projections of beneficiaries and average benefit levels for some programs, such as social security and food stamps, are based on explanatory models that explicitly take into account economic and demographic factors. For other programs, such as supplemental security income (SSI), projections are based on time trend models.

For some benefit payments accounts, such as food stamps and SSI, budget authority is equal to outlays. Many of these accounts are trust funds, however, and budget authority represents income to the funds. In most cases, income is largely attributable to social insurance tax receipts. Other sources of income vary from trust fund to trust fund, and in some cases can be significant. For example, for the Civil Service Retirement trust fund, the budget authority includes a federal government payment for interest on the unfunded liability. No such payment is included in the budget authority for the social security trust fund. Table 7 contains estimated social insurance budget authority receipts, and adjustments (including interest on the fund balance) for the major trust funds.

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<sup>4/</sup> Military retired pay, in the national defense function, is an account that provides benefit payments and is projected using a special methodology.

TABLE 7. COMPOSITION OF SOCIAL INSURANCE TRUST FUNDS  
BUDGET AUTHORITY FOR FISCAL YEAR 1979: IN  
BILLIONS OF DOLLARS

	Budget Authority	Social Insurance Receipts	Adjustments (Interest and Other Payments)
Old Age and Survivors Insurance	87.5	84.0	3.5
Disability Insurance	15.4	14.7	0.6
Hospital Insurance	22.1	20.3	1.8
Supplementary Medical Insurance	9.8	2.6	7.2
Unemployment Insurance	16.3	15.9	0.4
Civil Service Retirement	19.9	3.5	16.4
Railroad Retirement	4.0	2.1	1.9

Unique methodologies were used for some accounts that do not provide benefit payments to individuals. The most notable of these accounts are price supports (function 350), interest on the public debt (function 900), allowances for payraises (function 920), interest received by trust funds, employer's share of employee retirement, and offshore oil receipts (function 950).



## SPENDING BY FUNCTION

### National Defense (Function 050)

The national defense function includes the military functions of the Department of Defense, defense-related programs of the Department of Energy, and other defense-related activities.

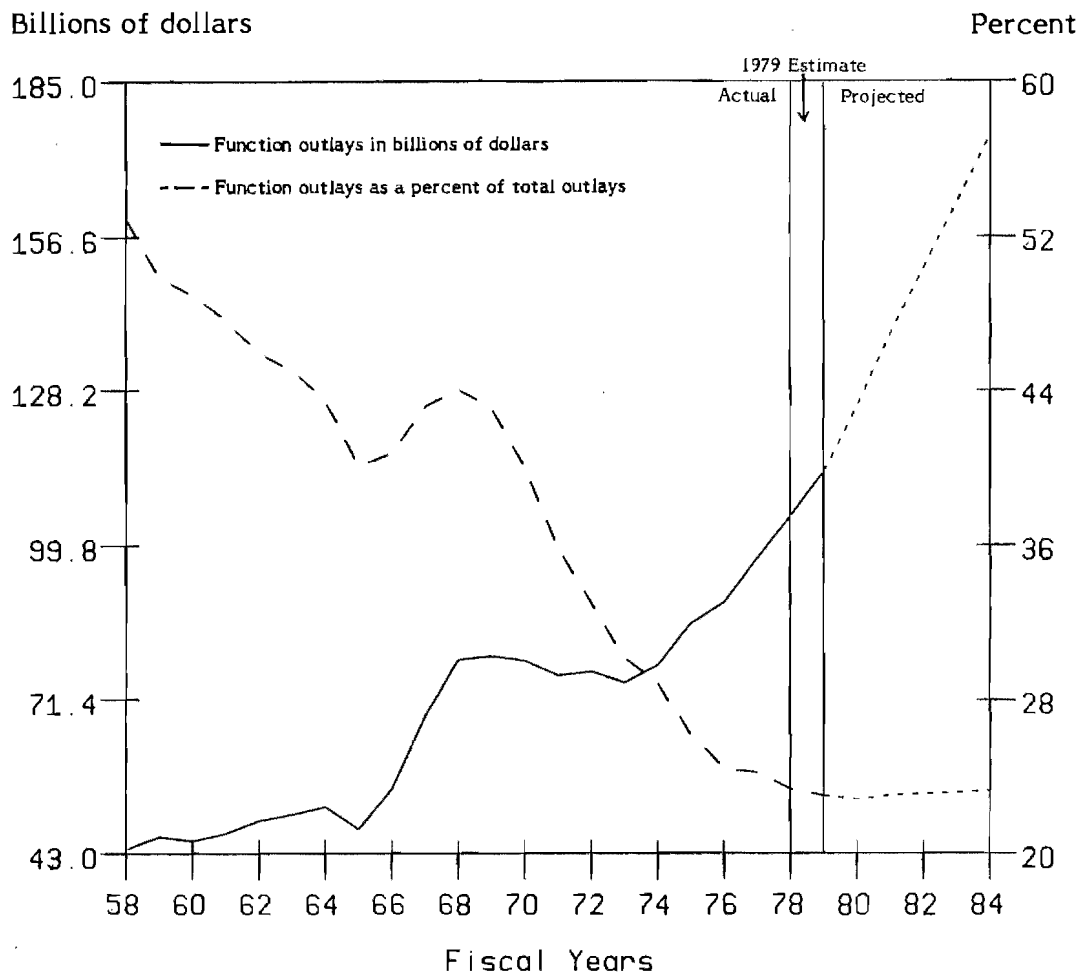
TABLE 8. NATIONAL DEFENSE, a/ BY MAJOR PROGRAM: BY FISCAL YEAR, IN MILLIONS OF DOLLARS

		1979	Projections				
		Estimate	1980	1981	1982	1983	1984
Department of Defense--Military							
Military personnel	BA	27,213	28,696	30,775	32,975	35,464	38,080
	O	26,745	28,182	30,189	32,344	34,786	37,354
Retired pay	BA	10,296	11,407	12,571	13,757	15,012	16,344
	O	10,270	11,401	12,567	13,752	15,007	16,338
Operation and maintenance	BA	37,337	39,899	43,031	46,344	50,110	54,141
	O	35,960	38,469	41,641	45,106	48,663	52,538
Procurement	BA	32,004	34,271	36,677	39,294	42,213	45,389
	O	22,068	26,414	31,091	34,173	37,078	39,665
Research and development	BA	12,171	13,069	14,132	15,248	16,440	17,733
	O	11,214	11,961	13,411	14,574	15,679	16,943
Military construction	BA	2,319	2,507	2,703	2,907	3,120	3,343
	O	1,743	1,908	2,317	2,667	2,913	3,130
Family housing	BA	1,562	1,674	1,799	1,932	2,071	2,205
	O	1,415	1,616	1,720	1,852	1,982	2,108
Allowances	BA	1,742	3,134	3,306	3,780	3,990	3,951
	O	1,696	3,058	3,302	3,768	3,984	3,952
Other	BA	-220	-237	-253	-268	-286	-301
	O	-322	-357	-379	-400	-426	-449
Subtotal	BA	124,424	134,420	144,741	155,969	168,134	180,885
	O	110,789	122,652	135,859	147,836	159,666	171,579
Atomic Energy Defense Activities	BA	2,596	2,801	3,021	3,258	3,504	3,768
	O	2,416	2,533	2,727	2,951	3,187	3,426
Other Defense-related Activities	BA	138	147	160	173	186	201
	O	140	146	156	168	181	195
Total	BA	127,156	137,366	147,919	159,397	171,822	184,851
	O	113,343	125,329	138,739	150,952	163,031	175,198

a/ Function 050.

Figure 6 shows federal expenditures for national defense since 1958. Between 1966 and 1969, defense spending reflects an average annual rate of 8.7 percent real growth, caused by expenditures for the war in VietNam. The increase in defense spending since 1973 reflects mainly the increased price of goods and services; in constant 1972 dollars, outlays in function 050 fell from \$70.0 million in 1973 to \$67.3 million in 1978. Thus, in real dollars, defense spending declined during this period. For the projections period, budget authority increases at an average annual rate of 7.8 percent--from \$127.2 billion for fiscal year 1979 to \$184.9 billion for 1984. Defense spending grows at an average annual rate of 9.1 percent in current dollars--from \$113.3 billion to \$175.2 billion--and by about 1.2 percent annually in real dollars.

FIGURE 6. FUNCTION 050 OUTLAYS: BY FISCAL YEAR



### Overview of projections methodology

The accounts in function 050 fall into three categories with respect to the projection of budget authority: accounts projected using the simple inflation method, accounts projected at zero, and other accounts each requiring a special method. The accounts projected by the simple inflation method total \$116.8 billion in budget authority in fiscal year 1979, or 92 percent of function 050. Payraises affect the individual accounts in the year following the one in which they take effect. (Funds to pay for raises in the year in which they take effect are included in defense allowances, and are displayed separately.) For the current policy projections, appropriate specialized deflators for purchases were used to calculate inflation adjustments necessary to keep real purchasing power constant.

The accounts projected at zero are primarily expiring accounts--ones in which the program has been transferred to other accounts, such as Procurement of Aircraft and Missiles, Navy.

Special methodologies are used to project budget authority for Retired Pay, Defense (\$10,296 million in 1979), and the Payment to the CIA Retirement Fund (\$43 million in fiscal year 1979). These methodologies are described in the discussion that follows.

Except for salaries and retired pay, accounts in function 050 are predominantly subject only to discretionary inflation adjustments, and are projected to be the same in the current law and decoupled projections. Expenditures for salaries and retired pay are the same in the current policy and current law projections, reflecting the assumption that increases in these items are nondiscretionary. In the decoupled projections, both salaries and retired pay levels are assumed not to increase after 1979; however, the population receiving retired pay continues to grow at the same rate as in the current policy and current law projections.

Outlays during the five-year period are a function of the projected budget authority and the unexpended balances from appropriations prior to fiscal year 1979. The spendout rates used to compute the outlays resulting from budget authority during 1979 to 1984 were developed by CBO on the basis of historical rates, those used by the Department of Defense (DoD), and changes in the composition of various programs. For example, in Aircraft Procurement, Air Force, the percentage of total funding for combat aircraft has risen from about 50 percent in fiscal year 1975 to about 63 percent in fiscal year 1978. Combat aircraft have a slower rate of spending than modification, spare parts, and other programs that comprise the remainder of the account. This is reflected in the projections by rates that are lower in the first two years than had previously been the case.

### Projections base

The overall base for the projections was the second concurrent resolution for fiscal year 1979. The amounts allocated to specific accounts were generally derived from the final appropriation bills. The amount included in defense allowances for the 1979 payraise assumes 20 percent absorption, but \$156 million is included to cover cost-of-living adjustments for military retired pay that were not anticipated in the second resolution. Also, \$1.7 billion in budget authority is included in the base for procurement of weapon systems; this amount remained under the second resolution after the deletion of a new aircraft carrier from the 1979 defense authorizations bill.

Since different inflation indexes are used for pay and purchases, and since only pay is increased in the current law projections, it was necessary to estimate the proportion of the dollars in each account that is used for pay. For fiscal year 1979, this was derived from the object class data in the President's budget, as adjusted by Congressional action. Military pay and allowances for fiscal year 1979 total \$25,044 million in 1979 dollars (not including the October 1979 payraise). Civilian pay was subdivided into general schedule and wage board pay. Total pay for general schedule employees in fiscal year 1979 is \$10,757 million in 1979 dollars; total pay for wage board (blue collar) employees is \$6,848 million in 1979 dollars. Civilian pay is primarily funded through the operation and maintenance accounts, and comprises 43 percent of the pay in function 050.

### Projections

The major components of national defense are compensation for military and civilian personnel, benefits to retired military personnel, and purchases of goods and services from the private sector. Retired pay is discussed in detail later in this section. The projection for pay (not including retired pay) and purchases for DoD--Military and for the national defense function as a whole is shown in Table 9. Budget authority for pay in the national defense function increases at an average annual rate of 7.7 percent, from fiscal year 1979 to fiscal year 1984, while budget authority for purchases increases 7.5 percent annually.

DoD--Military. The military functions of the Department of Defense constitute the primary component of national defense--\$124.4 billion out of the total \$127.2 billion in budget authority in the projections base. DoD--Military can be further divided into major categories: military personnel, retired pay, operations and maintenance, procurement, research and development, military construction, family housing, allowances, offsetting receipts, and other.

TABLE 9. PAY AND PURCHASES: BY FISCAL YEAR, IN BILLIONS OF DOLLARS

			Projections					
			1979 Estimate	1980	1981	1982	1983	1984
Department of Defense--Military								
Pay <u>a/</u>	BA	44.4	48.1	51.7	55.7	60.1	64.4	
	O	44.4	47.9	51.5	55.5	59.8	64.1	
Purchases	BA	69.9	75.1	80.7	86.7	93.3	100.4	
	O	56.3	63.6	72.0	78.8	85.0	91.3	
Total National Defense								
Pay <u>a/</u>	BA	44.5	48.2	51.8	55.8	60.2	64.5	
	O	44.5	47.9	51.6	55.6	59.9	64.2	
Purchases	BA	72.5	78.0	83.8	90.0	96.8	104.2	
	O	58.8	66.2	78.8	81.8	88.3	94.8	

a/ Does not include retired pay.

Military personnel includes: the military personnel accounts for the Army, Navy, Marine Corps, and Air Force; the accounts for reserve personnel for each of the services; and the Army and Air National Guard accounts. These accounts fund items such as pay, housing, and subsistence for military personnel. About 92 percent of the funds in this category are classified as pay.

The basic payraise is linked by law to general schedule payraises; estimating the cost of the raise to DoD, however, requires a detailed adjustment. Certain special pays, such as hazardous duty pay and flight pay, amounting to 5 percent of total pay, are not adjusted along with basic pay. Since these special pays are adjusted irregularly, they were held constant over the projection period.

Retired pay contains funds for retired pay for military personnel. Retired pay for civilians is, in general, funded through civil service retirement, and will be included in the discussion of the income security function. The estimate for retired pay increases at an average annual rate of 9.7 percent, as compared with 7.8 percent for the national defense function as a whole.



This difference occurs because three factors drive the retired pay projection, while inflation is the only adjustment assumed for the remainder of the national defense function. First, retired personnel receive periodic pay increases based on increases in the cost of living. Second, new retirees will be joining the retirement system at a faster rate than is projected for departures. Finally, the new retirees will have a higher wage history than the individuals who have already retired. In general, higher wage histories mean greater retirement benefits. Table 10 apportions the projected budget authority according to these three factors.

TABLE 10. COMPONENTS OF PROJECTIONS FOR RETIRED PAY: BY FISCAL YEAR, IN MILLIONS OF DOLLARS

	Projections				
	1980	1981	1982	1983	1984
Budget Authority for Retired Pay in 1978 Dollars					
Pre-September 30, 1978 retirees	9,578	9,360	9,138	8,920	8,709
Post-September 30, 1978 retirees	684	1,140	1,596	2,052	2,508
Adjustments for:					
Wage increases after September 30, 1978	59	147	284	476	726
Cost-of-living increases after September 30, 1978	1,086	1,924	2,739	3,564	4,401
Total	11,407	12,571	13,757	15,012	16,344

Operations and maintenance (O&M) includes the O&M accounts for each of the services, the reserves, and the national guard. These accounts pay for fuel and consumable parts needed for weapon system operations, routine maintenance, depot overhauls, and facility operations. This category also includes accounts for contingencies, claims, and the Court of Military Appeals. Approximately 42 percent of the funds in the O&M category are for civilian pay, or about 84 percent of the civilian pay in this function. The Claims, Defense, account has been categorized as an entitlement in the spending committee allocations of the budget resolution.

Since this account pays for miscellaneous claims that can be expected to rise with the general price level, this account has been projected at a constant level in real terms.

Procurement accounts fund the construction, procurement, production, and modification of aircraft, missiles, tracked combat vehicles, weapons, ordnance, ships, and communications and electronic equipment. Procurement accounts are forward-priced; that is, the budget authority in fiscal year 1979 includes funds for anticipated inflation over the period when the procurements will take place. To estimate these accounts in the current law projections, the purchase dollars were held constant at fiscal year 1979 levels. In current policy, purchase dollars were held constant in real terms. To estimate the real value of the 1979 budget authority in 1979 dollars, outlays from 1979 budget authority must first be estimated, since the amount of inflation included depends on the outlay pattern. Constant dollar outlays were computed as follows (assuming a six-year spendout period):

$$c_i = \frac{(B \times r_i)}{f_i}, \text{ and}$$

$$TC = \sum_{i=1}^6 c_i$$

where

$c_i$  = constant dollar outlays in fiscal years 1979, 1980, . . . , 1984 from budget authority for 1979

$B$  = fiscal year 1979 budget authority

$r_i$  = outlay rate for  $i$ th year

$f_i$  = budget authority deflator ( $f_1$  = fiscal year 1979 deflator = 1.0,  $f_2$  = fiscal year 1980 deflator, and so forth)

The total of the constant dollar outlays (TC) stemming from fiscal year 1979 budget authority is assumed to be the same for each projection year. To calculate current dollar budget authority for a given projection year, the constant dollar outlays are converted to current dollar outlays, and the results are summed. The formula is as follows:

$$BA_j = c_1 \times f_j + c_2 \times f_{j+1} + \dots + c_6 \times f_{j+5}, \quad j = 1980, \dots, 1984$$

where

$BA_j$  = budget authority in year j

$f_j$  = budget authority deflator in year j ( $f_{1979} = 1.0$ )

Outlays grow from \$22.1 billion in fiscal year 1979 to \$39.7 billion in fiscal year 1984. The largest year-to-year increase is \$4.7 billion, from fiscal year 1980 to fiscal year 1981. This rise in outlays results from the increases in budget authority in fiscal years prior to 1979 and from the slow spendout for procurement accounts.

The slow spendout of procurement accounts means that, in any one year, most outlays are the result of prior year authority. For example, for the fiscal year 1980 current policy projection, only about \$5.1 billion of the \$26.4 billion in procurement outlays reflect spending from fiscal year 1980 budget authority. The other \$21.3 billion represent outlays from programs authorized in fiscal year 1979 and prior years. Table 11 separates outlays that result from budget authority in fiscal year 1980 and beyond from those that result from budget authority approved prior to fiscal year 1980. The latter category of outlays is relatively uncontrollable, since it is the result of decisions already made by the Congress.

TABLE 11. PROCUREMENT OUTLAYS ACCORDING TO THE PERIOD IN WHICH AUTHORITY WAS GRANTED: BY FISCAL YEAR, IN BILLIONS OF DOLLARS

	Projections				
	1980	1981	1982	1983	1984
Outlays from Budget Authority in 1980 and beyond	5.1	15.6	24.7	31.2	36.2
Outlays from Budget Authority in Years Prior to 1980	21.3	15.5	9.5	5.9	3.5

Research and development programs provide for basic and applied research and the development, test, and evaluation of new and improved weapon systems. About 14 percent of the 1979 budget authority is for

civilian employee compensation. About 70 percent of the funding for the research, development, test, and evaluation of major weapon systems is forward-priced (discussed previously for procurement).

Military construction includes construction accounts for each of the services, the reserves, and the national guard. These accounts fund the acquisition, construction, installation, and equipment of temporary or permanent public works and military facilities. As in research and development, only part of the construction category--approximately 70 percent--has been forward-priced.

Family housing includes the Family Housing, Defense account and the Homeowners' Assistance Fund, Defense. The family housing account finances the military family housing program, including the construction of new housing, the operation and maintenance of existing family housing, and the payments required on the indebtedness assumed to acquire Capehart and Wherry housing. For projections, the account was divided into three pieces that, for fiscal year 1979, are estimated to include \$139 million for construction, \$1,387 million for operations and maintenance, and \$35 million for debt repayments. The construction and O&M portions were projected independently using the simple inflation method. About 65 percent of the construction portion is forward-priced. The debt repayment portion is projected to decline over the five-year period as the total indebtedness declines.

Allowances include funds for civilian and military payraises in the year they take effect. In subsequent years, the increased pay becomes part of other categories, such as military personnel or operations and maintenance. The allowance for payraises does not include funds for civilian payraises funded by the procurement, military construction, and family housing accounts through the purchase of services from the industrial funds. Those funds are carried in the individual account as part of the forward-pricing allowance.

Payraises for military personnel are effective on October 1. Payraises for general schedule employees are effective the first day of the two-week pay period beginning after October 1. Thus, the cost in the year the increase takes effect varies between 97 and 100 percent of the full-year cost. Payraises for wage board employees occur at various times; the cost of raises in the year they take effect has averaged about 60 percent of the full-year cost. Table 12 distributes the budget authority for allowances for payraises between military and civilian pay.

In fiscal year 1980, \$1,908 million is allowed for military payraises; in fiscal year 1981, the amount will be distributed among the military personnel accounts. The \$1,226 million allowed for civilian payraises is

TABLE 12. PROJECTIONS OF PAYRAISE COSTS: BY FISCAL YEAR, IN MILLIONS OF DOLLARS

	Projections				
	1980	1981	1982	1983	1984
Civilian Pay	1,226	1,303	1,491	1,582	1,567
Military Pay	1,908	2,003	2,289	2,408	2,384

81 percent of the \$1,509 million full-year cost. In fiscal year 1981, the \$1,509 million is distributed among the operations and maintenance, research and development, and other accounts.

Offsetting receipts include miscellaneous receipts for DoD--Military which have not otherwise been identified. The projections in fiscal years 1980 through 1984 were obtained by inflating the fiscal year 1979 estimate by the projected implicit price deflator for the gross national product.

Other accounts include revolving and management funds and miscellaneous accounts, such as trust funds. The fiscal year 1979 estimate includes \$101 million for purchase of war reserve items by the stock funds; this budget authority is projected by simple inflation for 1980 and subsequent years. Receipts have generally exceeded disbursements for the revolving funds, and this means that past appropriations for war reserves stocks have been more than offset by other transactions. Despite the projected budget authority, no outlays have been projected for these accounts, in recognition of the historical pattern.

Atomic energy defense activities. This component of the national defense function includes funds for the defense-related programs of the Department of Energy. These programs include weapons development and fabrication and naval reactor development. They were projected using the simple inflation method.

Other defense-related programs. This component includes funds for the Selective Service, the Renegotiation Board, the Federal Preparedness Agency, and payments to the CIA retirement fund. Also included are offsetting receipts from strategic stockpile sales. Aside from payments to

the CIA retirement fund, all accounts were projected by the simple inflation method. The growth in the contribution to the CIA retirement fund results from a projected rise in civilian pay and from legislation mandating increases by 10 percent a year until full estimated cost is reached in fiscal year 1980.



## International Affairs (Function 150)

The international affairs function includes foreign economic and financial assistance, military assistance, activities associated with the conduct of foreign affairs, foreign information and exchange activities, and international financial programs. Figure 7 shows the historical, current, and anticipated future outlay trends in this function. While the largest expenditures occur in the foreign economic and financial assistance area, the shifts in outlays result largely from military assistance. The rapid increase in outlays from 1961 to 1962 primarily reflects the decision to start recording outlays of the military assistance programs in this function. The 1975 surge reflects the rapid increase in the Export-Import Bank program and the military assistance program. (Military assistance to the South Vietnamese forces began to outlay in this year.)

TABLE 13. INTERNATIONAL AFFAIRS, a/ BY MAJOR PROGRAM: BY FISCAL YEAR, IN MILLIONS OF DOLLARS

			Projections				
			1980	1981	1982	1983	1984
1979 Estimate							
<hr/>							
Foreign Economic and Financial Assistance							
P.L. 480 (Food for Peace)	BA	806	617	1,046	1,093	1,128	1,165
	O	948	997	1,046	1,093	1,128	1,165
Multilateral development banks	BA	2,515	3,022	3,043	2,763	2,887	3,314
	O	887	949	1,083	1,080	1,088	1,312
Bilateral development assistance	BA	1,521	1,640	1,753	1,877	2,016	2,170
	O	1,072	1,184	1,305	1,425	1,556	1,698
Security supporting assistance	BA	1,919	2,071	2,219	2,368	2,524	2,681
	O	2,020	1,887	2,026	2,253	2,444	2,620
Peace Corps	BA	95	102	109	117	126	136
	O	93	105	110	116	124	134
Receipts	BA	-337	-365	-381	-401	-403	-394
	O	-337	-365	-381	-401	-403	-394
Other	BA	440	474	509	544	578	616
	O	445	536	559	583	687	623
<hr/>							
Subtotal	BA	6,959	7,561	8,298	8,361	8,856	9,688
	O	5,128	5,293	5,748	6,149	6,624	7,158

(Continued)

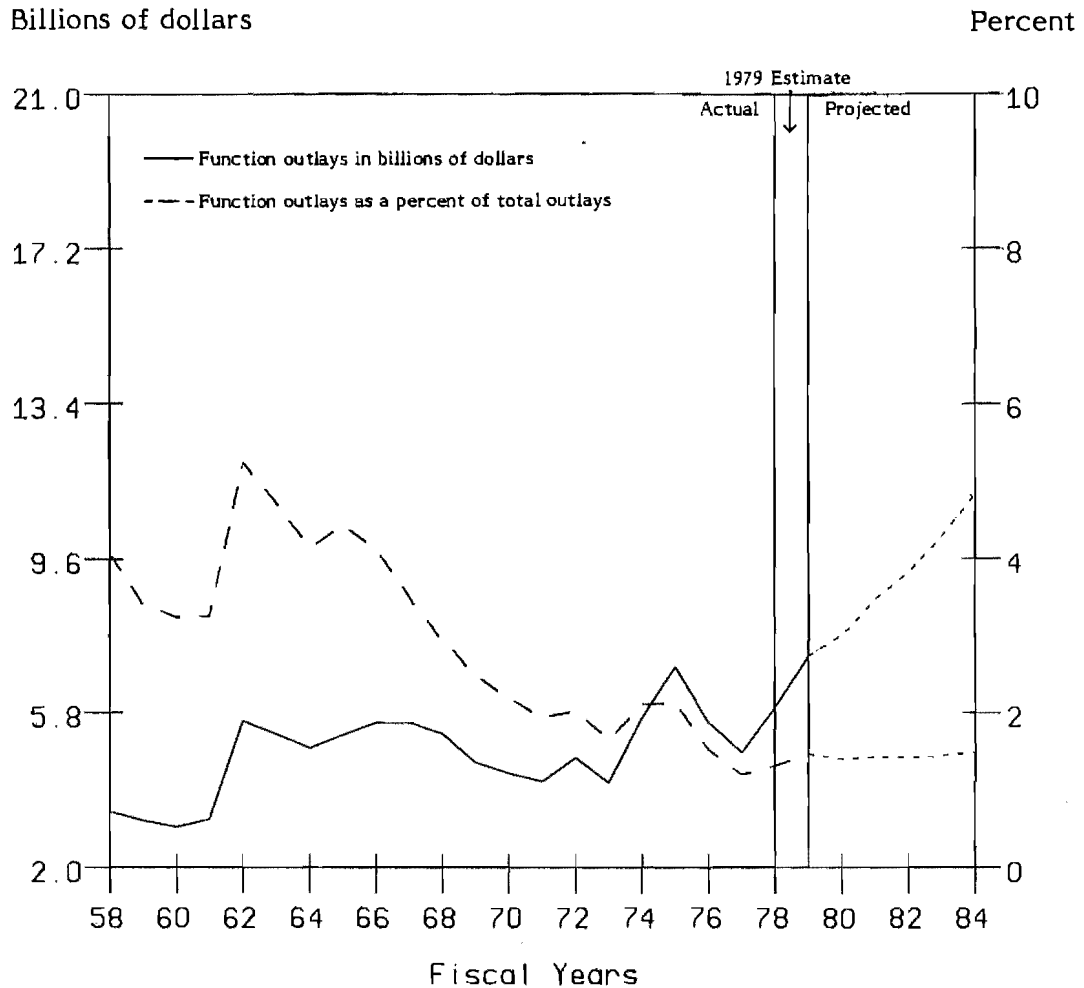


TABLE 13. CONTINUED.

		1979	Projections				
		Estimate	1980	1981	1982	1983	1984
Military Assistance							
Military assistance and training	BA	206	221	236	251	269	289
	O	227	225	232	238	247	258
Foreign military credit sales	BA	655	706	757	808	861	914
	O	530	556	596	637	679	722
Receipts	BA	-239	-244	-244	-246	-248	-251
	O	-239	-244	-244	-246	-248	-251
Subtotal	BA	621	683	748	813	882	953
	O	518	538	584	629	678	729
Conduct of Foreign Affairs							
Administration of foreign affairs	BA	798	851	916	983	1,058	1,140
	O	766	857	909	964	1,034	1,113
International organizations and conferences	BA	379	409	438	468	499	531
	O	383	411	435	461	492	523
Other	BA	34	33	36	36	39	42
	O	34	34	37	37	40	43
Subtotal	BA	1,211	1,293	1,390	1,487	1,596	1,712
	O	1,183	1,301	1,380	1,462	1,566	1,679
Foreign Information and Exchange							
International communication agency	BA	411	439	471	503	539	577
	O	391	424	460	494	529	566
Other	BA	87	93	100	107	114	121
	O	87	93	99	106	113	120
Subtotal	BA	498	532	571	610	653	698
	O	478	517	560	600	643	686
International Financial Programs							
Foreign military sales trust fund (net)	BA	1,700	1,900	2,100	2,300	2,500	2,600
	O	--	-200	-200	-300	-300	-300
Export-Import Bank	BA	--	1,691	2,117	2,308	2,438	2,725
	O	60	419	699	907	1,127	1,418
IMF supplementary financing facility	BA	1,832	--	--	--	--	--
	O	--	--	--	--	--	--
Receipts	BA	-96	-96	-96	-96	-96	-96
	O	-96	-96	-96	-96	-96	-96
Subtotal	BA	3,436	3,496	4,122	4,512	4,842	5,229
	O	-35	123	404	511	732	1,023
Undistributed Offsetting Receipts	BA	-93	-79	-80	-77	-76	-76
	O	-93	-79	-80	-77	-76	-76
Total	BA	12,632	13,486	15,049	15,707	16,754	18,204
	O	7,178	7,694	8,596	9,274	10,166	11,199

a/ Function 150.

FIGURE 7. FUNCTION 150 OUTLAYS: BY FISCAL YEARS



During the projections period, budget authority increases at an average annual rate of 7.6 percent, from \$12.6 billion in fiscal year 1979 to \$18.2 billion in fiscal year 1984. Outlays grow at a rate of 9.3 percent per year--from \$7.2 billion in fiscal year 1979 to \$11.2 billion in fiscal year 1984, as a result of inflation and the real growth in budget authority prior to 1979 in bilateral and multilateral assistance.

#### Foreign economic and financial assistance

Activities in this subfunction address U.S. security objectives, facilitate the growth of developing nations, and respond to the needs of the

poorest people in the world. These activities include security assistance, multilateral development assistance, bilateral development assistance, Public Law 480 food aid, the Peace Corps, and other smaller programs. With the exception of a portion of multilateral development assistance and Public Law 480, the projections for this subfunction use the simple inflation method. One account, the Inter-American Foundation (IAF) was not projected beyond 1980, since it does not have a history of receiving regular annual appropriations.

Public Law 480. Public Law 480 authorizes the use of Commodity Credit Corporation (CCC) stocks and funds to facilitate U.S. exports of agricultural commodities and to alleviate the food needs of developing countries. Titles I and III of the act authorize the extension of credit on a concessional basis to foreign importers of U.S. agricultural commodities; Title II authorizes donation of commodities to meet critical food needs.

Outlays for Public Law 480 measure net program costs or the amount of funds actually required to finance the program.

$$O_i = C_i - R_i$$

where

$O_i$  = actual outlays in year i = net program costs

$C_i$  = total program costs (commodity costs plus shipping costs) in year i

$R_i$  = receipts in year i

Receipts include credit repayments in dollars and conversion to dollars of foreign currencies received as payment on convertible currency credits, currency use payments, and balances of foreign currencies that are held in the account of the Public Law 480 program.

Budget authority is the amount actually appropriated to reimburse the CCC for costs incurred in the operation of the program. The budget authority for any year equals the estimate of net program costs for that year plus the amount by which the estimate of net program costs for the previous year and actual net program costs in all other prior years exceeded or fell short of amounts appropriated for those years.

$$BA_{i-1}^e + (O_{i-1}^e - BA_{i-1}) + \sum_{j=2}^m (O_{i-j} - BA_{i-j})$$

where

$BA_i$  = budget authority for year i

$O_i^e$  = budget estimate of outlays for year i

$BA_i$  = budget authority appropriated in year i

m = number of years program has been in existence

For most accounts in function 150, budget authority is the basis for projections. In the Public Law 480 account, however, total program costs are the basis for the projections. For developing estimates, Public Law 480 is disaggregated into the Title I/III and Title II programs.

The current law and decoupled projections for Title I/III maintain the estimated fiscal year 1979 level of total program costs in each year of the projection period. The current policy projections use the wholesale price index for farm products to maintain the fiscal year 1979 real level of total costs in 1980-1984.

A new Title III program, Food for Development, was added by the International Development and Food Assistance Act of 1977. Eligible countries may enter into a multiyear agreement for financing commodity shipments. Funds generated from the distribution of the commodities within the country are placed into a special account and, when disbursed for agreed upon development projects, are considered as repayments to the United States, thereby reducing the value of the loan. The act requires that Title III agreements shall be not less than 15 percent of the value of all Title I agreements entered into after fiscal year 1980. The projections assume that the minimum program of 15 percent is implemented under the authority of Title III and that the receipt stream is reduced accordingly.

The 1977 act amended Title II to require the distribution of 1.6 million metric tons of agricultural commodities in fiscal years 1978 through 1980, 1.65 million metric tons in fiscal year 1981, and 1.7 million tons in each subsequent year. The projections raise the base of Title II expenses for fiscal years 1981 through 1984 from the level estimated for fiscal year 1979 to include the increased minimum tonnage requirement. The current law and current policy projections then use the WPI for farm commodities to reflect the cost of achieving the distribution levels required by law. The decoupled projections assume no price increases.

Receipts are based on an estimate of long-term credit repayments for loans made prior to fiscal year 1979, plus an estimate of repayments from loan activity through the projection period, currency use payments, and sales of foreign currencies.

Outlays increase gradually throughout the projection period. This increase reflects the growth in total program costs, due to adjustments for inflation, that is not entirely offset by the growth in receipts. Budget authority is less than outlays in fiscal year 1980 by the amount the appropriations for fiscal year 1979 and prior years exceed estimated outlays for those years. Recent reimbursements (appropriations) to the CCC have actually exceeded the magnitude of program costs. In fiscal year 1980 and each year thereafter, budget authority is assumed to equal outlays.

Multilateral development assistance--contributions to international financial institutions. This category depicts U.S. participation in the international development banks. The U.S. contributes both to the "hard loan" commercial and to the "soft loan" concessional windows of the International Bank for Reconstruction and Development (IBRD), the Inter-American Development Bank (IDB), and the Asian Development Bank (ADB). The United States also contributes to the soft loan window of the African Development Bank (AFDB) and participates in the capital increases of the International Finance Corps (IFC).

The size of the U.S. contribution to each institution is determined through the replenishment process which occurs for each bank at three to four year intervals. (A replenishment is an international agreement of member countries to increase the financial resources of the banks.) Member countries negotiate the overall size of the replenishment and determine each country's share of the increase. In general, the total U.S. share of the replenishment is authorized at one time to be appropriated in even installments over the replenishment period. During the past few years, however, the funds have not been appropriated as anticipated in the authorization acts and, consequently, the United States has been building up "arrearages" to these institutions. Since amounts authorized for the banks have historically been appropriated in full over time, a convention was adopted for these projections to allow for the arrearages in fiscal years 1980 and 1981.

Projections of budget authority for multilateral development banks contain levels of budget authority consistent with the current replenishment until the amount authorized is depleted. Where a history of U.S. participation in replenishments of the institution is established, subscriptions and contributions exhausted during the projection period are assumed to be renewed. Under current policy, the succeeding authorizations increase in magnitude in accordance with increases in the GNP deflator. Under the

current law and decoupled projections, succeeding authorizations are assumed to equal existing authorizations. In any year, appropriations under these assumed authorizations maintain the relationships established in the original authorizing legislation and the subsequent appropriation action.

Since actual contributions to the banks may take the form of a letter of credit which is drawn upon as needed, outlays in this category occur over a number of years. Total outlays are estimated by summing agency estimates of disbursements from contributions appropriated prior to fiscal year 1979 and estimates of disbursements from contributions made during the projection period. The latter estimates are calculated by applying agency spendout rates against contributions projected for fiscal years 1979 through 1984.

The level of budget authority fluctuates over the projection period, reflecting both the peculiarities of some replenishment cycles and the allowance for arrearages in 1981 and 1982. Outlays increase at a relatively steady rate over the projection period, except for a slight decline from fiscal years 1981 to 1982 in response to the anticipated decline in outlays for the IDA IV contribution. Contributions and thus outlays for the International Development Association (IDA) have recently been compounded as the United States is concurrently contributing to both the fourth and fifth replenishments of this institution.

Outlays never exhaust all the available budget authority because a large portion of U.S. subscription to the capital replenishment of the banks takes the form of callable capital. This capital, a guarantee of the institutions' borrowings in private markets, has never been drawn and is not estimated to be spent.

Offsetting receipts. Offsetting receipts are composed of principal repayments of Agency for International Development (AID) loans and postwar reconstruction loans. Most AID loans are offered on concessional terms with an initial grace period of up to 10 years. Repayment of these AID loans, therefore, are a function of loan activity in years prior to the projection period. These receipts are estimated to grow from \$0.3 billion in fiscal year 1979 to \$0.4 billion in fiscal year 1984. Although the forgiveness of some principal repayments to AID under the retroactive terms adjustment program has been authorized to begin in fiscal year 1980, no projection of the program was included, since such forgiveness is contingent on appropriation action.

Other. Other major programs include the bilateral assistance programs, security supporting assistance and the Peace Corps. These programs are projected using the simple inflation method; outlays are calculated by applying historical spendout rates.

## Military assistance

The military assistance category includes funds for military assistance grants, international military education and training, and foreign military sales credits. Budget authority for military assistance grants and international military education and training include an estimate of reappropriations in fiscal year 1979. Budget authority for all three accounts is projected using the simple inflation method. The outlay estimate from foreign military credit sales is described below.

Foreign military credit sales. This program finances the sale of defense articles and services to foreign countries. Two types of financing are used: direct U.S. government loans and commercial or Federal Financing Bank loans guaranteed by the U.S. government. Direct loans are fully appropriated. Guaranteed loans are backed by the appropriation and obligation of 10 percent of the value of the loan. For fiscal year 1979, the Congress appropriated \$654.5 million to finance a program of \$1,887.5 million. Authority was granted to forgive up to \$500 million in direct loans to Israel.

Budget authority is divided into three parts for outlay estimation: \$500 million for direct credits for Israel is estimated to outlay but not to be repaid; \$17.5 million in other direct credits is estimated to be outlaid and repaid; and \$137.0 million to guarantee indirect loans of \$1,370.5 million is estimated to not outlay since none has in the past.

Offsetting receipts for the subfunction are composed of principal repayments from direct loans, fees from loan guarantees, and miscellaneous recoveries. Miscellaneous recoveries and interest and principal repayments from loans placed in fiscal year 1978 and prior years were taken from long range estimates of the Office of Management and Budget (OMB). To this was added an estimate of fee income and principal repayments from activity in fiscal year 1979 and the projection years.

## The conduct of foreign affairs

This category finances diplomatic activities administered by the Department of State, expenses associated with U.S. membership in international organizations and conferences, and other miscellaneous activities.

The projections for all accounts in this subfunction, except the U.S. payment to the Republic of Panama, rely on the simple inflation method. Annual payments to the Republic of Panama, called for by the Treaty of Mutual Understanding and Cooperation of 1955, are assumed to terminate in fiscal year 1980.

### Foreign information and exchange activities

This subfunction contains programs designed to facilitate the conduct of U.S. foreign policy by strengthening informal communication and understanding between foreign countries and the United States. Such programs include educational and cultural exchange activities administered by the International Communications Agency, the Board for International Broadcasting, and other smaller programs. All accounts in this subfunction are projected using the simple inflation method.

### International financial programs

This subfunction consists of programs designed to foster international financial stability. Included in the subfunction are such diverse programs as: the Export-Import Bank, which promotes U.S. exports abroad; the U.S. contribution to the Supplementary Financing Facility of the International Monetary Fund, which provides financing for countries experiencing extreme balance of payments difficulties; and the Foreign Military Sales trust fund, which facilitates the export of U.S. arms. 5/

Export-Import Bank. The Export-Import Bank is an independent corporate agency of the U.S. government which promotes U.S. exports both by financing foreign purchases of U.S. goods and by guaranteeing and insuring privately financed U.S. exports. The Export-Import Bank Act of 1945, as amended, grants the bank permanent authority to borrow from the Treasury, the Federal Financing Bank, and the public to finance these activities.

For budgetary purposes, the Export-Import Bank is classified as a revolving fund. Both budget authority and outlays are estimated levels based on the limitation on program and administrative activity contained in annual appropriation acts. A limitation for each of the bank's program areas, including direct credits, discount credits, and guarantees and insurance, is detailed in the annual budget request.

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5/ Beginning with the fiscal year 1980 budget request, interest income earned by the Exchange Stabilization Fund on its holdings of U.S. government securities will be recorded in this subfunction. The other component of fund activity, gains and losses on foreign exchange transactions, will be recorded as actuals at the end of the fiscal year in which they occur. Gains and losses will not be projected, however, due to the uncertainty surrounding these transactions. The projections described here were developed prior to the 1980 budget request and therefore do not include the interest income earned by the ESF.



For this account, therefore, budget authority measures potential borrowing requirements derived from bank activity during a given year. By definition, budget authority equals the value of signed credit agreements (S), plus 25 percent of the net change in guarantee and insurance authorizations (I), less credit repayments (R), cancellations (C), and bank net income (Y), plus any changes in the balance of unobligated authority (U) available to the bank. 6/

$$\text{Required Budget Authority} = S + 0.25 I - C - R - Y + U$$

The balance of unobligated authority (U) varies in magnitude to minimize the amount of new authority required in any period and to prevent budget authority from becoming a negative amount. If, for example, the value of credit repayments, cancellations, and net income exceeds the value of signed credit agreements plus 25 percent of net guarantee and insurance authorizations--that is

$$S + 0.25 I - C - R - Y < 0$$

--budget authority equals zero and a balance of unobligated authority is accumulated--that is

$$U - (S + 0.25 I - C - R - Y) = 0.$$

In later years, this balance of unobligated authority is drawn upon to minimize the amount of new budget authority required to support bank activities.

Signings are estimated as a function of the limitation on program activity; in the current policy projections this limitation (and the resulting program level) is inflated using the GNP deflator. In the current law and decoupled projections it is held constant. Cancellations (C), repayments (R), and net income (Y), excluding administrative expenses, are derived by applying historical rates to current and preceding levels of program activity. Administrative expenses are projected using the deflator for federal pay. Unobligated balances (U) is a residual which is not projected.

Outlays are defined as actual net changes in bank debt during any year. For direct credits, the bank pays the U.S. exporter directly at the

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6/ Beginning with the fiscal year 1980 budget request, 25 percent of guarantees and insurance (I) is no longer considered a component of budget authority. The projections discussed here were developed prior to receipt of the 1980 budget and therefore do not incorporate the new methodology.

time of delivery, and these payments constitute disbursements. Since the delivery of goods associated with a given export transaction occur over a number of years, a direct credit authorized one year will actually disburse over a number of years. Guarantees and insurance are estimated not to outlay. The need for the Export-Import Bank to incur debt to finance disbursements is offset by credit repayments and net income. Therefore, outlays for any year equal actual disbursements on credits (D), less credit repayments (R), and bank net income (Y).

$$\text{Outlays} = D - R - Y$$

The projection of repayments (R) and net income (Y), excluding administrative expenses, is the same as described for budget authority. Disbursements are projected by applying historical outlay rates to the level of credit authorizations in current and preceding years.

In the projections period, budget authority under current policy assumptions increases from zero in 1979 to \$1.7 billion in 1980 and to \$2.1 billion in 1981, as unobligated balances decline and are depleted in 1980. Budget authority increases at an average annual rate of 8.8 percent thereafter. The depletion of unobligated balances is also reflected in the projection of budget authority under the current law and decoupled assumptions during the 1979 to 1981 period. In these projections, however, budget authority declines steadily from 1982 through 1984 as receipts increase, while the level of authorizations, guarantees, and insurance remain constant. The current policy projection of outlays increases from \$60 million in 1979 to \$418 million in 1980 and increase at an annual average rate of 35 percent thereafter. Under current law and decoupled assumptions, outlays also increase significantly from 1979 to 1980 and increase at an average annual rate of 18 percent from 1980 to 1984.

IMF: Supplementary Financing Facility. Established in the wake of worldwide payments imbalances, the Supplementary Financing Facility was designed to temporarily augment the financial resources of the International Monetary Fund (IMF). Public Law 95-435 authorized U.S. participation in the facility including the contingent obligation to provide up to the dollar equivalent of \$1,450 million special drawing rights. An appropriation of \$1.8 billion was sought and obtained for fiscal year 1979; no budget authority was projected beyond that date due to the one-time nature of the facility. Given the current state of the U.S. economy, the facility is anticipated not to outlay during the projection period. CBO will recognize outlays as funds are drawn from the IMF or repaid to the U.S. Treasury.

Foreign military sales trust fund. 7/ The Arms Export Control Act authorizes the sale of defense articles and services by the U.S. government to foreign countries and international organizations. The military services are responsible for the implementation of government-to-government sales. Upon the signing of a sales agreement between the United States and a foreign country, the military services enter into contracts with private firms for the procurement of the goods and services or, if the items are to be sold from U.S. stocks, arrange for delivery of the items.

The accounting for foreign military sales is centralized within the foreign military sales trust fund, through which all sales cases flow. U.S. procurement of goods for foreign military sales cases may be financed on either a reimbursable or direct cite basis. Under the reimbursable method, the military services cite their own appropriations accounts in contracts with firms; the performing accounts are allotted obligational authority by the trust fund and reimbursed for actual expenses. Under the direct cite method, the military services cite the foreign military sales trust fund itself in contracts. Upon receipt of direct cite contracts or allotment status reports from the performing accounts indicating the obligation of funds in those accounts, an obligation is recorded in the trust fund. Gross budget authority associated with the foreign military trust fund equals the value of obligations recorded against the trust fund.

Foreign purchasers must make funds available to meet payments required by contracts entered into by the United States for the procurement of items before such payments are actually due. Payments from foreign governments are received and held in the trust fund until they are required for payment to private contractors or performing accounts in the military services. Gross outlays associated with the trust fund equal the magnitude of these disbursements from the trust fund.

Receipts from foreign purchasers are offset against gross budget authority and gross outlays when estimating the net budget effect of the trust fund.

Under current policy, the GNP deflator is used to project the estimated fiscal year 1979 level of new sales acceptances through the projection period. Current law and decoupled projections maintain the fiscal year 1979 level of new acceptances. Obligations in a given year are estimated as a

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7/ These projections were developed prior to the recent change of regimes in Iran and, therefore, do not include estimates of expenditures related to these events.

fixed percentage of the aggregate level of new acceptances plus a constant percentage of the balance of unobligated acceptances at the beginning of the year. Outlays are estimated at a fixed percentage of the aggregate level of new acceptances, plus a geometrically declining percentage of new acceptances in prior years.

Receipts are estimated as a function of outlays. CBO estimates of receipts reflect assumptions about the change in the balance of cash in the trust fund. The estimate for fiscal year 1979 assumes that there will be no change in the balance of cash in the trust fund (that is, the estimate assumes that the trust fund net outlays will equal zero). The projection years assume receipts lead outlays by one quarter resulting in negative net outlays. 8/

#### Undistributed offsetting receipts

These receipts are not assigned as offsets to any of the categories already discussed. This category includes dollar conversions of foreign currency loan repayments and other miscellaneous receipts. Projections of these receipts are based on OMB estimates and are estimated to decline slightly as some loans are repaid through the projection period.

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8/ See CBO paper, forthcoming, Foreign Military Sales and the Federal Budget.



## General Science, Space, and Technology (Function 250)

The general science, space, and technology function includes two major areas of activity: general science and basic research; and civilian space programs. Activities covered by the first area occur within the National Science Foundation and the Department of Energy. Activity in the second area occurs entirely within the National Aeronautics and Space Administration (NASA).

TABLE 14. GENERAL SCIENCE, SPACE, AND TECHNOLOGY, a/ BY MAJOR PROGRAM: BY FISCAL YEAR, IN MILLIONS OF DOLLARS

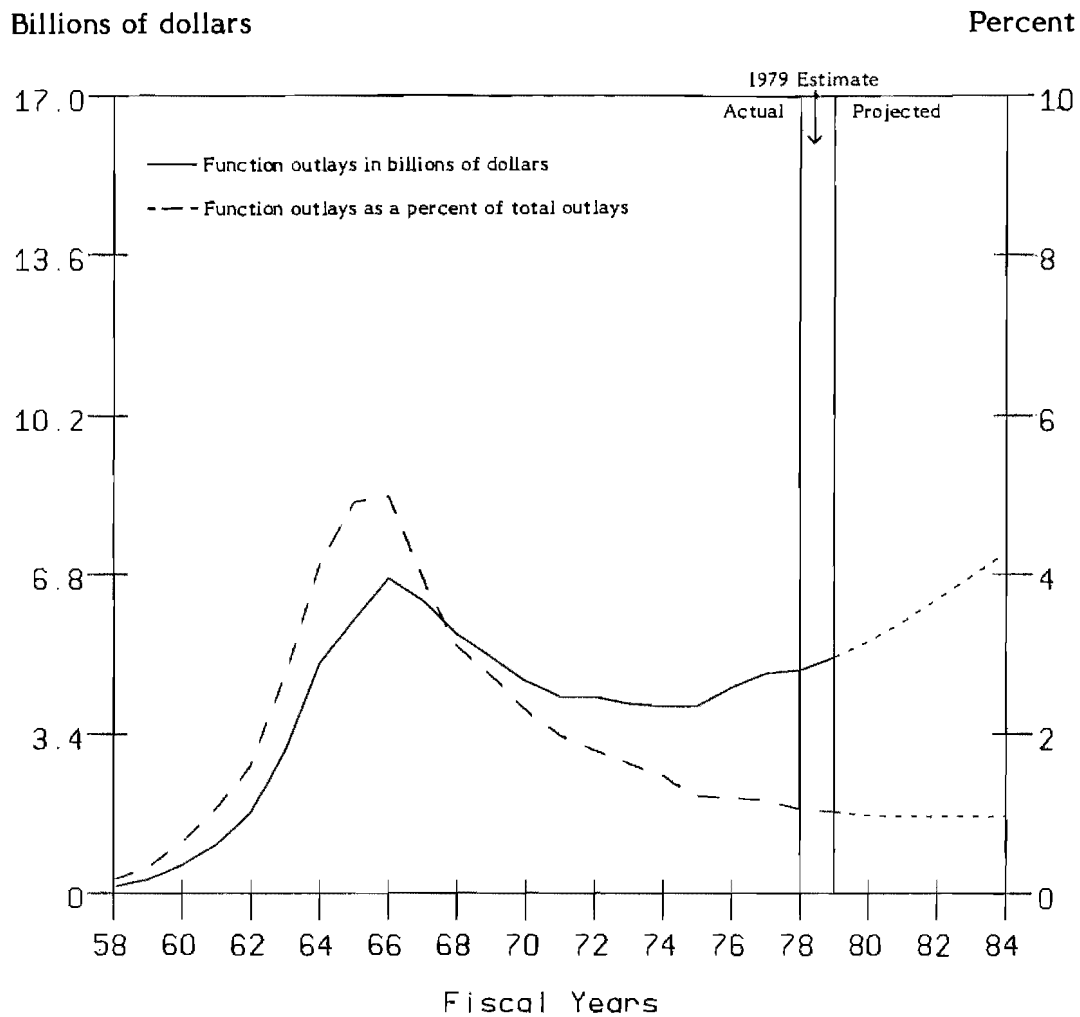
		1979 Estimate	Projections				
			1980	1981	1982	1983	1984
General Science and Basic Research	BA	1,350	1,460	1,574	1,701	1,837	1,974
	O	1,246	1,324	1,425	1,585	1,724	1,857
Civilian Space Programs	BA	3,838	4,111	4,436	4,776	5,138	5,533
	O	3,765	4,039	4,350	4,681	5,036	5,421
Total	BA	5,188	5,571	6,010	6,478	6,975	7,507
	O	5,011	5,363	5,774	6,266	6,761	7,278

a/ Function 250.

As shown in Figure 8, spending in function 250 rapidly increased between fiscal years 1958 and 1966 primarily because of the manned space flight program. Since then, spending has leveled off and, as a share of total outlays, has declined. From fiscal year 1980 through fiscal year 1984, function 250 outlays under current policy are projected to increase at an average annual rate of 7.8 percent. The share of the budget devoted to spending for this function remains relatively constant throughout the projections period.

The budget authority projections were developed by the simple inflation method. Outlays were derived using spendout rates that reflect the historical relationship between budget authority and outlays. In the current law projections, increases in budget authority occur primarily because of federal pay adjustments. For the current policy projections, all fiscal year 1979 funding is increased annually, based predominantly on projections of a specialized inflator for NASA research and development, and on projected increases in federal pay and in other nondefense research and development costs.

FIGURE 8. FUNCTION 250 OUTLAYS: BY FISCAL YEAR



Since no final decision has been reached concerning a fifth orbiter, expenditures for this item are not explicitly included. If an orbiter were to be funded out of current policy, resources for other activities would have to be reduced.

## Energy (Function 270)

The energy function includes four major areas of activity: energy supply, energy conservation, emergency energy preparedness, and other energy programs.

TABLE 15. ENERGY, a/ BY MAJOR PROGRAM: BY FISCAL YEAR, IN MILLIONS OF DOLLARS

			1979	Projections				
			Estimate	1980	1981	1982	1983	1984
<hr/>								
Energy Supply								
Dept. of Energy--energy supply	BA	3,964	4,208	4,482	4,773	5,079	5,409	
	O	3,000	3,239	3,905	4,451	4,777	5,087	
Other energy supply activities	BA	371	393	419	445	473	507	
	O	485	394	423	438	461	493	
Naval petroleum reserves receipts	BA	-552	-634	-1,581	-659	-2	-2	
	O	-552	-634	-1,581	-659	-2	-2	
TVA and power marketing activities	BA	-159	-2	886	1,664	1,342	1,216	
	O	1,524	1,516	1,410	1,009	1,887	1,892	
Energy Conservation	BA	1,087	1,157	1,233	1,313	1,400	1,490	
	O	461	849	1,024	1,139	1,195	1,249	
Strategic Petroleum Reserve	BA	3,024	---	---	1,884	1,863	24	
	O	2,000	1,575	1,142	2,062	2,131	882	
Other Energy Programs	BA	774	840	912	993	1,079	1,168	
	O	766	853	902	952	1,035	1,122	
<hr/>								
Total	BA	8,509	5,962	6,351	10,413	11,234	9,813	
	O	7,684	7,792	7,227	9,392	11,483	10,725	

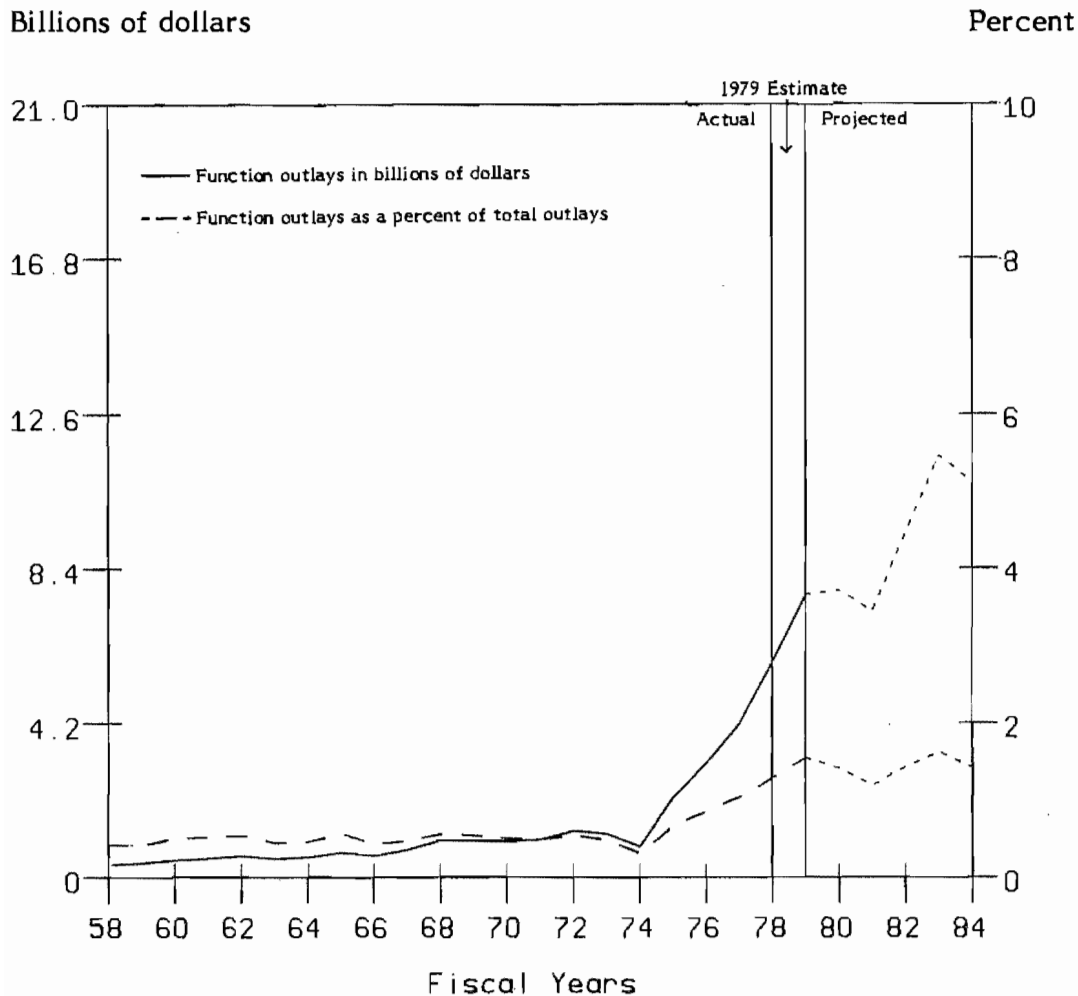
a/ Function 270.

Since 1974--the year of the OPEC oil embargo--federal energy spending has grown, both in dollars and as a share of the total budget (see Figure 9). Most of this increase occurs in the areas of energy supply and emergency energy preparedness. Between fiscal years 1974 and 1979, energy outlays increased over 900 percent; in 1974, they comprised only 0.3 percent of the budget while in 1979 they represent approximately 1.5 percent.

Budget authority and outlays for energy programs are expected to fluctuate over the projections period rather than to grow steadily as in the past several years. These patterns result primarily because the completion of the 500 million barrel Strategic Petroleum Reserve is expected to occur in two phases. Phase I will result in a 250 million barrel reserve by the end



FIGURE 9. FUNCTION 270 OUTLAYS: BY FISCAL YEAR



of fiscal year 1980. Phase II will add the second 250 million barrels, and is projected to be completed by the second quarter of fiscal year 1983. The outyear estimates are also affected by an assumed drop in 1982 through 1984 of receipts from the Naval Petroleum Reserve. The Naval Petroleum Production Act of 1976 (Public Law 94-258) directs the phaseout of production by April 1982. Consequently, receipts decrease from approximately \$0.7 billion in fiscal year 1982 to a maintenance level of \$2 million in 1983 and 1984. Finally, the outyear estimates are influenced by the assumption that the Tennessee Valley Authority will not require additional budget authority until the middle of the projections period.

### Department of Energy--energy supply

This area encompasses the energy research and development programs of the Department of Energy (DOE). (This includes \$665 million in legislative initiatives.) for the current policy projections, budget authority was based primarily on specialized inflators for research and development and on projected federal pay increases. Outlays were derived using spendout rates that reflect historical relationships between budget authority and outlays. In the current law projections, increases in budget authority occur primarily because of federal pay adjustments.

The Uranium Enrichment program is also included in this area. Receipts for the program are based on DOE estimates. Program costs were projected based on a specialized plant and capital inflator.

### Other energy supply activities

Programs in this category include the exploration of the national petroleum reserve in Alaska, energy research and development by the Environmental Protection Agency, and salaries and expenses of the Rural Electrification Administration. Budget authority projections for these programs were based on the simple inflation method. Outlays are based on historical spendout patterns.

### Naval Petroleum Reserves receipts

Projected receipts of the Naval Petroleum Reserve program were based on DOE estimates. Decreasing receipts in fiscal years 1982 and 1983 are expected as a result of the phaseout of production required by the Naval Petroleum Production Act of 1976. It is assumed that production beyond necessary maintenance levels will cease in April 1982. Oil price projections are derived using projections from Data Resources, Incorporated and information obtained from the DOE monthly energy review. Current policy, current law and decoupled projections for these receipts do not differ.

### Tennessee Valley Authority and power marketing activities

Most of the estimates within the power marketing program were derived by the simple inflation method. Exceptions were made for the Southwestern Power Administration, the Tennessee Valley Authority (TVA), and the Bonneville Power Administration. Southwestern Power was projected by first assuming that outlays equal the amount required for purchase of power, for pay, and for other operating expenses during an average water year. (Water is the key variable in determining the amount of hydroelectric power the agency can generate to meet its firm power commitment.) Budget authority was projected to be that which is necessary to fund projected

outlays. Outlay projections for the TVA and the Bonneville Power Administration are based on each agency's financial planning for the future, including capital construction plans and rate changes. TVA last received budget authority in 1976, in the form of a \$10 billion increase in its borrowing ceiling. The budget authority projected for TVA includes additional borrowing authority needed for new capital construction by the middle of the projections period. Bonneville is a revolving fund for which no new budget authority is expected to be needed during the projection period.

#### Energy conservation

Energy conservation activities include DOE conservation research programs (including \$275 million in legislative initiatives), DOE weatherization programs, and federal assistance to state and local governments through the Department of Energy. An initiative for an energy conservation loan program administered by the Department of Housing and Urban Development (HUD) is also among the programs included under this category.

Budget authority projections for the DOE programs are based on the simple inflation method. Outlay projections are based on historical spendout rates for actual or similar programs. Projections of the HUD conservation loan program are based on historical spendout patterns for similar existing loan programs.

#### Strategic Petroleum Reserve

Budget authority projections for the Strategic Petroleum Reserve are based on CBO estimates of funds necessary to develop and maintain a reserve of 500 million barrels of oil. CBO projects that this level will be reached by mid-1983. Outlays are based on a CBO projection of several variables, including the fill schedule of the reserve, oil prices, transportation costs, and storage development costs. This projection is derived from information provided by the program and project offices of the Strategic Petroleum Reserve Program and from observation of the program's past performance. Oil prices are derived using projections from Data Resources, Incorporated and information obtained from the DOE monthly energy review. Table 16 summarizes the key assumptions underlying the outlay projection.

#### Other energy programs

The DOE energy information, policy, and regulation programs account for the largest share of funds within this category. Salaries and expenses for the Nuclear Regulatory Commission (NRC) and several receipt

TABLE 16. KEY ASSUMPTIONS OF THE PROJECTION OF STRATEGIC PETROLEUM RESERVES a/: FISCAL YEAR

	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>
Assumed oil acquisition (millions of barrels)	116	70	40	105	100	25
Assumed oil price (dollars per barrel, weighted average)	\$13.31	\$14.86	\$16.15	\$17.60	\$19.10	\$19.41

a/ These figures were utilized for the projections reported in Table 15 but have subsequently been adjusted. Because of the volatile nature of the program, additional adjustments are likely, in terms of both fill schedule and oil price.

accounts make up the remainder. Budget authority projections for the DOE programs and the NRC account were derived using the simple inflation method. Outlays are based on historical spendout patterns for similar programs. Receipt projections were based on agency estimates.



## Natural Resources and Environment (Function 300)

This function is primarily composed of programs for the development and management of water resources, for conservation and land management, for the development of recreational resources, and for pollution control and abatement.

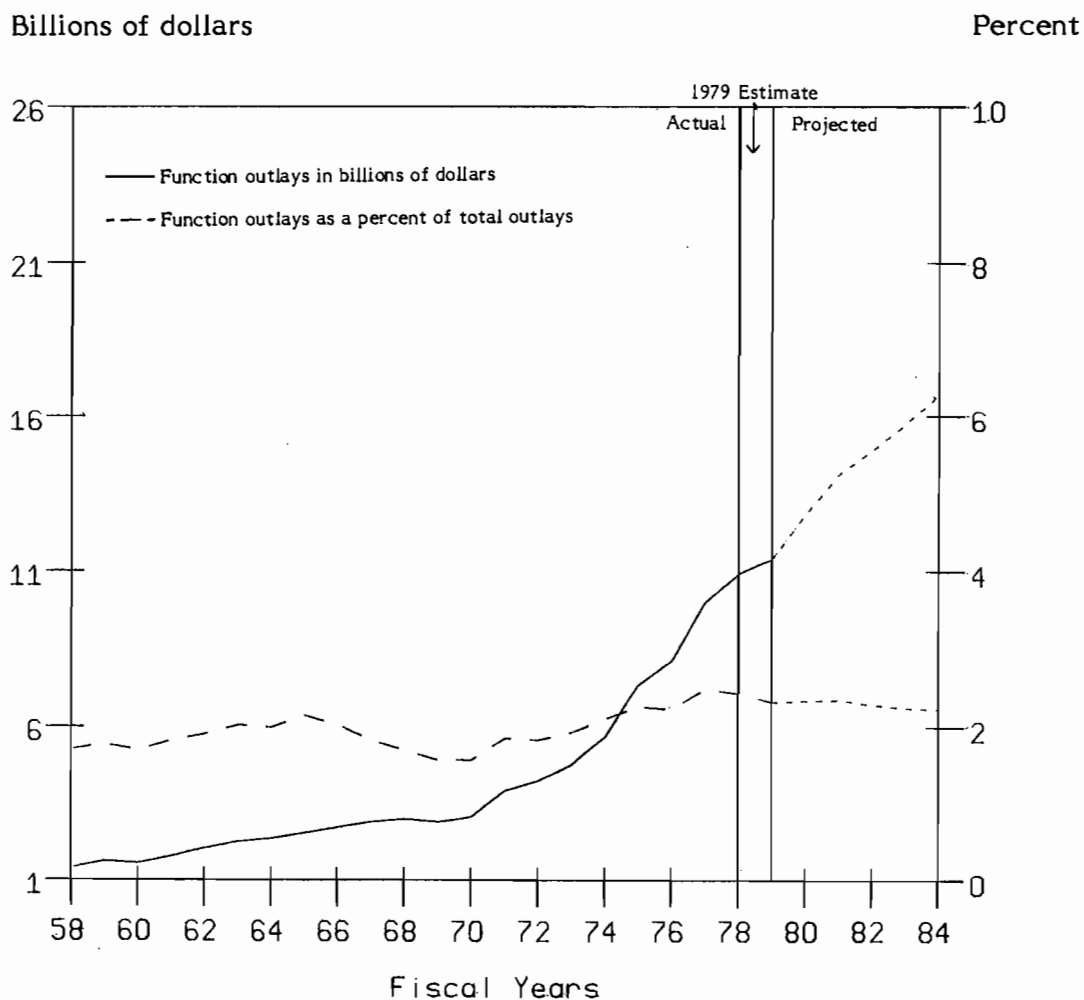
TABLE 17. NATURAL RESOURCES AND ENVIRONMENT, a/ BY MAJOR PROGRAM: BY FISCAL YEAR, IN MILLIONS OF DOLLARS

		1979	Projections				
		Estimate	1980	1981	1982	1983	1984
<b>Water Resources</b>							
Corps of Engineers	BA	2,669	2,852	3,057	3,286	3,524	3,783
	O	2,608	2,762	2,962	3,171	3,401	3,650
Other water resources	BA	922	1,094	1,159	1,241	1,295	1,404
	O	850	1,017	1,162	1,247	1,294	1,377
<b>Conservation and Land Management</b>							
Forest Service	BA	1,780	1,871	2,026	2,188	2,363	2,580
	O	1,589	1,772	1,938	2,093	2,260	2,442
Offsetting receipts	BA	-791	-817	-918	-1,005	-1,098	-1,198
	O	-791	-817	-918	-1,005	-1,098	-1,198
Other conservation and land management	BA	1,162	1,242	1,334	1,428	1,531	1,640
	O	1,067	1,245	1,337	1,422	1,510	1,606
<b>Recreational Resources</b>							
Land and water conservation	BA	767	815	873	936	1,004	1,078
	O	616	681	766	835	912	982
Other recreational resources	BA	1,143	1,218	1,305	1,397	1,499	1,609
	O	980	1,072	1,230	1,325	1,429	1,531
<b>Pollution Control and Abatement</b>							
EPA construction grants	BA	4,200	4,515	4,872	5,000	5,510	6,110
	O	3,400	3,790	4,230	4,300	4,400	4,600
Other pollution control and abatement	BA	1,308	1,400	1,499	1,611	1,732	1,859
	O	1,003	1,221	1,327	1,434	1,548	1,664
Other natural resources Programs	BA	1,341	1,357	1,459	1,567	1,686	1,812
	O	1,247	1,328	1,433	1,539	1,651	1,767
Offsetting Receipts	BA	-1,178	-1,246	-1,351	-1,459	-1,567	-1,678
	O	-1,178	-1,246	-1,351	-1,459	-1,567	-1,678
<b>Total</b>							
	BA	13,323	14,300	15,316	16,190	17,481	18,999
	O	11,390	12,825	14,115	14,900	15,741	16,744

a/ Function 300.

As a share of total budget outlays, spending in function 300 has remained relatively constant since 1958, and is projected to remain at about the same share of total spending throughout the projections period (see Figure 10). Increases in outlays since 1972 for the most part represent increases in the Environment Protection Agency (EPA) construction grant program, increases in the pollution abatement and control programs, the establishment of the surface mining reclamation and enforcement program, and increased funds for federal, state, and local recreational land acquisitions.

FIGURE 10. FUNCTION 300 OUTLAYS: BY FISCAL YEAR



It should be noted that there is a history of changes in the composition of function 300. In 1962, 63.5 percent of the outlays in this function was spent on water resource programs 27.7 percent on conservation and land management and only 3.4 percent on pollution control and abatement. In contrast, 36.3 percent of total outlays in 1978 was spent on pollution control and abatement, 31.7 percent on water resources, and 18.2 percent on conservation and land management. By the end of the projections period, 37.4 percent would be spent on pollution control and abatement, 17 percent on conservation and land management, and 30 percent on water resources.

#### Water resources

Included within the water resources mission are the activities of the Corps of Engineers, the Bureau of Reclamation, and certain other federal agencies involved in water related construction. Also included are research and policy programs of the Water Resources Council and the river basin commissions. Both types of accounts are generally projected by the simple inflation method, with the exception of certain construction accounts where a project, or a set of projects, will be completed in the near future. In these cases, the projections are based on the current schedule of work required to complete the project.

Two possible supplementals are contained in this mission. The first will accommodate the President's request of a \$48.6 million appropriation for the Water Resources Council to implement his water policy initiatives. The second (\$30 million) may be required for emergency watershed repairs by the Soil Conservation Service. Both have been projected by the simple inflation method.

#### Conservation and land management

This category is primarily composed of programs of the Soil Conservation Service, the Forest Service, and the Agricultural Stabilization and Conservation Service of the Department of Agriculture, as well as the Bureau of Land Management of the Department of Interior. Most of the projections were derived by the simple inflation method. The deflators most commonly used include those for federal pay, federal purchases of services, federal purchases of materials, sales of timber, and federal aid for highway construction.

Several accounts, for which budget authority is a permanent appropriation resulting from receipts, are projected using a deflator applicable to the source of the receipts. For example, budget authority for a number of Forest Service accounts is a function of receipts from national forests. There are a number of similar accounts in function 850.



### Recreational resources

Programs of the Heritage Conservation and Recreation Service, the National Park Service, and the Fish and Wildlife Service comprise the major portion of this category. The largest of these accounts is the land and water conservation fund. This account is funded through both direct appropriations and contract authority. The direct appropriation for fiscal year 1980 accounts for a majority of the funding, and is calculated by applying to the fiscal year 1979 level a composite of deflators consisting of federal pay and nonresidential structures. Most of the projections for the other accounts were derived using the simple inflation method.

### Pollution control and abatement

This category mostly consists of EPA programs, of which the most significant is the EPA construction grant program. This program supplies funds to state and local governments on a cost-sharing basis for the construction of various types of wastewater treatment projects. The program is divided into two parts: reimbursable programs to pay for construction already completed and grant programs for new projects. The reimbursable programs have not been allocated any appropriations since fiscal year 1977, and it is estimated that the remaining unexpended balance will outlay by fiscal year 1985.

The budget authority for the grant programs was determined by applying the sewage plant construction deflator to the fiscal year 1979 base level, using the construction grant authorization established in the Clean Water Act (Public Law 95-217) as a budget authority ceiling. Under this condition, budget authority in fiscal year 1982 is limited to \$5.0 billion. Fiscal year 1983 and 1984 budget authority, which is not contained in the authorization bill, was determined by applying the deflator.

Outlays for the grant program were based on the estimated fiscal year 1980-1984 obligations associated with new construction projects. Outlays were also dependent on the historical spendout rate applied to these future obligations and the actual/estimated obligations prior to fiscal year 1980. Total outlays for all three paths were identical because the high unobligated balance will be carried into future fiscal years and would be available to meet the obligation estimates associated with the current policy path.

Other EPA accounts were projected by the simple inflation method, using the deflators for research and development (nondefense), federal pay, and state and local government purchases.

### Other natural resources and environment

With the exception of the National Oceanic and Atmospheric Administration (NOAA) construction account, all other natural resources accounts are projected by simple inflation. The NOAA construction account is projected according to the amount of work needed to maintain a reasonable construction schedule.



## Agriculture (Function 350)

The agriculture function is divided into a farm income stabilization component, consisting of programs designed to reduce the flux of prices within agricultural markets, and a research and services subfunction, composed of programs that are designed to develop economic and scientific information and regulate the marketing of commodities.

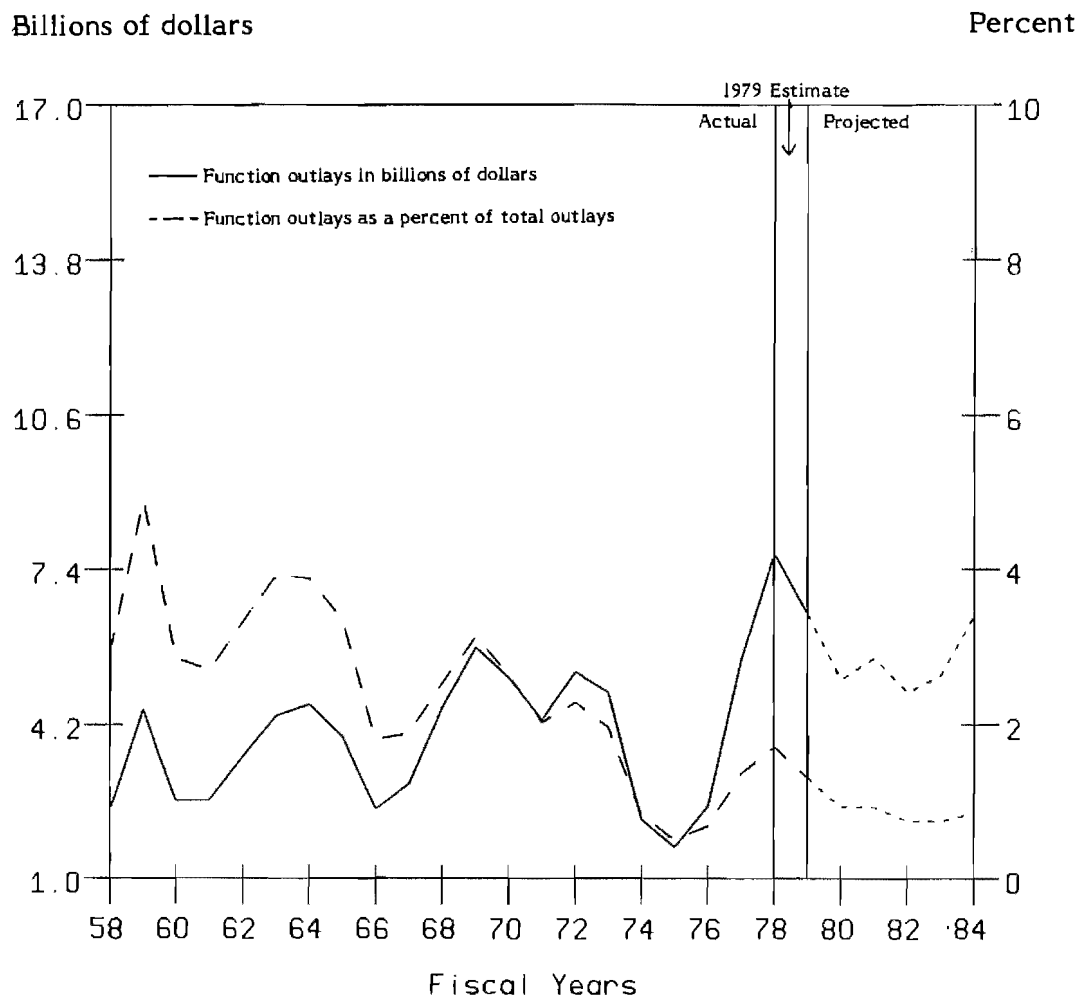
TABLE 18. AGRICULTURE, a/ BY MAJOR PROGRAM: BY FISCAL YEAR, IN MILLIONS OF DOLLARS

			Projections					
			1979 Estimate	1980	1981	1982	1983	1984
<hr/>								
Farm Income Stabilization								
Price support and related programs (CCC)	BA	7,450	3,243	2,814	2,765	2,583	2,289	
	O	5,282	3,406	3,691	2,853	3,074	4,150	
Agricultural credit insurance fund	BA	144	195	183	170	203	215	
	O	-339	170	203	215	227	239	
Other farm income stabilization	BA	274	315	341	364	398	415	
	O	299	302	322	343	367	390	
<hr/>								
Agricultural Research and Services	BA	1,366	1,381	1,485	1,598	1,723	1,852	
	O	1,224	1,250	1,341	1,444	1,543	1,659	
<hr/>								
Total	BA	9,233	5,134	4,823	4,898	4,899	4,771	
	O	6,466	5,128	5,557	4,855	5,212	6,438	

a/ Function 350.

The volatility of function 350 outlays, pictured in Figure 11, is primarily caused by the level of Commodity Credit Corporation activity. The CCC is the principal vehicle through which farm income stabilization is provided. Among other activities, the CCC makes direct payments and nonrecourse loans to eligible farmers, based on commodity specific target prices, market prices, and loan rates. Outlays for these programs vary in response to conditions in the farm economy. When market prices are relatively high compared to the applicable loan rate, farmers are less likely to take out commodity loans and are more likely to repay existing loans in order to sell their crops in the open market. When prices are relatively low compared to the loan rate, however, farmers are more likely to take out additional commodity loans and are less likely to repay existing loans. For example, from late 1973 through 1976, prices for grains, oil seeds, and cotton were relatively high and CCC outlays fell as farmers took out fewer loans, repaid existing loans, and sold their goods in the open market. As

FIGURE 11. FUNCTION 350 OUTLAYS: BY FISCAL YEAR



prices returned to levels nearer the loan rates, farmers began to opt for CCC loans rather than selling their commodities in the market, and CCC outlays rose. During fiscal years 1977, 1978, and 1979, farmers were given the option of placing crops in the farmer-held reserve instead of repaying or defaulting on loans. This option increased outlays by further lowering loan repayments.

Direct payments to farmers also vary in response to market conditions. When the market price of a commodity goes below its "target price," which is set by the Department of Agriculture, the CCC makes up the difference in the form of direct "deficiency" payments to farmers.

When the market price is above the target price, of course, farmers do not receive any deficiency payments. The concept of a deficiency payment originated in the 1973 Agriculture and Consumer Protection Act. Because of high market prices, however, payments were required under the act only for the 1977 crops. These payments were made in fiscal year 1978.

Function 350 outlays during the projection period are expected to be below those for fiscal year 1979, dropping by 21 percent from fiscal year 1979 to fiscal year 1980. After 1980, outlays are projected to vary within a range of \$4.9 billion to \$6.4 billion. The volatility of projected outlays is largely attributable to the price support programs administered by the CCC.

#### Price support and related programs

CCC outlays for the major commodity programs were projected using CBO agricultural supply and demand and government cost models. Loan rates and target prices were developed according to the formulas set forth in the Food and Agriculture Act of 1977 and the Emergency Agriculture Act of 1978. For crop year 1979, it was assumed that wheat and barley farmers would be required to set aside one acre of land for every five acres planted for harvest, and that corn and grain sorghum farmers would be required to set aside one acre of land for every ten acres planted for harvest. An optional additional acreage diversion program was assumed for corn and sorghum. In the following years, set-aside and diversion programs were assumed in order to maintain relatively stable farm prices. The weather was assumed normal for crop years 1979 through 1983. Milk price supports were assumed to decrease to 75 percent of parity for fiscal years 1980 through 1984.

For CCC programs not covered by the Food and Agriculture Act of 1977, authorizing legislation and Administration policy in effect for October 1978 were assumed to define the program parameters throughout the projection period. The short-term export credit program level was projected at \$1.5 billion each year, while the intermediate-term export credit program was projected at \$100 million in fiscal year 1980 and \$150 million in each of the following fiscal years. Net interest outlays were projected as a function of the level of CCC program outlays. Administrative expenses were estimated using the federal salary deflator. The projections also assumed that an international wheat reserve would be purchased in fiscal year 1979 and that, as a result, a savings in wheat loans and deficiency payments would be realized in fiscal year 1980. The reserve would also result in outlays for interest and storage each year. Table 19 shows projected CCC outlays by category.

TABLE 19. COMMODITY CREDIT CORPORATION OUTLAYS BY  
CATEGORY: BY FISCAL YEARS, IN MILLIONS OF DOLLARS

	1979 Estimate	Projections				
		1980	1981	1982	1983	1984
Net Lending						
Commodities	709	333	363	302	324	308
Other	856	344	131	105	81	59
Deficiency Payments	1,039	989	2,062	1,448	1,799	2,836
Diversion Payments	461	365	424	258	207	206
Disaster Payments	506	506	---	---	---	---
Net Purchases	871	251	95	122	43	128
All Other	840	618	616	618	620	613
Total	5,282	3,406	3,691	2,853	3,074	4,150

Budget authority projections for the CCC reflect estimated non-recoverable outlays of two years earlier. Budget authority is appropriated retroactively to fund realized losses.

For projections purposes, it is assumed that price support programs are not sensitive to aggregate inflation, but rather to agricultural market conditions. Consequently, they are projected in the same manner for the current policy, current law, and decoupled projections.

#### Agricultural credit insurance fund

The agricultural credit insurance fund (ACIF) provides several types of loans, including loans to individuals and organizations for the acquisition and improvement of farms, and emergency loans to agricultural producers. For the projections, loan obligations each year were estimated by applying projected changes in the GNP deflator to the loan levels specified in the fiscal year 1979 appropriations bill. Loan repayments and write-offs were projected as a constant proportion of unpaid loan balances insured by the fund. Based on fiscal year 1976 and 1977 experience, the net costs of the ACIF program were projected as a constant proportion of unpaid balances, and then adjusted for new loan programs and changes in interest rates for existing programs as specified in Public Law 95-344.

After ACIF loans are disbursed, they are usually sold to the Federal Financing Bank (FFB), an off-budget agency. Even at steady loan levels, outlays can fluctuate sharply from year to year, depending on whether and when such sales take place. For projections purposes, asset management was removed as a factor in the ACIF account, and it was assumed that all disbursed loans were sold to the FFB. Outlays each year were assumed to be equal to projected net costs of the ACIF program.

Since budget authority is appropriated retroactively to fund realized losses, budget authority projections for the ACIF reflect estimated outlays of two years earlier.

#### Other farm income stabilization

This category primarily consists of salaries and expenses for the Agricultural Stabilization and Conservation Service (ASCS), which administers price supports. Outlays and budget authority for ASCS were projected by the simple inflation method, using the deflators for federal purchases and federal pay.

#### Agricultural research and services

The major agencies included in this subfunction are the Agricultural Research Service, the Cooperative State Research Service, the Animal and Plant Health Inspection Service, and the Extension Service. Projections were done by the simple inflation method, using the deflators for federal pay and federal purchases.





## Commerce and Housing Credit (Function 370)

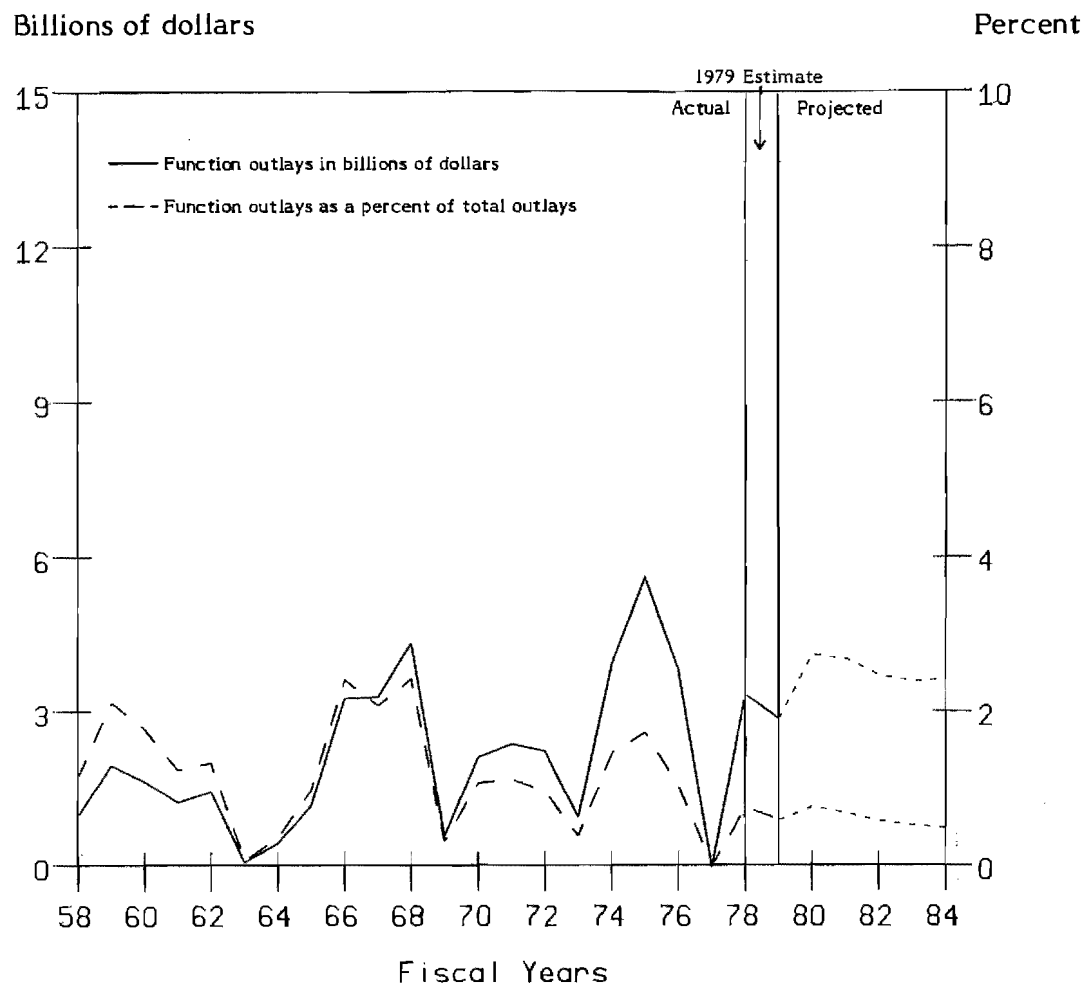
Most of the programs in this function are designed to ensure an adequate supply of funds to meet the nation's housing and credit needs. These programs include the mortgage insurance and purchase activities of the Department of Housing and Urban Development and the Department of Agriculture (USDA), the federal government's thrift deposit insurance programs, and many of the direct loan and loan guarantee programs of the Small Business Administration (SBA). The function also includes funding for the Postal Service, for parts of the Department of Commerce (DOC), and for a number of independent agencies.

TABLE 20. COMMERCE AND HOUSING CREDIT, a/ BY MAJOR PROGRAM: BY FISCAL YEAR, IN MILLIONS OF DOLLARS

		1979	Projections				
		Estimate	1980	1981	1982	1983	1984
Rural Housing Programs	BA	395	468	659	944	1,058	1,158
	O	-127	718	816	917	1,022	1,126
Federal Housing Administration (FHA) Fund	BA	465	423	430	429	429	427
	O	290	183	175	160	144	126
Govt. National Mortgage Association (GNMA)	BA	507	554	602	652	706	755
	O	491	522	404	184	112	114
Housing for the Elderly or Handicapped	BA	800	860	925	993	1,066	1,145
	O	475	641	686	728	773	822
Other Mortgage and Thrift Insurance	BA	---	---	---	---	---	---
	O	-1,455	-1,469	-1,572	-1,686	-1,815	-1,961
Payments to the Postal Service	BA	1,785	1,675	1,624	1,597	1,452	1,393
	O	1,785	1,675	1,624	1,597	1,452	1,393
Small Business Administration (SBA)	BA	750	816	908	967	1,012	1,030
	O	651	786	856	906	944	958
Other Commerce and Housing Credit	BA	774	1,249	815	836	931	1,029
	O	739	1,047	1,028	884	948	1,049
Total	BA	5,476	6,044	5,963	6,418	6,653	6,937
	O	2,849	4,102	4,018	3,690	3,580	3,628

a/ Function 370.

FIGURE 12. FUNCTION 370 OUTLAYS: BY FISCAL YEAR



Most of the volatility shown in Figure 12 is caused by federal government efforts to minimize the fluctuations in the housing market. During periods of scarce mortgage money, the government--primarily through the Government National Mortgage Association (GNMA) and the Federal Home Loan Bank Board--buys loans from and advances funds to private mortgage lenders. These loans are subsequently resold and the advances repaid when mortgage money is more readily available.

#### Mortgage credit and thrift insurance

Five items account for nearly all of the budget authority and outlays in this category: the rural housing insurance fund, the Federal Housing

Administration (FHA) fund, the Government National Mortgage Association market assistance programs, the HUD housing program for the elderly or handicapped, and the federal thrift insurance programs.

Rural housing programs. The bulk of the spending in this area is for the rural housing insurance fund (RHIF) of the Farmers' Home Administration, which contains the major federal rural housing programs. Loans are made from the fund for rural homeownership, rental and cooperative housing projects, farm labor housing, site development, and mobile home parks. In addition, the RHIF finances the rural rental assistance program established by the Housing and Community Development Act of 1974.

The projections methodology for this account is similar to that described for the agriculture credit insurance fund in function 350. The assumption is made that there will be no net asset sales. New loans are projected to increase from the fiscal year 1979 levels specified in the agriculture appropriations bill, at the same rate as the index for residential structures. Loan repayments are projected at 10.7 percent of the unpaid principal outstanding each year. Funded losses each year were projected at 3.6 percent of the unpaid principal balance. The projection of outlays in each year is the sum of funded losses and the increase in partially disbursed loans. Budget authority is the sum of funded losses and the increase in obligated but undisbursed loans.

Federal Housing Administration fund. The FHA fund is composed of all the HUD mortgage insurance programs. Outlay estimates for this fund are the result of three separate projections. First, estimates were made of the fund's capital outlays over the projection period, based on expected default rates, outstanding insurance balances, and levels and types of current activity. (Capital outlays result from insurance claims paid on defaulted mortgages.) Next, certain administrative expenses incurred by the FHA fund were estimated, using actual costs for fiscal year 1978 and projected increases in federal pay and the price index for federal purchases of services. Finally, income to the fund was projected using net interest and premium income figures calculated from the assumed levels of future insurance activities. Total outlays in each year are the sum of the fund's capital outlays and administrative expenses, less income to the fund. For accounting purposes, all revenues to the FHA fund serve to offset expenses and lower outlays. Net income from the fund's Section 203 and Title I loan insurance programs, however, cannot be used to actually fund obligations arising from other insurance activities of the FHA. Thus, budget authority for the fund is projected as the sum of outlays for a given year and net income to the fund from its Section 203 and Title I programs.

Government National Mortgage Association. The special assistance functions fund and the emergency mortgage purchase assistance program comprise the market assistance activities of GNMA and account for most of its spending. These programs operate under purchase authority limits set in annual appropriations acts. The means by which the authorized activity is financed, whether by new budget authority or by the release of recaptured authority, is also specified in appropriations acts.

For fiscal year 1979, the special assistance functions fund's (SAFF) mortgage purchase authority was set at \$2 billion, \$500 million of which would be funded with new budget authority. In the current law projections (without discretionary inflation adjustments) and the decoupled projections, annual purchase authority and the portion funded with new budget authority were projected at fiscal year 1979 levels throughout the five-year period. In the current policy projections (with discretionary inflation), annual purchase authority limits and new budget authority were assumed to increase at the same rate as the implicit price deflator for private residential structures.

The loan purchase authority of the emergency mortgage purchase assistance program was increased by \$1 billion for fiscal year 1979. All of the funding for this increase will come from recaptured authority. This is an emergency program, and no outlays from current authority are anticipated during the projection period. Outlays are projected for the emergency program, however, from pre-1979 authority.

Since the overall CBO projections methodology assumes neutral asset management, outlays from the GNMA mortgage purchase programs are the sum of operating expenses and discount costs. Operating expenses were estimated by the simple inflation method, using actual costs for fiscal year 1978 and projected increases in federal pay and the price index for federal purchases of other services. Discount costs were calculated assuming that GNMA buys mortgages with interest rates of 7.5 percent, terms-to-maturity of 30 years with prepayment at the end of 15 years. It was further assumed that these loans would then be sold in the private market to yield 9.5 percent in 1980, 9.1 percent in 1981, and 9.0 percent through the balance of the projection period.

Housing for the elderly or handicapped. This program operates under an annual loan limitation that is set in appropriations acts. This limitation is considered budget authority for this account. For the current law and decoupled projections, the annual limitation was assumed to remain at the fiscal year 1979 level throughout the projection period. For the current policy projections, the annual limitation was assumed to increase at the same rate as the implicit price deflator for private residential structures.

In projecting outlays for this program, the full amount of the loan limitation was assumed to be committed during the year it was made available. Projected loan disbursement rates were based on past experience. Administrative expenses, calculated in the same manner as those for the FHA fund, were added to loan disbursements to produce an estimate of total outlays. Program income (principally loan repayments and net interest income) was projected using loan portfolio levels consistent with the current portfolio and assumed levels of future activity.

Other mortgage credit and thrift insurance. The major components of this category are the federal thrift deposit insurance agencies (FDIC, FSLIC, and NCUA), which have consistently operated with net profits. Even so, these agencies have been granted permanent lines of credit with the Treasury in case fund reserves should be insufficient to cover losses. This borrowing authority has never been used. It is anticipated that the agencies will have no need of Treasury assistance during the projection period; thus, no budget authority has been projected for these accounts. These three funds operate in like manner, and similar methods were used for their outlay projections. Income to the funds is mainly a function of savings deposit levels. For these projections, the overall saving rate for the economy was assumed to remain constant. Savings deposit levels, therefore, can be assumed to increase at the same rate as the growth in the overall economy. The CBO projections of GNP were used to estimate deposit levels over the five-year projection period. Expenses of the funds were estimated by inflating actual costs for fiscal year 1978. Salaries were calculated using the federal pay deflator. No attempt was made to predict the rate of failures among insured institutions.

Payments to the Postal Service. Existing law requires payments to the Postal Service for public service costs, revenue foregone on free and reduced-rate mail, and previous unfunded liabilities to fund compensation to postal employees for injuries and for annual leave incurred prior to July 1, 1971. Budget authority and outlays are equal to the sum of these three components.

Public service costs are specified by law at \$920 million for fiscal year 1979, with gradual reductions of 10 percent annually through fiscal year 1984.

Revenue foregone on free and reduced-rate mail is the revenue lost because rates for certain second-class, third-class, fourth-class, and controlled circulation publications are set by law at levels below the full rates determined by postal rate proceedings. This loss to the Postal Service is recovered annually by appropriations from the Treasury. To estimate revenue foregone, mail volume is calculated as a function of historical

volume trends, U.S. Census household data, and the CBO real disposable income projections. Total costs are projected based on assumed levels of service, personnel compensation and benefits consistent with the most recent labor contract settlement. (Provisions for contingencies are estimated at 4 percent.) Postal rates are assumed to be set at a level necessary for total estimated income (including appropriations) to equal as nearly as possible total estimated costs. Revenue foregone is then estimated as the difference between revenues generated at the projected full rate and revenues generated at the reduced rates set by law.

The payment for previous unfunded liabilities was based on estimates for unused annual leave provided by the Postal Service and estimates of workers' compensation from the Department of Labor.

The current law and current policy projections are identical; the decoupled path assumes no increases in funding because of inflation, and only affects the revenue foregone component of the postal service projection.

#### Small Business Administration

This category includes the loan programs administered by the Small Business Administration, with the exception of the disaster loan fund. Outlays for the major SBA loan program, the business loan and investment fund, represent disbursements offset by repayments. Congress sets a ceiling for the individual direct and guaranteed loan programs within this account. These loan ceilings are held constant in the current law and decoupled projections. For the current policy projections they are estimated for the five-year period using the GNP deflator. Loan approvals and disbursements are based on historical rates for each loan program, and for each projection path.

Repurchases of guaranteed loans are estimated based on SBA repurchase history. Repayments adjusted for losses and loan liquidation are projected for each loan program. The outstanding loan balances for each year are determined by offsetting the prior year balance with loan disbursements and repurchases less estimated repayments. To calculate the annual interest payment to the Treasury, the average outstanding balance is multiplied by an appropriate interest rate. Interest revenue to the SBA is based on the outstanding loan balance (less defaults), multiplied by a composite interest rate.

Several additional cost and revenue items, including payments on participation certificates and business development expenses, are developed

for the base year. These are estimated by simple inflation for the current policy projection, and are held constant for the other projection paths.

#### Other commerce and housing credit

This category includes numerous accounts of the Department of Commerce, and several regulatory agencies such as the Securities and Exchange Commission (SEC), the Federal Communications Commission (FCC), and the Federal Trade Commission (FTC).

The largest DOC account in this group is periodic censuses and programs, which is highly cyclical--particularly for the decennial census component--and requires special calculations for the current policy projections. Budget authority was developed using Bureau of Census baseline projections through 1984, with adjustments made to eliminate major capital expenses and new initiatives not included in current policy. The mid-decade census, currently in the planning stage, was assumed to equal half the cost of the decennial census, using the data collection period as a point of reference. General administrative costs were estimated at 3 percent of the program level. Simple inflation was applied to the various components to estimate total budget authority. Outlays were estimated based on a three-year spendout pattern, with first and second year spendouts for fiscal year 1980 funds somewhat slower than in other years because of the relatively large program level in that fiscal year.

The remaining accounts, with a few exceptions including receipts and permanents, were projected using the simple inflation method.





## Transportation (Function 400)

This function is divided into five major categories: highway programs, railroad programs, mass transit, air programs, and water and other transportation programs.

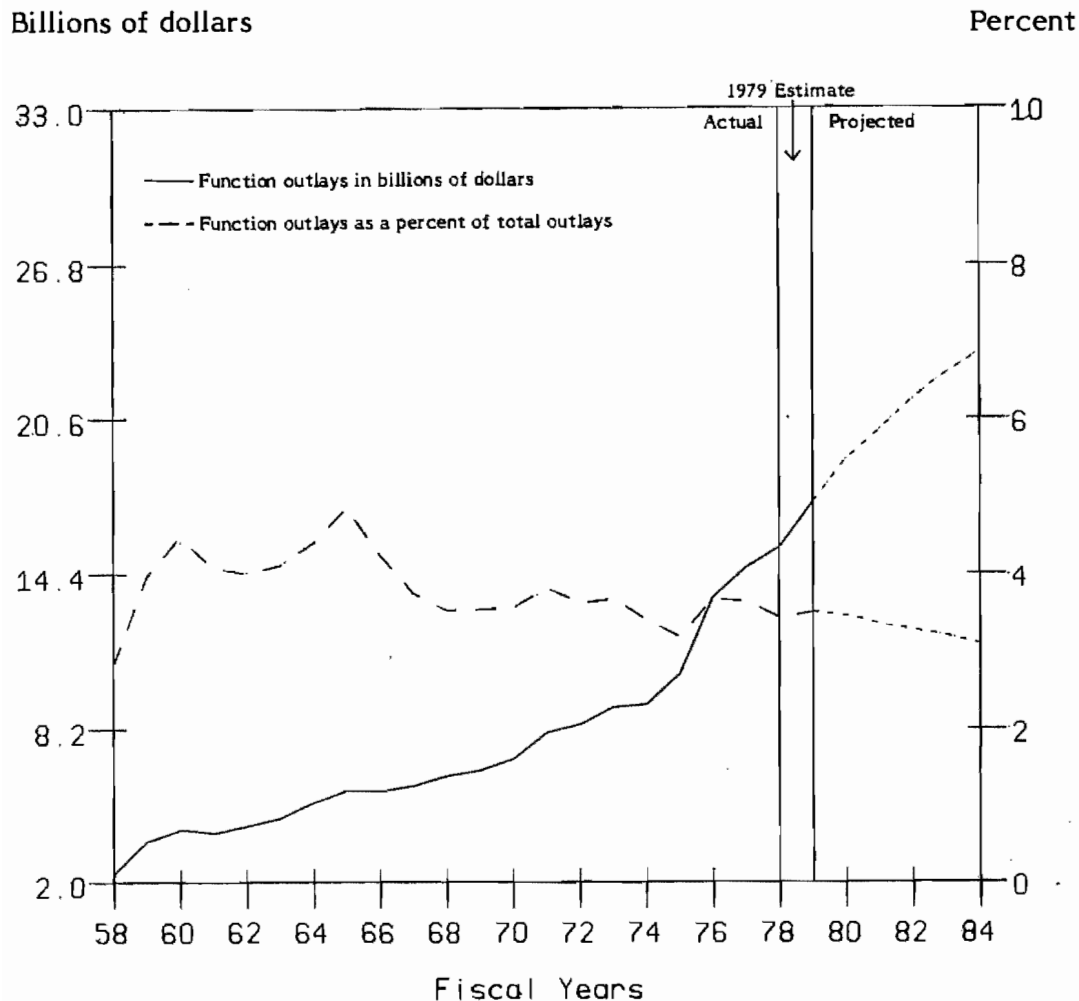
TABLE 21. TRANSPORTATION, a/ BY MAJOR PROGRAM: BY FISCAL YEAR, IN MILLIONS OF DOLLARS

		1979	Projections				
		Estimate	1980	1981	1982	1983	1984
<hr/>							
Ground Transportation							
Federal-aid highways	BA	7,991	8,576	9,030	7,854	8,628	9,014
	O	6,650	7,315	7,843	8,253	8,612	9,094
Other highway programs	BA	534	463	510	533	575	621
	O	590	631	620	607	590	592
Rail transportation	BA	2,342	2,484	1,332	1,428	1,530	1,636
	O	2,188	2,185	1,748	1,617	1,590	1,589
Urban mass transportation	BA	2,775	3,065	4,077	4,317	4,581	4,881
	O	2,444	2,867	3,392	3,902	4,213	3,989
Air Transportation							
Federal Aviation Administration	BA	3,030	3,217	3,450	3,697	3,974	4,272
	O	2,806	3,107	3,413	3,640	3,841	4,126
Other air transportation	BA	607	649	699	751	807	868
	O	535	604	664	719	777	835
Water Transportation							
Coast Guard	BA	1,561	1,604	1,722	1,844	1,977	2,121
	O	1,407	1,574	1,726	1,849	1,948	2,090
Maritime Administration	BA	538	715	760	805	853	905
	O	517	584	608	677	744	808
Other Transportation	BA	121	128	138	149	161	174
	O	119	132	141	146	158	171
<hr/>							
Total	BA	19,498	20,901	21,717	21,337	23,086	24,491
	O	17,256	18,999	20,155	21,411	22,474	23,294

a/ Function 400.

As shown in Figure 13, outlays for transportation have held a fairly stable share of the total budget since 1958, remaining between 2.8 percent (in fiscal year 1958) and 4.8 percent (in fiscal year 1965). Transportation spending increased almost linearly from 1958 until 1975, at an average annual rate of about 9.2 percent. Since 1975, spending has grown more

FIGURE 13. FUNCTION 400 OUTLAYS: BY FISCAL YEAR



rapidly, although not as a percent of total outlays. The major programs behind this recent increase are federal aid to highways, federal aid to rail transportation, and urban mass transportation assistance.

#### Federal-aid highways

The vast majority of highway spending falls under the federal-aid highway program, which funds construction of the interstate system, the primary, secondary, and urban road system, the bridge rehabilitation and replacement program, and various safety construction programs. The pro-

jections of 1980-1982 budget authority reflect the amounts established in the Surface Transportation Assistance Act of 1978 (Public Law 95-599). Since the act fixed budget authority only through fiscal year 1982, current policy projections of fiscal years 1983 and 1984 budget authority for interstate system programs reflect amounts established by earlier legislation; fiscal year 1983 and 1984 budget authority projections for noninterstate programs were inflated from the 1982 level, using the implicit deflator for highway construction. The current law and decoupled projections for 1983 and 1984 hold constant the 1982 budget authority level.

Outlay estimates are based on obligation levels that are assumed to be constant in real terms throughout the projection period, that is, after an upward adjustment in obligations in the fiscal 1979 base year to reflect increased federal/state matching ratios and authorization levels, obligations were projected at a rate slightly less than the implicit deflator for highway construction programs. Outlays were determined for each year by applying historical spendout rates to the separate interstate, noninterstate, and administration obligation levels. Since obligations can be met under all three sets of budget authority estimates, outlay estimates are the same for all three projections paths.

#### Other highway programs

Budget authority for most other highway programs was projected using the simple inflation method. In a couple of cases (Highland Scenic Highway and Miscellaneous Appropriations), fiscal year 1979 budget authority is zero; in others (The Overseas Highway), the budget authority provided is intended to fully fund the program. Estimates of outlays were based on the historical spendout rates for each of the programs.

#### Rail transportation

The major components of this mission are the Northeast Corridor Improvement program, grants to the National Railroad Passenger Corporation (AMTRAK), the U. S. Railway Association (USRA), and other rail programs of the Federal Railroad Administration (FRA) and the Interstate Commerce Commission.

The budget authority projection for the Northeast Corridor Improvement program is based on the funds authorized in the Railroad Revitalization and Regulatory Reform Act of 1976, (Public Law 94-210), which specified a total program cost of \$1.75 billion. Of this amount, \$654 million remains unappropriated and is projected as budget authority for fiscal year 1980. No budget authority is assumed thereafter. Outlays are estimated on the basis of agency plans and experience with the program, which has operated far behind schedule.

Grants to AMTRAK are projected using the simple inflation method. The program outlays all of its appropriated funds.

It is assumed that the remaining funds from the \$3.3 billion authorized in Public Law 95-210 and in the U.S. Railway Association Amendments Act of 1978 (Public Law 95-565) will be approved as 1980 budget authority for USRA purchase of Consolidated Rail Corporation (CONRAIL) securities. Since this budget authority would exhaust the authorized funds, no budget authority is projected for fiscal years 1981-1984. Government support will most likely continue beyond 1980; the corporation may be reorganized or its rail system restructured. The amount or even the form of government support, however, is too uncertain to project. The remainder of the USRA budget covers administrative expenses that, along with budget authority and outlays for all other rail programs (including railroad rehabilitation and improvement financing funds), are projected using the simple inflation method. Outlays are estimated based on historical spendout patterns.

#### Urban mass transportation

This mission is composed of two major accounts: the Urban Mass Transportation Administration (UMTA) fund and the federal contribution to the Washington Metropolitan Area Transit Authority (WMATA). The UMTA projection was based on the funds provided by appropriations action for fiscal year 1979, plus urban formula operating assistance amounts of \$850 million in fiscal year 1979 and \$900 million in fiscal year 1980 (previously provided), second tier operating assistance totaling \$250 million, and an interstate substitution program level of \$675 million. Various inflators were used to project budget authority for each program, with the exception of interstate substitution grant funds, which were held constant at \$675 million a year to reflect the finite number of interstate segments and locales that are likely to participate in the program. Outlays were derived by applying historical spendout rates to the projected budget authority.

For the other major mass transportation account, the federal contribution to WMATA, the current debt service assistance and the interest subsidy provided by the fiscal year 1979 appropriation (\$38.1 million) were projected to remain constant through fiscal year 1984.

#### Federal Aviation Administration

The major programs in this category are operations of the Federal Aviation Administration (FAA) and programs funded through the airport and airway trust fund, including a contribution to FAA operations, grants-in-aid for airports, and a facilities and equipment account.

Budget authority for the airport and airway trust fund accounts, FAA operations, and grants-in-aid is specified under existing law for fiscal year 1980 and projected by simple inflation thereafter, using primarily the wholesale price index of scientific equipment and the deflators for federal purchase of services and private nonresidential structures. Projections for other programs were estimated using the simple inflation method, and outlays were based on historical spendout rates.

#### Other air transportation

Civil Aeronautics Board (CAB) activities were estimated using the simple inflation method. These projections were not adjusted for the possible effects of the sunset provision in the recently enacted Airline Deregulation Act of 1978 (Public Law 95-504) because other provisions would have the activities assumed by other agencies (FAA, and the Office of the Secretary of Transportation) within this budget function. NASA research and construction activities in the air transportation area are also included in this function, and were projected using the simple inflation method.

#### Water transportation

The major components of water transportation are the activities of the Coast Guard, the Maritime Administration (MARAD), the Federal Maritime Commission, and the St. Lawrence Seaway Development Corporation. Budget authority for most accounts was inflated from the fiscal year 1979 level. Fiscal year 1980 budget authority for MARAD's ship construction program budget authority was based on assumed construction levels, and was inflated thereafter. Approximately \$3-4 million per year in outlays results from the assumption of a fiscal year 1979 supplemental for a Coast Guard ice-breaker. Also, the operating-differential subsidies account was based on MARAD estimates of future year requirements.

#### Other transportation

This category contains the Office of the Secretary of Transportation, the Interstate Commerce Commission, and the National Transportation Board. Projections were generally calculated using the simple inflation method and applying historical spendout rates. The National Transportation Policy Study Commission is scheduled to release its final report this fiscal year (1979) and then to terminate its operation.



## Community and Regional Development (Function 450)

Function 450 contains community and regional development programs that are designed to redevelop urban areas and stimulate economic growth in underdeveloped regions. The local public works program, funded in fiscal years 1976-1977, and several disaster assistance programs are also included in this function.

TABLE 22. COMMUNITY AND REGIONAL DEVELOPMENT, a/ BY MAJOR PROGRAM: BY FISCAL YEAR, IN MILLIONS OF DOLLARS

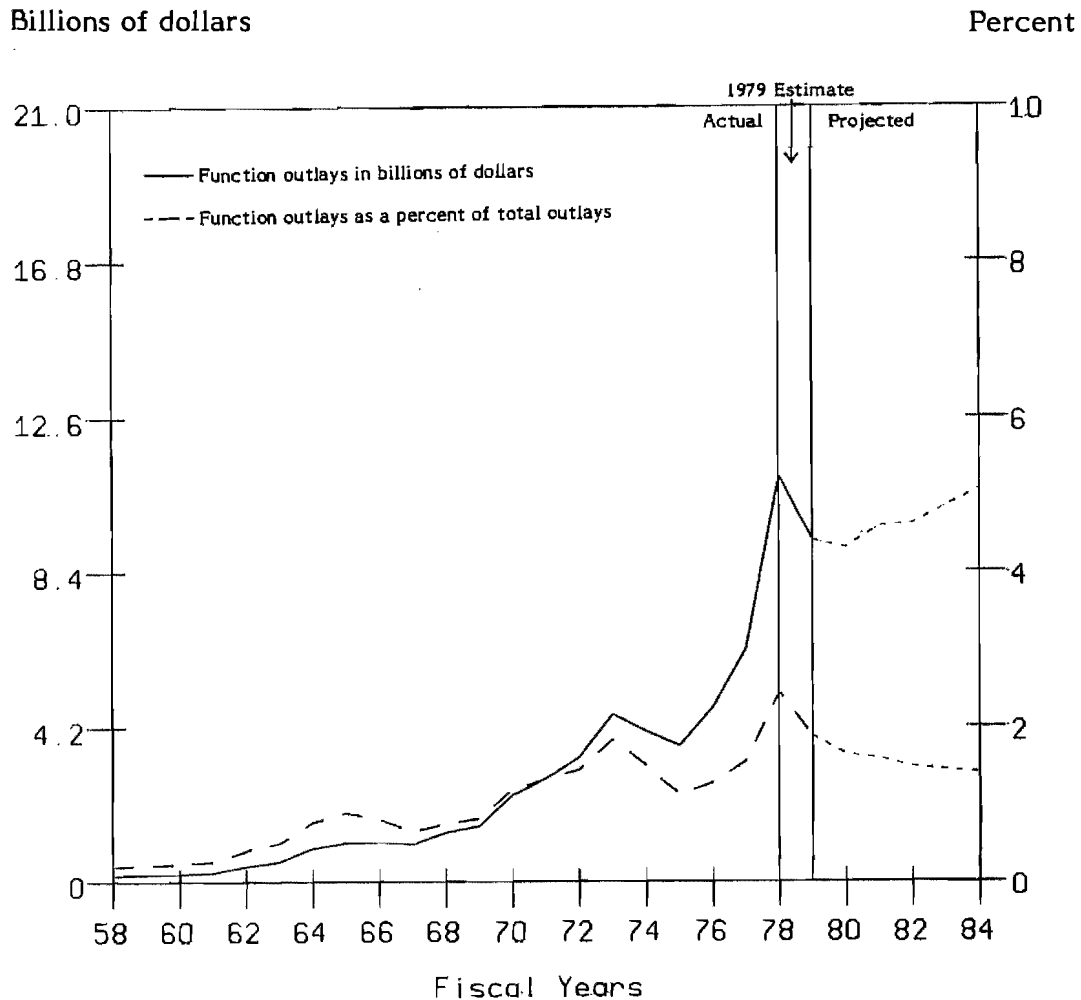
		1979	Projections				
		Estimate	1980	1981	1982	1983	1984
<hr/>							
Community Development							
Community development	BA	4,150	4,414	4,691	4,995	5,347	5,744
block grants	O	2,922	3,528	4,095	4,430	4,750	5,026
Other community development	BA	937	989	1,043	1,096	1,155	1,218
	O	1,129	1,119	1,149	1,038	1,017	1,005
<hr/>							
Area and Regional Development							
Local public works	BA	11	--	--	--	--	--
	O	1,930	375	66	--	--	--
Rural development	BA	322	401	480	548	643	730
insurance fund	O	133	250	309	370	438	510
Other area and regional	BA	2,175	2,324	2,479	2,645	2,827	3,017
development	O	1,733	2,215	2,405	2,543	2,705	2,853
<hr/>							
Disaster Relief and Insurance							
SBA disaster loan fund	BA	230	1,000	980	930	875	812
	O	915	794	895	850	792	733
Other disaster relief and	BA	285	477	508	538	571	606
insurance	O	486	617	564	602	644	689
Other Community and	BA	534	-120	-130	-125	-150	-175
Regional Development	O	-7	151	141	-125	-150	-175
<hr/>							
Total	BA	8,643	9,485	10,051	10,627	11,268	11,952
	O	9,242	9,050	9,624	9,708	10,196	10,641

a/ Function 450.

Function 450 outlays are characterized by slow, steady growth from 1958 through 1969 and accelerating, erratic growth from 1970 through 1978 (see Figure 14). The steady rise of the late 1960s and early 1970s is, in large part, caused by the increase in categorical grants for housing and urban development. The outlay peak in fiscal year 1973 was primarily the result of disaster relief necessitated by Hurricane Agnes, which caused severe damage in Pennsylvania, Maryland, and other areas.



FIGURE 14. FUNCTION 450 OUTLAYS: BY FISCAL YEAR



Outlays fell \$400 million in fiscal year 1975 as spending declined, both for area and regional development and for disaster relief and insurance. The drop in area and regional development resulted from weather-induced reductions in construction activity. As spending resumed a more normal pace, outlays continued to grow. The surge in fiscal year 1978 is primarily the result of two events. First, fiscal year 1978 was the peak spendout year for local public works stemming from earlier antirecession fiscal assistance. Second, July 1977 program changes enabled farmers to obtain small business disaster loans after the drought that occurred during the summer of 1977.

Budget authority for this function is projected to grow at an average rate of 6.7 percent per year during the projection period. Resulting outlays are estimated to increase by only 2.9 percent per year, because of the phaseout of the local public works program. Excluding local public works, however, outlays are projected to increase at 7.8 percent per year. Function totals include \$719 million in budget authority for fiscal year 1979 legislative initiatives of the 96th Congress.

#### Community development grants and urban development action grants

The budget authority for these two programs was projected using the simple inflation method. To fully adjust for inflation, budget authority was projected using the deflators for purchases by state and local governments, for nonresidential construction, and for the gross national product. Outlays were estimated by adjusting the base year weighted spendout rate to reflect recent program experience.

To establish the base year spendout rate, fiscal year 1975 actual data on grant approvals were disaggregated into four grant recipient groups. The grants made to each group were further disaggregated into 16 uses of funds, as identified in the grant applications. Individual spending rates for these 16 use categories were derived by matching each category with similar programs for which historical spendout experience was available. The resulting spendout rates were then weighted by their respective shares of fund allocations within each recipient group. Group based spending patterns were calculated using these weighted spending rates and were further adjusted to produce fiscal year spending rates. The aggregate spending pattern was derived by weighting the four recipient group rates by their respective allocations of grant funds, and has been adjusted periodically to reflect actual experience as data became available. Further slight adjustments have been made in the spending rates to reflect the effect of the Housing and Community Development Act of 1977. The allocation of grant funds is expected to slow somewhat over the next few years as the "hold harmless" grant portion of the program is completed.

For projections purposes, the urban development action grant program, which began in fiscal year 1978 as an adjunct to the basic community development block grant program, has been included with that program. This portion of the account was projected by the simple inflation method, using spending rates similar to those used for the economic development assistance program of the Economic Development Administration. Both the urban development action grant program and the economic development assistance program make similar capital investment grants to most levels of local governments.

### Other community development programs

The major programs in this category are related to the HUD community development effort as well as to the Farmer's Home Administration (FmHA) rural development grant program for water and waste disposal facilities. The revitalized rehabilitation loan fund, the continued phaseout of the urban renewal program and other categorical grant programs, and several small programs such as urban homesteading are included in the HUD effort.

FmHA provides rural water and waste disposal grants to associations, including nonprofit corporations, and to public and quasi-public agencies, that finance projects for the development of water and waste disposal facilities. Budget authority was projected by the simple inflation method, using the deflator for sewage plant construction. The historical spending pattern for the program is the basis for outlay projections.

Annual budget authority for the rehabilitation loan fund was derived by subtracting program receipts available for new loans from the annual program level defined in Public Law 95-392, the HUD Appropriations Act. The program level was inflated using the CPI, to assure a constant loan level in fiscal year 1979 dollars. Outlays were derived by netting loans disbursed against the projected repayment stream for the existing loan inventory.

The urban renewal program and other older HUD categorical grant programs are now undergoing liquidation. Outlays from these programs are expected to decline substantially during the projections period, while several loan and advance accounts are expected to show increased repayments over the same period.

Other HUD programs were projected using the simple inflation method, and outlays were estimated from historical experience.

### Local public works

The \$6 billion local public works program was enacted in two parts: \$2 billion was appropriated October 1, 1976, and an additional \$4 billion appropriation was enacted as part of the economic stimulus package in May 1977. For the purpose of projections, the program has been treated as a one-time, nonrecurring program with no increase in budget authority beyond fiscal year 1977. The outlay rate is based on experience with accelerated public works efforts in the early 1970's, and has been adjusted as actual spendout data becomes available. As of October 1, 1978, approximately \$2.3 billion remains to be spent in the program.

### Rural development insurance fund

The rural development insurance fund certifies or guarantees loans for water systems and waste disposal facilities, rural business development, community facilities, pollution abatement, and economic improvements in rural areas. The methodology for projecting this account was similar to that used for the agricultural credit insurance fund and for the rural housing insurance fund described earlier in functions 350 and 370, respectively. The limitation on insured loans specified in the agriculture appropriations bill was used as the base for the projections. (It should be noted that the projected costs for loan guarantees are included only implicitly in assumptions based on the insured loan program.) The base loan level was then projected by the simple inflation method, using the deflator for sewage plant construction. Loan repayments were projected at 1.5 percent of the unpaid principal outstanding each year. Funded losses each year were projected at 6 percent of the unpaid principal balance of the fund. Loan disbursement is based on the historical disbursement rates of the fund. The projection of outlays in each year is the sum of funded losses and the increase in partially disbursed loans. Budget authority is projected as the sum of funded losses and the increase in obligated but undisbursed loans.

### Other area and regional development

The three largest program areas in this category are Appalachian regional development programs, economic development assistance programs of the Economic Development Administration (EDA) and the operation of Indian programs.

For programs of the Appalachian Regional Commission (ARC), budget authority was projected by the simple inflation method, using the deflator for purchases of highways and streets for the road construction program, and the nonresidential construction price index for other development efforts. The historical spending rates for the ARC are the basis for the outlay projections.

The budget authority and outlays for the economic development assistance programs of EDA were projected by the simple inflation method, using the deflators for office building construction and nondefense research and development.

Programs operated by the Bureau of Indian Affairs (BIA) include education, services, economic development, and trust responsibilities. Projections for these accounts were calculated by the simple inflation method, using primarily the deflators for federal pay and federal services. Net outlays for BIA activities are reduced by offsetting receipts. Approximately 60 percent of these receipts come from resources generated by business activities on Indian reservations. Revenues are projected utilizing inflators specific to the products of these activities. The remainder of the receipts is

the estimated value of pending tribal claims. Because of the increasing size and complexity of several of the claims pending, awards are projected to increase over the next several years.

#### SBA disaster loan fund

The disaster loan fund of the Small Business Administration was projected using the average annual obligations from fiscal years 1972-1978 for the fund's historical constituency of homeowners and nonagricultural small businesses, plus an estimate of expected agricultural-based loan demand. The figures were individually adjusted to reflect current program policy and to arrive at a fiscal year 1979 program level of \$1,276 million in loan obligations. Obligations in future years are projected from this 1979 base using the consumer price index. Anticipated fund income was projected separately, based on loan volumes, interest rates, and loan maturities. Budget authority and outlays are calculated from the program level, using historical relationships between program activity and resource requirements, and are expected to decline slowly over time, as receipts from the loan portfolio increase.

#### Other disaster relief and insurance

The two main programs in this category are the disaster relief fund of the Federal Disaster Assistance Administration and the flood insurance program of the Federal Insurance Administration.

Since there is no reliable way to predict disasters, historical experience was used to project future obligations rates. The average obligation level for fiscal years 1970-1978--\$360 million in 1978 dollars--is the base for the budget authority projection of the disaster relief fund. This number is adjusted for future inflation using the consumer price index. The historical experience of the agency is the basis for outlay estimates.

There are two types of budget authority in the flood insurance program: a current appropriation for studies and surveys, and borrowing authority to cover the federal share of losses. Funds for studies and surveys were projected by the simple inflation method, using the deflator for federal purchases of services. Because of the complexity of flood plain studies, there will be a multiyear spendout of these funds. The federal share of losses has been calculated by assuming a constant growth in policies and considering average historical experience with the incidence and magnitude of losses. Inflation adjustments were then made to the average loss statistic and the premium rate. Borrowing authority is recognized as budget authority when it is used to cover losses.

#### Other community and regional development

This category includes \$639 million in 1979 budget authority for unspecified initiatives. Outlays from this budget authority were divided between 1979, 1980, and 1981. Also included here are certain offsetting receipts which are projected on the basis of administration estimates.



## Education, Training, Employment, and Social Services (Function 500)

The function contains a wide range of education, manpower, and social services programs, including student assistance, Head Start, Basic Educational Opportunity Grants (BEOGs), and employment and training assistance (ETA).

TABLE 23. EDUCATION, TRAINING, EMPLOYMENT, AND SOCIAL SERVICES, a/ BY MAJOR PROGRAM: BY FISCAL YEAR, IN MILLIONS OF DOLLARS

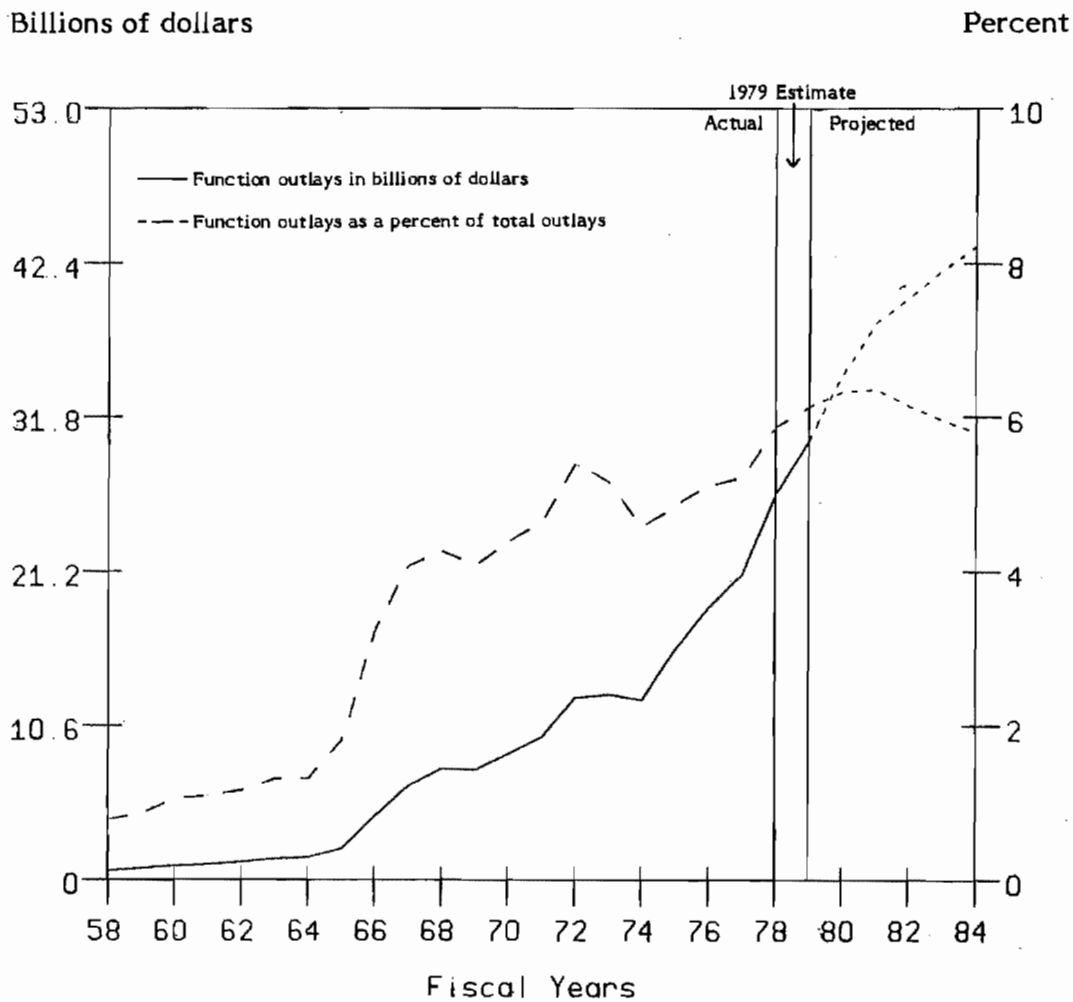
		1979	Projections				
		Estimate	1980	1981	1982	1983	1984
Elementary and Secondary Education	BA	3,791	4,060	4,348	4,644	4,966	5,303
	O	3,150	3,674	4,019	4,291	4,571	4,885
Other Elementary, Secondary, and Vocational Education	BA	3,943	4,243	4,528	4,841	5,183	5,538
	O	3,380	3,936	4,275	4,602	4,923	5,265
Student Assistance	BA	4,214	4,512	4,812	5,132	5,453	5,785
	O	3,116	3,993	4,244	4,652	4,933	5,244
Other Higher Education	BA	1,326	1,637	1,644	1,759	1,857	1,958
	O	1,180	1,501	1,602	1,690	1,790	1,889
Research and General Education	BA	1,355	1,474	1,579	1,687	1,803	1,926
	O	1,250	1,391	1,514	1,616	1,728	1,847
C E T A (Title VI) - TEA	BA	3,476	4,531	5,750	5,424	5,091	4,462
	O	3,693	4,344	5,751	5,448	5,121	4,518
Other C E T A - ETA (Titles I, II, III, and IV)	BA	6,769	8,658	9,266	9,945	10,708	11,452
	O	6,785	8,315	8,973	9,548	10,262	10,979
Other Employment and Training	BA	1,442	1,504	1,594	1,688	1,792	1,912
	O	1,412	1,488	1,563	1,656	1,758	1,878
Other Labor Services	BA	479	509	548	589	635	684
	O	466	505	542	583	628	676
Grants for Social Services	BA	3,113	3,188	3,202	3,217	3,228	3,233
	O	2,938	3,188	3,202	3,217	3,228	3,233
Other Social Services	BA	2,825	2,467	2,642	2,837	3,053	3,268
	O	2,823	2,403	2,575	2,762	2,970	3,185
Offsetting Receipts	BA	-5	-6	-6	-6	-7	-7
	O	-5	-6	-6	-6	-7	-7
Total	BA	32,728	36,779	39,907	41,756	43,762	45,514
	O	30,187	34,732	38,255	40,060	41,906	43,593

a/ Function 500.



Outlays in function 500 were slowly on the rise from 1958 through 1965, both in dollar terms and as a percent of total outlays (see Figure 15). Between 1965 and 1968, outlays for this function rose by \$5.5 billion, more than \$3 billion of which went to education. The major fluctuations between 1968 and 1972 were mainly the result of new social service programs. Between 1974 and 1976, there was an overall rise in outlays of \$6.4 billion; roughly \$3.4 billion of this was spent on training and employment, and about \$2.2 billion was spent on education. Since 1976, growth in function 500 has been primarily caused by youth and public service employment programs in the Comprehensive Employment and Training Act, and by the implementation of the Basic Educational Opportunity Grants.

FIGURE 15. FUNCTION 500 OUTLAYS: BY FISCAL YEAR



Budget authority for this function is projected to increase from \$36.8 billion in fiscal year 1980 to \$45.5 billion in fiscal year 1984, and outlays are estimated to increase from \$34.7 billion to \$43.6 billion over the same period. The annual rate of growth in outlays decreases after fiscal year 1981, from 10.1 percent to 4.5 percent, because of a projected decrease in the temporary employment assistance program. These projections are primarily determined by assumptions concerning the unemployment rate and the rate of inflation. The 1979 projections base in the Comprehensive Employment and Training Act is the budget authority and associated outlays funded under the fiscal year 1979 continuing resolution (Public Law 95-482).

#### Elementary, secondary, occupational, vocational, and adult education

The programs in this grouping include elementary and secondary education, school assistance in federally affected areas, education for the handicapped, Head Start, and occupational and vocational education, as well as a number of smaller education programs. The projections of budget authority and outlays were primarily based on assumed changes in the specialized price index for elementary and secondary education. Assuming discretionary inflation, budget authority increases at an average annual rate of 6.9 percent, while outlays increase at a marginally faster rate, because of the assumed spendout of budget authority increases approved prior to fiscal year 1978. Except for a small amount of pay, all the funds in these programs are discretionary.

#### Higher education

Basic Educational Opportunity Grants, Guaranteed Student Loans (GSLP) work study, direct loans, and various other grant programs are all covered in the higher education category. A specialized index for higher education was used to project all the programs except the GSLP. The budget authority and outlays for these programs increase at an average annual rate of 6-7 percent during the projections period. The CBO five-year estimates were based on the growth trends in the average annual number of "in school" loans. The estimate of the special allowance payment to GSLP lenders was based on the growth trends in the total average annual loan volume and on the CBO projection of the interest rate on the 90-day Treasury bill. Except for the GSLP, all inflationary adjustments in the higher education function are discretionary. The GSLP estimates for current policy and current law are the same. The decoupled estimate was developed by dividing the current policy figure by the CPI.

#### Research and general education

The programs included in this category are the National Institute of Education, the Smithsonian Institute, the National Foundation of the Arts

and Humanities, and the Corporation for Public Broadcasting, as well as a wide range of small accounts. These programs were projected by the simple inflation method, using a combination of the GNP deflator and the higher education and research and development specialized indexes. The inflationary adjustments for the research and general education programs are discretionary.

#### Temporary Employment Assistance (TEA)

Temporary Employment Assistance (Title VI of the Comprehensive Employment and Training Act) was established in December 1974 as a public service employment program to counter high unemployment rates throughout the country. The 1979 outlay estimate takes into account Congressional intent to phase down the program under the 1979 continuing resolution. The fiscal year 1980-1984 estimates of budget authority reflect the number of job slots generated by the statutory formula placed in the recently reauthorized law, using CBO unemployment projections and slot costs (cost per job). 9/ This formula relates funding of Title VI directly to the unemployment rate through the creation of sufficient job slots to employ 20 percent of the unemployed work force over 4 percent. If the unemployment rate rises above 7 percent, the share of the excess (over 4 percent) force to be employed rises to 25 percent. Under the formula, a 0.1 percent change in the unemployment rate represents 27,000 job slots and \$248 million in outlays, using fiscal year 1979 slot costs. Current law and decoupled projections apply fiscal year 1979 slot costs to the formula-derived slot level from 1980 through 1984. A one-month lag is assumed in calculating outlays from budget authority.

#### Employment and Training Assistance (ETA)

Employment and training assistance consists of Titles II, III, IV, VII and VIII of the Comprehensive Employment and Training Act. Title VII (Private Sector Opportunities for the Economically Disadvantaged) was newly authorized in 1978 and is not covered under the continuing resolution; current policy estimates do not reflect planned spending under this Title. Most programs under Titles II, III, IV and VIII were assumed to continue throughout the projections period. Funding levels for budget authority and outlays were calculated using the inflators for state and local government

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9/ Future projections will use CBO estimates of Administration projections of unemployment rates and slot costs, and will assume a six-month lag in reaching the number of slots yielded by the formula each fiscal year.

purchases of services and a specially constructed index for the minimum wage. Two programs scheduled to end in fiscal year 1980--Help Through Industry Retraining and the Skill Training Improvement Program--have no budget authority in 1979 and 1980, reflecting advance funding under the Economic Stimulus Appropriations Act of 1977. Both of these programs show outlays through 1982. Projections for the public service employment program, Title IID, are based on a 293,000 job slot level and CBO projections of slot costs. Current law and decoupled projections held budget authority and Title IID slot costs constant at fiscal year 1979 levels.

#### Other employment, training, and labor programs

For the projection of other employment accounts, budget authority was projected by the simple inflation method, using assumed increases in federal pay and in the price index for federal purchases of services. Outlays were based on historical spendout rates.

#### Grants for Social Services

Grants for social services consist of Title XX, the matching federal/state grant entitlement program, as well as some smaller entitlement programs, such as child welfare and state and local training. Estimates for the program reflect a \$2.9 billion ceiling on Title XX expenditures enacted for 1979, and the use of the simple inflation method for child welfare and training expenditures not covered by the ceiling, based on the price index for federal purchases of services. Current law projections allow the same growth as current policy because these programs are entitlements. Decoupled projections hold fiscal year 1979 levels constant in budget authority and outlays.

#### Other social services

The major account in this category provides funds for the Assistant Secretary for Human Development for grant programs related to child development and other human services. Budget authority was projected by the simple inflation method using the deflator for state and local government purchases. Outlays were generated using historical spendout rates.



## Health (Function 550)

The health function includes two major entitlement programs (medicare and medicaid) and a variety of health research, services, training, and regulation activities. The projections for this function, similar to those for income security (function 600), increase not only because of projected increases in the cost of living, but also because of increases in the number of participants and their levels of utilization of services in the entitlement programs.

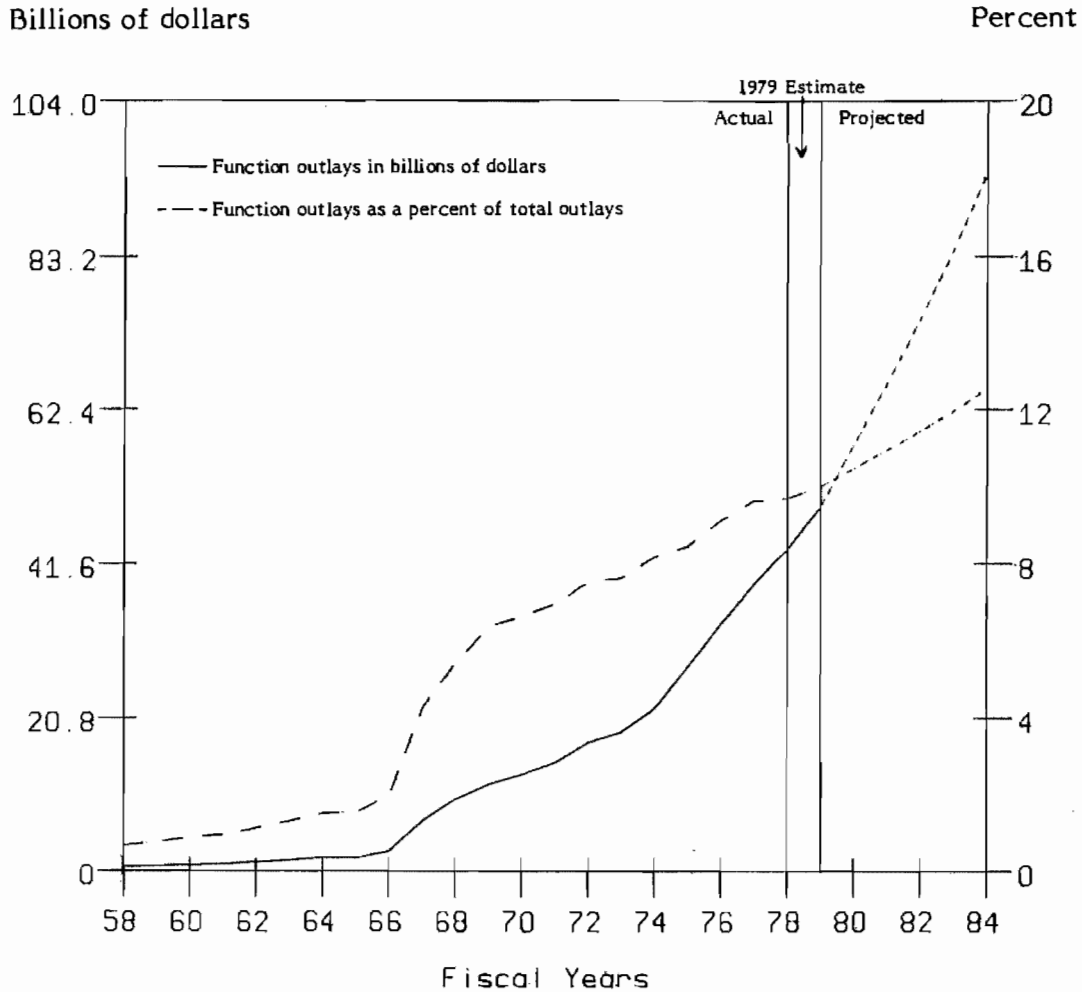
TABLE 24. HEALTH, a/ BY MAJOR PROGRAM: BY FISCAL YEAR, IN MILLIONS OF DOLLARS

			1979	Projections				
			Estimate	1980	1981	1982	1983	1984
Medicare								
Hospital insurance	BA	22,087	25,373	32,601	39,123	43,893	49,990	
	O	20,158	24,479	28,744	33,449	38,511	44,266	
Supplementary medical insurance	BA	9,751	10,563	12,128	13,825	15,564	17,564	
	O	8,845	10,272	11,829	13,530	15,280	17,243	
Medicaid	BA	12,012	13,626	15,297	16,858	18,436	20,075	
	O	11,966	13,626	15,297	16,858	18,436	20,075	
Other Health Services	BA	3,983	4,360	4,779	5,230	5,739	6,282	
	O	3,615	4,110	4,526	4,966	5,460	5,932	
National Institutes of Health	BA	3,016	3,257	3,515	3,802	4,110	4,421	
	O	2,747	3,089	3,346	3,613	3,905	4,212	
Other Health Research	BA	363	390	419	451	486	522	
	O	330	354	390	427	463	498	
Health Education	BA	740	793	851	914	980	1,048	
	O	756	761	785	847	913	978	
Prevention and Control of Health Problems	BA	925	983	1,056	1,134	1,221	1,312	
	O	895	990	1,044	1,121	1,205	1,295	
Offsetting Receipts and Other	BA	-12	-13	-14	-15	-16	-17	
	O	-12	-13	-14	-15	-16	-17	
Total	BA	52,864	59,331	70,631	81,323	90,412	101,198	
	O	49,300	57,667	65,948	74,796	84,158	94,483	

a/ Function 550.

Function 550 has claimed an increasing share of the federal budget since 1958, as outlays have tended to increase exponentially (see Figure 16). The upward shift starting in 1966 is the result of the introduction and rapid growth in the medicare and medicaid programs. These two programs are the dominant force in this function, accounting for over 90 percent of the outlays for health programs in fiscal year 1978.

FIGURE 16. FUNCTION 550 OUTLAYS: BY FISCAL YEAR



### Medicare

Hospital Insurance Trust Fund. Hospital insurance (HI) covers inpatient hospital care, and nursing home and home health care immediately following a hospital stay.

Total budget authority for the HI trust fund is calculated as the sum of payroll tax receipts, intragovernmental transfers (including reimbursement for uninsured persons and military wage credits), premiums from voluntary enrollees, and interest on investments. Table 25 shows the projected levels of each component.

TABLE 25. COMPONENTS OF PROJECTED HI BUDGET AUTHORITY:  
BY FISCAL YEAR, IN MILLIONS OF DOLLARS

	1979	1980	1981	1982	1983	1984
Receipts	20,342	23,588	30,729	36,930	41,279	46,923
Transfers	885	832	854	898	936	1,008
Premiums	16	21	24	27	32	36
Interest	844	932	995	1,268	1,647	2,023
Total	22,087	25,373	32,601	39,123	43,893	49,990

Receipts are based on CBO projections for the HI share of total tax receipts for the Old Age Survivors Disability Hospital Insurance program. Transfers and premiums are based on estimates of the growth or decline of the affected populations from the Department of Health, Education, and Welfare and CBO projections of cost increases. Interest is calculated by applying the average historical yield on investments to the previous year's trust fund balance.

Since reimbursements for inpatient hospital care represent about 96 percent of total benefit payments, the model for projecting HI outlays focuses on this component as the driving force of program costs.

For the purpose of projections, three factors affecting federal outlays for HI were examined: the eligible population, utilization of inpatient days per capita, and cost per patient day. These factors were estimated separately, then combined to obtain a projection of total expenditures. Table 26 shows the percent change in these components.

The medicare population is composed of aged and disabled persons. Projections of these groups were based on Social Security Administration



TABLE 26. PERCENT CHANGE IN COMPONENTS OF HI OUTLAYS

	1979	1980	1981	1982	1983	1984
Population	2.4	2.2	2.2	2.2	2.0	2.0
Utilization	0.5	0.5	0.5	0.5	0.5	0.5
U.S. Cost per Patient Day	13.0	12.7	12.2	12.0	11.5	11.1
Medicare Cost per Patient Day	13.3	13.0	12.5	12.3	11.8	11.4
Outlays	16.2	15.9	15.6	15.4	14.4	14.2

estimates of the population over 65 and CBO estimates of the recipients of disabled worker compensation.

Projections of utilization, as measured by patient days per eligible person, were based on trends in the length of hospital stays and inpatient admissions per capita for persons over 65.

Medicare costs per inpatient day were computed as a function of national costs per patient day. The model for national costs includes estimates for hospital wages, price increases for nonpayroll factors, and increases in hospital services.

Because medicare, both HI and SMI, reimburse reasonable and customary charges, current policy and current law projections are the same. Decoupled projections assumed no increase in the average payment after the base year.

Supplementary Medical Insurance. The SMI program provides coverage to enrollees for physician services, home health services not covered by HI, outpatient hospital services, and certain other services.

SMI budget authority for fiscal year 1979 is based on OMB estimates. Projections for fiscal years 1980-1984 are calculated as expenditures plus the amount required to maintain an adequate contingency balance in the trust fund. The latter is based on excess asset requirements cited in the 1978 SMI trustees report. Table 27 shows the components.

TABLE 27. COMPONENTS OF PROJECTED SMI BUDGET AUTHORITY:  
BY FISCAL YEAR, IN MILLIONS OF DOLLARS

	1980	1981	1982	1983	1984
Expenditures	10,272	11,829	13,530	15,280	17,243
Required Excess of Revenue over Expenditures to Maintain Contingency Balance	291	299	295	284	321
Budget Authority	10,563	12,128	13,825	15,564	17,564

Benefit payments for the aged and for the disabled populations were projected separately and combined to form a forecast of total benefits. Benefit payments for each group were further split into type-of-service categories, which include physician, outpatient hospital, and all other services. Cost and utilization factors were projected separately for each type of service, and combined for the forecast of benefit payments to the aged and to the disabled.

#### Medicaid

Projections for the medicaid program are based on percent changes in medical vendor payments (MVP) for each of the three major recipient categories in the program--the aged, the disabled, and the eligibility categories within the Aid to Families with Dependent Children (AFDC) program. (These groups account for about 95 percent of all medicaid payments. The remaining 5 percent accounted for by other eligible groups is apportioned among the three main groups, since it is assumed to be driven by essentially similar forces.) The equation for the percentage change in medical vendor payments for each of the three groups is:

$$1 + PCT_{jt} = (1 + INDEX_{jt}) (1 + RECIP_{jt}) (1 + UTIL_{jt})$$

where

$PCT_{jt}$  = the percent change in medical vendor payments for group j (aged, disabled, or welfare--that is, AFDC) in the projection year t (1980 through 1984)

INDEX<sub>jt</sub> = the percent change in a specialized price index for the market basket of health services used by group j in year t

RECIP<sub>jt</sub> = the percent change in the recipient population for group j in year t

UTIL<sub>jt</sub> = the percent change in the real utilization level for group j in year t

Medical vendor payments for a given year are calculated by multiplying the weighted sum of the rates of increase for the three groups times medical vendor payments in the preceding year:

$$MVP_t = MVP_{t-1} ((W_a)(1 + PCT_{at}) + (W_d)(1 + PCT_{dt}) + (W_w)(1 + PCT_{wt}))$$

where

MVP<sub>t</sub> = projected medical vendor payments for year t

MVP<sub>t-1</sub> = medical vendor payments for the preceding year

W<sub>a</sub>, W<sub>d</sub>, W<sub>w</sub> = the proportion of medical vendor payments accounted for by the aged, disabled and welfare (AFDC) population groups  
(W<sub>a</sub> + W<sub>d</sub> + W<sub>w</sub> = 1)

PCT<sub>at</sub>, PCT<sub>dt</sub>, PCT<sub>wt</sub> = the percentage change in medical vendor payments for the aged, disabled, and welfare population groups in year t.

Federal outlays are derived by applying the average matching percentage over the last several fiscal years to the medical vendor payment projection. To this is added an amount for administrative costs, which is projected at the same rate as medical vendor payments. Since medicaid is an appropriated entitlement, budget authority is set equal to outlays throughout the projection period.

The specialized price indexes for the eligibility categories are composed of weighted averages of indexes that measure price changes for the major types of services used by medicaid recipients: hospitals, nursing homes, physicians, and other medical services. These indexes are forecast for the entire projection period.

Each eligible population is forecast separately using a combination of trending and regression modeling techniques. Current CBO projections indicate that the aged population group will remain at approximately the same level over the projection period and that the disabled population group will increase at a moderate rate. The AFDC eligible population group is projected to increase slightly in fiscal year 1980 and to decline thereafter.

The real utilization level for each population group is projected by simple time trends. CBO currently expects real utilization to increase by 1 percent a year for the aged and by 0.5 percent a year for the disabled. The real utilization level of AFDC category recipients is expected to remain at the same level throughout the projection period.

For medicaid outlays, the current policy projections are identical to the current law projections, since inflation adjustments are not subject to discretionary action by the Congress. The decoupled projections are derived by setting the percentage changes of the specialized indexes equal to zero.

#### Other health programs

The remaining accounts in the health function were projected by the simple inflation method, using both the federal payraise and federal purchases-services specialized deflators, as well as the medical care component of the CPI. Budget authority is projected to increase at an average annual rate of about 8.6 percent, from 9.0 billion in fiscal year 1979 to about 13.6 billion in fiscal year 1984. Similarly, outlays are projected to grow at an average annual rate of 9.2 percent, from \$8.3 billion in fiscal year 1979 to \$12.9 billion in fiscal year 1984.



## Income Security (Function 600)

Income security programs account for approximately one-third of total budget outlays, and represent the largest single budget function. The projections for programs in the income security function differ from those for programs in other functions in two ways. First, most programs are

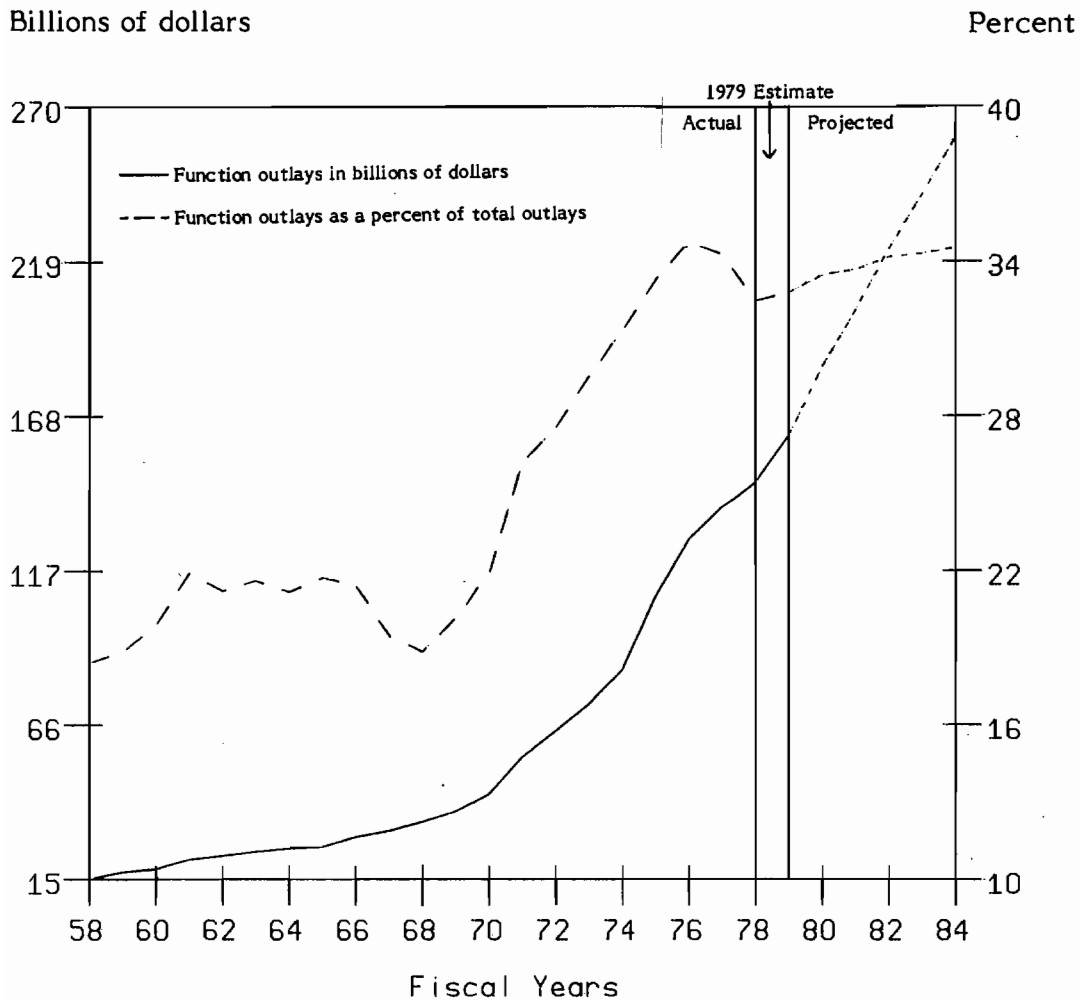
TABLE 28. INCOME SECURITY, <sup>a/</sup> BY MAJOR PROGRAM: BY FISCAL YEAR, IN MILLIONS OF DOLLARS

		1979 Estimate	Projections				
			1980	1981	1982	1983	1984
Social Security (OASDI)	BA	101,510	115,952	133,457	155,800	174,943	199,856
	O	103,367	117,288	132,633	148,627	162,259	176,810
Railroad Retirement	BA	3,992	4,319	4,593	4,757	4,910	5,110
	O	4,291	4,536	4,766	4,945	5,099	5,233
Special Benefits for Disabled Coal Miners	BA	1,017	1,016	1,030	1,037	1,037	1,037
	O	997	1,016	1,030	1,037	1,037	1,037
Federal Employee Retirement and Disability	BA	20,266	22,571	24,594	26,906	29,140	31,413
	O	12,271	14,064	16,040	18,019	20,109	22,307
Unemployment Insurance	BA	16,500	16,154	16,291	15,013	13,690	13,345
	O	11,555	15,210	14,595	14,175	13,526	12,660
Food Stamps	BA	5,926	6,188	6,235	6,640	7,058	7,467
	O	6,278	6,135	6,182	6,584	6,998	7,404
Child Nutrition and Other Food Programs	BA	3,824	4,200	4,856	5,301	5,770	6,303
	O	3,755	4,237	4,738	5,135	5,589	6,078
Public Assistance (AFDC)	BA	6,783	7,342	7,835	8,239	8,646	9,015
	O	6,683	7,342	7,835	8,239	8,646	9,015
SSI	BA	5,618	6,291	6,718	7,157	7,611	8,070
	O	5,515	6,291	6,718	7,157	7,611	8,070
Housing Assistance	BA	25,376	34,624	37,488	40,466	43,635	46,606
	O	4,464	5,072	5,916	6,797	8,074	9,463
Earned Income Tax	BA	1,441	1,874	1,567	1,544	1,521	1,128
	O	1,441	1,874	1,567	1,544	1,521	1,128
Other Programs	BA	1,138	1,135	961	953	841	827
	O	980	1,071	1,007	957	841	824
Total	BA	193,393	221,637	245,666	273,813	298,804	330,177
	O	161,597	184,177	203,028	223,216	241,310	260,028

<sup>a/</sup> Function 600.

automatically indexed for inflation. Second, a major factor driving the outlay projections for many of the programs in this function is the number of beneficiaries. <sup>10/</sup> Most of these programs are designed so that benefits are automatically provided to eligible people who apply. Since eligibility and program participation can be affected by changes in income and unemployment, these economic variables can have important effects on expenditures in this function.

FIGURE 17. FUNCTION 600 OUTLAYS: BY FISCAL YEAR



<sup>10/</sup> This characteristic also applies to medicare and medicaid programs, and to certain veterans' programs.

Since 1958, the most dramatic activity in function 600 has been the large increase in its share of total outlays, beginning around 1969 and extending through 1976. The rapid growth in income security outlays is actually the result of several different factors. From 1968 through 1975, there were large periodic ad hoc increases in social security benefits. Certain legislative and administrative changes affected the social security system from 1972 through 1976, and led to rapid growth in outlays in those years. In 1974, the supplemental security income program began and the food stamp program was mandated on a national basis. Both these programs grew rapidly in the mid-seventies. Finally, the high annual rates of increase in outlays from fiscal year 1974 through fiscal year 1976 reflect the effects of the recession, coupled with historically high rates of inflation. This is seen especially in unemployment compensation outlays, which grew 222 percent in fiscal year 1975, and another 45 percent in fiscal year 1976. Improving economic conditions were primarily responsible for the fiscal year 1977-1978 slowdown (in dollar terms) of function 600.

Outlays are projected to increase at an average annual rate of 10 percent, from \$160 billion in fiscal year 1979 to \$258 billion in fiscal year 1984. The function includes four different categories of programs: general retirement and disability, federal employee retirement and disability, unemployment insurance, and income supplements (including housing assistance). The first two categories increase at a rate exceeding the average for the function. Unemployment insurance outlays hold relatively constant over the five-year period, as the effects of a declining unemployment rate are offset by increases in the price level and the labor force. Outlays for income supplements increase at a rate slightly in excess of the average for the function because of large projected increases for housing assistance. The remaining income supplement programs increase much more slowly, reflecting a projected leveling off in the number of beneficiaries.

Budget authority for the income security function is projected to increase at an average annual rate of 11.4 percent. The increase largely results from increased income for the social security, civil service retirement, and unemployment trust funds. The major source of this new income is a projected increase in social insurance receipts, caused by real growth in the economy and inflation.

#### General retirement and disability

Social Security (OASDI). The financial status of the Old Age and Survivors Insurance (OASI) and the Disability Insurance (DI) trust funds through fiscal year 1984 has been improved by the changes made by the Social Security Amendments of 1977 (Public Law 95-216). Higher payroll



tax rates and a higher wage base upon which the rate is applied substantially increase revenues to the trust funds (see Table 29). In addition, correction of the over-indexing flaw in the benefit computation formula will begin to affect outlays substantially by 1982.

As shown in Table 30, combined OASDI outlays, under current economic assumptions, are projected to grow from \$104.7 billion in fiscal year 1979 to \$178.2 billion in fiscal year 1984. Outlays include cash benefit payments, administrative expenses, transfers to the railroad retirement trust fund and rehabilitation expenses. Benefits will be paid to an average of 21.5 million retired workers and 3.9 million disabled workers in fiscal year 1984. The total number of OASDI beneficiaries will grow from an average of 35.1 million in fiscal year 1979 to over 40 million in fiscal year 1984 (see Table 31).

Budget authority, or gross trust fund income, for the two funds is also projected to increase over the projection period, rising from an estimated \$102.9 billion in fiscal year 1979 to \$201.2 billion in fiscal year 1984. The principal components of budget authority are tax receipts, transfers from the general fund, and interest on the trust fund reserves that are invested in U.S. government securities. Tax receipts increase because of the increases legislated by the 1977 Amendments in the tax rates as well as in the taxable wage base, and because of growth in the number of workers paying social security payroll taxes. The level of the maximum wage subject to the payroll tax has been legislated through 1982, and is tied automatically to changes in average earnings thereafter. Interest income is a function of the estimated yearly average trust fund balance and the interest rate paid on government securities.

The combined trust fund balances, under current assumptions, are projected to rise from \$33.5 billion at the end of fiscal year 1979 to \$75.9 billion at the end of fiscal year 1984. These combined balances would rise to 29.6 percent of outlays by fiscal year 1984, after declining to a low of 22.0 percent of outlays in 1982. Estimates of outlays and revenues are sensitive to the economic assumptions. Projected trust fund balances would grow as a percentage of outlays if economic growth is more rapid than assumed, and would fall if growth were slower.

The model now being used by the Congressional Budget Office to forecast recipient levels and total outlays for the OASI and DI trust funds provides estimates of the effect on the program of different economic and demographic assumptions. <sup>11/</sup> The model consists of 10 equations, of which 4 estimate average monthly benefits and 4 the total number of recipients in each of the major beneficiary groups. Thus, there is one average benefit equation and one recipient equation each for retired workers, disabled

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<sup>11/</sup> A fuller treatment of the rationale for the specifications in the model will be forthcoming in a CBO technical analysis paper.

workers, widows and widowers, and child beneficiaries. Two equations are used to project residual benefits to other groups of recipients, as well as other lump sum and retroactive payments.

The number of recipients in each of these four groups is estimated as a function of the relevant population and economic variables. The two most important recipient groups are retired and disabled workers. The results of the equations for these two groups are as follows:

for retired workers

$$\begin{aligned} \ln(\text{RETW}) = & -10.84 + 1.90 \ln(\text{POP60}) - 0.0032 D2 + 0.0049 UN_{t-3...t-8} \\ & (12.71) \quad (16.95) \quad (3.70) \quad (2.43) \\ & + 0.0977 \ln(\text{BEN}_{t-1}) - 0.3163 \ln(W_{t-1}) \\ & (1.80) \quad (3.01) \\ & + 0.7670 RH0. \\ & (6.154) \end{aligned}$$

$$R^2 = 0.9993 \quad \text{Durbin-Watson Statistic} = 1.4587$$

for disabled workers

$$\begin{aligned} \ln(\text{DISW}) = & -119.82 + 11.55 \ln(\text{POP4064}) + 0.0772 D73:1 \\ & (9.10) \quad (9.55) \quad (4.97) \\ & + 0.0857 D75:3 + 0.0049 \text{BEN}_{t-3} + 0.0195 UN_{t-8} \\ & (4.96) \quad (7.39) \quad (3.51) \\ & - 2.59 \ln(W_{t-3}). \\ & (6.03) \end{aligned}$$

$$R^2 = 0.9958 \quad \text{Durbin-Watson Statistic} = 1.2052$$

where

$\ln$  = natural log

RETW = number of retired workers

DISW = number of disabled workers

POP60 = total population 60 and over

D2 = dummy = 1 in second quarter, 0 elsewhere

UN = unemployment rate

W = hourly earnings of production workers

POP4064 = total population 40-64

D73:1 = dummy = 1 in 1973 first quarter on

D75:3 = dummy = 1 in 1975 third quarter on.

BEN = average real social security benefit

RHO = autocorrelation correction factor

t-i = lag of i quarters

(t-i...t-j = average lag of i to j quarters)

The estimation period is from 1967:1 through 1978:4. Absolute t values are given in parentheses.

As the results indicate, the number of workers collecting OASI benefits declines as the level of real earnings (W) rises, all other things being the same. This reflects the fact that, holding the benefit level and other variables constant, a rise in earnings makes work--the alternative to retirement--more attractive. As a result, fewer people will choose retirement. Similarly, as real benefits of newly entitled recipients increase, more people are likely to retire. The number of retired workers also increases when the unemployment rate increases, although this relationship is of a relatively small magnitude. The results of the equations used to estimate the number of disabled workers show that many of these same factors drive people onto the rolls of the disabled. There are, however, differences in the strength of the response to the economic variables and in the length of time taken to respond.

The average monthly benefits are estimated in real terms (deflated by the CPI), and then reinflated by an index of actual and projected benefit

increases. The average deflated monthly benefits in each quarter for retired workers, for example, are a function of these benefits paid in the previous quarter and of the deflated average benefit paid in the current quarter to newly entitled beneficiaries who earned a median amount over a lifetime. The empirical formulation of this relationship is:

$$\ln (\text{PAYRETW}) = 0.2063 + 0.9493 (\text{PAYRETW}_{t-1}) + 1.3059 \text{ E-}5 (\text{BEN}).$$

(2.057) (37.84) (2.069)

$$R^2 = .9989 \quad \text{D-W } 1.7950$$

PAYRETW is the deflated average monthly benefit in each quarter and BEN is the deflated benefit of newly retired workers. Absolute t values are in parenthesis. The deflated average benefits for disabled workers, children, and widows and widowers follow similar specifications.

These equations are then used to forecast the total cost of benefit payments from the two trust funds. Administrative expenses, transfers to the railroad retirement trust fund, and rehabilitation payments are added to these cash payments to determine total outlays.

The tax receipts for the OASI and DI trust funds are generated as part of a larger effort to project social insurance tax revenues. The model employed for these two trust funds takes into account changes in the labor force, the level of covered wages, the unemployment rate, and price changes. These factors affect taxable wages, and hence payroll tax receipts. The effects of scheduled tax rate changes are also incorporated in the model. A more detailed description of the methodology for projecting social security tax receipts is contained in Chapter IV as part of the discussion on social insurance revenues.

Current policy and current law projections are identical since inflation adjustments are mandated under existing law. To develop decoupled projections, no benefit increase was assumed.

TABLE 29. OASI AND DI TAX RATES AND TAXABLE WAGE BASE, UNDER 1977 SOCIAL SECURITY AMENDMENTS, AND ESTIMATES OF THE COST-OF-LIVING INCREASE UNDER CURRENT ECONOMIC ASSUMPTIONS: BY CALENDAR YEAR

	OASI Tax Rate, <u>a/</u> Employer and Employee, Each	DI Tax Rate, <u>a/</u> Employer and Employee, Each	Taxable Wage Base (in dollars)	Estimated Cost-of-Living Benefit Increase (in percents)
1979	4.330	0.750	22,900	9.0
1980	4.330	0.750	25,900	8.1
1981	4.525	0.825	29,700	7.3
1982	4.575	0.825	32,100 <u>b/</u>	6.8
1983	4.575	0.825	35,400 <u>b/</u>	6.5
1984	4.575	.825	39,300 <u>b/</u>	6.2

a/ Tax rate refers to salaried workers. Rate for self employed are somewhat different.

b/ Subject to automatic increases based on wage indexing, starting in 1982.

TABLE 30. OASI, DI AND COMBINED OASDI BUDGET AUTHORITY,  
OUTLAYS AND TRUST FUND BALANCES IN BILLIONS OF  
DOLLARS a/: BY FISCAL YEAR

	1979	1980	1981	1982	1983	1984
Old Age and Survivors' Insurance Trust Fund						
Budget Authority	87.5	100.0	114.2	132.9	149.1	170.2
Outlays	90.4	102.2	114.9	127.5	139.2	151.3
Trust Fund Balance <u>b/</u>	28.2	25.9	25.1	30.5	40.3	59.2
Trust Fund Balance as a Percent of Outlays <u>c/</u>	--	27.6	22.5	19.7	21.9	26.6
Disability Insurance Trust Fund						
Budget Authority	15.4	17.4	20.7	24.3	27.2	31.0
Outlays	14.4	16.5	19.2	22.5	24.4	26.8
Trust Fund Balance <u>b/</u>	5.3	6.3	7.8	9.7	12.5	16.7
Trust Fund Balances as a Percent of Outlays <u>c/</u>	--	32.1	32.8	34.7	39.8	46.6
Combined Trust Funds						
Budget Authority	102.9	117.4	134.9	157.2	176.3	201.2
Outlays	104.7	118.7	134.1	150.0	163.6	178.2
Trust Fund Balance <u>b/</u>	33.5	32.2	33.0	40.2	52.8	75.9
Trust Fund Balances as a Percent of Outlays <u>c/</u>	--	28.2	24.0	22.0	24.6	29.6

a/ Based on CBO's January, 1979 Economic Assumptions.

b/ Balances at end of fiscal year.

c/ Balances at end of preceding year as percent of year's outlays.

TABLE 31. NUMBER OF RETIRED WORKER, DISABLED WORKER AND TOTAL SOCIAL SECURITY RECIPIENTS: AVERAGE FOR FISCAL YEAR

	Number of Retired Worker Recipients	Number of Disabled Worker Recipients	Total Number of Social Security Recipients
1979	18,484,000	2,951,000	35,123,000
1980	19,210,000	3,129,000	36,423,000
1981	19,988,000	3,391,000	37,872,000
1982	20,598,000	3,741,000	39,232,000
1983	21,003,000	3,819,000	39,852,000
1984	21,463,000	3,916,000	40,535,000

## Federal Employee Retirement and Disability

Projections for the Civil Service Retirement and Disability trust fund are estimated by two computer models, one for outlays and the other for budget authority. Inputs to the models include the current base data provided by the Civil Service Commission (CSC), rates of change derived from CSC data, and CBO economic assumptions.

Outlays are projected to increase over 11 percent per year between fiscal years 1979 and 1984. Three major factors contribute to this increase: expected growth in the number of beneficiaries, larger-than-average benefits for new retirees because of their higher earnings histories, and automatic cost-of-living adjustments.

Monthly outlays are calculated using a model that projects beneficiaries, average benefit payments, and cost-of-living increases on a monthly basis, from October 1978. Annual outlays are simply the sum of monthly outlays.

The outlays for any given month  $i$  ( $i = 1$  to 12) are derived using the following equation:

$$O_i = COLA_i P_A(A) + P_S(S) \\ + \sum_{k=1}^i P_{AG,k}(AG_k) - P_{AL,k}(AL_k) + P_{SG,k}(SG_k)$$

where

$A$  = number of annuitants at the start of the year

$S$  = number of survivors at the start of the year

$AG_k$  = new annuitants in month  $k$

$AL_k$  = the loss of annuitants in month  $k$

$SG_k$  = new survivors (net) in month  $k$

$P_x$  = average monthly benefit payment for beneficiary category  $x$

$COLA_i$  = cost-of-living adjustments that have occurred up to month  $i$



The CSC provided the initial annuitant (A) and survivor (S) base figures, as of October 1, 1978, as well as the initial average benefit payments for annuitants ( $P_A$ ) and survivors ( $P_S$ ) (see Table 32). These numbers are updated by the model at the start of each fiscal year to incorporate all changes that have occurred in the previous year.

TABLE 32. DATA USED TO COMPUTE OUTLAYS

Beneficiary Base Figures, as of October 1, 1978			
	Number of Beneficiaries	Average Monthly Benefit Payments (in dollars)	
Annuitants	1,163,000	713.67	
Survivors	423,000	297.64	
Beneficiary Change Data			
	Monthly Growth (Loss) Rates of Beneficiaries	Average Monthly Benefit Payments (in dollars)	Monthly Growth in Average Benefit Payments
Annuitant Increases	0.006306	729.08	a/
Annuitant Losses	0.003060	457.21	0.002107
Survivor Increases	0.003125	451.46	0.000271

a/ Calculated for each projection year from the pay increases of the prior three years.

The monthly annuitant loss (AL), survivor net growth (SG), and annuitant growth (AG) are estimated each month by rates that are based on information provided by the CSC. In addition, the initial average monthly benefit payments for beneficiaries in these categories (as of October 1, 1978) are provided by the CSC. The average monthly benefit payments for annuitants leaving the rolls ( $P_{AL}$ ) and for new survivors (net) ( $P_{SG}$ ) vary slightly over the projection period because of the changing mix (that is, the

wage history). These average benefit payments are also updated at the end of each fiscal year to reflect the cost-of-living adjustments that have occurred. The average monthly benefit payment for new retirees ( $P_{AG}$ ) is affected solely by federal pay levels, which are in turn affected by payraises. These benefit payments are adjusted each month to reflect previous payraises. Table 32 summarizes the data used in the computation of monthly outlays.

As with the social security trust funds, budget authority for the Civil Service Retirement trust fund represents income to the fund. Budget authority, which is projected to increase at an average annual rate of 10 percent between fiscal years 1979 and 1984, is estimated as the sum of the following sources of trust fund income:

- Employee Contributions
- Agency Contributions
- Postal Service Contributions
- Postal Service Amortization Payments
- Federal Contributions
  - Amortization Payments
  - Interest on Unfunded Liability
  - Payment for Military Service Credit
- Interest on Fund Balances
- Other Receipts to the Trust Fund

Employee, agency, and postal service contributions are calculated by taking 7 percent of the covered payroll base and 7 percent of the dollar amount of the projected payraise for the percentage of the year that the payraise is in effect, for general schedule, wage board, and postal employees. The covered payroll bases (as of October 1, 1978) are shown in Table 33, and are based on agency estimates. Payroll bases are updated each year to include the appropriate pay increases. Payraises for general schedule and wage board employees are discussed in the section on allowances (function 920). Payraises for postal employees are assumed to be 2.5 percent. In addition to the payraises, current Postal Service employees also receive cost-of-living adjustments--1¢ per hour increases for each full 0.4 of a point increase in the consumer price index. These increases, however, are not automatically included in the covered payroll base; that is, 7 percent of the increase is not contributed to the retirement fund. During the July 1978 negotiation, the previous cost-of-living adjustments were "rolled in" to the covered payroll base. CBO assumes that "roll in" of the

cost-of-living adjustments to the covered payroll base will continue every three years. Consequently, for these projections postal covered payroll bases are increased following years of contract negotiations to incorporate the previous three years' cost-of-living adjustments.

TABLE 33. FISCAL YEAR 1979 COVERED PAYROLL BASES: IN MILLIONS OF DOLLARS

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General Schedule	28,517
Wage Board	10,019
Postal Service	12,988

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The Civil Service Retirement and Disability trust fund has an unfunded liability. That is, the present value of future payments (outlays) from the fund is less than the present value of fund assets and projected future fund income. The unfunded liability is increased each year by the cost-of-living adjustments, the unpaid interest on the unfunded liability, and the unpaid military service credit. (Civil service retirees receive "credit" for any years spent in military service; that is, the years are counted in the determination of their retirement income. No contribution for those years has been made to the trust fund. The anticipated increase in unfunded liability resulting from this provision is partially paid by the federal government each year.) The unfunded liability is reduced annually to reflect such things as the excess interest on the fund balance.

The Civil Service Retirement Amendments of 1969 provided authorization for federal payments to finance the increase in unfunded liability each succeeding year for new or liberalized benefits, extension of retirement coverage, or pay increase. Since annual pay increases have been assumed, the projections amortize the additional unfunded liability created by the payraises over 30 years, as provide by the amendments. The federal and postal amortization payments are calculated by multiplying the annualized dollar amount of their respective pay increases by a factor reflecting the projected liabilities (2.2), amortizing this over 30 years at 5 percent (16.1411), and adding the result to the base payment (the payment required to amortize previous years' payraises).

$$A_n = A_{n-1} + \frac{2.2 \times P_n \times B_n}{16.1411}$$

where

$A_n$  = amortization payment in year n

$P_n$  = payraise in year n

$B_n$  = payroll base in year n

Interest on the unfunded liability is 5 percent of the year's unfunded liability. <sup>12/</sup> The military service credit is increased by a fixed factor each year to produce the projections. <sup>13/</sup> The payments for interest on the unfunded liability and the military service credit result from permanent appropriations.

Interest on the fund balance is the product of the appropriate interest rate and the dollar amount of securities held by the trust fund (fund balance). The fund balance is increased each year by the difference between the receipts to the fund and its outlays, or the net income. Special issues rates and the average earnings rate on the existing portfolio are used in the interest calculation.

Other receipts to the trust fund include voluntary contributions, employing nonfederal agency contributions, contributions for re-employed annuitants, receipts from the Foreign Service Fund, and special annuities. This category is straightlined at \$123.7 million.

Table 34 summarizes the data provided by the CSC for the budget authority projection.

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<sup>12/</sup> Under current law, 90 percent of the interest on the unfunded liability for fiscal year 1979 is paid. In 1980 and subsequent years, the payment is 100 percent. The difference between 100 percent payment and the payment made increases the unfunded liability.

<sup>13/</sup> The military service credit is subject to the same increasing percentage payments as interest on unfunded liability.

TABLE 34. DATA USED IN THE MODEL OF CIVIL SERVICE RETIREMENT BUDGET AUTHORITY a/

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Federal Amortization Base <u>b/</u>	2,114.79
Postal Amortization Base <u>b/</u>	478.40
Unfunded Liability Base <u>b/</u>	123,800.0
Military Service Credit Base <u>b/</u>	724.11
Military Service Credit Growth Factor	1.029
Fund Interest Base <u>b/</u>	3,200.00
Fund Balance Base <u>b/</u>	56,290.9
Average Earnings Rate on Existing Portfolio	0.06727

---

a/ Base figures as of October 1, 1978.

b/ In millions of dollars.

In the current policy and current law projections, payraises are included for each year of the projection period. In the decoupled projections, it is assumed that there are no payraises after 1979.

#### Unemployment Insurance

The unemployment trust fund is composed of Regular and Extended Benefit (EB) programs as well as the Railroad Unemployment Insurance program. Of these three, the regular program is the largest; over 85 percent of all benefit payments from the trust fund in fiscal year 1978 were paid through the regular state programs. CBO has recently completed a statistical analysis of benefit payments in the regular state programs.

Quarterly outlays are calculated using a model that independently estimates the number of recipients and the average unemployment insurance benefit. Recipients for any quarter are estimated using the following equation:

$$\begin{aligned} \text{RECIP} = & 486136 + 0.495366 \text{ UHHNS} + 0.409956 \text{ CHUHHNS}/1 \\ & (12.57) \qquad (5.57) \\ & -17285 \text{ TREND} - 64390 \text{ FALL} - 174046 \text{ SPRING} \\ & (3.06) \qquad (0.67) \qquad (1.40) \end{aligned}$$

$$+478481 \text{ WINTER} + 225354 \text{ DUM 78}$$

(6.44)                      (1.71)

Estimation Period: 1st quarter 1968 to 3rd quarter 1978

$R^2 = 0.95$                       Durbin-Watson: 1.36

(t - statistics in parentheses)

where

RECIP	=	number of Unemployment Insurance Recipients
UHHNS	=	number of unemployed persons nonseasonally adjusted
CHUHHNS/1	=	change in the number of unemployed persons lagged one quarter
TREND	=	trend variable
FALL	=	dummy variable = 1 in fall; 0 otherwise
SPRING	=	dummy variable = 1 in spring; 0 otherwise
WINTER	=	dummy variable = 1 in winter; 0 otherwise
DUM 78	=	dummy variable 1 after 1st quarter 1978; 0 otherwise

Recipients are a function of the number of unemployed persons. The change in the number of unemployed persons lagged one quarter reflects both lags in receiving benefits and time of stay on the program. The trend variable reflects changes in the composition of the labor force. In addition, the number of recipients is highly subject to seasonal factors and these are incorporated in the model by dummy variables. The winter quarter is most important showing the increase caused by construction and other industries that experience slowdowns during the winter months. Finally, the 1978 dummy variable is an attempt to pick up the new coverage of state and local government workers and certain agricultural workers mandated in the 1976 Unemployment Insurance Amendments and started on January 1, 1978.

Average benefits for any quarter are estimated using the following equation.

$$\begin{aligned}
 AB &= 9.7 + 25.93 \text{ JRWSSNF}/1 + 2.00 \text{ RU}/1 \\
 &\quad (7.15) \qquad\qquad\qquad (2.97) \\
 &\quad +1.62 \text{ WINTER} + 0.81 \text{ RHO} \\
 &\quad (3.59) \qquad\qquad\qquad (8.74)
 \end{aligned}$$

Estimation Period: 2nd quarter 1968 to 3rd quarter 1978

$R^2 = 0.98$       Durbin-Watson: 1.67

(t - statistics in parentheses)

where

AB                    = average benefit

JRWSSNF/1        = compensation per man-hour lagged 1 quarter

RU/1                = unemployment rate seasonally adjusted and lagged 1 quarter

RHO                = an adjustment for autocorrelation in the error terms

Weekly unemployment insurance benefits are usually calculated as a percentage of previous earnings, generally subject to a maximum. The compensation per manhour variable picks up increases in benefits resulting from increasing wage payments. The unemployment rate relates to the increase in the number of wage workers who become unemployed at relatively high unemployment rates.

Predictions from this model are that unemployment insurance payments in the regular state programs will increase, from \$9.0 billion in 1979 to \$12.1 billion in 1980, because of the predicted increase in unemployment (see Table 35); payments will slowly decline from the 1980 peak as the economy improves.

The recipient population is expected to decline with the decrease in the unemployment rate, but the average weekly benefit will continue to increase as a result of the growth in money wages.

CBO is currently in the process of developing models to estimate benefit payments in the Extended Benefit and Railroad Unemployment insurance programs. Currently, estimates for these two components of the Unemployment Insurance trust fund are based on adjusted Administration estimates.

TABLE 35. ESTIMATED BENEFICIARIES AND PAYMENTS IN REGULAR STATE UNEMPLOYMENT INSURANCE PROGRAMS, BY FISCAL YEAR

	Unemployment Rate (projected)	Average Number of Beneficiaries (millions)	Average Weekly Benefits (\$)	Benefit Payments (billions)
1979	5.98	2.068	84.01	\$ 9.0
1980	6.75	2.553	91.40	\$12.1
1981	6.62	2.370	97.30	\$12.0
1982	6.31	2.181	103.37	\$11.7
1983	5.95	1.953	109.44	\$11.1
1984	5.58	1.721	115.97	\$10.4

Budget authority is the sum of state contributions to the trust fund, federal unemployment taxes (FUTA), railroad unemployment taxes, and an interest estimate, which is based on current interest rates and the expected trust fund balance. The projection of the tax components of budget authority is described in Chapter IV.

#### Income supplements and housing assistance

Food stamps. Projections for the federal food stamp program are developed in two major phases. In the first phase, a series of explanatory equations are used to project the program as if it had not been amended by the Food Stamp Act of 1977 (Public Law 95-113). (The unamended program is operational through the beginning of March 1979, when the final regulations implementing the act become effective.) In the second phase, the unamended program projections are adjusted for micro-data simulations of the new law's impact.

Historical time series of public and nonpublic assistance food stamp recipients are used to develop estimates of participants in future years for the unamended program. Simulations of the major income and eligibility



provisions of the act are developed on a data base consisting of participating food stamp households sampled in September 1976. These simulation results are then used to adjust the time series estimates of the old food stamp law to develop current policy food stamp estimates.

Model estimates are developed for obligations. Obligational estimates in an entitlement program represent needed budget authority. The budget authority estimates are then converted to outlays based on historical spending rates.

Estimates of the old food stamp law (pre Public Law 95-113) are developed based on a series of explanatory equations (estimated on a quarterly basis) that consist of: estimates of the food stamp allotment for a family of four; average benefit per recipient based on estimated allotment levels; the average monthly participation by quarter for nonpublic assistance food stamp recipients; average monthly participation by quarter for public assistance food stamp recipients; and administrative costs.

Five basic equations follow:

$$\text{ALLOT} = -3.796 + 0.963 (\text{CPIFDHOME})$$

$$R^2 = 0.997 \quad \text{S.E.E.} = 0.752 \quad \text{D.W.} = 0.988$$

$$\text{BENEFIT} = -12.19 + 0.1576 (\text{ALLOT}) + 0.086 (\text{TIME})$$

$$R^2 = 0.996 \quad \text{S.E.E.} = 0.270 \quad \text{D.W.} = 2.122$$

$$\text{NONPUBLIC} = 289.508 + 1,008.5 (\text{PRDUM}) + 1,396.2 (\text{RU})$$

$$R^2 = 0.9575 \quad \text{S.E.E.} = 413.1 \quad \text{D.W.} = 0.739$$

$$\text{PUBLIC} = 3,800.8 + 0.4679 (\text{AFDC}) - 407.3 (\text{SSI-DUMMY})$$

$$R^2 = 0.9250 \quad \text{S.E.E.} = 94.7 \quad \text{D.W.} = 1.974$$

$$\text{RHO}(1) = 1.065 \quad \text{RHO}(2) = -0.385$$

$$\text{ADM} = \text{TBEN} (0.074)$$

where:

ALLOT = food stamp allotment for a family of four; semi-annual level, January and July

CPIFDHOME = consumer price index for food at home

BENEFIT = average monthly food stamp benefit per participant, quarterly average

TIME	= time trend variable
NONPUBLIC	= nonpublic assistance food stamp recipients quarterly average, not seasonally adjusted
PRDUM	= Puerto Rico dummy variable 0 through 1973 1 from 1974 on
RU	= national average unemployment rate per quarter
PUBLIC	= public assistance food stamp recipients quarterly average, not seasonally adjusted
AFDC	= aid to families with dependent children, quarterly average participation
SSI-DUMMY	= dummy variable shift for definition of supplemental security income (SSI) food stamp recipients from public assistance to nonpublic assistance
ADM	= federal administrative cost
TBEN	= total benefits

Old food stamp law estimates of obligations would have increased from \$5.9 billion in fiscal year 1979 to \$8.5 billion by fiscal year 1984 using the current policy projections for food prices, unemployment, and AFDC public assistance participation (see Table 36). Average monthly participation under the old food stamp law would have increased in fiscal year 1980 to 16.2 million persons, up from the 15.4 million estimated for fiscal year 1979. By fiscal year 1984, average monthly participation would have declined to 14.5 million persons.

Simulations of the major eligibility provisions enacted with Public Law 95-113 were estimated on a representative sample of food stamp recipients in September 1976. These major provisions include:

- o Definition of gross countable income, including that portion of student loans not used to tuition and mandatory fees;
- o Definition of the basic allotment equivalent to the "Thrifty Food Plan";

TABLE 36. FOOD STAMP OBLIGATION ESTIMATES <sup>a/</sup>: BY FISCAL YEAR

	Participants (in millions of persons)	Obligations (in billions of dollars)	
Old Law			
1979	15.4	5,975	
1980	16.1	6,934	
1981	15.9	7,469	
1982	15.5	7,881	
1983	15.0	8,228	
1984	14.5	8,535	
-----			
Public Law 95-113			
		(no cap)	(current policy)
1979	15.5	6,171	6,171
1980	16.6	7,559	6,189 <sup>b/</sup>
1981	16.4	8,156	6,235 <sup>b/</sup>
1982	16.1	8,633	6,640
1983	15.6	9,339	7,058
1984	15.1	9,423	7,467

<sup>a/</sup> These numbers were developed before the implementation of the new program and, as such, are subject to change as the program takes effect and actual data become available.

<sup>b/</sup> Public Law 95-113, Section 18(a) authorization ceiling.

- o Benefit reduction rate established at 30 percent;
- o Minimum benefit of \$10 for households of one and two persons;
- o Standard deduction of \$65 (January 1979) deflated to September 1976;

- o Maximum dependent and shelter cost deduction of \$80 (January 1979) deflated to September 1976;
- o Elimination of purchase requirement; and
- o Net income eligibility established at the OMB poverty threshold for nonfarm families.

The ratio of the simulated benefits paid under the modified program provisions to the actual benefits paid in September 1976 resulted in benefits under the old food stamp law being reduced approximately 3.6 percent. Participating households would decline by about 3.9 percent, or 600,000 persons in fiscal year 1979 and 632,000 in fiscal year 1980.

Offsetting the decline in participation were simulation results of the impact of the provision that would eliminate the purchase requirement. The impact of this provision was based on cash-equivalency estimates of the old law bonus stamps by various income and family size groupings. It was assumed that households whose bonus transfer was valued at less than the full cash value (but who were currently not participating in the program with the purchase requirement) would be more likely to participate when the purchase requirement was eliminated than households that valued the transfer at its full cash equivalence but who were not currently participating. Adjustments to participation rates were completed on an eligible population developed from an aged Current Population Survey. Participation increased by 1.2 million persons; the average benefit per new participant was approximately three times as great as the benefit of those participating before the purchase requirement was eliminated.

The current policy estimates that result from combining the various procedures are shown in Table 36. Since Public Law 95-113 contains an authorization for appropriation ceilings for fiscal years 1979 through 1981, estimates reflect the authorization limits. For fiscal years beyond 1981 (the program's authorization expires in fiscal year 1981), the authorization ceiling established by law for 1981 was increased by the same proportionate increase in the estimated costs of the program assuming no authorization ceiling.

Child nutrition and related programs. Total costs for child nutrition and related programs are projected to grow at an average annual rate of 10 percent, from \$3.8 billion in fiscal year 1979 to \$6.1 billion by fiscal year 1984. This increase in cost is largely the result of inflation, since increases in the federal subsidy (the reimbursement rates) are automatically tied to increases in the food-away-from-home component of the CPI. In fact, these automatic increases were sufficiently large over the projected period to

offset the estimated decline in the number of program recipients, expected to occur as the number of children in the eligible age groups declines.

Currently, the school lunch program represents close to two-thirds of all funds for this category. Projections for the school lunch program utilize two models developed by CBO. Total lunches are estimated by a regression equation, using as variables elementary school enrollments, secondary school enrollments, percentage of meals served at free and reduced prices, and school participation. Total expenditures are estimated using a model that computes the reimbursement rates for lunches, breakfasts, supper, and snacks, based on changes in the CPI food-away-from-home specialized deflator. It computes the reimbursement rate for commodities based on the wholesale price index, and computes the reimbursement rate for cartons of milk based on changes in the wholesale price for fluid milk index.

Table 37 shows that total costs for the lunch program are projected to be \$2.1 billion in fiscal year 1980, and will increase at an average rate of 7.8 percent, to a total of \$2.8 billion by fiscal year 1984. Two factors underlie the projections for the school lunch program.

- o Overall, elementary and secondary enrollments are projected to decline (see Table 37); The overall declines in enrollments, however, are offset by the projected increases in both the number of participating schools and the percentage of students participating in the program. As a net result of these offsetting trends, total lunches are projected to decline slightly from fiscal year 1979 to fiscal year 1980 (from 4.18 billion meals to 4.13 billion meals), and continues that decline over the remainder of the projection period.
- o The federal payment for the three categories of school lunches will rise because of the semiannual automatic inflation adjustment based on changes in the food-away-from-home component of the CPI. It is estimated that the weighted average subsidy per lunch will increase by 19 cents over the five-year period. (The three categories of lunches are the paid lunch, which received a subsidy of 14.4 cents per meal in fiscal year 1978, the reduced price lunch, which received a subsidy of 69.2 cents, and the free lunch, which received a subsidy of 79.2 cents).

Since, over the five-year period, the number of lunches served remains relatively constant, the major dollar growth in this program results from the semiannual automatic adjustment for inflation.

TABLE 37. COMPONENTS OF SCHOOL LUNCH PROGRAM PROJECTIONS: BY FISCAL YEARS

Fiscal Period	Elementary Enrollment (in millions)	Secondary Enrollment (in millions)	Total Lunch Served (in billions)	Total Expenditures (in billions of dollars)
1980	31.8	15.1	4.18	2.1
1981	31.5	14.6	4.13	2.3
1982	31.3	14.1	4.11	2.4
1983	31.2	13.6	4.10	2.6
1984	31.2	13.3	4.10	2.8

The other nutrition programs are smaller than the school lunch program, but are growing both in the number of institutions involved and in the number of people participating. This group includes the school breakfast program, the child care feeding program, the summer feeding program, the commodity program, and other programs. Because they are relatively new, these programs are still at the stage when participation rates among eligible institutions and children are increasing as information about these programs spreads. Moreover, cost increases tied to rising food prices will add to federal outlays in these programs. As a result, this group, which represents less than one-third of the Child Nutrition budget, is responsible for one-half of its growth over the five years. For the majority of the feeding programs, current policy and current law estimates are the same. The decoupled estimate reflects the cost of the program if reimbursement rates were held to the fiscal year 1979 levels.

Aid to Families with Dependent Children. The AFDC program makes cash payments to qualifying low income families with dependent children. States and localities administer AFDC payments and partially contribute to its cost. The federal government contributes the remainder, about 53 percent in fiscal year 1978. Federal outlays for the AFDC program are estimated to increase at an average annual rate of 5.9 percent, from \$6.8 billion in fiscal year 1979 to \$9.0 billion in fiscal year 1984. Approximately 90 percent of these outlays go to make benefit payments to AFDC recipients. The remaining 10 percent is mostly for administrative expenses.

AFDC payments to beneficiaries in a given fiscal year can be computed as:

$$\text{Total payments} = (12) \times (\text{average monthly payment per recipient}) \times (\text{average monthly number of recipients})$$

The projected overall rise in public assistance expenditures is primarily the result of increased average payments to AFDC beneficiaries. Average monthly federal, state, and local payments to recipients are projected to rise from \$83 in fiscal year 1978 to \$129 by fiscal year 1984 (see Table 38.)

TABLE 38. RECIPIENT AND PAYMENT LEVELS FOR AID TO FAMILIES WITH DEPENDENT CHILDREN: BY FISCAL YEARS

	Average Monthly Recipients (in millions)	Average Monthly Payments (Federal State, and Local) (in dollars)
1978	10.7	83
1979	10.4	89
1980	10.5	97
1981	10.4	105
1982	10.3	113
1983	10.1	121
1984	9.9	129

This increase in payments is basically the result of adjustments in AFDC payments to account for increases in prices as shown in the equation below. This equation was developed by CBO on an historical basis (fiscal years 1970-1978) to reflect, on average, the adjustments states make in AFDC payments. In general, payment levels are enacted through each state's legislative process, although a few states adjust the payment automatically. The other factor determining the average payment per recipient is family size. Members of a smaller AFDC family will receive a higher average payment per recipient since family benefits do not rise proportionately for additional members. The continuing trend towards smaller AFDC families thus contributes to the rise in the average AFDC payment, albeit in a minor way compared to increases in prices.

$$\text{Log (average monthly payment)} = 3.98742$$

$$+ 1.08424 \log (\text{CPI year before})$$

$$(t=7.59)$$

$$- .181447 \log (\text{AFDC family size})$$

$$(t=-.62)$$

$$\bar{R}^2 = .997$$

$$\text{D.W.} = 2.34$$

AFDC recipient levels are projected to increase from 10.4 million in fiscal year 1979 to 10.5 million in fiscal year 1980. After that, however, AFDC recipient levels are expected to decline continually from their fiscal year 1980 level to 9.9 million in fiscal year 1984. These projected recipient levels are based on a statistical analysis of historical data.

This analysis is done in two parts. First, there are the non-unemployed father AFDC families (or simply, Non-UF families), consisting mainly of female-headed families. This category currently represents about 95.5 percent of all AFDC recipients. Second, there are the unemployed father AFDC families representing the remaining 4.5 percent of all AFDC recipients. The latter is examined separately because it is a relatively more volatile part of the AFDC population, and thus accounts for a good deal of the change in the total number of recipients.

For the Non-UF portion of the AFDC population, the analysis includes multiple regression equations that indicate higher recipient levels when there are more female-headed families, when there is greater unemployment, and when family size is larger.

These factors can be seen as affecting one or more of the variables in the following tautology:

$$\text{Non-UF Recipients} = (\text{Number of female headed families}) \times (\text{Percent of female headed families receiving AFDC} \div 100) \times (\text{Non-UF AFDC family size})$$

The following regression equations show estimated relationships between the various determining factors and the parts of the tautology.

$$\text{Percent of female-headed families receiving AFDC} = 15.7441$$



$$+ .61594 \times (\text{unemployment rate})$$

$$(t=5.43)$$

$$+ 7.2185 \times (\text{Average family size in the U.S.})$$

$$(t=3.16)$$

This equation uses monthly data from January 1951 through October 1978.

$$\text{Non-UF AFDC family size} = -7.5570 + 3.15281 \times (\text{Average family size})$$

$$(t=22.13)$$

This equation uses monthly data from January 1970 through October 1978. The number of female-headed families is projected by the Bureau of the Census.

While it is estimated that the number of female headed families will continue to grow in the future and exert upward pressure on the number receiving AFDC, overall family size and the Non-UF AFDC family size are on downward paths and this is acting to lower the number of recipients. When the positive effect of higher unemployment is factored into the process, the net result is an increase in recipients in the short run (as both unemployment and female headed families increase) but a decline in the longer run (as the unemployment rate falls and family size decreases).

The unemployed father segment of the AFDC population is computed as a function of the unemployment rate as shown in the following equation.

$$\text{Number of AFDC UF families} = -13020.8$$

$$+ 4250.38 \times \text{unemployment rate}$$

$$(t=5.01)$$

$$+ 5656.45 \times \text{unemployment rate lagged six months}$$

$$(t=5.30)$$

$$+ 4154.87 \times \text{unemployment rate lagged one year}$$

$$(t=3.95)$$

$$+ 6313.53 \times \text{unemployment rate lagged one and one-half years}$$

$$(t=7.68)$$

The equation uses monthly data. Observations on the dependent variable cover the period July 1973 through October 1978. Since it has been found that the number of AFDC-UF families is related to past as well as current unemployment rates, a lagged equation has been estimated.

To get the number of AFDC UF recipients, the number of families can be multiplied by 4.5 (the average size of an AFDC UF family). This number appears to remain fairly constant over time.

Because of the anticipated rise in unemployment late in fiscal year 1979, the number of AFDC UF recipients is expected to start to rise slowly at the end of the year. With the lagged unemployment effects, however, this is not expected to turn down again until the end of fiscal year 1981, when it should begin to reflect the economy's anticipated recovery. From then through fiscal year 1984 the number of AFDC UF recipients are projected to decline as a result of lower assumed unemployment rates.

Because AFDC payment levels are set by the various states and projections of average payments anticipate these state adjustments without any change in federal law, current policy projections and current law projections are the same. Decoupled projections assume no increase in the average payment after the base year.

Supplemental Security Income. Federal outlays for SSI are projected to increase from \$5.5 billion in fiscal year 1979 to \$8.1 billion in fiscal year 1984. This represents an average annual increase of 8.0 percent. The growth in outlays is attributable to projected cost-of-living increases, since the average number of recipients is projected to decline slightly over the projection period, from 4.2 million to 4.1 million.

The budget projections of the SSI program have been formulated by independently estimating the number of recipients and the average benefit payment per recipient. The relatively brief history of the SSI program and the conflicting trends over this initial period make estimating future caseloads difficult.

The total number of recipients grew over the first 28 months of the program's existence, reaching a peak caseload of 4.4 million in April 1976; currently, caseloads are averaging about 4.2 million recipients per month. When recipient categories are examined, the trends are mixed. The number of blind and disabled persons receiving SSI payments has increased over the life of the program, although rates of growth have decreased. The number of aged SSI recipients has been declining for more than two years; this decline reflects the growing participation of aged persons in social security and other retirement programs. Social security and pension income are included for the purposes of determining eligibility and benefit payments in SSI.

Monthly federal basic benefit levels for single individuals and for couples increase automatically with changes in the CPI, and by the same

percentage amount as OASDI benefits. The basic benefit is the maximum federal grant attainable by those with little or no other income. Projected basic benefits for singles and childless couples are listed in Table 39.

TABLE 39. PROJECTED BASIC BENEFIT LEVELS FOR SUPPLEMENTAL SECURITY INCOME RECIPIENTS: BY FISCAL YEARS, IN DOLLARS

	Singles	Couples
July 1979	206.50	309.70
July 1980	223.20	334.80
July 1981	239.50	359.20
July 1982	255.80	383.60
July 1983	272.40	408.50
July 1984	289.30	433.80

Housing assistance. This category includes the budget authority and outlays for the HUD assisted housing programs. The projections of budget authority result from the following procedure. First, the total new contract authority provided in fiscal year 1979 was allocated among the various assistance programs, based on the allocation implicit in the fiscal year 1979 appropriation. For the current law and decoupled paths, these allocations were held at their 1979 levels throughout the projections period. For the current policy projection, the allocation for public housing (both conventional and modernization) and the Section 8 newly constructed housing programs were assumed to increase at the same rate as the CBO estimate of the residential construction index. The allocation for the Section 8 existing housing program was assumed to increase with the CBO estimate of the CPI component for rent. The projected contract authority for each program in each year was then multiplied by the average contract term for that particular program to determine the budget authority for that program. The contract terms range from 15 to 40 years. The budget authority for housing assistance in each year is the sum of the budget authorities of the various program components.

The Section 8 and public housing programs account for most of the outlay growth in this category. Section 8 is a rental subsidy program designed to limit the assisted tenants' rent payments to 15 to 25 percent of their incomes. For these projections, tenant contributions were assumed to

be 25 percent of income during the five-year period. It was also assumed that tenant incomes would increase at the rate estimated for those of the lowest quintile of the population. For the current policy and current law paths, rents for the first year of occupancy in the new construction portion of the Section 8 program were calculated by increasing the HUD estimate of average reservation amounts by the residential construction index. In subsequent years, rents were increased by the CBO estimates of the rental CPI. In the existing housing program, the base for the average rent was calculated by a weighted average of the published fair market rent levels for fiscal year 1978. This base was then increased at the same rate as the CBO estimate of the CPI for rent. For the decoupled path, rents were held at their base levels. Outlays for Section 8 payments do not begin until a unit is occupied. The rate at which units come under payment from prior or newly provided authority was estimated from historical experience.

The public housing program provides complete debt service subsidies to owners and operators of public housing projects. Debt service subsidies essentially remain fixed through the mortgage term. For those units currently under payment, therefore, annual costs were held constant throughout the five-year period. For those units first coming under payment during the projection period, the subsidy was calculated by indexing the fiscal year 1979 appropriation allocation by the CBO estimate of the residential construction index. Once a unit was estimated to come under payment, its cost was assumed to remain constant throughout the remainder of the projection period. As with Section 8, the rate at which units come under payment was based on past program experience.

#### Other Programs

This category contains primarily expenditures for the Black Lung Disability trust fund, migration and refugee assistance, and departmental administration. Projections for the Black Lung program and for migration and refugee assistance are based on administration estimates. The estimates for departmental administration are projected by the simple inflation method.



## Veterans' Benefits and Services (Function 700)

Veterans' benefits and services consist of those federal programs designed for veterans, their dependents, and their survivors. Three programs--compensation and pensions, readjustment benefits, and medical care--account for approximately 96 percent of the outlays assumed in the 1979 projections base. With the exception of the veterans' pension program, veterans' benefits and services are not directly indexed for inflation under current law. Historically, however, these direct benefit accounts have been adjusted for inflation through annual or biannual legislated rate increases. The current policy projections shown for such accounts (compensation and readjustment benefits) thus assume annual cost-of-living increases. The current law projections include increases in pensions only; the decoupled projections reflect no adjustments for inflation.

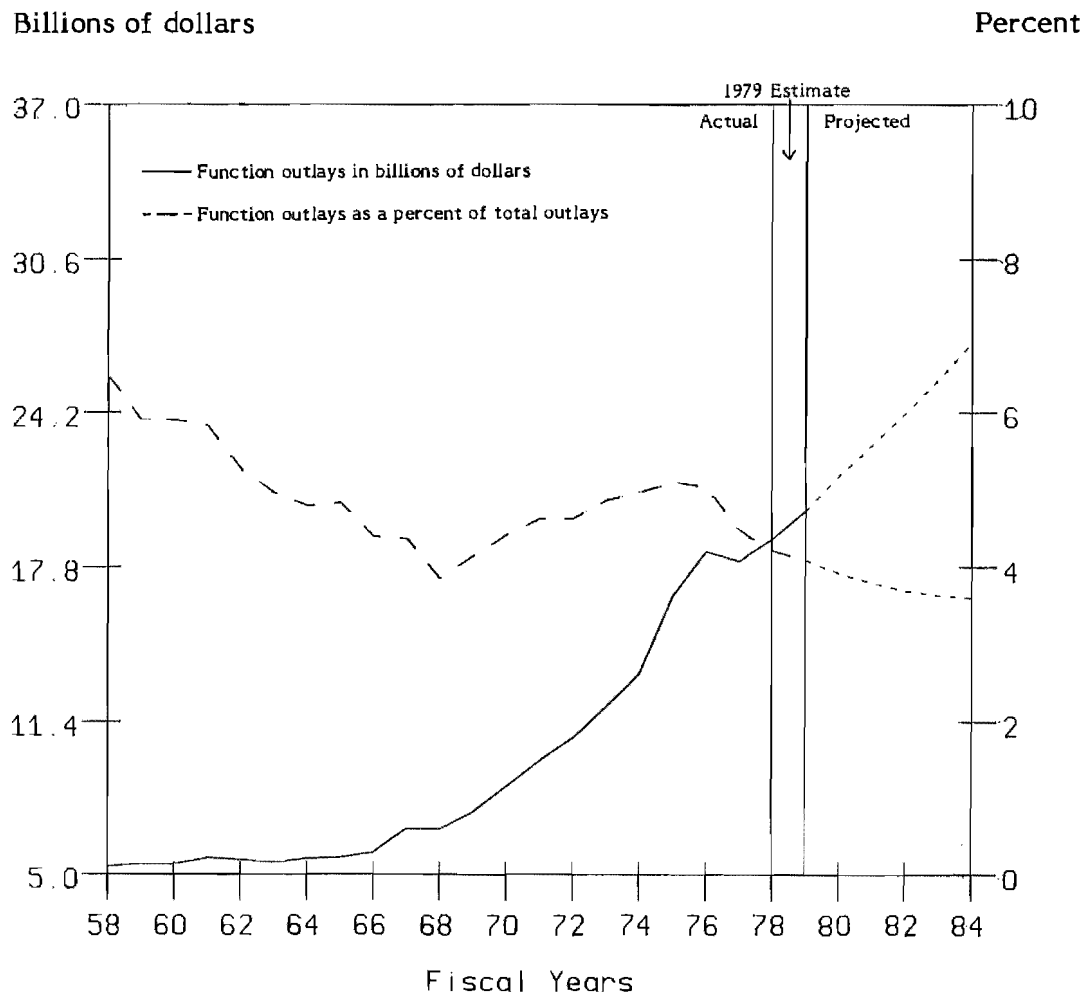
TABLE 40. VETERANS' BENEFITS AND SERVICES, a/ BY MAJOR PROGRAM: BY FISCAL YEAR, IN MILLIONS OF DOLLARS

		1979	Projections				
		Estimate	1980	1981	1982	1983	1984
Veterans' Compensation and Pensions	BA	10,567	11,672	12,638	13,687	14,744	15,887
	O	10,494	11,556	12,561	13,603	14,659	15,795
Other Income Security for Veterans	BA	537	553	561	566	569	571
	O	294	332	354	375	390	403
Veterans' Readjustment Benefits	BA	2,628	2,645	2,320	2,040	1,728	1,479
	O	2,842	2,624	2,294	2,013	1,741	1,497
Hospital and Medical Care	BA	6,015	6,287	6,799	7,333	7,920	8,534
	O	5,890	6,366	6,896	7,357	7,901	8,469
Veterans' Housing	BA	8	--	--	--	--	--
	O	-38	-7	4	16	29	40
Other Veterans' Benefits and Services	BA	649	688	741	796	858	923
	O	647	685	736	791	853	915
Offsetting Receipts	BA	-3	-3	-3	-3	-3	-4
	O	-3	-3	-3	-3	-3	-4
Total	BA	20,400	21,842	23,055	24,419	25,815	27,391
	O	20,126	21,552	22,842	24,152	25,569	27,117

a/ Function 700.

From 1968 to 1976, function 700 tended to grow as a share of the total budget, thus reversing the fiscal year 1958-1968 trend toward a declining share (see Figure 18). The two most noticeable deviations from the trend occurred between fiscal years 1967-1968 and between fiscal years 1975-1977. The fiscal year 1967 surge is the result of eligible veterans taking advantage of the newly passed GI bill, which was enacted on June 1, 1966, and provided education benefits for veterans who served between January 31, 1955, and June 1, 1966. Fiscal year 1968 outlays appear flat because the continued--albeit smaller--growth in subfunctions 702 (veterans' education, training, and rehabilitation), 703 (hospital and medical care for veterans), and 705 (other veterans' benefits and services) was offset by

FIGURE 18. FUNCTION 700 OUTLAYS: BY FISCAL YEAR



declines in subfunctions 701 (income security for veterans) and 704 (veterans' housing). The growth in fiscal year 1975 was the result of increases in all of these subfunctions; however, the most important factor was the educational benefit payment increase from \$220 per month to \$270 per month, which was made on December 3, 1974 (retroactive to September 1, 1974). This increase in benefits, and the high unemployment rates in fiscal years 1975-1976, encouraged many veterans to take advantage of the GI bill. The abrupt downturn of function 700 outlays in fiscal year 1977 occurred primarily because of the initial GI bill delimiting date, May 31, 1976, when the eligibility of 3.6 million veterans expired.

#### Veterans' pensions

The veterans' pension programs offer income supplements to needy war veterans who are either totally disabled from non-service-connected causes or over age 65. The Veterans' and Survivors' Pension Improvement Act of 1978 (Public Law 95-588), which took effect on January 1, 1979, established an entirely new pension program that will operate concurrently with the three existing types of pensions. In the absence of historical data, a discrete case simulation model was used to project the costs associated with the new program. The model operates on a 1 percent sample, randomly selected each March by the Veterans Administration, of cases currently receiving pension benefits. The number of cases expected to elect benefits under the new program is based on the income of the sample cases, updated for inflation by the appropriate index. It was assumed that one-third of those veterans who would benefit by switching to the new program would actually participate.

Caseload and average benefit estimates for the ongoing pension programs were derived by use of trend models. Projected real average benefits were adjusted by assumed changes in the consumer price index.

Although the bulk of the increase in pension outlays is the result of inflation (Public Law 95-588 indexed pension benefits), the rate of increase in pension beneficiaries rises steadily through the five-year period because of the influx of veterans from World War II. The veteran caseload is projected to increase from 1,077,000 in fiscal year 1980 to 1,295,000 in fiscal year 1984, while the level of survivor cases rises from 1,285,000 to 1,355,000 during the same period.

#### Veterans' compensation

This program pays compensation benefits to veterans who were disabled in military service or as a result thereof, and to the survivors and dependents of such veterans. Expenditures for the veterans' and survivors'



compensation program were derived from trend models for veteran and survivor caseloads, as well as for average benefit levels. The projection shows a slight increase in the veteran caseload, from a total 2,277,000 in fiscal year 1980 to 2,325,000 in fiscal year 1984; the survivor cases showed a slight decline, from 360,000 in fiscal year 1980 to 352,000 in fiscal year 1984. Although this program is not indexed for inflation under current law, annual legislated rate increases are assumed for the purpose of the current policy projection.

#### Other income security for veterans

This category includes veterans' insurance funds like the national service life insurance fund, and the U.S. government life insurance fund. Current policy projections for these funds are based on Administration estimates.

#### Veterans' readjustment benefits

This program covers training benefits to the dependents of veterans who are 100 percent disabled or the dependents of those who died from service connected causes, benefits for vocational rehabilitation, GI bill benefits for those in the service, and a new contributory GI bill program for veterans who enter military service after January 1, 1977. Veterans training under the current noncontributory GI bill, however, are by far the largest component of the estimate, in terms of both the number of trainees and the amount of expenditures. In fiscal year 1978 they accounted for 89 percent of outlays in this program.

Under existing law, readjustment benefit outlays are projected to decrease from \$3.4 billion in fiscal year 1978 to \$0.8 billion in fiscal year 1984. When benefit payments are adjusted to reflect inflation, total payments still decline, but only to \$2.0 billion in fiscal year 1984. This program has no automatic cost-of-living increases. For this reason, holding benefit levels constant to determine the projected expenditure path decoupled from inflation results in the same expenditure path as under the current law assumptions.

Outlays for veterans' readjustment benefits under the current GI Bill are the product of three factors: the number of veterans eligible for benefits (N), the percent of those eligible who choose to train (P), and the average yearly benefit (Y).

$$\text{Outlays} = N \times P \times Y$$

Veterans eligible for benefits. The estimated decline in outlays is primarily the result of a decrease in trainees, brought about because fewer

veterans are eligible to train under the GI bill. Table 41 shows the estimated number of eligible veterans (that is, those within the ten-year eligibility period following their discharge from the armed services) as of the end of each fiscal year, from 1978-1984.

TABLE 41. PROJECTED NUMBER OF VETERANS ELIGIBLE TO TRAIN UNDER THE GI BILL (TITLE 38, CHAPTER 34, U.S.C.) a/

September 30 of Fiscal Year	Number Eligible to Train (in millions)
1978	5.779
1979	5.140
1980	4.375
1981	3.642
1982	3.078
1983	2.704
1984	2.368

a/ Office of the Controller, Statistical Review and Analysis Division, Veterans' Administration.

Eligible veterans who train. Participation among those veterans eligible to train under the GI bill is determined by several factors. A CBO analysis using multiple regression logit techniques has shown that, when eligible veterans are grouped by year of separation, a larger percentage will choose to train the shorter the time that has elapsed between the year of separation and the year of training. In addition, more veterans will choose to train the higher the real benefit level and the higher the level of unemployment. 14/

14/ Further details on the CBO estimation procedures for veterans' readjustment benefits will be published in Congressional Budget Office, Determinants of the Number of Veterans Training under the GI Bill, Technical Analysis Paper, forthcoming.

The primary equation used to project the percentage of eligible veterans who choose to train is:

$$\begin{aligned} \log \frac{P_{ti}}{100-P_{ti}} = & -5.20092 + 1.50205 D_{1t} + 1.38390 D_{2t} \\ & + 1.16671 D_{3t} + 0.939649 D_{4t} + 0.730251 D_{5t} \\ & + 0.575459 D_{6t} + 0.463168 D_{7t} + 0.400167 D_{8t} \\ & + 0.277360 D_{9t} \\ & + 0.00541948 B_t + 0.00794818 B_{t-1} + 0.00353346 B_{t-2} \\ & + 0.0515503 U_t - 0.105172 D77 - 0.183237 D78 \\ & - 0.381267 DBAD - 0.0115197 D77 S_{it} \\ & - 0.0239691 D78 S_{it} \end{aligned}$$

$$\bar{R}^2 = 0.99$$

where

$P_{ti}$  = the percentage of veterans who train in year  $t$  out of those separated in year  $i$

$D_{1t}$  = a dummy variable that has a value of 1 when the number of years since separation = 1; 0 otherwise

$D_{2t}$  = a dummy variable that has a value of 1 when the number of years since separation = 2; 0 otherwise

and so forth, to

$D_{9t}$  = a dummy variable that has a value of 1 when the number of years since separation = 9; 0 otherwise

$B_t$	= average real benefit level in t
$B_{t-1}$	= average real benefit level in t-1
$B_{t-2}$	= average real benefit level in t-2
$U_t$	= unemployment rate in t
D77	= a dummy variable set equal to 1 in fiscal year 1977 and equal to 0 in prior years and fiscal year 1978
D78	= a dummy variable set equal to 1 in fiscal year 1978 and equal to 0 in prior years
DBAD	= bad data dummy set equal to 1 for the one observation representing fiscal year 1977 separatees training in fiscal year 1978; 0 otherwise
$S_{it}$	= number of years since discharge (t-i).

Table 42 shows the estimated number of veterans trained out of those eligible for training, the monthly rate of payment, and outlays for the readjustment benefits program. These estimates are given both with and without adjustments for inflation. (Times after discharge are, of course, invariant for the groups of eligibles, and unemployment rates used are from CBO assumptions).

Average yearly benefit. These projections are based on the monthly benefit level, the projected percentage of veterans with dependents, and the CPI. When there are increases in the monthly benefits, there will be an almost proportional increase in the average yearly benefit. In addition, there will be more trainees when adjustments are made for inflation than when they are not made. For the projections shown in Table 40 it was assumed that cost-of-living increases were granted annually. Historical practice, however, seems to be better approximated by assuming biannual cost-of-living adjustments. Table 42 shows outlay estimates under biannual adjustments. <sup>15/</sup> Outlays are higher when cost-of-living adjustments are made, both because of a relatively greater average yearly benefit and because of a comparatively larger number of trainees.

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<sup>15/</sup> The numbers in Table 42 also reflect some minor changes in the model subsequent to the January projections.

TABLE 42. PROJECTED NUMBER OF VETERANS WHO TRAIN AND MONTHLY BENEFIT PAYMENTS: BY FISCAL YEAR

	<u>With Inflationary Adjustments a/</u>			<u>Without Inflationary Adjustments</u>		
	Number of Trainees	Monthly Benefit Level (in dollars)	Outlays (in billions of dollars)	Number of Trainees	Monthly Benefit Level (in dollars)	Outlays (in billions of dollars)
1978 b/	1,407,000	311	3.4	1,407,000	311	3.4
1979	1,140,000	311	2.8	1,140,000	311	2.8
1980	1,018,000	365	2.9	897,000	311	2.2
1981	843,000	365	2.5	625,000	311	1.7
1982	710,000	418	2.4	434,000	311	1.2
1983	591,000	418	2.1	316,000	311	1.0
1984	509,000	472	2.0	232,000	311	0.8

a/ The usual Congressional practice has been to grant rate increases every two years.

b/ 1978 actuals.

#### Hospital and medical care for veterans

This category increases in both budget authority and outlays at an average annual rate slightly in excess of 7 percent. The major account in this category is veterans' medical care, which was projected using the simple inflation method. It was assumed that 77 percent of the outlays in this account is for the pay of federal employees, and that the remaining 23 percent is for purchases.

#### Veterans' housing

The two major accounts in this category are the direct loan revolving fund and the loan guarantee revolving fund. The first account makes direct loans to veterans, while the second guarantees loans made to veterans by private lenders. Projections were based on Administration estimates, and are the same in all three projections paths.

#### Other veterans' benefits and services

This category includes miscellaneous accounts providing benefits and services to veterans. The largest single account is for general operating expenses of the Veterans' Administration, which is projected to increase at an average annual rate slightly in excess of 7.5 percent. Budget authority for this account increases from \$654 million in 1980 to \$877 million in 1984 and outlays increase from \$651 million to \$872 million. In most cases projections are based on Administration estimates, and are the same in all three projections paths.

### Administration of Justice (Function 750)

The largest expenditures within this function are for law enforcement and prosecution activities and for grants to state and local governments. The function also includes correctional, rehabilitative, and judicial activities.

TABLE 43. ADMINISTRATION OF JUSTICE, a/ BY MAJOR PROGRAM: BY FISCAL YEAR, IN MILLIONS OF DOLLARS

		1979	Projections				
		Estimate	1980	1981	1982	1983	1984
Federal Law Enforcement Activities	BA	2,067	2,192	2,357	2,532	2,727	2,933
	O	2,027	2,182	2,338	2,508	2,700	2,904
Criminal Justice Assistance	BA	656	709	760	816	878	940
	O	722	725	736	754	810	870
Other Administration of Justice	BA	1,534	1,622	1,744	1,873	2,016	2,166
	O	1,505	1,631	1,743	1,874	2,009	2,137
Total	BA	4,257	4,524	4,861	5,221	5,621	6,039
	O	4,254	4,537	4,817	5,136	5,519	5,911

a/ Function 750.

As a share of the total budget, outlays in this function remained roughly level from 1958 through 1970, at which time they began to increase rapidly (see Figure 19). This shift was primarily caused by growth in spending for criminal justice assistance, which increased from \$65 million in 1970 to \$921 million in 1976--an average annual growth rate of almost 56 percent (Most of this increase occurred in expenditures for the Law Enforcement Assistance Administration--LEAA). Spending for function 750 increased at an overall rate of more than 23 percent annually between 1970 and 1976. Since then, outlays have increased by about 8 percent per year, with any decreases in spending for criminal justice assistance more than offset by substantial increases in other areas. Budget authority and outlays for this function are projected to increase at an average annual rate of about 7 percent between 1979 and 1984.

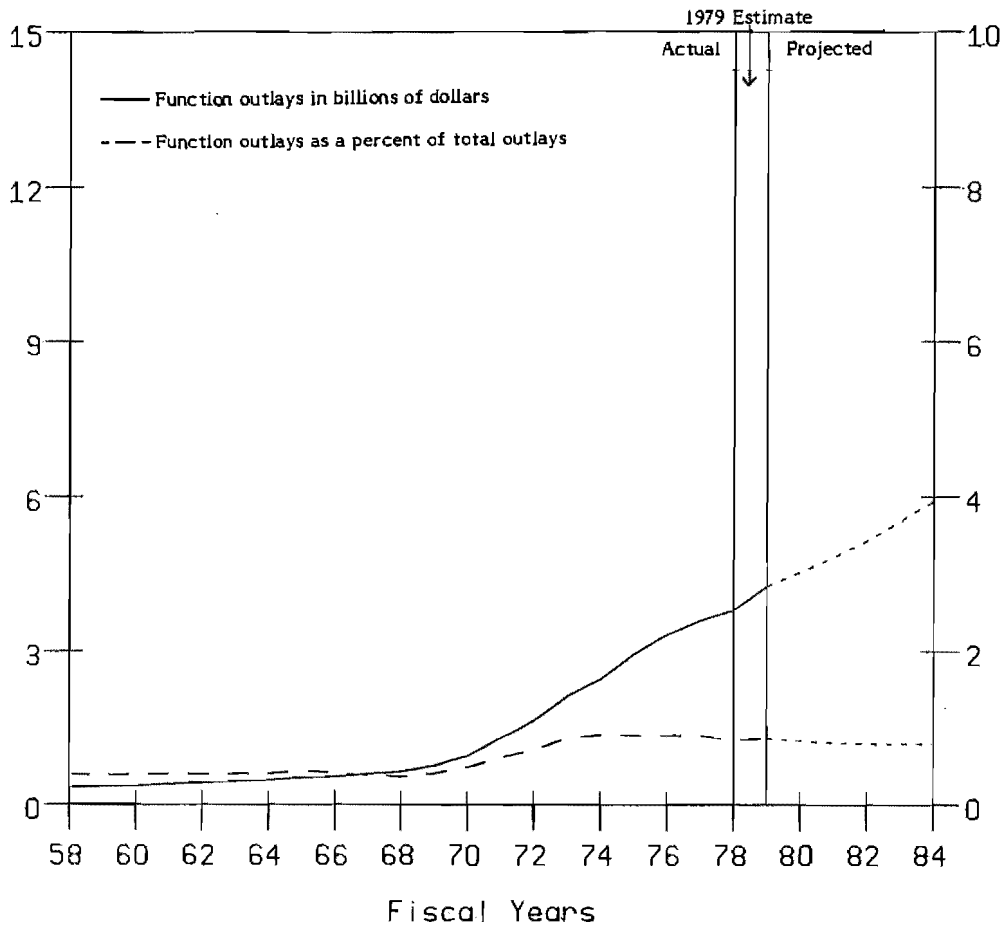
#### Federal law enforcement and prosecution

This category includes most of the federal enforcement agencies, such as the Federal Bureau of Investigation, the Immigration and Naturalization Service, the Customs Service, and the Secret Service. It also includes the Legal Services Corporation, which provides legal representation in noncriminal cases.

FIGURE 19. FUNCTION 750 OUTLAYS: BY FISCAL YEAR

Billions of dollars

Percent



In general, each of these agencies has a single salary and expense account that was projected by the simple inflation method. The major deflators used were those for federal pay and federal purchases of services.

#### Other administration of justice activities

All remaining accounts were estimated by the simple inflation method. The LEAA account was assumed to be routinely reauthorized and was projected using the deflator for purchases by state and local governments. Most other accounts were projected using the deflators for federal pay and federal purchases of goods and services. Funding was included to cover the costs of additional judgeships established by the Omnibus Judgeship Act of 1978.

## General Government (Function 800)

This function includes the activities of the Legislative Branch and the general overhead costs of the federal government, such as executive direction and management, central fiscal operations, general property and records management, and central personnel management.

TABLE 44. GENERAL GOVERNMENT, a/ BY MAJOR PROGRAM: BY FISCAL YEAR, IN MILLIONS OF DOLLARS

		1979	Projections				
		Estimate	1980	1981	1982	1983	1984
Legislative Functions	BA	952	997	1,070	1,145	1,230	1,323
	O	972	993	1,022	1,093	1,170	1,258
Other General Government Programs	BA	3,277	3,475	3,730	3,910	4,216	4,537
	O	3,178	3,440	3,709	3,998	4,332	4,729
Total	BA	4,229	4,471	4,801	5,055	5,446	5,860
	O	4,151	4,433	4,731	5,091	5,502	5,987

a/ Function 800.

The upward trend in outlays since 1972, as shown in Figure 20, is primarily caused by cost-of-living increases in the salaries and expenses accounts, which utilize approximately 90 percent of the outlays in the function. Budget authority is projected to increase at an average annual rate of about 7.5 percent from fiscal year 1979 to fiscal year 1984.

### Legislative functions

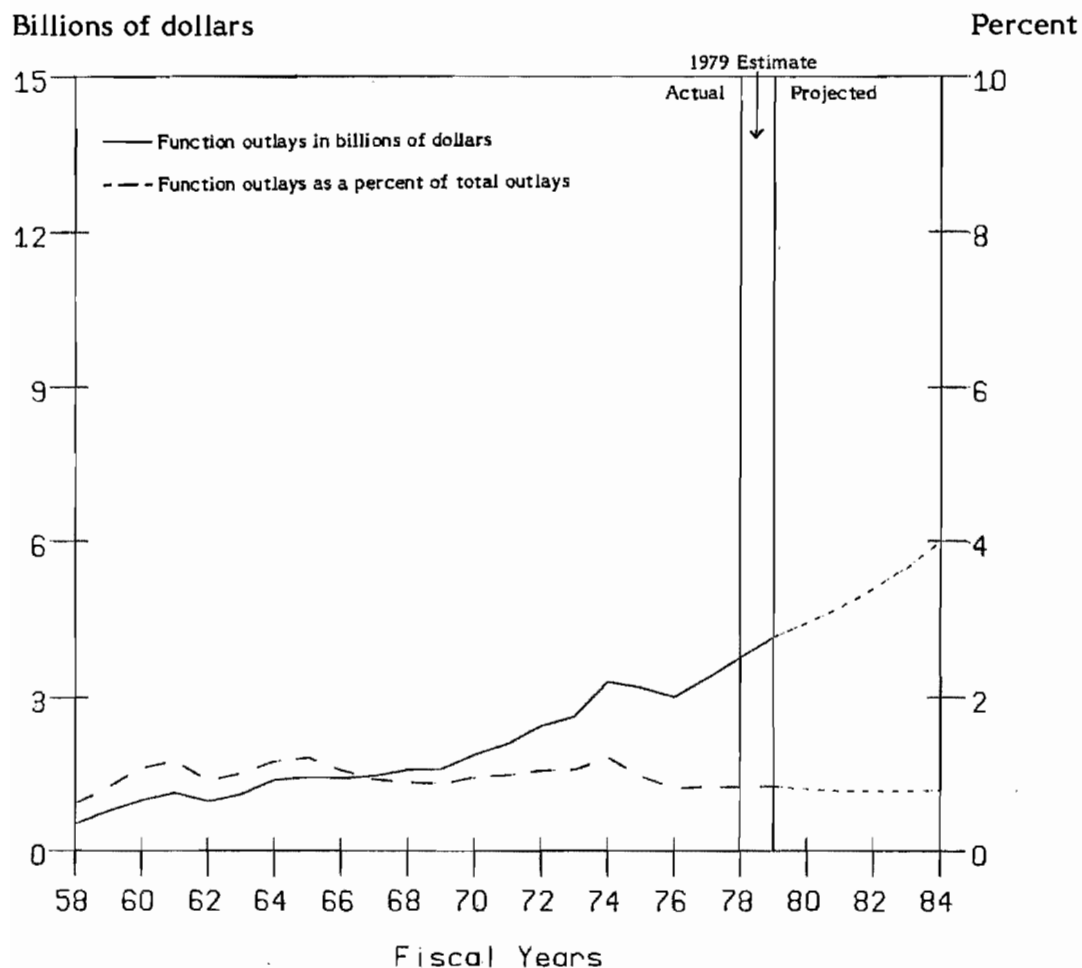
With the exception of the construction projects currently underway, most of the accounts were estimated using the simple inflation method. Projections for the construction accounts are based on information supplied by the Architect of the Capitol.

### Other general government activities

Other general government activities include programs in the Executive Office of the President, the Department of the Treasury, the General Services Administration, the Judiciary, and the Department of the Interior, as well as other independent agencies and commissions. The majority of the accounts were projected using the simple inflation method, with the inflators for federal pay and federal purchases of services, supplies, and



FIGURE 20. FUNCTION 800 OUTLAYS: BY FISCAL YEAR



materials. Small revolving funds were generally projected at zero. Larger funds, such as the Federal Buildings Fund, were independently projected assuming a steady rate of income into the fund and a constant amount of obligations (adjusted for inflation). Independent commissions were examined individually and projected to continue until their likely expiration dates; new temporary commissions were not assumed to take the place of old temporary commissions.

## General Purpose Fiscal Assistance (Function 850)

The payments in this function are directed toward state and local governments and U.S. territories. The function consists of the general revenue sharing program and general purpose fiscal assistance. General purpose fiscal assistance includes payments in lieu of taxes, antirecession financial assistance, broad-purpose shared revenues, and the federal payment to the District of Columbia. Contained in the function are 24 expenditure and 4 offsetting receipt accounts, 12 of which were individually projected and 16 of which were calculated using the simple inflation method.

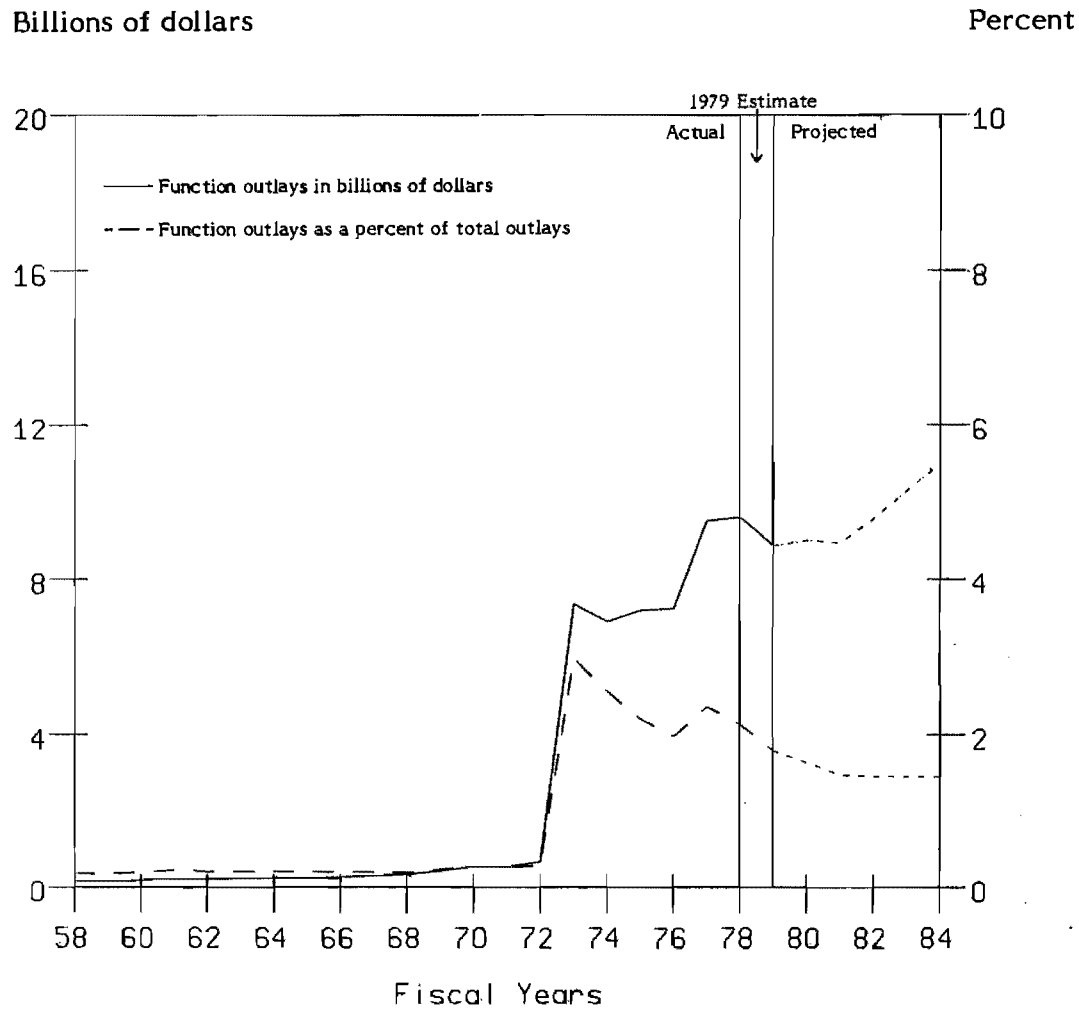
TABLE 45. GENERAL PURPOSE FISCAL ASSISTANCE, a/ BY MAJOR PROGRAM: BY FISCAL YEAR, IN MILLIONS OF DOLLARS

		1979 Estimate	Projections				
			1980	1981	1982	1983	1984
General Revenue Sharing	BA	6,855	6,855	7,335	7,876	8,480	9,069
	O	6,852	6,855	7,218	7,741	8,329	8,922
Office of Revenue Sharing	BA	7	7	7	8	9	9
	O	7	7	7	8	8	9
Antirecession Fiscal Assistance Fund	BA	550	550	--	--	--	--
	O	552	550	--	--	--	--
Other General Purpose Fiscal Assistance	BA	1,409	1,585	1,720	1,810	1,937	2,070
	O	1,438	1,576	1,693	1,810	1,933	2,062
Total	BA	8,821	8,997	9,062	9,695	10,425	11,149
	O	8,849	8,988	8,918	9,559	10,271	10,993

a/ Function 850.

The two most significant events depicted in Figure 21 are the introduction in fiscal year 1973 of general revenue sharing and the introduction in fiscal year 1977 of antirecession fiscal assistance (ARFA) to states and localities. Outlays in function 850 grew from \$673 million in fiscal year 1972 to more than \$7 billion in fiscal year 1973, when spending for general revenue sharing was introduced at a level of \$6.6 billion. General revenue sharing outlays fell \$530 million in fiscal year 1974--hence, the slight drop in total outlays. The primary factor behind the surge in fiscal year 1977 outlays was a \$1.7 billion increase due to ARFA.

FIGURE 21. FUNCTION 850 OUTLAYS: BY FISCAL YEAR



Over the projections period, outlays decline from fiscal year 1980 to fiscal year 1981 because of the assumed phaseout of antirecession financial assistance, and then increase at an annual rate of about 7 percent through fiscal year 1984. Most of this growth is attributable to discretionary inflation increases assumed for the renewal of the general revenue sharing program.

The general revenue sharing program was renewed in September 1976 at a level of \$6.855 billion for fiscal years 1978-1980. It has been assumed that the program will again be renewed after its expiration in fiscal year 1980. The current policy projection for fiscal years 1981-1984 is estimated by the simple inflation method, using the state and local government deflator, with fiscal year 1980 as the base year. For the current law and decoupled projections, the \$6.855 billion level was extended through fiscal year 1984.

The antirecession fiscal assistance fund expired on September 30, 1978, and new legislation proposed to replace the program failed to pass both houses during the 95th Congress. Based on the second budget resolution, it was assumed that \$550 million will be spent on some form of countercyclical fiscal assistance in fiscal years 1979 and 1980. An additional \$2 million is carried for the fund in fiscal year 1979, for adjustments necessary to correct certain payments made under the expired program.

The federal payment to the District of Columbia is also included in function 850. Two funds are contained in this account: the general fund, and the fund for the payment of water and sewer services. The account was projected by the simple inflation method, using the implicit price deflator for state and local government purchases of goods and services. The general fund has a \$300 million ceiling; in the current policy projection, this ceiling is reached in fiscal year 1982. The current law and decoupled projections were held constant at the fiscal year 1979 level.

Estimates for other general purpose fiscal assistance programs are approximately the same in both the current policy and the current law projections because almost all of the accounts have permanent authority. Some of these accounts involve the return to states or localities of certain receipts from the collection of rents, royalties, and other fees for private use of public land for activities such as mining, grazing, and timber cutting. (Fees collected by the federal government are reflected in the projection of offsetting receipts for function 300, natural resources and environment.) Other accounts return to Puerto Rico and the Virgin Islands customs duties and excise taxes that are collected there by the federal government.



### Interest (Function 900)

The interest function is the sum of two main components: interest on the public debt, and other interest, which is composed almost entirely of offsetting receipts.

TABLE 46. INTEREST, a/ BY MAJOR PROGRAM: BY FISCAL YEAR, IN MILLIONS OF DOLLARS

			Projections					
			1979 Estimate	1980	1981	1982	1983	1984
Interest on the Public Debt	BA	59,000	65,000	70,000	73,700	76,100	77,400	
	O	59,000	65,000	70,000	73,700	76,100	77,400	
Other Interest	BA	-6,525	-8,118	-9,255	-10,643	-11,799	-12,915	
	O	-6,524	-8,118	-9,255	-10,643	-11,799	-12,915	
Total	BA	52,475	56,882	60,745	63,057	64,301	64,485	
	O	52,476	56,882	60,745	63,057	64,301	64,485	

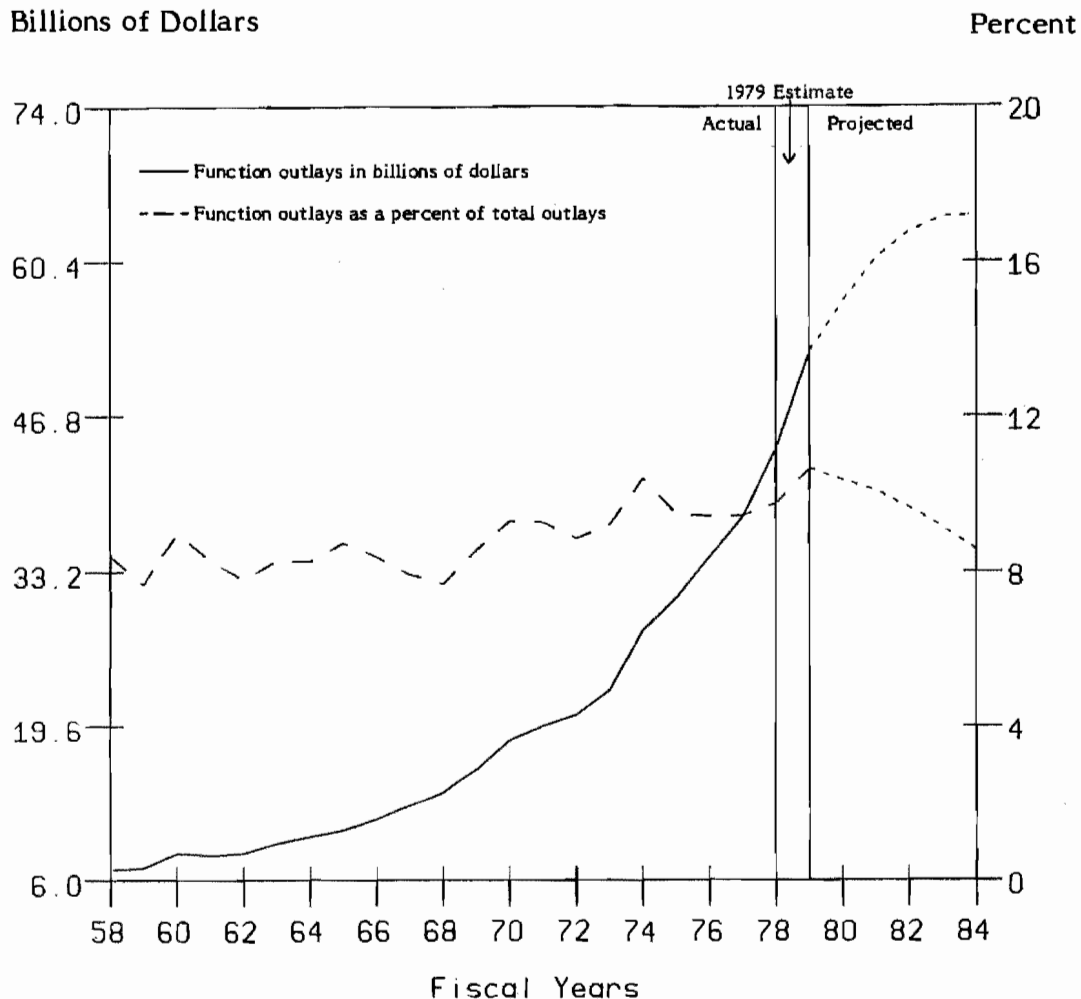
a/ Function 900.

As seen in Figure 22, outlays have grown steadily--at an average annual rate of approximately 9.5 percent per year. This primarily results from increases in the federal debt (which has grown about 4.5 to 5 percent annually) and rising interest rates on the debt outstanding. As a share of total spending, interest expenditures have remained fairly stable, increasing at an average rate of less than 0.01 percent per year between 1958 and 1978.

During the projections period budget authority and outlays for function 900 increase at an average annual rate of 4.2 percent, from \$52.5 billion in fiscal year 1979 to \$64.5 billion in fiscal year 1984. Interest on the public debt is projected to grow at an average annual rate of about 5.6 percent. Other interest is projected to grow (become more negative) at a rate of 14.6 percent per year. The decrease in the rate of growth of interest outlays toward the end of the five-year period results from the projected decrease in the budget deficit.

The interest on the public debt is calculated as the product of the total value of outstanding debt securities and an appropriate interest rate. The growth each year in the total debt is the sum of the unified and off-budget deficits and the combined trust fund surplus. The total debt is

FIGURE 22. FUNCTION 900 OUTLAYS: BY FISCAL YEARS



currently projected as growing by about \$74 billion in fiscal year 1979, and about \$285 billion by the end of fiscal year 1984. The debt is broken down into several categories of securities, with different effective interest rates applied to each. The interest rates are estimated on the basis of regression analysis as functions of the short- and long-term rates included in the projections economic assumptions. <sup>16/</sup>

<sup>16/</sup> For more detail on the estimating technique used here, see Congressional Budget Office, Estimating Outlays for the Interest on the Public Debt, Technical Analysis Paper, October 1977.

Estimates of interest on the public debt are sensitive to changes in assumptions of deficits and interest rates. If the total interest-bearing debt were \$5 billion higher in fiscal year 1980 than assumed for this projection, for example, and if the Treasury were to finance the debt by issuance of new securities, the interest estimate for fiscal year 1980 would grow by approximately \$370 million. An increase in the average interest rate on all debt securities in fiscal year 1980 by one-half of one percentage point would raise the interest cost in that year by approximately \$4.4 billion, with a corresponding increase in the unified budget deficit. On the other hand, a change in the interest rate on one type of security might have a marginal effect on interest costs, if it were assumed that the Treasury would seek alternative means of financing.

Other interest is primarily composed of offsetting receipts. The largest receipts are for interest repayments to Treasury from government agencies to which Treasury has made loans. Of these, repayments from off-budget agencies (primarily the Federal Financing Bank) increase at an average rate of approximately 18.7 percent per year, while repayments from on-budget agencies rise at approximately 6.2 percent per year.

Except for the interest repayment from the FFB, other interest is basically projected using the simple inflation method. The FFB repayment is calculated by first multiplying the assumed Treasury bill rate by an assumed amount of net lending in each year, and then adding these annual increments to the previous year's estimate of the interest repayment.

Because of certain financial transactions in the budget, the interest function total presents an unrealistically high picture of the total budget impact of federal borrowing. Much of the interest on the public debt is paid to trust funds on their investments, and is deducted from total outlays as an intragovernmental offsetting receipt in function 950. In addition, earnings of the Federal Reserve on certain debt securities are returned to the Treasury as miscellaneous receipts. The net budget impact of interest is shown in Table 47.

Since the current policy, current law, and decoupled projections are based upon the same interest rate assumptions, interest expenditures are basically the same for all three projections. The slight difference in the function totals between the current law and decoupled projections is caused by the simple inflation treatment of offsetting receipts, which holds the 1979 level constant in the decoupled projections.



TABLE 47. NET INTEREST IMPACT a/: BY FISCAL YEAR, IN BILLIONS OF DOLLARS

	1979	1980	1981	1982	1983	1984
Interest on the Public Debt	59.0	65.0	70.0	73.7	76.1	77.4
Other Interest	<u>-6.5</u>	<u>-8.1</u>	<u>-9.3</u>	<u>-10.6</u>	<u>-11.8</u>	<u>-12.9</u>
Interest Function	52.5	56.9	60.7	63.1	64.3	64.5
Interest Received by Trust Funds	-9.6	-10.9	-11.8	-12.8	-13.8	-14.7
Deposit of Earnings, Federal Reserve	<u>-7.2</u>	<u>-7.6</u>	<u>-8.1</u>	<u>-8.5</u>	<u>-9.0</u>	<u>-9.5</u>
Net Impact	35.7	38.4	40.8	41.8	41.5	40.3

a/ Outlays with further adjustments for inflation.

### Allowances (Function 920)

Allowances can include any item that it is not practical to classify under another existing budget function. Though the President's budget generally includes an allowance for contingencies, no such allowance is included in the CBO projections. The only allowances included in function 920 are the payraises for federal civilian employees whose wages and salaries are not paid from trust funds and revolving funds. The allowance for Defense Department payraises is carried within the national defense function. Payraises for civilian employees paid by trust funds and revolving funds are carried within the individual function containing the respective fund.

The budget authority for federal pay for employees paid by trust funds and revolving funds is carried as part of the basic budget authority of the fund account. The Congress imposes a limitation on administrative expenses (this includes payraises) for several of these funds, and this limitation is carried in a separate subaccount within the respective fund account. Because the limitation is included with the fund account, CBO has distributed into the appropriate fund account the increase in the limitation caused by federal payraises for employees of these funds. Table 48 lists the accounts with increases in limitations that are treated as described.

TABLE 48. ACCOUNTS WITH LIMITATIONS ON ADMINISTRATIVE EXPENSES

Account Number	Account Title
83-4027-03-155	Export-Import Bank
12-4085-03-351	Federal Crop Insurance Corporation
82-4035-03-371	Federal Home Loan Bank Board
82-4037-03-371	FSLIC
38-4060-03-403	Panama Canal Corporation
69-4089-03-403	St. Lawrence Seaway Development Company
20-8005-07-551	Hospital Insurance
20-8006-07-601	Old-Age and Survivors Insurance
60-8011-07-601	Railroad Retirement
24-8135-07-602	Civil Service Retirement

The function 920 projections contain only the value of the pay increase for the relevant fiscal year; previous years' payraises are distributed by function into the appropriate salary accounts. In the current policy and current law projections, payraises are estimated for each year during the 1980-1984 period. In the decoupled projections, it is assumed that there will be no payraises after 1979.

The projections of payraises assume neither absorption nor a "catchup" from the 1979 pay cap. If a "catchup" raise of 10.5 percent were assumed for the fiscal year 1980 payraise, budget authority and outlays would increase by \$560 million and \$550 million, respectively.

The projection involves two steps. First, the rates of pay increase for the five-year span are projected. Next, each year's annualized payroll base for government civilians (net of civilians working for DoD) is determined.

The Federal Pay Comparability Act of 1970 (Public Law 91-656) provides for an annual adjustment of general schedule federal pay on the basis of comparability with the private sector. The Bureau of Labor Statistics has designed a survey specifically for determining federal/private sector pay comparability--the National Survey of Professional, Administrative, Technical, and Clerical Pay (PATC Survey). <sup>17/</sup>

To project general schedule federal payraises, the real percent increase in the PATC survey was regressed on the real percent increase in the index of average hourly earnings (AHE) for the 1961 to 1978 period. The following equation resulted.

$$\% \Delta \text{PATC}_{\text{real}} = -0.49 + 1.04 \% \Delta \text{AHE}_{\text{real}}$$

The CBO economic assumptions include an index of average hourly earnings and the consumer price index. From these two series, the percent increase in the index of average hourly earnings in real terms is calculated and used with the preceding equation to determine the real percent increase in the PATC index. The nominal percent change in the PATC, which is calculated from the real percent increase and the percent increase in the CPI, is the projected federal payraise for general schedule employees.

Wage board (blue collar) payraises are determined on a regional basis by surveys conducted throughout the year in various wage board districts.

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<sup>17/</sup> For a more detailed discussion of federal pay, see Congressional Budget Office, The Federal Government's Pay Systems, Background Paper #19, February 1977.

To project wage board payraises, national annualized payraises for defense wage board employees for fiscal years 1971 to 1978 were obtained from the DoD Manpower/Wage Board Section. These data were derived by calculating the average cent's per year increase per grade, applying an average weight per grade, and weighting the average increases by the number of employees per grade per region. Wage board employees in DoD represent about 80 percent of the total rolls; these data are assumed to be representative of all wage board employees. The real percent increase in the wage board survey was regressed on the real percent increase in the index of average hourly earnings for the 1971 to 1978 period. The following equation resulted.

$$\% \Delta \text{WAGEBOARD}_{\text{real}} = 0.85 + 1.02 \% \Delta \text{AHE}_{\text{real}}$$

The projected federal payraise for wage board employees is calculated in the same manner as previously described for the general schedule increases. The projected payraises are shown in Table 49.

TABLE 49. PROJECTED FEDERAL PAYRAISES: BY FISCAL YEAR, IN PERCENTS

Fiscal Year	General Schedule October 1 Payraise	Wage Board October 1 Payraise
1980	7.6	9.0
1981	7.4	8.8
1982	7.9	9.3
1983	7.7	9.1
1984	7.0	8.4

For federal civilian employees, annualized fiscal year 1979 payroll bases of \$19.7 billion (general schedule) and \$1.9 billion (wage board) were used. <sup>18/</sup> These bases include basic and premium pay plus benefits. Payroll

<sup>18/</sup> The payroll bases are those implicit in the January fiscal year 1979 budget.

bases for each succeeding year are calculated by multiplying the fiscal year 1979 payroll base by (1 + pay increase) of each intervening year.

$$PB_t = PB_{1979} \prod_{i=1}^t (1 + PI_i)$$

where

$PB_t$  = the payroll base for year 1979 + t

$PI_i$  = the pay increase percentage for year 1979 + i

The payroll base for year t is used to calculate the pay increase for year t + 1. Except for minor adjustments, outlays for a given year are generated by multiplying the previous year's payroll base for general schedule and wage board employees by the pay increase in that year. The formula for outlays is:

$$O_{t+1} = PB_t \times PI_{t+1} \times A_{t+1}$$

where

$O_{t+1}$  = outlays in year 1979 + (t + 1)

$A_{t+1}$  = the adjustment factor for year 1979 + (t + 1)

The adjustment factor reflects the percentage of the fiscal year that the payraise is in effect.

For the general schedule, a payraise does not usually occur on the first day of the fiscal year (October 1) but rather on the first day of the first pay period after October 1. Since the payraise is not in effect 100 percent of the year, the payraise for each year is multiplied by adjustment factors to indicate the percentage of the year for which the payraise applies. For the wage board employees, increases occur throughout the year and are thus not in effect 100 percent of the year. The wage board adjustment factor for the phased-in increases is 0.6; the allowances outlays for wage board employees are 60 percent of the annualized cost of the payraise.

Budget authority projections are based on the general schedule and wage board covered payroll bases and payraises, less budget authority for the administration of social security and other trust funds. Trust fund payrolls are assumed to be 5 percent of the total civilian agency payroll.

## Undistributed Offsetting Receipts (Function 950)

This function is composed of intragovernmental and proprietary receipts that are not assigned to any other single function. Intragovernmental receipts are payments from one part of the government to another; proprietary receipts come from the public.

TABLE 50. UNDISTRIBUTED OFFSETTING RECEIPTS, a/ BY MAJOR PROGRAM: BY FISCAL YEAR, IN MILLIONS OF DOLLARS

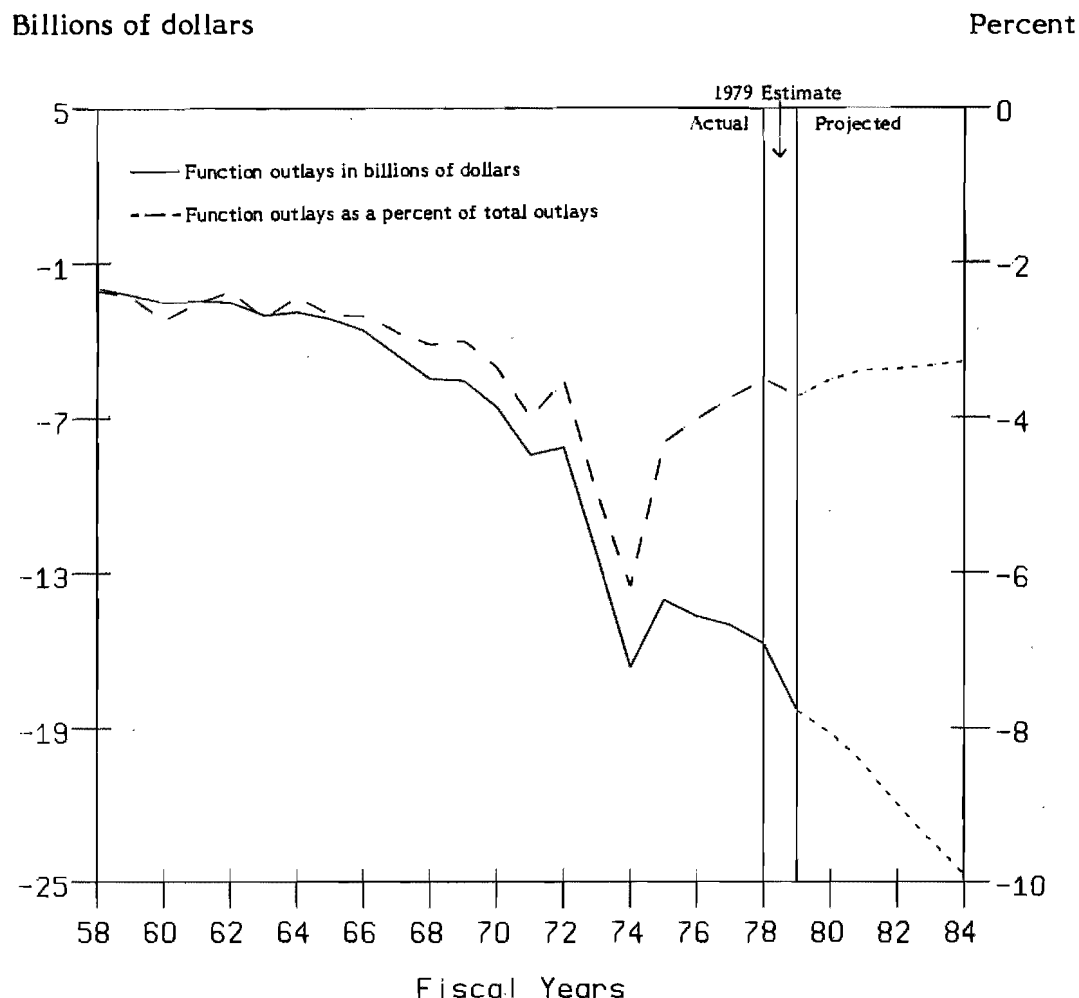
		1979	Projections				
		Estimate	1980	1981	1982	1983	1984
Employer Share of Employee Retirement	BA	-5,400	-5,600	-5,900	-6,500	-6,900	-7,300
	O	-5,400	-5,600	-5,900	-6,500	-6,900	-7,300
Interest Received by Trust Funds	BA	-9,600	-10,900	-11,800	-12,800	-13,800	-14,700
	O	-9,600	-10,900	-11,800	-12,800	-13,800	-14,700
OCS Receipts	BA	-3,350	-2,700	-2,700	-2,700	-2,700	-2,700
	O	-3,350	-2,700	-2,700	-2,700	-2,700	-2,700
Total	BA	-18,350	-19,200	-20,400	-22,000	-23,400	-24,700
	O	-18,350	-19,200	-20,400	-22,000	-23,400	-24,700

a/ Function 950.

The deviations in Figure 23 occur because of a proprietary receipt--rents and royalties on the outer continental shelf (OCS), which fluctuates because the number and size of lease sales held varies. Undistributed offsetting receipts are projected to increase at a rate of about 6 percent per year, from \$18.4 billion in fiscal year 1979 to \$24.7 billion in fiscal year 1984. The rising receipts reflect larger government contributions to employee retirement and greater interest receipts by trust funds on Treasury securities.

Employer share of employee retirement (subfunction 951) contains the government's contributions for general schedule, wage board, and postal service employees to the civil service retirement and disability trust fund, to the social security trust fund, and to other related programs. Most government employees are covered under the civil service plan, and the government's stipend constitutes well over half of the dollar amount of these intragovernmental receipts.

FIGURE 23. FUNCTION 950 OUTLAYS: BY FISCAL YEAR



The projections assume a constant number of federal employees. As a result of payraises, the contributions grow each year. The increase in the employer contribution to the civil service trust fund is proportional to the increase in the pay base, as discussed earlier regarding the civil service retirement and disability trust fund (subfunction 602). All other contributions are assumed to increase at the same rate as the employer contribution to civil service retirement. Since the decoupled projections include no payraises after fiscal year 1979, the contributions are held constant in this path.

Interest is paid to trust funds on their investments in U.S. debt securities (see interest on the public debt, function 900). Interest received

by trust funds is recorded as an intragovernmental receipt in subfunction 952. Total trust fund investments grow each year by the amount of the combined trust fund surpluses, and the interest received is estimated by applying an appropriate interest rate to the value of outstanding securities. The average annual rate of change in these receipts is 8.9 percent. For projections purposes, payments are assumed to be the same in all three paths.

Proprietary receipts in subfunction 953 stem from the sale of leases of outer continental shelf lands and the royalties from mineral production on the OCS. These receipts are volatile, and estimates for 1980 through 1984 depend on the scheduling of sales, the attitude of businesses bidding on leases, and the effect of recent legislation. Two major pieces of legislation enacted in the 95th Congress affect OCS receipts--the Natural Gas Policy Act of 1978 and the Outer Continental Shelf Land Act Amendments of 1978. The first will change the price of gas drilled on the OCS, and therefore will increase receipts. The second establishes regulations on bonus bidding, which will decrease receipts, and requires that a new schedule for sales be produced. Since a new schedule is expected, the fiscal year 1980 projections were straightlined through 1984. An estimate of receipts from anticipated sales in fiscal year 1980 are shown in Table 51. <sup>19/</sup> OCS receipts are assumed to be the same in the current policy, current law and decoupled projections.

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<sup>19/</sup> For more detail on the derivation of projections estimates, see Congressional Budget Office, Revenues from the Outer Continental Shelf, Five-Year Projections, an Internal Working Paper, October 1976.



TABLE 51. ESTIMATED FISCAL YEAR 1980 OCS RECEIPTS: IN  
BILLIONS OF DOLLARS

Sale Number	Sale Name	Receipt
48	Southern California	0.4
58A	Gulf of Mexico	0.3
--	Beaufort Sea	--
55	Gulf of Alaska	0.2
62	Gulf of Mexico	0.3
	Rents and Royalties	1.5
	Total	2.7



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## CHAPTER IV. PROJECTIONS OF CURRENT POLICY RECEIPTS

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The five-year revenue projections of the Congressional Budget Office are prepared annually from CBO economic assumptions. The current five-year projections are shown in Table 52.

TABLE 52. CURRENT POLICY PROJECTIONS OF REVENUES BY SOURCE:  
BY FISCAL YEAR, IN BILLIONS OF DOLLARS

	1979 Estimate	Projections				
		1980	1981	1982	1983	1984
Individual Income Taxes	202.7	226.3	264	310	361	415
Corporate Income Taxes	67.7	73.0	80	89	100	112
Social Insurance Taxes	142.7	161.1	187	215	238	268
Excise Taxes	18.8	18.8	19	19	19	20
Estate and Gift Taxes	5.8	6.3	7	8	8	9
Customs Duties	7.5	8.6	10	11	12	14
Miscellaneous Revenues	8.1	8.2	9	9	10	10
Total	453.3	502.3	574	661	749	849
Percent of Projected GNP	19.7	19.9	20.4	21.0	21.4	21.8

### INDIVIDUAL INCOME TAXES

Individual income tax receipts are estimated to be \$202.7 billion in fiscal year 1979, or about 44.7 percent of total federal tax revenues. They are projected to more than double by fiscal year 1984, and would comprise about 49 percent of all receipts.

The government collects taxes on individual income in three ways:

- o Withholding of tax at the source;
- o Declaration tax payments (from self-employed individuals and those who receive income from sources not subject to withholding); and
- o Final tax payments.

Wage and salary income is subject to withholding by employers. These amounts, periodically remitted to the U. S. Treasury, are determined by referring to tables prepared by the Internal Revenue Service; the amount withheld is based on income level and family size.

Declarations are payments on estimated tax liability and are remitted on a quarterly basis to the Treasury. Individuals who receive pensions, annuities, interest, dividends, rent, capital gains, or other income from which federal income tax is not withheld must make these payments. Declarations for the calendar year are usually a fixed percentage of estimated final tax liability.

Final tax payments for the preceding calendar year are filed with the Treasury on or before April 15 of each year. This entails computing one's final tax liability and reconciling it with the amounts withheld or paid as declarations to determine whether there is any under- or overpayment of taxes. Some taxpayers need additional time to prepare their returns, so a very small proportion of these final payments are received after April 15 each year. Any overpayment of liability is refunded to the taxpayer after the income tax return is filed.

The individual income tax estimates were derived by projecting liability under 1976 law, allocating that liability to the various collections components according to their own timing patterns, and subtracting out the effect of tax law changes since 1976.

Calendar year liability (LIAB) is projected using an assumed elasticity with respect to taxable personal income (TPY) of 1.45. The elasticity is assumed to be slightly greater for times of high inflation.

$$\frac{LIAB_{t+1} - LIAB_t}{LIAB_t} = 1.45 * \frac{TPY_{t+1} - TPY_t}{TPY_t}$$

Taxable personal income is equal to the sum of wages and salaries, proprietors' income, rental income, dividends, and interest income. Liability is increased by 2 percent to account for reaudits and back-year tax payments.

Withholding is forecast on a quarterly basis, with a slight adjustment for seasonal factors in the fourth quarters, according to the relationship:

$$\frac{\text{withholding}}{\text{employment}} = 0.0016 \times \frac{\text{wages and salaries}}{\text{employment}} \cdot 1.58$$

Refunds are estimated at 22.5 percent of calendar year withholding, and are paid in the following calendar year according to a quarterly percentage spread of 42.0, 52.5, 4.0, and 1.5 percent for the first through the fourth calendar quarters, respectively.

Declaration payments account for 52 percent of nonwithheld liability (net of refunds) collected; the remaining 48 percent is collected through final payments. An estimated 66 percent of calendar year declarations are paid in the same fiscal year, and the rest are paid during the subsequent fiscal year. Calendar year final payments are allocated to the subsequent fiscal year and to the fiscal year two years following by a 93:7 percent split.

The effect of the 1977 and 1978 tax law changes is deducted from estimated collections under 1976 law.

## CORPORATE INCOME TAXES

Federal corporation tax receipts are estimated to be \$67.7 billion for fiscal year 1979, or 14.9 percent of total federal tax receipts. This percentage is projected to decline to 13.2 percent by fiscal year 1984 as other revenue sources grow more rapidly and corporate tax rates enacted in 1978 reduce revenue.

Corporation income tax receipts are estimated by a two-step approach. First, corporate tax liability is forecast by calendar year; then calendar year liabilities are translated into fiscal year receipts.

### Calendar Year Liability

Corporate liabilities for calendar years are estimated as a function of adjusted pre-tax corporate profits forecast for future years. The National Income Account version of corporate profits used as input components such as state and local taxes, (which are deductible from taxable income) Federal Reserve Board profits not subject to normal taxation, and foreign source earnings. The normal corporate liability is reduced by various credits, including the investment tax credit. Therefore, no simple relationship appears between corporate profits and the corporate profits tax until several adjustments are made.

Corporate profits taxes are estimated on the basis of gross liabilities (before credits) as a function of corporate profits before tax, less Federal Reserve Board profits and state and local taxes.

$$\text{Gross Liability} = 0.41 (\text{Profits Before Tax} - \text{FRB} \\ - \text{State and Local Taxes})$$

A second step involves separate estimation of investment tax credits (ITC), which are then subtracted from estimated gross liabilities. The investment credits are calculated as a percentage of producers' durable equipment as forecast for the projections period.

$$\text{Net Liability} = \text{Gross Liability} - \text{ITC}$$

This procedure projects calendar year liabilities on a preaudit basis. Liabilities must still be adjusted upward approximately 10 percent to account for audit changes, and are then translated into fiscal year receipts by a set of timing adjustments.

#### Fiscal Year Receipts

The conversion of liability to collections for normal economic times recognizes that collections normally lag behind the accrual of liabilities. Corporate taxes are received as installment payments of estimated taxes and as final payments. Estimated liabilities are allocated to fiscal year receipts. As an approximate rule of thumb, calendar year liabilities have been paid as follows:

- o 44 percent in the current fiscal year;
- o 53 percent in the first following fiscal year; and
- o 3 percent in the second following fiscal year.

The changing economic environment can alter the payment patterns. In times of a recession, businesses tend to be conservative in estimating profits, and the collections lag structure has to be adjusted to reflect a lag in receipts of more than the usual amounts. Finally, refunds from overpayment of estimated taxes and carryback are estimated and deducted.

Corporate collections were originally projected based on 1976 law, and tax rates were reduced by the estimated annual impact of subsequent law changes for each year through 1984.

## SOCIAL INSURANCE TAXES AND CONTRIBUTIONS

Social insurance taxes and contributions are estimated to be \$142.7 billion in fiscal year 1979, more than 30 percent of total tax revenues. In the absence of law changes, the share of total receipts collected as social insurance is projected to continue at slightly above 30 percent through fiscal year 1984.

Old Age and Survivors', Disability, and Health Insurance (OASDHI) revenues comprise about 83 percent of all social insurance taxes and contributions in 1979, and are estimated within a single model. The other items in this receipts category are unemployment insurance, supplementary medical insurance premiums, civil service retirement contributions, and railroad retirement contributions.

### Social Security

Social security taxes consist of employer and employee taxes on wages and salaries under the Federal Insurance Contributions Act (FICA), and contributions by the self-employed under the Self-Employed Contributions Act (SECA). In calendar year 1978, FICA taxes amounted to 12.1 percent of wages and salaries that are below the taxable earnings maximum (\$17,700) and that are earned in employment covered by the social security program; SECA taxes amounted to 8.1 percent of covered proprietors' income that is below the same taxable maximum. Both FICA and SECA tax receipts are deposited, according to a formula, into three separate trust funds--one each for old age and survivors' insurance, disability insurance, and health insurance. The 1979 estimate for total OASDHI is \$118.8 billion, and is projected to be \$241.2 billion by 1984.

The CBO social security estimates are based on a model built by the Social Security Administration (SSA). It is basically the same model that is used for the SSA Trustees' or the Administration's estimates, but the economic assumptions may differ.

Estimates of OASDHI revenues are based on economic assumptions regarding wages and salaries (broken down by private, military, and government civilian), proprietors' income, the unemployment rate, the consumer price index, the gross national product, and the labor force. In addition, there are demographic assumptions built into the estimating procedure.

The model involves two steps. In the first, taxable covered wages and salaries and proprietors' income are determined. In the second,

appropriate FICA and SECA tax rates are applied to the amounts determined in the first step.

The taxable wage bases are estimated as a function of the total amount of covered wages and salaries, the total amount of covered proprietors' income, and the taxable earnings maximum. The key to measuring these taxable wage bases is correctly estimating the relationship between the distribution of covered wages and covered proprietors' income, and the taxable earnings ceiling. The method of determining the taxable wage bases is the same for wages and for self-employed income.

To determine total OASDHI tax revenues, payroll tax rates for FICA and SECA are applied to the taxable wage bases. For this calculation, tax rates for wages and salaries and proprietors' income are broken down by OASI, DI, and HI. Under existing laws, the total tax rate for OASDHI would increase from 12.1 percent to 12.26 percent in calendar year 1979, and to 13.3 percent in 1981. These changes are incorporated into the estimates that appear in the five-year projection report.

#### Unemployment Insurance

Unemployment insurance revenues are estimated to be \$15.7 billion in fiscal year 1979, and are projected to decrease to \$14.9 billion by fiscal year 1984. This projected decrease is caused by the expected decline in the state tax rate by 1984.

The basic unemployment compensation system is financed by two payroll taxes collected from employers; both the federal and the state governments levy a tax on each employer's taxable payroll. The payroll subject to federal tax is defined as total wages up to \$6,000 for 1978 and later years. The state taxable wage base varies between states. For the purposes of projection, the state wage base is set in calendar year 1979 at \$6,264 (a weighted average of state tax bases in that year) and grows by \$10 each year.

The federal tax rate under the Federal Unemployment Tax Act (FUTA) is 0.7 percent. FUTA taxes are a small portion of total unemployment insurance revenues; most UI revenues are derived from state taxes. All state programs (except Puerto Rico) use an experience rating system, under which an employer's tax rate varies on the basis of his employment (unemployment) experience. By imposing higher tax rates, this system penalizes employers whose workers experience high levels of unemployment. Each state sets a minimum tax rate--which may be as small as zero--and a maximum tax rate.



To estimate unemployment revenues, one uses the federal FUTA tax rate and estimated state tax rates. The average state tax rate is a function of UI outlays by states and their year-to-year UI trust fund balances. Total taxable wage is inferred from wages and salaries, employment, and state and federal taxable wage bases. The federal and average state tax rates are then applied to total taxable wages to determine UI revenues.

An additional small contribution to the UI trust fund is the receipts from the tax on railroad employees' wages. These receipts are deposited by the Railroad Retirement Board to finance the administrative expenses and the benefit payments under the railroad employee UI program.

### Supplementary Medical Insurance

SMI provides coverage for medical services--designated as Part B of medicare--for participating individuals. The SMI program is operated out of a separate trust fund. SMI trust fund receipts include monthly premium payments by participants, and are estimated to be \$2.6 billion in fiscal year 1979. These receipts, plus general revenue appropriations, <sup>1/</sup> finance the SMI program.

SMI participation is voluntary, but is available to all individuals aged 65 or older who are eligible for OASI benefits, and to all individuals under age 65 who have received disability or railroad retirement benefits for at least 24 months, or who are receiving treatment for chronic renal disease. Monthly premium rates are now \$8.20 and are paid by all participants. (This rate is applicable for the period July 1, 1978 to June 30, 1979.) The premium will increase in future years by the same percentage as will social security benefits. Since the annual premium rate is determined on a July-June basis, a weighted premium rate is applied to the number of participants to estimate receipts for any given fiscal year.

### Civil Service and Railroad Retirement Contributions

The civil service retirement system, which provides retirement and disability benefits for federal civil service employees and a portion of D.C. civil service employees, is operated out of a separate trust fund. Total contributions from employees are estimated to be \$3.5 billion in fiscal year

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<sup>1/</sup> These appropriations are intragovernmental transfers, and are excluded from unified budget receipts.

1979. Trust fund income equals 7 percent of employees' wages, plus a matching amount from employing agencies. Agency contributions, however, are intragovernmental transfers, and are not counted as income in the unified budget; unified budget receipts, therefore, are simply equal to 7 percent of payroll covered by the civil service retirement system. It is assumed that 92 percent of nonpostal employee payrolls and about 83 percent of postal employee payrolls are covered. In estimating civil service retirement contributions, it is assumed that there is no change in the size of the nonpostal civilian work force, but the estimates do incorporate projected scheduled federal pay increases.

The Railroad Retirement Act provides retirement benefits to railroad employees who have worked at least 10 years, plus insurance for survivors and disabled workers. Contributions for the railroad retirement trust fund amount to 21.2 percent of covered wages, split evenly (10.6 percent each) between employees and employers. These contributions are estimated to be \$2.1 billion in fiscal year 1979.

#### OTHER TAXES AND RECEIPTS

Estimates of excise, estate and gift, customs, and miscellaneous receipts are developed from a review of collections data for recent time periods and estimated rates on the levels of relevant forecast variables.

Excise taxes on gasoline, alcohol, and tobacco are estimated separately; the remainder was estimated from forecast levels of real and nominal GNP. Customs duties are estimated as an increasing function of nominal GNP. For recent years, customs duties have been about 0.3 percent of GNP and rising. Miscellaneous receipts are primarily Federal Reserve Board profits turned over to the Treasury. These amounts are forecast as a function of short- and long-term interest rates and the level of nominal GNP.

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## CHAPTER V. CLOSING THE FISCAL POLICY LOOP

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Because of the progressive nature of the individual income tax, current policy receipts grow much faster than current policy outlays. As discussed in Chapter I, this rapid rise of receipts as compared to outlays would have a restrictive effect on the economy, preventing it from achieving the growth rate assumptions discussed in Chapter II. The five-year projections report contains estimates of the tax cuts or spending increases that would, in all likelihood, be required if the economy were to grow at the assumed rates. The purpose of this chapter is to present further details on those estimates.

### METHODOLOGY

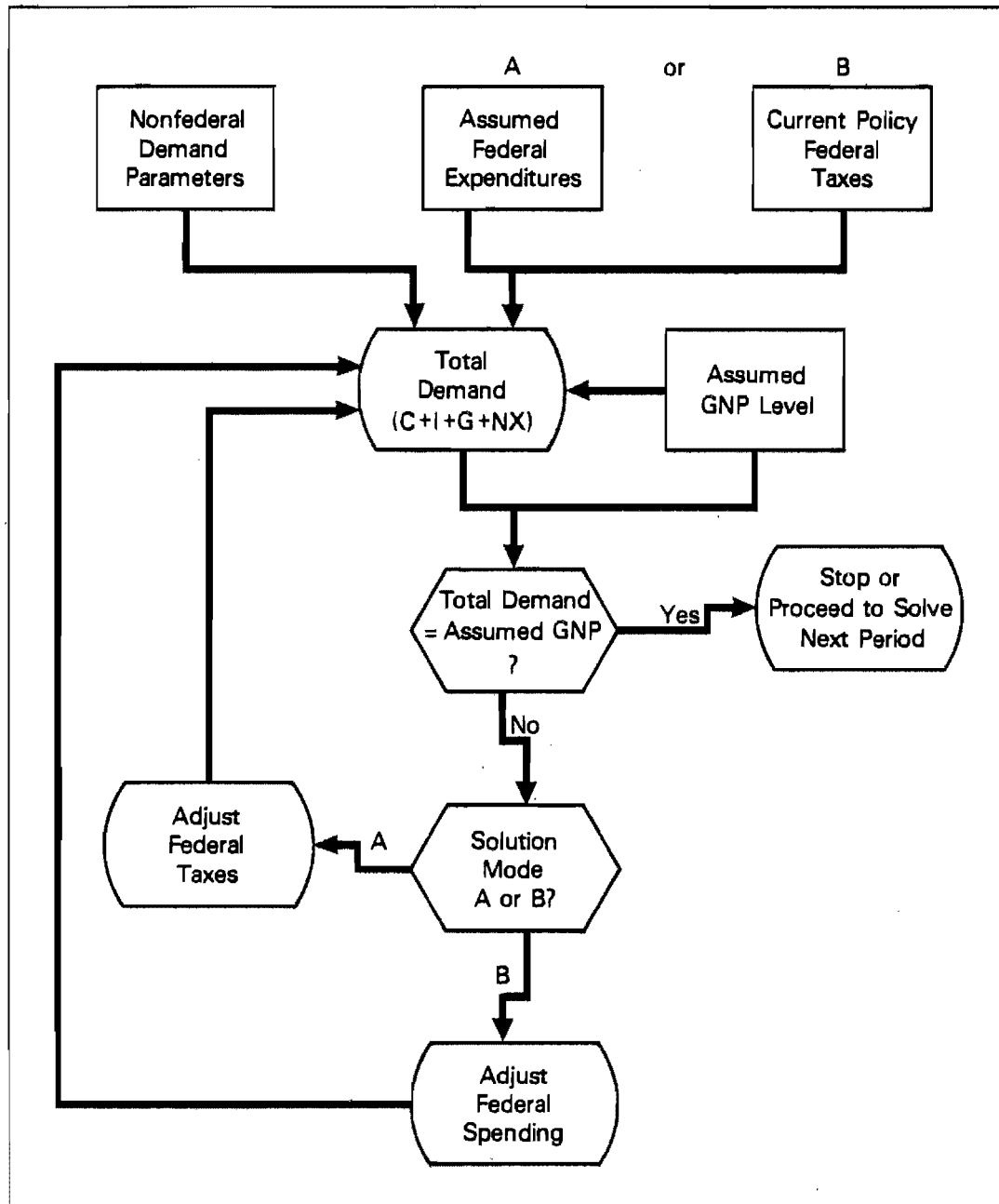
The Congressional Budget Office model for estimating changes in fiscal policy is discussed extensively in a CBO technical analysis paper. <sup>1/</sup> Briefly, the methodology involves making assumptions about the strength of demand in the nonfederal sectors of the economy--namely, consumption, investment, state and local purchases, and net exports--and then calculating the tax cuts and spending increases needed to reach the assumed growth rates for the economy. Consumer spending, private investment, state and local spending, and net exports are, of course, influenced by fiscal policy, but they are also affected by the strength of consumer and investor confidence, technological development, inflationary expectations, and such unpredictable events as crop failures and oil embargoes. Monetary policy also plays an important role in influencing the strength of nonfederal demand, especially investment. Similarly, net exports depend heavily on the strength of foreign demand, inflation abroad, and other international developments. Judgments concerning each of these factors are implicit within the assumed autonomous strength of the various nonfederal demand components.

Figure 24, taken from the 1977 technical analysis paper, shows the model flow. Nonfederal demand parameters, assumed expenditures and taxes, and an assumed gross national product level are the basic inputs. If total demand equals the GNP level, a solution has been achieved. If total demand does not equal the assumed GNP level, the model adjusts the tax

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<sup>1/</sup> Congressional Budget Office, Closing the Fiscal Policy Loop: A Long-Run Analysis, Technical Analysis Paper (December 1977).

FIGURE 24.  
MODEL FLOW CHART



receipts or expenditures. The tax cuts and expenditure increases equal the difference between current policy and the amounts needed to match total demand to the assumed GNP level.

#### ASSUMPTIONS AND RELATIONSHIPS AMONG VARIABLES

As discussed in the five-year projections report, assumptions about the strength of nonfederal demand are crucial to an analysis of the stimulus needed to offset the economic restraint exerted by current policy budgets. Strong autonomous nonfederal demand contributes directly to rapid economic growth. Growth in nonfederal demand also has a direct impact on the deficit. Since growth in nonfederal demand will raise budget revenues and diminish outlays, it will reduce the budget deficit. Weakness of nonfederal demand hinders progress toward both goals. (For any given nonfederal demand environment, however, rapid economic growth and budget balance are conflicting, not complimentary goals.) For each of its components, the strength of nonfederal demand is characterized differently. The strength for consumption is characterized by the marginal propensity to consume disposable income. Investment strength is specified in terms of a real rate of growth relative to real growth of GNP. For state and local government purchases, the strength is expressed as the rate of growth of non-grant-induced state and local purchases. Strength for net exports is specified by the level expressed in current dollar terms. The assumed values for these variables are given in Table 53.

TABLE 53. NONFEDERAL DEMAND ASSUMPTIONS IN THE MODERATE AND OPTIMISTIC SCENARIOS: FIVE-YEAR AVERAGES

	Moderate	Optimistic
Marginal Propensity to Consume (percent)	69.0	69.7
Growth Rate of Real Investment Minus Growth Rate of Real GNP (percent)	1.9	2.9
Real Growth Rate of State and Local Expenditures Not Induced by Federal Grants (percent)	2.7	3.5
Net Exports (in billions of dollars)	2.6	7.7

The model enforces the full set of relationships required for consistency among different variables. For example, personal disposable income equals the difference between personal income and personal taxes (including contributions for social insurance, income taxes, estate and gift taxes, and state and local personal taxes). Some variables, such as estate and gift taxes, are inputs. Others (for instance, state and local personal taxes) are determined by the model using equations that are given in the technical analysis paper.

#### TAX CUTS OR SPENDING INCREASES

The spending increases in the five-year projections report were spread among purchases, transfers and grants-in-aid in the same ratio as these variables bear to one another in the current policy projections. This had the effect of making the fiscal policy multiplier for expenditure increases approximately equal to the multiplier for tax cuts. As discussed in the projections report, the requirement for fiscal stimulus might be more or less than depicted, depending on which items of the budget are altered to meet the needs of fiscal policy. Purchases of goods and services have more impact per budget dollar than broad-based tax changes or changes in transfer programs. Public employment programs tend to have a greater effect on the unemployment rate than other instruments of fiscal policy. Specially designed tax changes, such as an investment tax credit, can have powerful effects on output and jobs after a lag of one or two years. The CBO model can be used to arrive at rough estimates of the effects of such specially designed fiscal policy initiatives.

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## APPENDIXES

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## APPENDIX A.      DETAIL ON THE ECONOMIC ASSUMPTIONS

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This appendix contains the detail supporting the economic assumptions discussed in Chapter II. Table A-1 contains aggregate assumptions by fiscal year and calendar year. In addition, the values for the consumer price index and the unemployment rate, by calendar year quarter, are shown in Table A-2. Finally Table A-3 lists the values for various specialized price indexes, by fiscal year.

TABLE A-1. AGGREGATE ASSUMPTIONS: BY FISCAL AND CALENDAR YEAR

	1978		1979	
	Fiscal	Calendar	Fiscal	Calendar
Real GNP (Billions of 72¢)	1,370.7	1,385.1	1,424.4	1,428.1
%CH	4.2	3.9	3.9	3.1
Nominal GNP (Billions of \$)	2,043.4	2,106.6	2,300.2	2,351.6
%CH	11.4	11.6	12.6	11.6
GNP Deflator (1972 = 1.0)	1.4904	1.5204	1.6146	1.6465
%CH	6.8	7.4	8.3	8.3
Unemployment Rate	6.20	6.00	5.98	6.19
Civ. Labor Force	99,678	100,403	102,347	102,923
Employment	93,497	94,384	96,227	96,549
Consumer Price Index	1.913	1.954	2.076	2.117
%CH	7.1	7.6	8.5	8.4
Wholesale Price Index	2.045	2.092	2.224	2.264
%CH	6.8	7.7	8.8	8.2
WPI-Farm	2.037	2.128	2.310	2.360
%CH	5.6	10.5	13.4	10.9
WPI-Fuel	3.176	3.222	3.435	3.527
%CH	7.9	6.6	8.2	9.5
Taxable Personal Income	1,402.9	1,442.2	1,578.8	1,620.5
Share of GNP (%)	68.66	68.48	68.63	68.90
Wages & Salaries	1,068.9	1,100.8	1,203.5	1,233.5
Share of GNP (%)	52.31	52.26	52.31	52.45
Non-Wage Income	334.0	341.5	375.4	387.0
Share of GNP (%)	16.35	16.21	16.31	16.45
Corporate Profits	190.3	202.0	215.8	211.8
Share of GNP (%)	9.30	9.57	9.39	9.01
Sum of Shares (%)	77.96	78.05	78.02	77.92
Treasury Bill Rate	6.57	7.22	9.35	9.11
Moody's Rate	8.49	8.70	8.94	8.90

(Continued)

TABLE A-1. CONTINUED

	1980		1981	
	Fiscal	Calendar	Fiscal	Calendar
Real GNP (Billions of 72\$)	1,448.8	1,462.8	1,508.0	1,524.7
%CH	1.7	2.4	4.1	4.2
Nominal GNP (Billions of \$)	2,524.5	2,595.3	2,813.7	2,892.6
%CH	9.7	10.4	11.5	11.5
GNP Deflator (1972 = 1.0)	1.7417	1.7733	1.8653	1.8968
%CH	7.9	7.7	7.1	7.0
Unemployment Rate	6.75	6.75	6.55	6.47
Civ. Labor Force	104,742	105,344	106,954	107,387
Employment	97,669	98,232	99,954	100,442
Consumer Price Index	2.242	2.283	2.405	2.445
%CH	8.0	7.8	7.3	7.1
Wholesale Price Index	2.380	2.421	2.548	2.592
%CH	7.0	6.9	7.1	7.1
WPI-Farm	2.503	2.549	2.672	2.708
%CH	8.3	8.0	6.8	6.2
WPI-Fuel	3.811	3.909	4.190	4.281
%CH	11.0	10.8	9.9	9.5
Taxable Personal Income	1,730.8	1,773.9	1,926.3	1,986.2
Share of GNP (%)	68.57	68.36	68.46	68.66
Wages & Salaries	1,316.8	1,349.2	1,468.1	1,515.7
Share of GNP (%)	52.17	51.99	52.17	52.39
Non-Wage Income	414.0	424.8	458.2	470.5
Share of GNP (%)	16.40	16.37	16.29	16.26
Corporate Profits	224.3	234.0	253.3	259.2
Share of GNP (%)	8.88	9.01	9.01	8.96
Sum of Shares (%)	77.45	77.37	77.46	77.62
Treasury Bill Rate	7.58	7.60	8.25	8.31
Moody's Rate	8.78	8.82	9.26	9.36

(Continued)

TABLE A-1. CONTINUED

	1982		1983	
	Fiscal	Calendar	Fiscal	Calendar
Real GNP (Billions of 72\$)	1,575.9	1,593.3	1,646.8	1,665.0
%CH	4.5	4.5	4.5	4.5
Nominal GNP (Billions of \$)	3,141.0	3,227.8	3,499.2	3,593.3
%CH	11.6	11.6	11.4	11.3
GNP Deflator (1972 = 1.0)	1.9928	2.0254	2.1244	2.1577
%CH	6.8	6.8	6.6	6.5
Unemployment Rate	6.23	6.14	5.89	5.80
Civ. Labor Force	108,534	108,903	109,968	110,310
Employment	101,773	102,212	103,495	103,913
Consumer Price Index	2.567	2.609	2.735	2.777
%CH	6.8	6.7	6.5	6.4
Wholesale Price Index	2.726	2.772	2.911	2.958
%CH	7.0	6.9	6.8	6.7
WPI-Farm	2.819	2.857	2.974	3.014
%CH	5.5	5.5	5.5	5.5
WPI-Fuel	4.567	4.666	4.978	5.086
%CH	9.0	9.0	9.0	9.0
Taxable Personal Income	2,174.0	2,236.8	2,426.1	2,491.4
Share of GNP (%)	69.21	69.30	69.33	69.33
Wages & Salaries	1,663.6	1,713.0	1,859.5	1,909.8
Share of GNP (%)	52.96	53.07	53.14	53.15
Non-Wage Income	510.3	523.8	566.6	581.6
Share of GNP (%)	16.25	16.23	16.19	16.18
Corporate Profits	282.1	290.3	315.5	323.8
Share of GNP (%)	8.98	8.99	9.02	9.01
Sum of Shares (%)	78.19	78.29	78.35	78.34
Treasury Bill Rate	7.48	7.15	6.58	6.47
Moody's Rate	9.26	9.22	9.04	8.98

(Continued)

TABLE A-1. CONTINUED

	1984	
	Fiscal	Calendar
Real GNP (Billions of 72\$)	1,720.9	1,739.9
%CH	4.5	4.5
Nominal GNP (Billions of \$)	3,886.9	3,987.5
%CH	11.1	11.0
GNP Deflator (1972 = 1.0)	2.2582	2.2913
%CH	6.3	6.2
Unemployment Rate	5.54	5.45
Civ. Labor Force	111,302	111,628
Employment	105,137	105,542
Consumer Price Index	2.904	2.946
%CH	6.2	6.1
Wholesale Price Index	3.101	3.149
%CH	6.5	6.4
WPI-Farm	3.137	3.180
%CH	5.5	5.5
WPI-Fuel	5.426	5.544
%CH	9.0	9.0
Taxable Personal Income	2,695.2	2,765.3
Share of GNP (%)	69.34	69.35
Wages & Salaries	2,066.8	2,120.7
Share of GNP (%)	53.17	53.18
Non-Wage Income	628.4	644.6
Share of GNP (%)	16.17	16.17
Corporate Profits	350.4	358.7
Share of GNP (%)	9.02	9.00
Sum of Shares (%)	78.36	78.35
Treasury Bill Rate	6.32	6.31
Moody's Rate	8.83	8.78

TABLE A-2. ASSUMPTIONS FOR THE CONSUMER PRICE INDEX  
AND THE UNEMPLOYMENT RATE BY CALENDAR YEAR  
AND QUARTER

	CPI Percent Increase from Previous Quarter	Unemployment Rate
1978:1	8.0	6.20
1978:2	10.9	5.93
1978:3	8.6	6.03
1978:4	7.7	5.83
1979:1	8.4	5.78
1979:2	8.2	6.00
1979:3	8.5	6.32
1979:4	7.7	6.67
1980:1	7.9	6.77
1980:2	7.8	6.78
1980:3	7.4	6.79
1980:4	7.3	6.67
1981:1	6.9	6.54
1981:2	6.9	6.53
1981:3	6.9	6.44
1981:4	6.7	6.36
1982:1	6.7	6.27
1982:2	6.7	6.19
1982:3	6.5	6.10
1982:4	6.7	6.02
1983:1	6.4	5.93
1983:2	6.3	5.84
1983:3	6.3	5.76
1983:4	6.2	5.67
1984:1	6.2	5.58
1984:2	6.0	5.50
1984:3	5.7	5.41
1984:4	5.6	5.32

TABLE A-3. SPECIALIZED PRICE INDEXES: BY FISCAL YEAR

	1979	1980	1981	1982	1983	1984
Defense	1.000	1.076	1.157	1.242	1.331	1.430
% Change	NC	7.65	7.52	7.30	7.17	7.45
Services: Defense	1.000	1.077	1.162	1.254	1.350	1.453
% Change	NC	7.73	7.88	7.91	7.64	7.63
Trans of People	1.000	1.073	1.147	1.227	1.314	1.404
% Change	NC	7.25	6.94	6.94	7.12	6.82
Trans of Freight	1.000	1.087	1.174	1.290	1.403	1.518
% Change	NC	8.66	8.01	9.96	8.73	8.15
Rent Comm Utils	1.000	1.073	1.149	1.225	1.306	1.394
% Change	NC	7.27	7.09	6.66	6.60	6.73
Printing	1.000	1.066	1.138	1.216	1.297	1.379
% Change	NC	6.64	6.75	6.79	6.72	6.27
Other Services	1.000	1.079	1.164	1.256	1.353	1.458
% Change	NC	7.93	7.85	7.94	7.71	7.71
Defense R&D	1.000	1.075	1.163	1.255	1.351	1.456
% Change	NC	7.55	8.18	7.89	7.66	7.76
Durables: Defense	1.000	1.073	1.146	1.223	1.305	1.400
% Change	NC	7.26	6.84	6.72	6.70	7.27
Aircraft	1.000	1.073	1.145	1.221	1.302	1.394
% Change	NC	7.28	6.73	6.66	6.58	7.08
Ships	1.000	1.074	1.150	1.232	1.322	1.429
% Change	NC	7.37	7.12	7.12	7.31	8.06
Other: Defense	1.000	1.071	1.146	1.222	1.304	1.399
% Change	NC	7.12	6.98	6.63	6.67	7.32
Nondurables: Defense	1.000	1.082	1.168	1.250	1.337	1.435
% Change	NC	8.21	7.99	6.98	6.93	7.38
Fuel	1.000	1.099	1.194	1.285	1.382	1.486
% Change	NC	9.92	8.66	7.61	7.50	7.53
Sup & Mat: Defense	1.000	1.072	1.153	1.228	1.309	1.404
% Change	NC	7.16	7.56	6.57	6.56	7.28

(Continued)

TABLE A-3. CONTINUED

	1979	1980	1981	1982	1983	1984
Nondefense	1.000	1.083	1.163	1.247	1.336	1.429
% Change	NC	8.25	7.42	7.20	7.14	7.03
Services: Nondefense	1.000	1.079	1.162	1.254	1.351	1.452
% Change	NC	7.85	7.78	7.89	7.71	7.47
Trans of People	1.000	1.073	1.147	1.227	1.314	1.404
% Change	NC	7.25	6.94	6.94	7.12	6.82
Trans of Freight	1.000	1.087	1.174	1.290	1.403	1.518
% Change	NC	8.66	8.01	9.96	8.73	8.15
Rent Comm Utils	1.000	1.073	1.149	1.225	1.306	1.394
% Change	NC	7.27	7.09	6.66	6.60	6.73
Printing	1.000	1.066	1.138	1.216	1.297	1.379
% Change	NC	6.64	6.75	6.79	6.72	6.27
Other Services	1.000	1.079	1.164	1.256	1.353	1.458
% Change	NC	7.93	7.85	7.94	7.71	7.71
NASA R&D	1.000	1.075	1.163	1.255	1.351	1.456
% Change	NC	7.55	8.18	7.89	7.66	7.76
Other Nondefense R&D	1.000	1.082	1.168	1.265	1.368	1.471
% Change	NC	8.18	7.98	8.31	8.14	7.49
Durables (except sales): Nondefense	1.000	1.070	1.142	1.216	1.296	1.389
% Change	NC	6.98	6.77	6.45	6.59	7.16
NASA Equipment	1.000	1.071	1.146	1.222	1.304	1.399
% Change	NC	7.12	6.98	6.63	6.67	7.32
Other: Nondefense	1.000	1.067	1.134	1.202	1.279	1.366
% Change	NC	6.67	6.28	6.05	6.39	6.81
Nondurables: Nondefense	1.000	1.082	1.157	1.224	1.294	1.369
% Change	NC	8.16	6.96	5.79	5.73	5.78
Commod Credit Corp	1.000	1.083	1.157	1.220	1.287	1.358
% Change	NC	8.34	6.76	5.50	5.50	5.50
Fuel	1.000	1.099	1.194	1.285	1.382	1.486
% Change	NC	9.92	8.66	7.61	7.50	7.53
S & M: Nondefense	1.000	1.068	1.147	1.223	1.299	1.383
% Change	NC	6.81	7.40	6.58	6.23	6.51

(Continued)



TABLE A-3. CONTINUED

	1979	1980	1981	1982	1983	1984
GNP Deflator	1.000	1.079	1.156	1.234	1.315	1.397
% Change	8.23%	7.88%	7.12%	6.80%	6.55%	6.24%
CPI (all items, all urban)	1.000	1.080	1.158	1.236	1.316	1.397
% Change	8.60%	7.99%	7.25%	6.73%	6.46%	6.13%
Food	1.000	1.082	1.163	1.243	1.325	1.408
% Change	9.64%	8.20%	7.51%	6.82%	6.66%	6.25%
Food at Home	1.000	1.081	1.160	1.235	1.313	1.389
% Change	9.73%	8.12%	7.31%	6.49%	6.29%	5.80%
Food away from Home	1.000	1.085	1.175	1.269	1.370	1.476
% Change	9.34%	8.50%	8.26%	8.01%	7.95%	7.80%
Services	1.000	1.087	1.174	1.265	1.361	1.457
% Change	9.11%	8.69%	8.00%	7.73%	7.63%	7.08%
Medical Care	1.000	1.104	1.214	1.327	1.443	1.563
% Change	9.57%	10.41%	9.94%	9.32%	8.77%	8.26%
Rent	1.000	1.070	1.141	1.211	1.284	1.360
% Change	7.10%	7.00%	6.61%	6.20%	6.00%	5.88%
WPI (all commodities)	1.000	1.070	1.146	1.226	1.309	1.393
% Change	8.91%	7.03%	7.11%	6.94%	6.74%	6.48%
Farm Products	1.000	1.083	1.157	1.220	1.287	1.358
% Change	13.39%	8.34%	6.76%	5.50%	5.50%	5.50%
Fuel and Power and Related Prod.	1.000	1.110	1.220	1.330	1.449	1.580
% Change	8.17%	10.96%	9.93%	9.00%	9.00%	9.00%
S & L Gov't. Deflator	1.000	1.082	1.158	1.243	1.338	1.431
% Change	8.78%	8.16%	7.04%	7.34%	7.67%	6.93%
Res. Structures Def.	1.000	1.094	1.190	1.291	1.399	1.498
% Change	11.72%	9.39%	8.74%	8.55%	8.31%	7.14%
Nonres Structures Def.	1.000	1.088	1.176	1.271	1.368	1.466
% Change	12.15%	8.83%	8.09%	8.02%	7.64%	7.17%
El. and Sec. Education	1.000	1.071	1.147	1.225	1.310	1.399
% Change	7.21%	7.07%	7.08%	6.85%	6.93%	6.81%
Higher Education	1.000	1.070	1.142	1.218	1.294	1.373
% Change	7.49%	6.99%	6.75%	6.65%	6.21%	6.14%

(Continued)

TABLE A-3. CONTINUED

	1979	1980	1981	1982	1983	1984
Fed. Aid to Highways % Change	1.000 8.76%	1.085 8.49%	1.177 8.48%	1.276 8.44%	1.384 8.45%	1.499 8.27%
Sewage Plants % Change	1.000 9.09%	1.082 8.17%	1.169 8.03%	1.256 7.45%	1.347 7.31%	1.450 7.58%
House Construction % Change	1.000 8.74%	1.043 4.27%	1.129 8.31%	1.217 7.79%	1.308 7.41%	1.408 7.69%
Med Care Facility % Change	1.000 9.38%	1.081 8.09%	1.167 7.99%	1.254 7.47%	1.359 8.37%	1.490 9.60%
Hospital Constr. % Change	1.000 9.51%	1.080 7.98%	1.166 7.95%	1.255 7.64%	1.363 8.62%	1.498 9.94%
Office Bldg. Constr. % Change	1.000 9.39%	1.083 8.26%	1.169 7.95%	1.253 7.25%	1.351 7.81%	1.468 8.61%
WPI Integrations and Measuring Inst. % Change	1.000 6.42%	1.061 6.13%	1.126 6.06%	1.193 6.00%	1.263 5.81%	1.332 5.48%
WPI Railroad Equip. % Change	1.000 9.05%	1.086 8.59%	1.180 8.69%	1.282 8.63%	1.391 8.49%	1.509 8.52%
Comp. Per Manhour % Change	1.000 9.72%	1.090 8.99%	1.187 8.90%	1.292 8.87%	1.400 8.37%	1.517 8.34%
AHE Construction % Change	1.000 8.72%	1.091 9.08%	1.190 9.07%	1.296 8.95%	1.407 8.55%	1.527 8.50%
AHE Aircraft and Parts % Change	1.000 8.17%	1.069 6.88%	1.164 8.94%	1.260 8.21%	1.357 7.71%	1.473 8.53%
AHE Ships % Change	1.000 6.90%	1.094 9.35%	1.178 7.72%	1.278 8.53%	1.382 8.08%	1.489 7.78%

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APPENDIX B. MAJOR CONTRIBUTORS TO THE PREPARATION OF THIS REPORT

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Members of the Tax Analysis Division, the Fiscal Analysis Division, and the Natural Resources, Human Resources, and National Security cost units of the Budget Analysis Division were major contributors to this report. Table B-1 lists the individuals who performed and documented the analyses for each chapter.

TABLE B-1. MAJOR CONTRIBUTORS TO THE PREPARATION OF THIS REPORT

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Function 150	International Affairs	Rita Seymour Joe Whitehill	225-4844 225-4844
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TABLE B-1. CONTINUED

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Function 500	Education, Training Employment and Social Services	Debb Kalcevic (501, 502, 503) Betsy Guthrie (504, 505, 506)	225-7766
Function 550	Health	Eric Wedum Steve Crane	225-7766
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(continued)

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