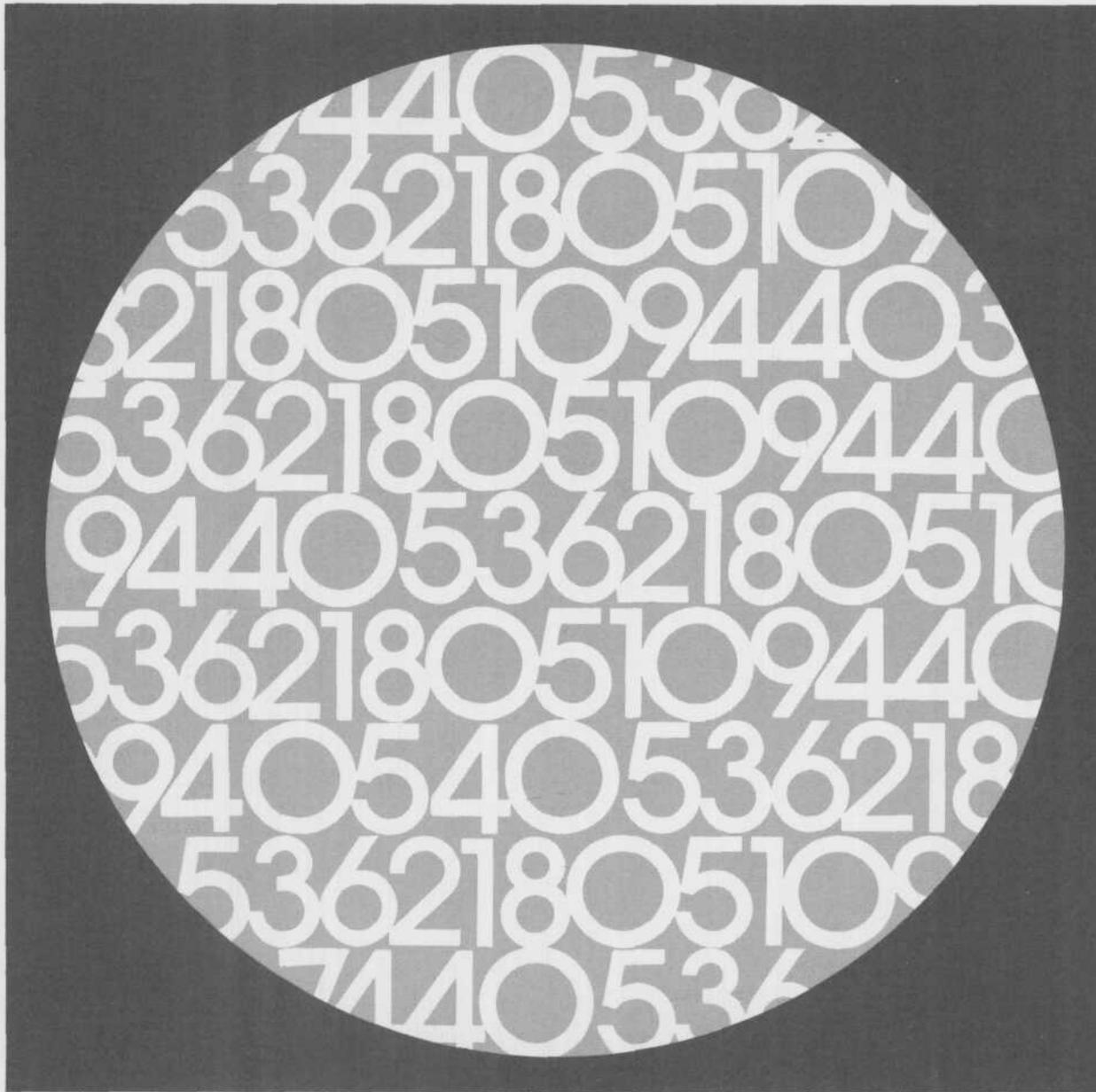


FIVE-YEAR
BUDGET
PROJECTIONS:
FISCAL
YEARS
1979-1983

January 1978

Technical Background



CONGRESS OF THE UNITED STATES



CONGRESSIONAL BUDGET OFFICE

**FIVE-YEAR BUDGET PROJECTIONS:
FISCAL YEARS 1979-1983
TECHNICAL BACKGROUND**

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Congressional Budget Office**

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NOTES

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

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

PREFACE

This staff working paper provides technical background on the methodologies used for making the projections published in the CBO report, Five-Year Budget Projections: Fiscal Years 1979-1983. 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. Paula Spitzig assisted in drafting the manuscript and supervised its production. It was typed for publication by Gwen Coleman, Barbara Bakari, Paula Spitzig, and Deborah Vogt.

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Director

December 1977



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CHAPTER I. OVERVIEW

This paper provides the technical background for Five-Year Budget Projections: Fiscal Years 1979-1983, a Congressional Budget Office (CBO) report released December 5, 1977. 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 the major purposes of the projections can be characterized as the following:

- o baseline -- to provide a baseline against which to measure budget options, including the President's budget;
- o estimate of room for new initiatives -- to provide an estimate of the room available for new tax cuts or new spending initiatives; and
- o controllability -- to provide the Congress with an estimate of the expenditures to which they have committed themselves and an estimate of their flexibility when 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 that included assumptions about future rates of growth and price levels. Next, the budget implications of the economic assumptions were derived, given a continuation of current laws and policies. This involved estimating revenues for fiscal years 1979 through 1983 if current laws were to remain in effect and projecting current policy outlays over the same period. Finally, the so-called "fiscal drag offset" was 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 allow the economy to grow at the assumed rates.

ECONOMIC ASSUMPTIONS

The economic assumptions used for the five-year projections report represent one possible set of goals for the economy over the next five years. For 1977 and 1978, the assumptions are consistent with the goals adopted for the Second Concurrent Resolution on the Budget for Fiscal Year 1978. The most salient feature of the resolution economic assumptions is a 4.8 percent real rate of growth for the economy in 1978, as measured by the rate of growth in the gross national product (GNP) in constant 1972 dollars. The assumptions for 1979 through 1982 are an extrapolation of the 4.8 percent rate of growth. In 1983, the assumed rate would drop to 3.7 percent as the unemployment rate reaches 4.5 percent. 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 CBO's 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 includes the continuation of most current tax laws; the provisions of the Tax Reform and Simplification Act of 1977 are assumed to be extended through fiscal year 1983. The major exception to this assumption is the jobs credit, which is assumed to expire without extension in 1978. The projection of revenues in the five-year projections report did not include the effects of the social security and energy legislation that was pending as of December 5, 1977. The effect of the recently passed social security legislation, however, is

discussed in this paper. 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 current laws. For discretionary programs, such as defense procurement, that are subject to annual appropriations, current policy means the maintenance of the current level of inputs or resources to meet continuing needs. In other words, the projections hold constant in real terms the 1978 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. The latter programs are assumed to be phased out as the need for them disappears. For example, the temporary employment assistance program, which provides for public service jobs at state and local government levels, is designed to meet the current unemployment situation; it is assumed to phase out as the unemployment rate falls.

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 B-1 bomber or the Trident submarine. Rather, they hold constant the resources devoted to general needs such as national security. The output 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 DRAG OFFSET

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, purchase, and transfer payments. Current policy revenues rise at an average annual rate of 13.2 percent, while current policy outlays increase at a rate of 7.3 percent per year. The higher growth rate of receipts would exert a restrictive influence on the economy that itself 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 fiscal drag implicit in current policy

budgets. The fiscal drag offset represents a rough estimate of the size of the stimulus that would be needed if fiscal policy (that is, tax cuts or spending increases) were used. The offset can be thought of as the room available for new programs or budget initiatives if existing programs were maintained at current policy levels. Further details on the fiscal drag offset are contained in Chapter V.

AGGREGATE ASSUMPTIONS

The aggregate economic assumptions used in Five-Year Budget Projections: Fiscal Years 1979-1983 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 (CBO) regarding food and fuel prices, exports, and monetary policy, as well as the federal budget, were used in producing the forecast, which extended through the end of calendar year 1978. The assumptions used were based on predictions made by a variety of other forecasters, analyses done by CBO staff members, and assumptions contained in the Second Concurrent Resolution on the Budget for Fiscal Year 1978.

Given the difficulty and uncertainty in predicting economic events very far into the future, CBO did not attempt to extend the forecast beyond the end of calendar year 1978. Beginning in 1979, an economic projection was prepared, based on an assumption about future rates of growth in real gross national product (GNP). A quarterly model estimated by CBO was used to generate a consistent and complete set of economic projections for fiscal years 1979-1983 on the basis of the assumed real GNP growth rate and four additional exogenous assumptions.

The model used by CBO to produce the long-range economic projections is relatively small and only requires 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 shown in Figure 1. Once potential and real GNP are known, the unemployment rate is projected with Okun's Law, an estimated equation which 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 the labor force, total employment can then be determined. The unemployment rate and the two exogenous wholesale price indexes are then used in a simultaneous wage-price model to determine the rates of change in

compensation per hour and in the consumer price index (CPI). The variables are in turn used in estimated equations to project the rates of change in government wage rates, the federal purchases deflator, and the GNP deflator. Current dollar GNP can then be calculated, since real GNP and the GNP deflator are known. Once current dollar GNP is determined, three income 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 1983 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, constant 1972 dollars
- Gross national product, current dollars
- Implicit price deflator, gross national product
- Index of compensation per manhour, private domestic economy
- Civilian labor force
- Nonwage income
- Unemployment rate, civilian workers
- Wage and salary disbursements
- Total population
- Potential gross national product
- Wholesale price index
- Wholesale price index, farm products
- Wholesale price index, fuels and related products and power

The projection path generated by the economic models is shown in Table 1. The assumptions for 1977 and 1978 are consistent with the economic assumptions made by both budget committees in preparing the 1978 second concurrent resolution. The projection for 1979-1983 assumes that real GNP grows by about 4.8 percent in calendar years 1979-1982 and then grows at 3.7 percent in calendar year 1983, as the unemployment rate reaches 4.5 percent. 2/

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

2/ An alternative economic path was also generated. This path contained less vigorous economic expansion, with an assumed rate of growth of real GNP in fiscal years 1979-1983 of 4.0 percent.

TABLE 1. AGGREGATE ECONOMIC ASSUMPTIONS: BY CALENDAR YEARS

Selected Economic Variables	1977	1978	1979	1980	1981	1982	1983
Gross National Product (GNP)							
Current dollar GNP (in billions of dollars)	1,898.0	2,107.0	2,333.8	2,582.2	2,853.9	3,156.4	3,465.2
Real GNP (in billions of 1972 dollars)	1,338.0	1,402.7	1,467.9	1,538.4	1,612.2	1,688.3	1,751.4
Growth rate of real GNP	5.0	4.8	4.7	4.8	4.8	4.7	3.7
Unemployment Rate (percent)	7.0	6.5	6.2	5.7	5.2	4.7	4.5
Consumer Price Index (percent change)	6.5	5.6	6.0	5.7	5.5	5.7	5.9

SPECIALIZED PRICE INDEXES

Aggregate measures of economic activity provide only a general indication of the activity or 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. The appendix to this paper contains the values assumed for the specialized price indexes used for five-year budget projections.

A portion of the unified budget (UB) expenditures fall into the category of federal purchases of goods and services, as defined in the National Income and Product Accounts (NIPA). This category is broken down 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.

Among the types of UB expenditures that are not classified as purchases of goods and services are transfer payments, grants, intergovern-

mental receipts, and subsidies. The techniques utilized for projecting these expenditures varied. Series that were available for this purpose include an extensive list 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

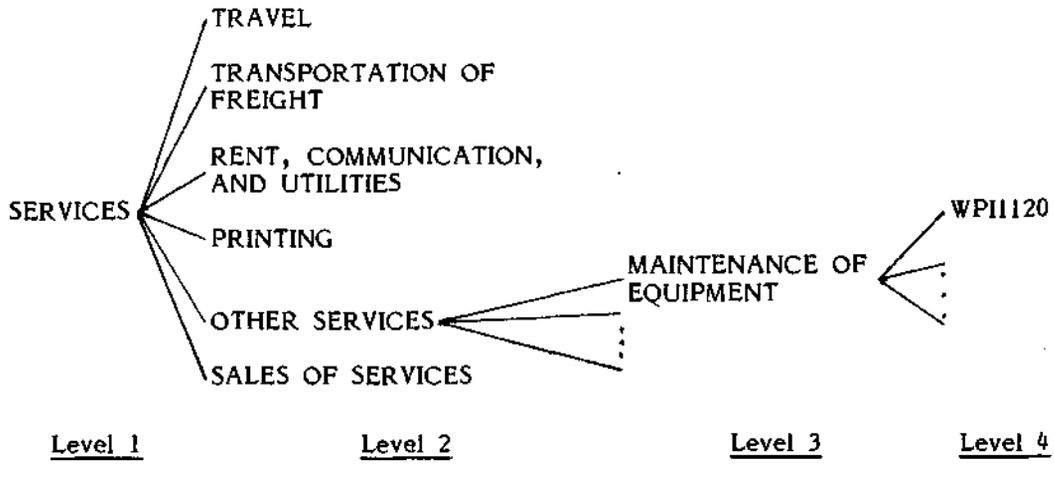
Federal purchases include compensation of employees, structures, durable goods, nondurable goods, and services. As previously mentioned, an index of federal pay increases was used to project compensation of employees, and several implicit price deflators and construction cost indexes were used in projections 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 2, using the price index for services and its components as an example. The wholesale price index for construction machinery and equipment (WPI1120), is a component at the lowest level of aggregation (level 4). Wholesale price indexes comprise the majority of indexes at this level. WPI1120 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; and sales of services were also aggregations of detailed indexes. From the level 2 indexes, the price index for federal purchases of services (level 1) was generated.

The value of a particular index was calculated as the weighted average of the price indexes 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

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

FIGURE 2. THE DETAILED STRUCTURE OF THE PRICE INDEX FOR FEDERAL PURCHASES OF SERVICES



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. ^{3/} 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. ^{4/} In the cases where no suitable substitute was available, the weights were renormalized to account for the omission.

^{3/} 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.

^{4/} 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 other price indexes in addition to the federal purchases price indexes. Some of the equations were estimated using multiple regression techniques. Other equations 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.

CHAPTER III. PROJECTION OF CURRENT POLICY SPENDING

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 seventeen budget functions used in the preparation of annual budget resolutions. ^{1/}

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 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 discretionary inflation adjustments.

The Projections Base

The base for the projections was the Second Concurrent Resolution on the Budget for Fiscal Year 1978 (H. Con. Res. 341). Consequently, the totals in all functional tables for fiscal year 1978 are equal to second concurrent resolution levels. In some cases, the second concurrent resolution levels reflect allowances for anticipated legislation or rounding. In the cases where the Congressional Budget Office (CBO) was able to determine the form of the anticipated legislation in sufficient detail to make a projection, the cost of this legislation was projected forward. However, if the form of the anticipated legislation was ambiguous or uncertain, the allowance was not projected forward. Allowances for rounding were not projected forward.

^{1/} The fiscal year 1979 budget will include new and expanded functional classifications. This analysis is based on current classifications.

The ceiling on outlays in the second concurrent resolution is \$458.25 billion. The parliamentarian's status report for December 14, 1977, lists outlays for fiscal year 1978 as \$454.7 billion. Part of the difference between the resolution and the status report reflects legislation anticipated in the resolution and not yet enacted, as described above. However, a second part of the difference reflects reestimates made by CBO since the passage of the resolution. The dollar value of reestimates and of anticipated legislation whose content was ambiguous or uncertain was placed in residual or "plug" accounts and not projected into the future. These accounts generally fall in the "other" category in the functional tables that follow.

Discretionary Inflation Adjustments

Under existing law, all federal programs do not respond automatically to inflation. For the projections, federal spending was broken into four categories: benefit programs that are indexed for inflation, either directly or indirectly; programs for which the concept of inflation is either not important or only indirectly related to spending; nondiscretionary programs or accounts that respond to inflation but over which the Congress does not exercise control on a year-to-year basis; and programs whose funding level is discretionary.

Existing laws establish various automatic cost-of-living adjustments for virtually all entitlement programs providing direct benefit payments to individuals. (Veterans' benefits are a notable exception.) Since current policy for these programs means the maintenance of current laws, the projections contain estimated cost-of-living adjustments. Certain other federal programs, such as medicare and medicaid, are indirectly indexed for inflation since the federal government pays a fraction of the costs. Again, under the assumption that current policy for these programs means the maintenance of current laws, projected benefit levels are increased as the cost of medical care increases. Finally, benefit levels for some programs, like public assistance and unemployment insurance, are set by state and local governments under federal guidelines. It is assumed for projections purposes that benefits under these programs will keep pace with 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 which have been fixed for some time and are not assumed to change (for instance, Title XX social services grants). 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.

The category of accounts that respond to inflation but over which the Congress does not exercise discretionary control on a year-to-year basis includes most proprietary receipts from sales to the public and certain accounts with permanent authority that automatically return a fraction of these receipts to the states. (For example, part of the receipts from timber sales and mineral leases are returned to the states.) For the projections, accounts in this category are assumed to respond automatically to inflation.

Finally, for a certain part of the budget, the Congress exercises discretionary control over whether to grant inflation adjustments. In many cases, such as veterans' benefits, inflation adjustments are generally approved, although there is no statutory requirement that such adjustments be granted. In other cases, programs are often held at the previous year's level in order to provide room for new initiatives or to hold down the level of federal spending. Given the purposes of the projections (the primary one being to provide a neutral baseline against which to evaluate various budget options), it appears useful to include inflation adjustments for all programs where such adjustments make sense. Because of widespread interest in the cost of discretionary inflation adjustments, however, two projections were made. The first includes the discretionary inflation adjustments while the second does not.^{2/} The cost of discretionary inflation adjustments, by function, is included in Table 2.

OVERVIEW OF PROJECTIONS METHODOLOGIES

The budget can be partitioned into five pieces, each of which are characterized by a somewhat different projection methodology: accounts

^{2/} There exists some question concerning federal payraises. They fall somewhere between the categories of discretionary and nondiscretionary inflation adjustments. 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 takes positive action on the part of the President or the Congress to limit or increase the payraise, payraises were treated as nondiscretionary.

TABLE 2. THE COST OF INFLATIONARY ADJUSTMENTS, BY
FUNCTION: BY FISCAL YEARS, IN BILLIONS OF DOLLARS

	1979	1980	1981	1982	1983
National Defense (050)	2.2	6.3	11.4	16.9	23.0
International Affairs (150)	0.2	0.5	0.9	1.4	1.9
General Science, Space, and Technology (250)	0.2	0.6	1.0	1.4	1.8
Natural Resources, Environment, and Energy (300)	0.4	1.3	2.2	3.3	4.5
Agriculture (350)	--	0.1	0.1	0.2	0.3
Commerce and Transportation (400)	0.3	0.6	1.2	1.9	2.8
Community and Regional Development (450)	0.2	0.6	1.1	1.8	2.4
Education, Training, Employment, and Social Services (500)	0.6	1.7	3.1	4.6	6.2
Health (550)	0.2	0.7	1.3	1.8	2.5
Income Security (600)	0.2	0.4	0.8	1.2	1.8
Veterans' Benefits and Services (700)	1.1	2.1	3.0	3.9	4.9
Law Enforcement and Justice (750)	0.1	0.2	0.4	0.5	0.7
General Government (800)	--	0.1	0.3	0.4	0.5
Revenue Sharing and General Purpose Fiscal Assistance (850)	--	--	0.4	0.9	1.5
Interest (900)	--	--	--	--	--
Allowances (920)	--	--	--	--	--
Undistributed Offsetting Receipts (950)	--	--	--	--	--
Total	5.9	15.4	27.3	40.3	54.8

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. Table 3 shows what types of accounts are found in each of the seventeen budget functions.

The Simple Inflation Method

The most frequently used technique for projecting budget authority and outlays is the simple inflation method. Table 4 shows by function the percent of current policy outlays for fiscal year 1979 that were projected by the simple inflation method.

This method involves inflating fiscal year 1978 budget authority to arrive at projected budget authority for fiscal years 1979 through 1983. The inflation rates used for each account were based on the specialized price indexes discussed in Chapter II and listed in the appendix. Each account had a unique price index associated with it that was a weighted average of indexes listed in the appendix. "Account specific" indexes were constructed using the Budget Appendix 3/ for the fiscal year 1978 budget. Review of the Budget Appendix yielded information on appropriate indexes and weights for each account.

Outlays from budget authority for fiscal years 1978 through 1983 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 1978 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 1979 and later years as in 1978. For example, suppose unexpended balances for an account at the beginning of fiscal year 1978 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 1978. This leaves \$60 million in balances from budget authority approved prior to fiscal year 1978. For fiscal year 1979, estimated outlays from this prior authority would be estimated to be \$24 million (40 percent of \$60 million).

3/ Appendix to The Budget of the United States Government, Fiscal Year 1978, January 1977.

TABLE 3. TYPES OF ACCOUNTS IN EACH BUDGET FUNCTION

	Simple Inflation	Revolving Fund	Loan	Temporary	Special
National Defense (050)	*	*			*
International Affairs (150)	*	*	*		
General Science, Space and Technology (250)	*	*			
Natural Resources, Environment, and Energy (300)	*	*		*	
Agriculture (350)	*	*			*
Commerce and Transpor- tation (400)	*		*	*	
Community and Regional Development (450)	*	*	*	*	
Education, Training, Employment, and Social Services (500)	*		*	*	*
Health (550)	*	*	*		*
Income Security (600)	*				*
Veterans' Benefits and Services (700)	*	*	*		*
Law Enforcement and Justice (750)	*				
General Government (800)	*	*	*		
Revenue Sharing and General Purpose Fiscal Assistance (850)	*				
Interest (900)	*				*
Allowances (920)					*
Undistributed Offsetting Receipts (950)					*

TABLE 4. PERCENT OF FISCAL YEAR 1979 CURRENT POLICY OUTLAYS PROJECTED BY THE SIMPLE INFLATION METHOD: BY FUNCTION

National Defense (050)	90
International Affairs (150)	68
General Science, Space, and Technology (250)	97
Natural Resources, Environment and Energy (300)	81
Agriculture (350)	20
Commerce and Transportation (400)	84
Community and Regional Development (450)	28
Education, Training, Employment, and Social Services (500)	71
Health (550)	17
Income Security (600)	--
Veterans' Benefits and Services (700)	31
Law Enforcement and Justice (750)	100
General Government (800)	96
Revenue Sharing and General Purpose Fiscal Assistance (850)	26
Interest (900)	10
Allowances (920)	--
Undistributed Offsetting Receipts (950)	--

Table 5 resembles the reports used to review projections for accounts that were estimated using the simple inflation method. The first row of the table shows budget authority for fiscal years 1978 through 1983. The second row designates outlays in fiscal years 1978 through 1983 from authority approved prior to fiscal year 1978. The third row contains estimated outlays in fiscal years 1978 through 1983 from budget authority approved in fiscal year 1978, and similarly for succeeding rows until the last one, which contains projected total outlays.

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

TABLE 5. SAMPLE COMPUTER REPORT

FIVE-YEAR PROJECTION SYSTEM AUDIT REPORT							
ACCOUNT NUMBER: 80 0108 0 1 255 00(2700)							
TITLE:	UNEXP BAL	1978	1979	1980	1981	1982	1983
Research and development (Supporting space activities)	BA	294,066	318,203	345,192	373,605	400,965	432,612
BUREAU:	O 133599	89,300	29,638	14,661	0	0	0
National Aeronautics and Space Administration	78	194,928	72,896	17,495	8,747	0	0
AGENCY:	79		210,014	79,551	19,092	9,546	0
National Aeronautics and Space Administration	80			227,827	86,298	20,712	10,356
AGENCY:	81				246,579	93,401	22,416
Space Administration	82					264,637	100,241
BA TYPE:	83						285,524
HOUSE COM: IH							
SENATE COM: IH							
Total Outlay		284,228	312,548	339,534	360,716	388,296	418,537

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. Outlays were also projected at zero unless the account showed unexpended balances at the end of fiscal year 1978, in which case these balances were spent out in fiscal years 1979 through 1983. 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 current policy 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 projection that includes discretionary inflation was based on a ceiling that increases with inflation. If the ceiling is not reviewed annually, but is set on a multiyear basis, the projection with discretionary inflation was based on a ceiling which was held constant until the next scheduled review, when the ceiling was projected to increase based on inflation. 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 based on disbursements of new loan commitments, loan repayments, and net income. Disbursements, in turn, are the sum of disbursements of budget authority and disbursements of net income:

$$\begin{aligned} \text{Outlays} &= \text{Disbursements from BA} + \text{Disbursements from Net Income} \\ &\quad - \text{Net Income} \end{aligned}$$

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,

$$\begin{aligned} \text{Outlays} &= (\text{Assets Purchased} - \text{Asset Sales} - \text{Loan Repayments}) \\ &\quad + \text{Net Income} \end{aligned}$$

It was generally assumed that assets purchased equal the sum of asset sales and loan repayments. This assumption removes asset management as a factor in the projections, and is reasonable for constructing a long-run, neutral base for the budget. However, it should be noted 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.

Certain loan accounts are controlled by the Congress by means of direct appropriations. The projection methodology for these accounts was to

inflate the fiscal year 1978 budget authority for the projection with discretionary inflation and to hold it constant for the projection under existing law commitments. It was assumed that net income is used for new loan commitments. In the absence of better information, it was also assumed that disbursements from net income equal net income, which means that outlays were computed by applying disbursement rates to current and prior year budget authority.

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 which is a reserve against default; in other cases it is net losses (default payments less recoveries). In general, the fiscal year 1978 budget authority was inflated for the projection with discretionary inflation and held constant for the projection under existing law commitments. 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 which 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 (under Title VI of the Comprehensive Employment and Training Act) and antirecession financial assistance, are assumed to be tied to the current employment situation and are assumed to be phased out 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 disappear 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. ^{4/}

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 like 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 based on social insurance tax receipts. Other sources of income vary from trust fund to trust fund. 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 6 contains estimated social insurance budget authority, receipts, and adjustments (including interest on the fund balance) for the major trust funds.

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, the military assistance program, defense-related programs of the Energy Research and Development Administration (ERDA), and other defense-related activities.

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

TABLE 6. COMPOSITION OF BUDGET AUTHORITY FOR SOCIAL INSURANCE TRUST FUNDS: IN BILLIONS OF DOLLARS

	Budget Authority	Social Insurance Receipts	Adjustments (Interest and Other Payments)
Old Age and Survivors Insurance	86.1	82.5	3.6
Disability Insurance	11.6	11.4	0.2
Hospital Insurance	22.6	20.6	2.0
Supplementary Medical Insurance	9.8	2.5	7.3
Unemployment Insurance	14.5	14.3	0.3
Civil Service Retirement	19.6	3.3	16.3
Railroad Retirement	3.8	2.0	1.8
Total	158.3	136.7	21.6

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 model, accounts projected at zero, and other accounts each requiring a special method. The accounts projected by the simple inflation model total \$106.9 billion in budget authority in fiscal year 1978, or 97 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 allowances and are displayed separately.) For the projection that includes further adjustments for inflation, 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 and revolving and management funds. The expiring accounts are ones in which the program has been transferred to other accounts, such as Procurement of Aircraft and Missiles, Navy. The revolving and management funds provide centralized services and are reimbursed by other accounts. In general, they



are planned to net to zero, although in any one year they may miss slightly. Budget authority in these accounts is used to increase stocks or working capital and occurs irregularly. Thus, the \$171 million in fiscal year 1978 budget authority in the stock funds for increasing the stored war reserves was not projected. The net amount of fiscal year 1978 budget authority that was not projected into fiscal years 1979 through 1983 is \$172 million.

Outlay projections are made on the basis of recent experience, which has seen shortfalls in the initial estimates of 1976, the transition quarter, and 1977. Outlays for 1978 were estimated on the basis of the first year spendout of 1977 budget authority and the net spendout in 1977 of authority granted prior to 1977. Thus, the outlay estimates for 1978 were lower than assumed in the second concurrent resolution. The effect of these reestimates is seen in the "allowances, other" line of Table 7. The spendout rates used to compute outlays from projected budget authority assume a longer spendout period than rates used in previous projections. As a result, the outlay projections do not have the upward bias that would result from traditional rates.

Special projection methodologies are described in the discussion that follows. Accounts in this category have a net fiscal year 1978 budget authority of \$9.8 billion, including \$9.0 billion in offsetting receipts.

Projections base

The overall base for the projections was the Second Concurrent Resolution on the Budget for Fiscal Year 1978. The amounts allocated to specific accounts were generally derived from the final appropriation bills. After identifying the amounts appropriated for various accounts and for allowances for payraises and other legislation, amounts of -\$404 million in budget authority and \$2,068 million in outlays are necessary to match the second concurrent resolution totals. These amounts are carried in an account for general programs and are not projected. The negative amount for budget authority is primarily the result of not assuming any absorption of the October 1977 payraise.

Since different inflation factors were used for pay and purchases, and since only pay is increased under existing law commitments, it was necessary to estimate the proportion of each account that is used for pay. The proportion of the dollars in each account for fiscal year 1978 that is attributed to pay was derived from the object class data in the President's budget, as adjusted by Congressional action. Military pay and allowances for fiscal year 1978 total \$23,860 million in 1977 dollars (not including the October 1977 payraise). Civilian pay was subdivided into general schedule and wage board pay. Total pay for general schedule employees in fiscal year

1978 is \$10,120 million in 1977 dollars; total pay for wage board (blue collar) employees (including foreign nationals) is \$7,258 million in 1977 dollars. Civilian pay is primarily funded through the operation and maintenance accounts and comprises 40 percent of the pay in function 050.

Projections

Table 7 details the projections for the national defense function. Budget authority increases at an average annual rate of 7.8 percent, from \$116.4 billion for fiscal year 1978 to \$169.3 billion for 1983. The associated outlays increase at a rate of 7.9 percent annually, from \$110.1 billion to \$161.3 billion.

TABLE 7. NATIONAL DEFENSE, a/ BY MAJOR PROGRAM: BY FISCAL YEARS, IN MILLIONS OF DOLLARS

		1978 Second Concurrent Resolution	Projections				
			1979	1980	1981	1982	1983
Department of Defense -- Military							
Military personnel	BA	26,056	27,772	29,662	31,538	33,463	35,521
	O	25,609	27,420	29,302	31,151	33,044	35,062
Retired pay	BA	9,103	9,935	10,837	11,758	12,733	13,787
	O	9,105	9,933	10,833	11,754	12,729	13,783
Operation and maintenance	BA	33,510	36,297	39,299	42,408	45,567	49,013
	O	32,352	35,898	38,543	41,569	44,672	47,931
Procurement	BA	30,035	32,389	34,733	37,035	39,495	42,139
	O	21,569	24,996	28,041	31,430	34,737	37,972
Research and development	BA	11,347	12,271	13,289	14,342	15,404	16,602
	O	10,621	11,732	12,739	13,746	14,766	15,894
Military construction	BA	1,632	1,744	1,864	1,997	2,143	2,302
	O	2,083	1,719	1,762	1,807	1,889	2,072
Family housing	BA	1,346	1,455	1,575	1,705	1,836	1,982
	O	1,483	1,508	1,554	1,649	1,769	1,903
Civil defense	BA	90	98	106	116	125	135
	O	93	97	105	111	119	129
Special foreign currency program	BA	2	3	3	3	3	4
	O	3	2	2	3	3	3
Revolving and management funds	BA	171	--	--	--	--	--
	O	6	--	--	--	--	--
Trust funds	BA	8	8	9	9	10	10
	O	4	8	9	9	9	10

a/ Function 050.

(Continued)

TABLE 7. (Continued)

		1978 Second Concurrent Resolution	Projections				
			1979	1980	1981	1982	1983
Department of Defense -- Military (continued)							
Allowances							
Civilian and military payraises	BA	2,673	2,756	2,686	2,742	2,898	3,180
	O	2,593	2,763	2,688	2,740	2,894	3,173
Other	BA	-404	--	--	--	--	--
	O	-2,068	--	--	--	--	--
Deductions for offsetting receipts	BA	-176	-186	-197	-208	-219	-232
	O	-176	-186	-197	-208	-219	-232
Subtotal	BA	115,393	124,542	133,865	143,445	153,458	164,443
	O	107,414	115,889	125,380	135,760	146,412	157,702
Military Assistance							
Foreign military sales trust fund (net)	BA	-1,884	391	426	464	506	552
	O	--	-266	-256	-268	-288	-312
Foreign military credit sales	BA	676	720	783	841	894	954
	O	551	570	607	651	681	726
Other	BA	250	267	290	312	333	355
	O	319	304	297	309	305	305
Deductions for offsetting receipts	BA	-310	-317	-325	-333	-341	-350
	O	-310	-317	-325	-333	-341	-350
Subtotal	BA	-1,267	1,061	1,174	1,284	1,392	1,510
	O	561	291	323	359	356	368
Defense-related ERDA Programs	BA	2,242	2,430	2,635	2,846	3,063	3,310
	O	2,096	2,335	2,489	2,700	2,913	3,144
Other Defense-related Programs							
Federal Preparedness Agency	BA	39	42	45	49	52	56
	O	35	36	43	47	51	54
Payment to CIA retirement fund	BA	35	42	50	53	57	60
	O	35	42	50	53	57	60
Renegotiation Board	BA	6	6	7	7	8	8
	O	6	6	7	7	8	8
Selective Service	BA	6	7	7	8	8	9
	O	6	7	7	8	8	9
Intelligence community oversight	BA	9	10	10	11	12	13
	O	9	9	10	11	12	13
Other	BA	1	--	--	--	--	--
	O	1	--	--	--	--	--
Deductions for offsetting receipts	BA	-61	-65	-68	-72	-76	-80
	O	-61	-65	-68	-72	-76	-80
Subtotal	BA	35	43	51	56	61	66
	O	32	37	48	54	59	64
Undistributed Offsetting Receipts	BA	-3	-3	-3	-3	-3	-3
	O	-3	-3	-3	-3	-3	-3
Total	BA	116,400	128,073	137,722	147,628	157,970	169,326
	O	110,100	118,549	128,238	138,870	149,738	161,274

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 below. 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 8.

TABLE 8. PAY AND PURCHASES: BY FISCAL YEARS, IN BILLIONS OF DOLLARS

		1978 Second Concurrent Resolution	Projections				
			1979	1980	1981	1982	1983
Department of Defense -- Military							
Pay <u>a/</u>	BA	43.8	46.6	49.6	52.5	55.7	59.1
	O	43.4	46.5	49.4	52.3	55.5	58.9
Purchases	BA	62.9	68.0	73.5	79.1	85.0	91.5
	O	52.9	59.5	65.2	71.7	78.2	85.0
Total National Defense							
Pay <u>a/</u>	BA	43.9	46.8	49.8	52.7	55.9	59.3
	O	43.5	46.6	49.6	52.5	55.7	59.1
Purchases	BA	63.4	71.4	77.1	83.2	89.3	96.2
	O	57.5	62.0	67.9	74.6	81.3	88.4

a/ Does not include Retired Pay.

Budget authority for pay in the national defense function increases at an average annual rate of 6.2 percent, from fiscal year 1978 to fiscal year 1983, while budget authority for purchases increases 8.7 percent annually. Assumed rates of inflation are higher for purchases than for pay. Thus, the percent of the total that is for purchases increases slightly from 54.5 to 56.8 percent.

DoD-Military. The military functions of the Department of Defense (DoD) are the primary component of the national defense function: \$115.4 billion out of the total \$116.4 billion in budget authority in the second concurrent resolution. DoD-Military can be further divided into major

categories: military personnel, retired pay, operation and maintenance, research and development, military construction, family housing, other, allowances, and deductions for offsetting receipts. The relative share of DoD-Military budget authority for each category remains relatively stable. The largest change is a decrease in the military personnel category from 22.6 percent in fiscal year 1978 to 21.6 percent in fiscal year 1983. The next largest change is a decrease from 28.0 to 25.6 percent in procurement. All other shifts are by less than half a percentage point. A description of the details of the methodology and the distinctive aspects of each category follows.

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.

Under laws in effect since 1974, military payraises were spread evenly among the three largest types of military pay: basic pay, allowance for quarters, and allowance for food. The Congress has granted the President discretionary authority to reallocate up to 25 percent of the basic payraise into quarters or food allowances. This year, DoD allocated 12 percent of the October 1, 1977, increase in basic pay into the allowance for quarters -- in effect, raising rents for those in government quarters -- and gave rebates to bachelors in government quarters (the effective rent for barracks was not increased). Available information indicates that this action will probably be taken in future years as well; the projections therefore assume reallocations into the quarters allowance every year and cumulative rebates to bachelors.

The basic payraise is linked by law to general schedule payraises; estimating the cost of the raises to DoD, however, requires some special adjustments. First, certain special pays, such as hazardous duty pay and flight pay, amounting to 9 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. Second, since those in government quarters forfeit their quarters allowance, the reallocation from basic pay reduces the cost to DoD.

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 8.6 percent, compared to 7.9 percent for the national defense function as

a whole. This result 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 9 apportions the projected budget authority according to these three factors.

TABLE 9. COMPONENTS OF PROJECTIONS FOR RETIRED PAY: BY FISCAL YEARS, IN MILLIONS OF DOLLARS

	Projections				
	1979	1980	1981	1982	1983
Budget Authority for Retired Pay in 1977 Dollars					
Pre-September 30, 1977, retirees	8,567	8,383	8,186	7,985	7,776
Post-September 30, 1977, retirees	644	1,073	1,502	1,931	2,360
Adjustments for:					
Wage increases after September 30, 1977	55	153	197	352	511
Cost-of-living increases after September 30, 1977	669	1,256	1,873	2,465	3,140
Total	9,935	10,837	11,758	12,733	13,787

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 46 percent of the funds in the O&M category is for civilian pay, or about 89 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 the account pays for miscellaneous claims that can be expected to rise with the general price level, we have projected this account 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 1978 includes funds for anticipated inflation over the period when the procurement will take place. To project these accounts under existing law commitments, the purchase dollars were held constant at fiscal year 1978 levels. Under further adjustments for inflation, purchase dollars were held constant in real terms. To estimate the real value of the 1978 budget authority in 1978 dollars, outlays from 1978 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 6-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 1978, 1979, ..., 1983 from budget authority for 1978

B = fiscal year 1978 budget authority

r_i = outlay rate for i th year

f_i = budget authority deflator (f_1 = fiscal year 1978 deflator = 1.0, f_2 = fiscal year 1979 deflator, and so forth)

The total of the constant dollar outlays (TC) stemming from fiscal year 1978 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:

$$BA_j = c_1 \times f_j + c_2 \times f_{j+1} + \dots + c_6 \times f_{j+5}, \quad j = 1979, \dots, 1983$$

where

BA_j = budget authority in year j

f_j = budget authority deflator in year j ($f_{1978} = 1.0$)

Under existing law commitments, budget authority for procurement is almost constant. The increase from fiscal year 1978 to fiscal year 1983 is solely because of increases for the pay funded through procurement accounts. Outlays, however, increase from \$21.6 billion in fiscal year 1978 to \$37.9 billion in fiscal year 1983. The largest year-to-year increase is \$2.6 billion, from fiscal year 1982 to fiscal year 1983. The increase in outlays results from the increases in budget authority in fiscal years prior to 1978 and 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 1979 projection including further inflation adjustments, only about \$3.9 billion of the \$25.0 billion in procurement outlays reflect outlays from fiscal year 1979 budget authority. The other \$21.1 billion represent outlays from programs authorized in fiscal year 1978 and prior years. Table 10 separates outlays that result from budget authority in fiscal year 1979 and beyond from those that result from budget authority approved prior to fiscal year 1979. The latter category of outlays is relatively uncontrollable since it is the result of decisions already made by the Congress.

TABLE 10. PROCUREMENT OUTLAYS ACCORDING TO THE PERIOD IN WHICH AUTHORITY WAS GRANTED: BY FISCAL YEARS, IN BILLIONS OF DOLLARS

	Projections				
	1979	1980	1981	1982	1983
Outlays from Budget Authority in 1979 and Beyond	3.9	15.4	24.6	30.2	34.7
Outlays from Budget Authority in Years Prior to 1979	21.1	12.6	6.8	4.6	3.3

Research and development programs provide for basic and applied research, and the development, test, and evaluation of new and improved

weapon systems. About 13 percent of the 1978 budget authority is for civilian employee compensation. The development, test, and evaluation of major weapon systems is forward-priced (discussed previously for procurement). Approximately 70 percent of research and development funding has been forward-priced.

Military construction includes accounts for military construction for each of the services, the reserves, and the national guard. The construction 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 85 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 construction of new housing, operation and maintenance of existing family housing, and payments required on the indebtedness assumed to acquire Capehart and Wherry housing. For projections, this account was divided into three pieces that for fiscal year 1978 are estimated to include \$74 million for construction, \$1,228 million for operations and maintenance, and \$44 million for debt repayments. The construction and O&M portions were projected independently by 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.

Stock funds, DCPA, and other accounts include revolving and management funds and miscellaneous accounts such as the Defense Civil Preparedness Agency, Intelligence Oversight Commission, and trust funds. The fiscal year 1978 estimate includes \$171 million for purchase of war reserve items by the stock funds. These funds were interpreted as one-time increases in stocks and were not included in the projections of budget authority for fiscal year 1979 and subsequent years.

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 11 distributes the budget authority for allowances for payraises between military and civilian pay.

TABLE 11. PROJECTIONS OF PAYRAISE COSTS: BY FISCAL YEARS, IN MILLIONS OF DOLLARS

	Projections				
	1979	1980	1981	1982	1983
Civilian Pay	1,099	1,066	1,101	1,169	1,276
Military Pay	1,657	1,620	1,641	1,729	1,904

In fiscal year 1979, \$1,657 million is allowed for military payraises; in fiscal year 1980, the amount will be distributed among the military personnel accounts. The \$1,099 million allowed for civilian payraises is 83 percent of the \$1,328 million full-year cost. In fiscal year 1979, the \$1,328 million is distributed among the operations and maintenance, research and development, and other accounts.

In addition to allowances for payraises, the allowance category contains -\$404 million in fiscal year 1978 budget authority for items assumed to be included in the second concurrent resolution, including absorption of approximately 18 percent of the October 1978 payraise.

Offsetting receipts include miscellaneous offsetting receipts for DoD-Military which have not otherwise been identified. The projections in fiscal years 1979 through 1983 were obtained by inflating the fiscal year 1978 estimate by the projected implicit price deflator for the gross national product (GNP).

Military assistance

This component of the national defense function is estimated to have little budget impact relative to other parts of the function. Budget authority for this category grows from -\$1.3 billion in fiscal year 1978 to

\$1.5 billion in fiscal year 1983. Military assistance is, however, subject to wide swings, because of the presence in that category of the foreign military sales trust fund, which lies outside of the normal appropriations process. In addition to the trust fund, the military assistance category includes funds for foreign military sales credits, foreign military training, and grant military assistance. The methodologies used for the trust fund and for sales credits are described below. The remaining items are projected using the simple inflation method.

Foreign Military Sales Trust Fund. 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. The amounts shown in Table 7 are net budget authority, equal to gross budget authority less receipts, and net outlays, equal to gross outlays less receipts. The derivation of net budget authority and net outlays are shown in Table 12.

TABLE 12. PROJECTIONS OF THE FOREIGN MILITARY SALES TRUST FUND: BY FISCAL YEARS IN MILLIONS OF DOLLARS

	1978 Second Concurrent Resolution	Projections				
		1979	1980	1981	1982	1983
Budget Authority (gross)	6,916	10,282	10,783	11,330	11,926	12,576
Receipts	-8,800	-9,891	-10,357	-10,865	-11,420	-12,025
Net Budget Authority	-1,884	391	426	464	506	552
Outlays (gross)	8,800	9,625	10,101	10,598	11,132	11,712
Receipts	-8,800	-9,891	-10,357	-10,865	-11,420	-12,025
Net Outlays	--	-266	-256	-268	-288	-312

The GNP deflator is used to adjust the fiscal year 1978 level of new sales acceptances for projected price changes throughout the five-year period. Obligations are estimated as a function of new acceptances in each year and the balance of unobligated acceptances at the beginning of that year. Receipts are estimated as a function of new acceptances and the value of unfunded acceptances at the beginning of each year. Gross outlays are estimated as a function of the receipts estimated to be received during the year and the balance of cash in the trust fund at the beginning of each year.

Net budget authority grows from -\$1.9 billion in fiscal year 1979 to \$0.6 billion in fiscal year 1983. This increase reflects a growth in obligations in excess of the growth in receipts, because of the increasing dollar value of new acceptances over the projection period and the fact that the obligation of funds generally precedes the receipt of funds from a foreign purchaser.

Net outlays decline during the projection period from \$0.0 to -\$0.3 billion. This decrease reflects an increase in receipts in excess of the increase in disbursements from the trust fund, because of the growing nominal value of new acceptances over the projection period and the fact that receipts generally precede the disbursement of funds (bills are issued and payable quarterly in the amount estimated to be required for disbursement through the succeeding quarter).

Foreign Military Sales Credits. This program finances the sale of defense articles and services to foreign countries. Two types of financing

TABLE 13. (Continued)

		1978 Second Concurrent Resolution	Projections				
			1979	1980	1981	1982	1983
Conduct of Foreign Affairs							
Administration of foreign affairs	BA	813	867	925	983	1,043	1,109
	O	767	858	915	970	1,025	1,089
International organizations & conferences	BA	389	412	437	461	486	514
	O	351	406	430	455	480	507
Other	BA	52	55	55	56	58	60
	O	50	54	56	55	57	59
Offsetting receipts	BA	-115	-115	-115	-115	-115	-115
	O	-115	-115	-115	-115	-115	-115
Subtotal	BA	1,139	1,220	1,302	1,385	1,473	1,569
	O	1,054	1,202	1,287	1,365	1,448	1,541
Foreign Information and Exchange							
Educational exchange	BA	78	83	87	92	98	103
	O	73	79	86	91	96	101
USIA	BA	287	309	333	357	381	408
	O	287	314	335	353	377	403
Other ^{b/}	BA	68	70	74	78	82	87
	O	69	74	74	78	82	87
Subtotal	BA	432	461	494	527	561	598
	O	429	468	494	521	555	591
International Financial Programs							
Export-Import Bank	BA	--	829	1,623	1,644	1,648	1,619
	O	221	469	580	738	948	906
Offsetting receipts	BA	-20	-20	-20	-20	-20	-20
	O	-20	-20	-20	-20	-20	-20
Subtotal	BA	-20	809	1,603	1,624	1,628	1,599
	O	201	449	560	718	928	886
Undistributed Offsetting Receipts	BA	-526	-553	-549	-604	-625	-641
	O	-526	-553	-549	-604	-625	-641
Total	BA	8,000	8,566	10,158	10,690	11,326	11,724
	O	6,600	6,862	7,620	8,050	8,797	9,243

^{b/} Offsetting receipts for the Foreign Information and Exchange category are less than 0.5 throughout the projection period.

Most of the accounts in the function are projected using the simple inflation method. The projections generally use the GNP deflator to adjust nominal levels of budget authority for anticipated price changes. Outlays flow from prior and new budget authority, and are computed by applying spendout rates to estimates of unexpended balances and new budget authority.

Five accounts, totalling \$3.1 billion in budget authority and \$2.4 billion in outlays, rely on special projection methodologies. Descriptions of these methodologies are included in the following discussion of projections by subfunction.

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 of the world. These activities include security supporting assistance, multilateral development assistance, bilateral development assistance, Public Law (P. L.) 480 food aid, the Peace Corps, and other smaller programs. With the exception of a portion of multilateral development assistance, P. L. 480, and the residual, the projections for this subfunction use the simple inflation method.

The budget authority residual of \$229 million, remaining between amounts currently appropriated and estimated for fiscal year 1978 and the second concurrent resolution ceiling, is assumed to be a part of this subfunction. The budget authority residual results from uncertainties encountered in the determination of the ceiling, due to the relatively late passage of the fiscal year 1978 Foreign Assistance Appropriation Bill. The outlay residual of \$377 million is the result of those same uncertainties, as well as reestimates of outlays for security supporting assistance and other programs. The residuals are not projected into fiscal year 1979 and later years.

Multilateral development assistance -- contributions to international financial institutions. The multilateral development assistance category includes U. S. subscriptions to the capital replenishments of the International Bank for Reconstruction and Development, the International Finance Corporation, the Inter-American Development Bank (IDB), and the Asian Development Bank; and contributions to the International Development Association (IDA), the Fund for Special Operations of the IDB, the Asian Development Fund, and the African Development Fund.

Authorized appropriations for U. S. subscriptions or contributions to these institutions generally equal the total value of anticipated subscriptions or contributions to the replenishment of their resources. Actual subscriptions or contributions, however, are generally made in installments over a number of years. For example, Public Law 95-118 (an act to provide for continued participation by the U. S. in international financial institutions) authorized the appropriation of \$2,400 million for a contribution to the fifth replenishment of the resources of the IDA. A payment of \$800 million was appropriated for fiscal year 1978, with additional payments of \$800 million anticipated for both fiscal year 1979 and fiscal year 1980.

The projections with and without further adjustments for inflation maintain fiscal year 1978 levels of appropriation for subscriptions and contributions to these institutions until those currently authorized are exhausted. When a history of U. S. participation in replenishments for the institution is established, subscriptions and contributions exhausted during the projection period are assumed to be renewed. Under existing law commitments, succeeding authorizations are assumed to equal existing authorizations in current dollars. For the projections with further adjustments for inflation, the succeeding authorizations increase in magnitude in accordance with increases in the GNP deflator. In any year, appropriations under these assumed authorizations maintain the same relationship to the assumed authorizations as fiscal year 1978 appropriations bear to current authorizations.

Because actual contributions may take the form of letters of credit drawn upon as needed by the institutions, outlays from these contributions occur over a number of years. Total outlays are estimated by summing agency estimates of disbursements from contributions appropriated prior to fiscal year 1978 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 1978 through 1983.

Outlays for multilateral development assistance are projected to decline from fiscal year 1978 to fiscal year 1979, and rise thereafter. The initial decline reflects the completion in fiscal year 1978 of disbursements from U. S. contributions to the fourth replenishment of the resources of the IDA (IDA IV). The fiscal year 1978 Foreign Assistance Appropriation Act contains no funds for a contribution to IDA IV. Drawdowns for IDA IV during fiscal year 1978 and later years, therefore, are constrained by the amount of funds appropriated but undisbursed during fiscal year 1977 and prior years. All such funds are estimated to be drawn during fiscal year 1978.

Outlays never rise to the level of budget authority because a large portion of U. S. subscriptions 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.

P. L. 480. P. L. 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. Title I of the act authorizes the extension of credit on a concessional basis to foreign importers of U. S. agricultural commodities; Title II authorizes donations of commodities to meet critical foreign needs.

Outlays for P. L. 480 measure net program costs -- the amount of CCC funds actually required to finance the program. These net costs equal the total cost of commodities shipped abroad (including relevant shipping costs), less receipts (credit repayments in dollars and proceeds from the sale of foreign currency credit repayments).

$$O_i = C_i - R_i$$

where

O_i = actual outlays in year i

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

R_i = receipts in year i

Budget authority, on the other hand, 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/less 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/fell short of amounts appropriated for those years.

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

where

BA_i^r = budget authority requested 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

Whereas budget authority drives the projections for most accounts in function 150, outlays drive the projections for P. L. 480. For the purpose of the projections, P. L. 480 is disaggregated into the Title I and Title II programs. The projections for Title I under current law commitments maintain the fiscal year 1978 level of total expenses in each year of the projection period. Projections with further adjustments for inflation use the wholesale price index for farm products (WPI01) to adjust the nominal level of total expenses in fiscal year 1979 and later years so as to maintain the fiscal year 1978 real level of total costs in those years.

The International Development and Food Assistance Act of 1977, Public Law 95-88, 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 metric tons in each subsequent year. The projections, therefore, adjust the estimate of Title II expenses for fiscal years 1981 through 1983 from the level estimated for fiscal year 1978, to reflect the minimum tonnage requirements. Both projections then use WPI01 to reflect the cost of achieving the distribution levels specified by law.

P. L. 480 outlays equal the sum of Title I and Title II costs less estimated receipts. Receipts in any year are estimated as a function of the magnitudes and terms of outstanding credits.

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 1979 by the amount the appropriations for fiscal year 1978 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.

The conduct of foreign affairs

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

The projections for all accounts in this subfunction, except the U. S. payment to 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 be fixed under current law and continue unchanged in magnitude throughout the projection period.

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 Department of State, the activities of the United States Information Agency, the Board for International Broadcasting, and a number of other small programs.

All accounts in this subfunction are projected using the simple inflation method.

International financial programs

This subfunction consists entirely of the activities of the Export-Import Bank, which promotes U. S. exports by financing foreign purchases of U. S. goods, and by guaranteeing and insuring privately financed exports.

Export-Import Bank participation in an export transaction may involve the direct financing of a sale and/or the provision of credit guarantees or credit insurance to either the institutions financing the sale or the exporter of the goods. In the case of direct credits, the bank pays the U. S. exporter directly, and the payments are timed to delivery. Because deliveries associated with a given export agreement will occur over a number of years, a direct credit authorized in any given year will disburse over those years. Actual disbursements of direct credits in excess of credit repayments and bank net income are financed by bank borrowings from the Treasury and the Federal Financing Bank. Outlays are a measure of bank net borrowing.

$$O_i \equiv NB_i = D_i - R_i - Y_i$$

where

- O_i = outlays in year i
- NB_i = net borrowing in year i
- D_i = disbursements in year i
- R_i = credit repayments in year i
- Y_i = net income in year i

Budget authority measures potential borrowing requirements derived from bank activity during a given year. By definition, it equals the value of signed direct credit agreements (the signing of a credit agreement generally occurs within 15 to 18 months of the authorization of the credit), plus 25 percent of net guarantee and insurance authorizations, less direct credit repayments, direct credit cancellations and bank net income, plus any change in the balance of unobligated authority available to the bank.

$$BA_i \equiv S_i + 0.250 I_i - C_i - R_i - Y_i + \dot{U}_i$$



where

- BA_i = budget authority in year i
- S_i = signed credit agreements in year i
- I_i = net guarantee and insurance authorizations in year i
- C_i = credit cancellations in year i
- R_i = credit repayments in year i
- Y_i = net income in year i
- U_i = change in magnitude of unobligated balance during year i

Outlays may be greater or less than zero, depending on whether actual net borrowing increases or decreases during the period. Budget authority, however, may not be less than zero. The balance of unobligated authority adjusts in magnitude to minimize the amount of new authority required during the period, while insuring that budget authority remains greater than or equal to zero. During fiscal year 1977, for example, cancellations (C), repayments (R), and net income (Y) exceeded signed credit agreements (S) plus 25 percent of net guarantee and insurance authorizations (I).

$$S + 0.250 I - C - R - Y < 0$$

Budget authority, rather than becoming negative, equalled zero, and a balance of unobligated authority accumulated in the amount by which cancellations, repayments, and net income exceeded signed credit agreements plus 25 percent of net guarantee and insurance authorizations.

$$BA = 0$$

$$U = -(S + 0.250 I - C - R - Y) > 0$$

In later years, when signed credit agreements plus 25 percent of net guarantee and insurance authorizations exceed cancellations, repayments and net income ($S + 0.250 I - C - R - Y > 0$), the balance of unobligated authority will be drawn upon to reduce the amount of budget authority required to support bank activities ($U < 0$).

Projections under existing law commitments maintain estimated fiscal year 1978 levels of direct credit (A) and net guarantee and insurance authorizations (I) through the projection period. Projections with further adjustments for inflation increase A and I in accordance with projected increases in the GNP deflator. Signed credit agreements are estimated as a

function of direct credit authorizations in the current and preceding year. Budget authority is the sum of estimated signed credit agreements plus 25 percent of net guarantee and insurance authorizations, less credit cancellations, credit repayments, and bank net income, plus the change in the unobligated balance during the year. Disbursements of direct credits are estimated by applying historical spendout rates to levels of credit authorizations in the current year and prior years. Outlays are calculated by netting estimates of credit repayments and bank net income from estimated disbursements.

Budget authority rises sharply during the early years of the projection period and remains relatively constant thereafter. The level of credit authorizations assumed for fiscal year 1978 exceeds the actual level for fiscal year 1977 by \$2.1 billion. No budget authority is estimated to be required during fiscal year 1978 to support bank activity, however, because of the balance of unobligated authority that accumulated during fiscal year 1977 and the effect of the low level of fiscal year 1977 credit authorizations upon estimated credit signings during fiscal year 1978. During fiscal year 1979, the balance of unobligated authority is exhausted and \$0.8 billion of new authority is estimated to be required to support bank activity. In fiscal year 1980, no balance of unobligated authority will be available, and budget authority is estimated to rise to \$1.6 billion. It remains at roughly that level through the remainder of the projection period.

Outlays grow from fiscal year 1978 through fiscal year 1982, and decline from fiscal year 1982 to fiscal year 1983. The growth reflects an increase in credit disbursements throughout the projection period, derived from the \$2.1 billion growth in credit authorizations from the fiscal year 1977 actual level to the assumed fiscal year 1978 level, and the nominal growth in credit authorizations thereafter. The decrease in fiscal year 1983 reflects an increase in receipts in excess of the growth in credit disbursements.

Undistributed offsetting receipts

These receipts are not assigned as offsets to any of the categories already discussed. This category includes dollar principal repayments of Agency for International Development (AID) loans, dollar conversions of foreign currency loan repayments, recoveries under the lend-lease program, repayments of loans to the United Kingdom, and other miscellaneous receipts. These receipts are projected to grow from \$0.5 billion in fiscal year 1978 to \$0.6 billion in fiscal year 1983.

Most AID loans are offered on concessional terms with an initial grace period of up to 10 years. Repayments 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 1977 to \$0.4 billion in fiscal year 1983.

The Security Supporting Assistance appropriation for fiscal year 1978 includes funds for a \$300 million loan to Portugal. This loan is estimated to be repaid in 15 approximately equal semiannual installments, beginning 36 months after the disbursement of the funds. The first principal repayments are estimated to be received in fiscal year 1981.

Dollar conversions of foreign currency loan repayments, recoveries under the lend-lease program, repayments of loans to the United Kingdom, and other receipts are assumed constant over the projection period.

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. The major activities categorized under general science and basic research are within the National Science Foundation and ERDA. The activity in civilian space programs is entirely within the National Aeronautics and Space Administration (NASA). Outlays for this function are projected to grow at an average annual rate of 8.0 percent during the projection period.

The budget authority projections were developed by the simple inflation method. Outlays were derived through the use of spendout rates that reflect the historical relationship between budget authority and outlays. Under existing law commitments, increases in budget authority occur primarily because of federal pay adjustments. For the projection with further adjustments for inflation (Table 14), all fiscal year 1978 funding is increased annually, based predominately on projections of a specialized inflator for NASA research and development, and on projected increases in federal pay and other nondefense research and development costs.

Natural Resources, Environment and Energy (Function 300)

The major programs in this function involve the management and maintenance of the nation's natural resources, with primary concern for the conservation and promotion of energy resources and the protection of the environment. Budget authority for this function in fiscal year 1983 is projected to be only slightly higher than that specified in the Second Concurrent Resolution on the Budget for Fiscal Year 1978. This increase is

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

		1978 Second Concurrent Resolution	Projections				
			1979	1980	1981	1982	1983
General Science and Basic Research	BA	1,279	1,386	1,497	1,611	1,733	1,871
	O	1,170	1,342	1,498	1,544	1,663	1,795
Civilian Space Programs	BA	3,596	3,886	4,210	4,546	4,873	5,247
	O	3,564	3,736	4,085	4,438	4,767	5,129
Offsetting Receipts and Other	BA	25	-2	-2	-2	-3	-3
	O	-35	-2	-2	-2	-3	-3
Total	BA	4,900	5,270	5,705	6,155	6,604	7,115
	O	4,700	5,076	5,581	5,980	6,428	6,921

a/ Function 250.

small because the budget resolution allows for substantial budget authority for pending energy legislation, which could not be projected because of its uncertain nature, and for purchases of oil for the strategic petroleum reserve, which would be completed before 1983. Outlays for this function are projected to increase at an average annual rate of 3.5 percent between 1978 and 1983, excluding any impact of the pending energy legislation. This relatively slow rate of growth is primarily attributable to projected completion of the 500 million barrel strategic petroleum reserve by fiscal year 1980, the constrained growth of Environmental Protection Agency (EPA) construction grants because of authorization limitations, and a projected decline in Tennessee Valley Authority (TVA) outlays.

Water resources and power

The water resources programs of the Bureau of Reclamation, the Army Corps of Engineers, and the TVA are the primary components of this subfunction. With the exception of the TVA fund and the Bonneville Power Administration fund, all the estimates were derived by the simple inflation method. The deflators most commonly used were those for federal pay, federal purchases of services, and sewage plants.

The projection of budget authority for the TVA fund includes two components -- borrowing authority and direct appropriation. The agency provided a forecast of its current plans for borrowing authority for the 1978-1982 period, while the direct appropriation component was projected using the simple inflation method.

The Bonneville Power Administration operates entirely on receipts from sale of power, borrowing and other activities. The projection of

outlays is based on the agency's forecast of both income and expenditures, taking into consideration its plans for major construction and likely rate increases on power sold in future years.

Conservation, land management, and recreational resources

This category is composed chiefly of the 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. All of the projections were derived by the simple inflation method, except for the land and water conservation fund, conservation loans to the agricultural conservation program from the Commodity Credit Corporation, and several permanent appropriations. The deflators most commonly used include those for federal pay, nonresidential structures, federal purchases of services, federal purchases of materials, sales of timber, and federal aid for highway construction.

The land and water conservation fund of the Bureau of Outdoor Recreation is funded through both direct appropriation and contract authority. The direct appropriation for fiscal year 1978 was inflated by a composite of the inflators for federal pay and nonresidential structures. Outlays from the direct appropriation are estimated based on spendout rates provided by the Bureau of Outdoor Recreation. The contract authority portion was projected at a constant level throughout the projection period, with outlays estimated using the same spendout rates.

Conservation loans to the agricultural conservation program from the CCC, expected to be made in fiscal year 1978, were assumed to be repaid in fiscal year 1979. No additional loans were projected, because a provision of the Food and Agriculture Act of 1977 (Public Law 95-113) ends this fund transfer after fiscal year 1978.

Those 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.

EPA construction grants

The EPA construction program supplies funds to state and local governments on a cost-sharing basis for the construction of various types of state and local 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 projections assume that the funds of reimbursable programs would be exhausted by fiscal year 1980.

Outlays for the grant program for new construction projects are based on the projected obligation rates in fiscal years 1979-1983. Obligations and budget authority for these years were set equal to the authorization levels contained in the Federal Water Pollution Control Act conference bill (H. R. 3199) through fiscal year 1982, and inflated thereafter for the discretionary inflation path. In addition, it was assumed that most of the unobligated balances from fiscal years prior to fiscal year 1978 would be exhausted by the end of fiscal year 1978. Outlays were then derived through the use of historical spendout rates relating outlays to obligations.

Other pollution control and abatement

Other EPA accounts were projected by applying the simple inflation method. The most common deflators employed were those for research and development (nondefense), federal pay, and state and local government purchases.

ERDA

This program area includes all of the ERDA activity in the energy subfunction. The major share of the funding projections was developed by the simple inflation method, applied separately to each ERDA program area, primarily using indexes for federal pay, ERDA plant and capital, and research and development of other nondefense activities. Receipts from uranium enrichment activities were projected separately, based on estimates of future sales volume and prices. These receipts were then netted against the projections for ERDA's spending programs.

Petroleum reserves

The activities included in this program area are the implementation of the strategic petroleum reserve and the development and productive operation of the naval and Alaskan petroleum reserves. For the strategic petroleum reserve, current policy is defined as the purchase and storage of 500 million barrels of oil by the end of fiscal year 1980. Outlays are estimated using a CBO projection of the fill schedule and future oil prices. The cost of exploration and development of the naval and Alaskan petroleum reserve is projected by the simple inflation method, using an index for oil field machinery and tools. Projected receipts from the sale of oil and natural gas from the naval petroleum reserves are based on estimates from the Office of Naval Petroleum Reserves.

The phasing down of oil purchases for the strategic petroleum reserve program, plus rising receipts from the naval petroleum reserve, account for the substantial drop in outlays projected for fiscal year 1981. The increase thereafter is due to a projected decrease in receipts from the naval petroleum reserves, when production required by the Naval Petroleum Reserves Production Act of 1976 will end.

Other energy programs

This category is composed of the Federal Energy Administration, the Nuclear Regulatory Commission, and other smaller energy programs. The programs are projected using the simple inflation method. No projection was made of the cost of the pending energy legislation, since the magnitude and nature of any new programs was unclear at the time this report was being prepared.

Other natural resources programs

The major components of this category include programs of the National Oceanic and Atmospheric Administration (NOAA), the Geological Survey, and the Bureau of Mines. All are projected by the simple inflation method. Major inflators used in these projections were those for federal pay and for federal purchases of services.

TABLE 15. NATURAL RESOURCES, ENVIRONMENT, AND ENERGY, ^{a/} BY MAJOR PROGRAM: BY FISCAL YEARS, IN MILLIONS OF DOLLARS

		1978	Projections				
		Second	1979	1980	1981	1982	1983
		Concurrent					
		Resolution					
Water Resources and Power	BA	3,660	3,947	4,276	4,603	4,944	5,326
	O	4,443	5,057	5,668	5,940	5,750	5,612
Conservation, Land Management and Recreational Resources	BA	3,346	3,565	3,835	4,105	4,375	4,666
	O	2,972	3,268	3,587	3,973	4,166	4,461
Pollution Control and Abatement							
	EPA construction grants						
	BA	4,500	5,000	5,000	5,000	5,000	5,400
	O	4,380	5,288	5,661	5,369	5,166	5,137
Other pollution control and abatement	BA	937	1,010	1,088	1,169	1,255	1,350
	O	775	906	1,059	1,102	1,185	1,273
Energy							
	ERDA						
	BA	4,265	4,444	4,718	4,990	5,304	5,618
	O	3,394	3,812	4,105	4,488	4,782	5,095
Petroleum reserves	BA	3,057	2,936	659	-1,023	566	620
	O	2,058	2,992	2,306	-1,048	541	594
Other energy programs	BA	4,712	1,118	1,206	1,297	1,391	1,496
	O	1,996	994	1,166	1,245	1,333	1,430
Offsetting Receipts and Other	BA	122	115	143	175	195	217
	O	-18	82	135	157	164	177
Total	BA	24,600	22,135	20,925	20,317	23,031	24,693
	O	20,000	22,399	23,688	21,225	23,087	23,778

^{a/} Function 300.

Agriculture (Function 350)

The agriculture function is divided into a farm income stabilization component, consisting of programs designed to reduce the volatility 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. Outlays for this function are projected to grow at an average annual rate of 2.2 percent during the projection period. This relatively slow rate is attributable to the projected decline in price support payments from the peak levels of fiscal year 1978.

Farm income stabilization

The major program within this stabilization component is the price support effort of the CCC, which stabilizes farm prices and income through the use of commodity loans and payments, purchases of surplus products, and compensatory payments for disaster-related losses.

CCC outlays for the major commodity programs were projected using the Data Resources, Incorporated, long-term agricultural model and a government cost algorithm developed by CBO. Loan rates and target prices were developed according to the formulas set forth in the Food and Agriculture Act of 1977 (Public Law 95-113). Set-asides of 20 percent on wheat and 10 percent on feed grains were assumed for crop years 1978 and 1979. The weather was assumed normal for crop years 1978 through 1982.

For commodities not covered by the Food and Agriculture Act of 1977, authorizing legislation in effect for October 1977 was assumed to define the program parameters throughout the projection period. The short-term export credit program level was projected at the current level of \$1.5 billion each year. Interest paid by the CCC was projected for each year according to the estimated level of crop loan activity. Administrative expenses were inflated using the federal salary, purchases, and services deflators.

The budget authority projections for the CCC are retroactive on a two-year lag basis, since budget authority is intended to fund realized losses from the corporation.

Other farm income stabilization

Most of the remaining costs for farm income stabilization programs are accounted for by the agricultural credit insurance fund (ACIF) of the Farmers Home Administration, and by the Agricultural Stabilization and Conservation Service. The ACIF provides loans to individuals and organizations for the acquisition and improvement of farms, emergency loans to



agricultural producers, and several other types of loans. For the projections including full inflation adjustments, loans made in each year were estimated by applying projected changes in the GNP deflator to the loan levels specified in the 1978 appropriations bill. Loan repayments and write-offs were projected as a constant proportion of unpaid loan balances insured by the fund. Funded losses each year were set at 4 percent of the previous year's beginning loan balance.

After ACIF loans are disbursed, they are generally sold to the Federal Financing Bank, an off-budget agency. Even at steady loan levels, budget authority and outlays can fluctuate sharply from year to year, depending on whether and when such sales take place. As described at the beginning of this chapter, asset management was removed as a factor in projections for loan accounts. Thus, for this account it was assumed that all disbursed loans are sold to the Federal Financing Bank, and outlays each year were projected to be the funded losses, together with the increase in partially disbursed loans. Budget authority was projected to equal funded losses plus the increase in obligated, but undisbursed loans.

Outlays and budget authority for the Agricultural Stabilization and Conservation Service, the agency that administers the price supports, were projected using the simple inflation method, applying the estimated changes in the index of federal purchases of services and in federal pay to the 1978 base.

Agricultural research and services

This subfunction includes the programs administered by the Agricultural Research Service, Cooperative State Research Service, Animal and Plant Health Inspection Service, and the Extension Service. Projections were done by the simple inflation method, using the deflator for federal pay and, for projections with inflation adjustments, the deflator for federal purchases.

Commerce and Transportation (Function 400)

This function encompasses various HUD and USDA private market housing programs, thrift insurance programs, the federal payment to the Postal Service, and most of the activities of the Departments of Transportation and Commerce. It also includes funds for a number of regulatory agencies, and for activities of the Small Business Administration (except the disaster loan program).

Outlays for this function are projected to grow at an average annual rate of 5.5 percent from 1978 to 1983. The rate of increase is somewhat

TABLE 16. AGRICULTURE, a/ BY MAJOR PROGRAM: BY FISCAL YEARS, IN MILLIONS OF DOLLARS

		1978 Second Concurrent Resolution	Projections				
			1979	1980	1981	1982	1983
Farm Income Stabilization							
Price support programs (CCC)	BA	524	3,418	4,772	5,328	4,259	4,861
	O	6,458	5,322	4,252	4,854	4,470	4,733
Other farm income stabilization	BA	384	452	504	548	591	632
	O	462	468	512	554	596	638
Agricultural Research and Services	BA	1,176	1,267	1,365	1,463	1,565	1,676
	O	1,166	1,248	1,344	1,438	1,539	1,648
Offsetting Receipts and Other	BA	16	-3	-3	-3	-3	-3
	O	-1,786	-3	-3	-3	-3	-3
Total	BA	2,100	5,134	6,638	7,336	6,412	7,166
	O	6,300	7,035	6,105	6,843	6,602	7,016

a/ Function 350.

diminished by the decline in payments to the Postal Service prescribed by current law, and by projected decreases in outlays for rail programs (the Northeast Corridor and purchase of Conrail securities), which, under current policy, are to be completed by fiscal year 1983.

Mortgage credit and thrift insurance

Four activities account for the bulk of the budget authority and outlays for this category: the rural housing insurance fund, the Federal Housing Administration fund, housing programs for the elderly or handicapped, and the government's thrift insurance programs.

The rural housing insurance fund contains the major federal rural housing programs. The fund makes loans for rural rental and cooperative housing, farm labor housing, rural housing sites, and mobile home parks. The fund also guarantees private loans. The projections methodology for this account is similar to that described for the agriculture credit insurance fund in function 350. New loans were projected to increase at the same rate as the index for residential structures, from fiscal year 1978 levels specified in the agriculture appropriations bill (Public Law 95-97). Loan repayments were 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 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 the sum of funded losses and the increase in obligated but undisbursed loans.

The Federal Housing Administration (FHA) fund is composed of all of the HUD mortgage insurance programs. In recent years, outlays from the fund have been substantial, as HUD has settled claims on an increasing number of defaulted mortgages. After a slight decrease in fiscal year 1976, however, FHA fund outlays dropped significantly in fiscal year 1977, primarily because of improved economic conditions, the aging of FHA's subsidized insurance portfolio, and Section 8 assistance to troubled FHA insured multifamily projects. These lower outlay levels are expected to continue throughout the projection period. There will be a slight bulge in the middle years of the period, however, as loans insured under the revised Section 235 program reach their peak default years.

The FHA fund outlay estimates are the result of three separate projections. First, estimates were made of the fund's capital outlays over the projection period. Capital outlays result from insurance claims paid on defaulted mortgages. Future levels of capital outlays were projected based on expected default rates, outstanding insurance balances, and levels and types of current activity. In addition to capital outlays, certain administrative expenses are incurred by the FHA fund. These were estimated by the simple inflation method, using actual costs for fiscal year 1977, and projected increases in federal pay and the price index for federal purchases of other 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. Projected budget authority was estimated by assuming the relationship between budget authority and outlays remains the same over the projection period.

The housing for the elderly or handicapped program operates under an annual loan limitation that is set in appropriation acts. This limitation is considered budget authority for this account. Without discretionary inflation, the annual limitation was assumed to remain at the fiscal year 1978 level throughout the projection period. With discretionary inflation, 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. Loan schedules were constructed, based on past program experience to estimate the rate at which the committed funds would be disbursed. Administrative expenses, calculated in the same manner as those for the FHA fund, were added to

loan disbursements to produce estimates of gross outlays. Program income (principally loan repayments and net interest income) was projected using loan portfolio levels consistent with the current portfolio and the assumed levels of future activity.

The federal thrift deposit insurance agencies (FDIC, FSLIC, and NCUA) 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 savings rate for the economy was assumed to remain constant. Savings deposit levels, therefore, can be assumed to grow 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 1977. Costs attributable to personnel were inflated using the CBO estimates of increases in federal pay, and the balance of expenses using the CBO estimates of increases in the costs of rent, communications and utilities. No attempt was made to predict the rate of failures among insured institutions.

Payment to the Postal Service

Current law provides for payments to the Postal Service for public service costs, revenue foregone on free and reduced-rate mail, and previous unfunded liabilities of the Post Office Department. The first is specified by law at \$920 million for fiscal year 1979, with gradual reductions thereafter. The second was projected using the simple inflation method, applied to the fiscal year 1978 appropriation for revenue foregone. The payment for previous unfunded liabilities was estimated, based on Postal Service figures, at \$64.8 million for fiscal years 1979 through 1982, with a residual amount of \$14 million for fiscal year 1983.

Other advancement and regulation of commerce

The largest account in this subfunction is the business loan and investment fund of the Small Business Administration. It was projected by the simple inflation method, using the implicit GNP deflator.

This subfunction also includes numerous other accounts of the Department of Commerce and other agencies, including the Securities and Exchange Commission, the Federal Communications Commission, and the Federal Trade Commission. With the exception of a number of small

accounts with unique characteristics or permanent authority, these were projected using the simple inflation method.

Highway programs

The vast majority of highway spending falls under the Federal-Aid Highways program, which funds construction of the interstate system and other noninterstate programs. It was assumed for this projection that this program will continue in its present form at least through fiscal year 1983. The Federal-Aid Highway Act of 1976 (Public Law 94-280) established budget authority through 1990 for the interstate system and through 1978 for noninterstate programs. Budget authority for the latter, under current law commitments, was projected to remain constant at the 1978 level through the remainder of the projection period. When adjusted for inflation, the noninterstate budget authority was increased from the 1978 level using the implicit deflator for highways and streets.

Obligation levels, except for administration, were assumed to be constant in real terms throughout the projection period. The obligation level was based on the annual obligation rate for fiscal years 1972 through 1977, expressed in fiscal year 1978 dollars, and projected forward using the deflator for highways and streets. Administrative obligations were projected as a normal salaries and expenses account using the simple inflation method. Outlays were determined for each year by applying separate spendout rates to the interstate, noninterstate, and administrative obligation levels.

Budget authority for other highway programs was projected using the simple inflation method, except in cases where fiscal year 1978 budget authority is zero. A number of such accounts represent programs that have been fully funded and are being phased out. In these cases, budget authority was projected at zero, and estimates were made of expected outlay flows.

Rail transportation

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

Budget authority for the Northeast Corridor program was projected based on the funding schedule used by the Congress in planning the improvement program. Outlays were estimated based on agency plans and experience with the program to date. Similarly, payments for the purchase of Consolidated Rail Corporation securities (which comprise the bulk of USRA funds) were projected using the budget authority levels already approved by the Congress through fiscal year 1979. The remainder of the

USRA budget authority is for administrative expenses. These administrative expenses and budget authority and outlays for all other rail programs, including grants to AMTRAK, were projected using the simple inflation method.

Mass transportation

For these projections, it was assumed that the programs of the Urban Mass Transportation Administration (UMTA) would be continued in their present form through fiscal year 1983. Since UMTA has advance budget authority for most of its programs, future year obligation levels were projected using the obligation levels approved for fiscal year 1978 in the appropriations act (Public Law 95-85). These were projected on a program-by-program basis, detailed here.

- o Obligation levels for formula grants are set in law through fiscal year 1980. They were assumed to remain constant through the remainder of the projection period (at \$900 million a year) under current law commitments, and were increased after 1980 when adjusted for inflation.
- o Rail service operating payments are limited by law to \$45 million for fiscal year 1978, and \$30 million for fiscal years 1979 and 1980. For fiscal years 1981 through 1983, they were projected using the simple inflation method.
- o Obligations for interstate substitution grants out of prior budget authority were projected at \$350 million for fiscal years 1979 and 1980 and \$150 million for fiscal year 1981. New budget authority and resulting outlays for these grants were projected from the fiscal year 1978 base using the simple inflation method.
- o Obligations for all other UMTA programs were projected from fiscal year 1978 levels using the simple inflation method.

It was assumed that the Congress would continue to annually appropriate the funds required for rail service operating payments and interstate substitution grants, and that all other obligations would be derived from existing contract authority. New budget authority was assumed to be added when available balances would be exhausted, beginning in fiscal year 1980. Outlays were derived by applying spendout rates to the projected obligation levels for each UMTA program.

The other major mass transportation account is the federal contribution to the Washington Metropolitan Area Transit Authority (WMATA). The

current debt service assistance and interest subsidy portions of the fiscal year 1978 appropriation (\$48.7 million) were projected to remain constant through fiscal year 1983. The remainder of the fiscal year 1978 appropriation was of a one-time nature, and no additional expenditures were projected.

Air transportation

The major components of this subfunction include grants-in-aid for airports, Federal Aviation Administration (FAA) operations (trust fund), other trust fund programs, and other FAA and Civil Aeronautics Board (CAB) activities. Budget authority for the first two accounts is specified by law through fiscal year 1980. They were assumed to remain constant through 1983 under current law commitments, and were increased thereafter when adjusted for inflation. Projections for other programs were estimated using the simple inflation method.

Water transportation

This subfunction encompasses activities of the Coast Guard, the Maritime Administration (MARAD), the Federal Maritime Commission, the St. Lawrence Seaway Development Corporation, and the Panama Canal Company Fund. In general, budget authority was projected from the fiscal year 1978 level. However, since MARAD's ship construction program is relying on existing unobligated balances for a portion of its fiscal year 1978 activities, the projections of future year budget authority are based on the estimated fiscal year 1978 obligation level for that program, and a gradual reduction of the account's unexpended balance. The projection for operating-differential subsidies was based on agency estimates of future year requirements.

Other transportation

This category contains the National Transportation Policy Study Commission, the Interstate Commerce Commission, and various activities of the Office of the Secretary of Transportation. Projections were generally calculated using the simple inflation method.

Community and Regional Development (Function 450)

This function includes community and regional development programs that are designed to redevelop urban areas and stimulate the economic growth of underdeveloped regions. Also included are antirecessionary programs and disaster relief funds.

Budget authority for this function is projected to grow at an average rate of about 8 percent per year during the projection period. Resulting

TABLE 17. COMMERCE AND TRANSPORTATION, a/ BY MAJOR PROGRAM: BY FISCAL YEARS, IN MILLIONS OF DOLLARS

		1978 Second Concurrent Resolution	Projections				
			1979	1980	1981	1982	1983
Mortgage Credit and Thrift Insurance	BA	1,929	2,131	2,329	2,550	2,737	2,888
	O	385	491	884	833	806	800
Federal Payment to Postal Service	BA	1,696	1,736	1,689	1,641	1,594	1,501
	O	1,696	1,736	1,689	1,641	1,594	1,501
Other Advancement and Regulation of Commerce	BA	1,491	1,587	1,696	1,806	1,918	2,041
	O	1,246	1,508	1,673	1,777	1,888	2,007
Ground Transportation							
Highway programs	BA	7,392	7,604	8,199	8,415	8,655	8,929
	O	6,998	7,466	7,806	8,154	8,529	8,933
Rail transportation	BA	1,854	1,836	1,696	1,283	1,365	1,456
	O	1,729	1,801	1,650	1,621	1,542	1,544
Mass transportation	BA	553	521	1,951	3,651	3,901	4,151
	O	2,172	2,256	2,501	2,901	3,401	3,701
Air Transportation	BA	3,197	3,436	3,692	3,959	4,237	4,548
	O	3,042	3,358	3,598	3,863	4,122	4,401
Water Transportation	BA	1,905	2,005	2,258	2,436	2,599	2,777
	O	1,894	2,077	2,160	2,305	2,467	2,639
Other Transportation	BA	450	154	164	176	189	202
	O	507	154	164	176	187	200
Offsetting Receipts	BA	-67	-71	-75	-79	-84	-88
	O	-67	-71	-75	-79	-84	-88
Total	BA	20,400	20,940	23,601	25,838	27,114	28,404
	O	19,600	20,776	22,051	23,191	24,453	25,639

a/ Function 400.

outlays are estimated to increase by only 1.6 percent per year, because of the phaseout of the local public works program. Outlays for this function, excluding local public works, are projected to increase by 8 percent per year.

Community Development Block Grants

The budget authority for this program was projected using the simple inflation method. For the projection that fully adjusts for inflation, the deflators for purchases by state and local governments, for nonresidential construction, and for the gross national product were used. Outlays were calculated based on a weighted spendout rate. To establish the base

projected by the simple inflation method using the historical spending rate of a similar program, the economic development assistance program of the Economic Development Administration (EDA).

This category also includes a number of expiring HUD programs, including urban renewal, model cities, and most of the older HUD categorical grant programs now undergoing liquidation. Also included are several loan and advance accounts that are being closed out. Outlays from the grant programs, which were estimated based on agency-supplied spending data, are expected to decline rapidly through the projection period. The estimates of the loan and advance accounts, which were also based on agency data, show a substantial increase in repayments over the same period.

Local Public Works

The \$6 billion local public works program was enacted in two parts. The first part of the program was a \$2 billion appropriation effective October 1, 1976. The second part was a \$4 billion appropriation enacted in May 1977 as part of the economic stimulus package. The fiscal year 1977 program is treated in the projection as a one-time, nonrecurring program with no new budget authority projected after fiscal year 1977. This determination is based on the nature of the program as a particular response to a temporary set of economic conditions. The outlay rate is based on experience with accelerated public works during the early 1970s, with additional adjustments based on actual fiscal year 1977 spending data for this program.

Other area and regional development

The three largest programs in this category are Appalachian regional development programs, economic development assistance programs of EDA, and operation of Indian programs. It also includes the rural development insurance fund of FmHA, which required a specialized methodology for the projection.

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 program of EDA were projected by the simple inflation method, using the deflators for office building construction and nondefense research and development.





Indian programs operated by the Bureau of Indian Affairs (BIA) include education, Indian services, economic development, and trust responsibilities. Projections of 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 substantial offsetting receipts. Approximately 60 percent of these receipts come from revenues generated by business activities on Indian reservations. Revenues are projected utilizing inflators specific to the products of these business 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.

The rural development insurance fund insures or guarantees loans for water systems and waste disposal facilities, development of rural business, community facilities, pollution abatement, and economic improvements in rural areas. The methodology for projecting this account was similar to that used for the rural housing insurance fund and for the agriculture credit insurance fund described earlier. The level of insured loans specified in the 1978 agriculture appropriations bill (Public Law 95-97) 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 unpaid principal outstanding each year. Funded losses each year were projected at 5 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.

Disaster relief and insurance

The three main programs in this subfunction are the disaster relief fund of the Federal Disaster Assistance Administration, the Small Business Administration's disaster loan fund, and the flood insurance program of the Federal Insurance Administration.

Since there is no reliable way to predict the incidence of disasters, historical experience was used to project future obligation rates. The average obligation level for fiscal years 1970 through 1977 -- \$329 million in 1977 dollars -- is the base for the budget authority projections of the disaster relief fund, adjusted for future inflation by the consumer price index (CPI). The historical experience of the agency is the basis for outlay estimates.

For the disaster loan fund of the Small Business Administration, the fiscal year 1978 obligation level is used as the projections base. This level represents approximately a fivefold increase from the fiscal year 1977 program level. Physical disaster loans to farmers for drought-related losses account for most of the increase. Obligations in future years, when fully adjusted for inflation, are projected from the 1978 level using the CPI. Future interest receipts and loan repayments are estimated separately, based on the projected loan volumes. Budget authority is calculated as obligations less net income. A two-year outlay spendout rate of 70 percent and 30 percent is assumed, although this rate is based on historical experience at a much smaller obligation level. Over time, net outlays are projected to decrease somewhat as the loan receipts increase.

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 assuming a constant growth in policies, average historical experience with incidence and magnitude of losses, and inflation adjustments to the average loss statistic and the premium rate. Borrowing authority is recognized as budget authority when it is used to cover losses. Outlays from annual losses are projected at 50 percent in each of the first two years. The administrative structure of this program is currently being revised and will likely effect costs of the program; these effects are not included in this projection.

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

This function includes a wide range of education, manpower, and social service programs. Budget authority for this function would increase from \$26.3 billion in fiscal year 1979 to \$31.5 billion in fiscal year 1983, and outlays would increase from \$26.9 billion to \$29.9 billion over the same period. These projections increase at an annual rate of only 3 to 5 percent, because of the assumed phaseout of the temporary employment assistance program. The projections are primarily determined by assumptions concerning the unemployment rate and the rate of inflation.

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

TABLE 18. COMMUNITY AND REGIONAL DEVELOPMENT, a/ BY MAJOR PROGRAM: BY FISCAL YEARS, IN MILLIONS OF DOLLARS

		1978 Second Concurrent Resolution	Projections				
			1979	1980	1981	1982	1983
Community Development Block Grants	BA	3,600	3,827	4,103	4,375	4,680	5,042
	O	2,502	3,037	3,677	4,015	4,354	4,681
Other Community Development	BA	1,829	2,005	2,142	2,252	2,350	2,495
	O	2,200	2,050	2,043	2,109	2,157	2,199
Local Public Works Program	BA	--	--	--	--	--	--
	O	2,800	1,920	620	80	--	--
Other Area and Regional Development	BA	1,822	2,272	2,385	2,567	2,774	3,014
	O	1,752	1,705	2,030	2,276	2,457	2,687
Disaster Relief and Insurance	BA	1,776	2,029	1,968	1,894	1,821	1,746
	O	1,720	2,129	2,133	2,113	2,043	1,946
Offsetting Receipts and Other	BA	-827	-40	-42	-45	-48	-51
	O	-374	-40	-42	-45	-48	-51
Total	BA	8,200	10,094	10,556	11,043	11,577	12,247
	O	10,600	10,301	10,461	10,547	10,963	11,461

a/ Function 450.

authority and outlays were based primarily on assumed changes in the specialized price index for elementary and secondary education (see Table 19). Budget authority increases at an average annual rate of 7 percent, while outlays increase at a faster rate of 8 percent per year, because of the assumed spendout of budget authority increases approved prior to fiscal year 1978.

Higher education

Higher education programs include the Basic Educational Opportunity grants, Guaranteed Student Loans work study, direct loans, and other loan programs. A specialized index for higher education was used for the projections. Although budget authority increases at an average annual rate of 7 percent, outlays increase at a slightly faster rate, 8 percent per year, because of the assumed spendout of increases approved prior to fiscal year 1978.

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

TABLE 19. EDUCATION PROGRAMS: BY FISCAL YEAR IN BILLIONS OF DOLLARS

		1979	1980	1981	1982	1983
Elementary and Secondary, Occupational, Vocational, and Adult Education	BA	7.2	7.7	8.2	8.8	9.4
	O	6.6	7.3	7.8	8.2	8.8
Higher Education	BA	4.6	4.9	5.3	5.7	6.1
	O	4.0	4.4	4.7	5.1	5.4
Research and General Education	BA	1.3	1.4	1.5	1.6	1.7
	O	1.2	1.4	1.5	1.5	1.6
Total	BA	13.1	14.0	15.0	16.0	17.2
	O	11.7	13.1	13.9	14.8	15.9

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.

Temporary Employment Assistance (TEA)

Temporary Employment Assistance (Title VI of the Comprehensive Employment and Training Act) was established in December 1974 in response to high unemployment rates throughout the country. TEA enables states and localities to create temporary jobs for unemployed workers. The 1978 estimate takes into account the Economic Stimulus Appropriations Act of 1977, which authorized expansion in Title VI from the 260,000 job level to 600,000 jobs by the middle of fiscal year 1978.

Outlays for TEA are assumed to be related to the unemployment rate. Under the baseline economic assumptions, a one percentage point decrease in the unemployment rate is assumed to yield approximately a \$2.0 billion decrease in spending. Under this assumption, a declining unemployment rate would result in outlays for fiscal year 1983 of approximately \$40 million. If the economy were to grow at a somewhat slower rate, say 4 percent real GNP growth per year, outlays would be \$2.2 billion in fiscal year 1983.

The projection of budget authority includes the funds needed to cover anticipated TEA costs one year in advance. This is consistent with assumptions made about the second concurrent resolution, which was assumed to contain \$3.8 billion in budget authority for forward-funding of TEA.

Employment and Training Assistance (ETA)

Employment and training assistance consists of Titles I through IV of the Comprehensive Employment and Training Act. In addition to the established programs in ETA, the Economic Stimulus Appropriations Act of 1977 authorized an expansion of Title II jobs from 50,000 to 125,000 in fiscal year 1978, and the creation of several new programs: a Health Through Industry and Retraining and Employment Program (HIRE), a Skill Training Improvement Program (STIP), and several youth programs including a Title VIII, Young Adult Conservation Corps. The 1978 estimate takes into account the spending of these new programs.

All programs were assumed to continue throughout the projected period. In addition, the estimates include the projected effects of recently enacted minimum wage legislation.

Other employment programs

For the projection of other employment accounts, budget authority and outlays were projected by the simple inflation method, using assumed increases in federal pay and in the price index for federal purchases of services.

Grants for social services

Grants for social services consist of the matching Federal - State Grant Program (Title XX) as well as some smaller programs such as child welfare and state and local training. In fiscal year 1973, a statutory ceiling of \$2.5 billion was placed on the Title XX programs. For fiscal years 1979 through 1983 spending is assumed to be at the ceiling. It was also assumed that the second concurrent resolution contained \$200 million for day care services and that this would raise the ceiling to \$2.7 billion in fiscal years 1979 through 1983. Finally, spending for child welfare and state and local training were projected by the simple inflation method, using the deflator for state and local purchases.

Other social services

The major account in this category provides funds for the Assistant Secretary for Human Development, who in turn provides grants for child development and other programs. The account was projected using the simple inflation method using the deflator for state and local government

purchases. Budget authority and outlays are projected to increase at an average annual rate of about 7 percent, from \$1.5 billion in fiscal year 1978 to about \$2.1 billion in fiscal year 1983.

TABLE 20. EDUCATION, TRAINING, EMPLOYMENT, AND SOCIAL SERVICES, a/ BY MAJOR PROGRAM: BY FISCAL YEARS, IN MILLIONS OF DOLLARS

		1978 Second Concurrent Resolution	Projections				
			1979	1980	1981	1982	1983
Elementary and Secondary Education	BA	3,181	3,461	3,729	4,007	4,213	4,651
	O	2,615	2,990	3,485	3,705	3,957	4,239
Other Elementary, Secondary, and Vocational Education	BA	3,499	3,726	3,951	4,188	4,448	4,737
	O	3,380	3,578	3,861	4,063	4,280	4,568
Higher Education	BA	3,903	4,400	4,722	5,056	5,423	5,834
	O	3,324	3,756	4,224	4,489	4,814	5,162
Other Higher Education	BA	175	189	204	220	236	255
	O	187	196	213	223	238	256
Research and General Education	BA	1,195	1,289	1,408	1,505	1,606	1,717
	O	1,119	1,207	1,357	1,461	1,539	1,641
C E T A (Title VI)	BA	3,800	1,383	1,666	670	40	--
	O	4,413	3,599	2,664	1,666	670	40
Other C E T A (Titles I, II, III, and IV)	BA	4,096	5,427	5,722	6,028	6,370	6,773
	O	5,185	5,154	5,500	5,795	6,116	6,493
Other Employment and Training	BA	1,774	1,874	1,997	2,123	2,258	2,406
	O	1,737	1,881	1,983	2,097	2,230	2,376
Grants for Social Services	BA	2,904	2,909	2,922	2,937	2,952	2,968
	O	2,878	2,909	2,922	2,937	2,952	2,968
Other Social Services	BA	1,579	1,689	1,800	1,922	2,060	2,214
	O	1,530	1,644	1,761	1,879	2,011	2,159
Offsetting Receipts	BA	-6	-6	-6	-7	-7	-8
	O	-6	-6	-6	-7	-7	-8
Other	BA	200	--	--	--	--	--
	O	39	--	--	--	--	--
Total	BA	26,300	26,341	28,115	28,647	29,698	31,549
	O	26,400	26,908	27,963	28,308	28,798	29,895

a/ Function 500.

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.

Medicare budget authority

Hospital Insurance Trust Fund (HI). The total budget authority for the HI trust fund is calculated as the sum of payroll tax receipts, intragovernmental transfers (reimbursement for uninsured persons and military wage credits), premiums from voluntary enrollees, and interest on investments. Table 21 reflects the projected levels of each of the components for the 1979-1983 period.

TABLE 21. COMPONENTS OF PROJECTED HI BUDGET AUTHORITY:
BY FISCAL YEARS, IN BILLIONS OF DOLLARS

	Receipts	Total Transfers	Premiums	Interest	Total BA
1979	20.25	0.85	0.01	1.89	22.60
1980	23.10	0.88	0.01	1.01	25.00
1981	29.60	0.92	0.02	1.13	31.67
1982	34.60	1.24	0.02	1.38	37.24
1983	38.20	1.30	0.02	1.69	41.21

Receipts are based on CBO projections for the HI share of total tax receipts for the OASDHI program. Transfers and premiums are based on Social Security Administration (SSA) projections. The yearly surplus was calculated from HI budget authority and outlay projections for the year t-1, and the average historical (1974 and 1975) yield on investments was applied to the cumulative surplus to determine the interest for the year t.

Supplementary Medical Insurance (SMI). For fiscal years 1979-1982, SMI budget authority is based on OMB five-year projections. Fiscal year

1983 budget authority assumes the same rate of growth that existed between 1981 and 1982.

Medicare outlays

Three models were employed to project outlays for the medicare program -- one model was developed for the HI component, and two separate models were used to project expenditures for the SMI aged and for the disabled and chronic renal disease (CRD) beneficiary populations.

Hospital Insurance. Medicare HI outlays are projected to increase at an average annual rate of 16 percent between fiscal years 1979 and 1983. Projections for this program are based on examination of increases in both labor (number of employees and wages) and nonlabor (purchase of goods and services, capital costs, and the per capita level of services provided) inputs over the five-year period. The percent increases in the various inputs and their relative weighting are expressed by the following equation:

$$\text{Outlays} = \text{Outlays}_{t-1} (1 + (0.5453 L_t + 0.4547 NP_t)) (1 + U_t)$$

where

L_t = percent change 5/ in labor inputs over year t-1, defined by the equation:

$$L_t = (1 + CPMH_t + WD_t) (1 + LI_t) - 1$$

where

$CPMH_t$ = percent change in yearly compensation per man-hour index

WD_t = percent increment above $CPMH_t$ to account for the wage differential for hospital workers

LI_t = percent increase in the labor intensity factor for hospitals over year t-1

NP_t = percent increase in nonpayroll related inputs over the year t-1, defined by the equation:

$$NP_t = (1 + CPI_t + 0.01) (1 + NL_t) - 1$$

5/ All percent changes are expressed in decimal form.

where

$CPI_t + 0.01$ = percent change in the CPI over year t-1, plus an added 1 percent adjustment for the higher cost of hospital equipment and supplies

NL_t = percent change in nonlabor intensity factors over the year t-1

U_t = percent change in utilization of services over year t-1

0.5453 = weighting factor for labor inputs

0.4547 = weighting factor for nonlabor inputs

In order to project overall benefits, values were determined for each of the variables over the 1978 through 1983 period. Table 22 contains those values, expressed in percent increases over the previous year.

TABLE 22. VALUES OF VARIABLES USED FOR HI PROJECTIONS: BY FISCAL YEARS

	1979	1980	1981	1982	1983
$CPMH_t$	7.91	7.78	7.88	8.07	8.39
WD_t	1.50	1.50	1.50	1.50	1.00
LI_t	2.00	2.00	2.00	2.00	2.00
CPI_t	5.98	5.81	5.52	5.64	5.84
NL_t	8.00	8.00	8.00	8.00	6.00
U_t	3.00	3.00	3.00	3.00	3.00

Values for the CPI and compensation per manhour are based on CBO economic assumptions. In the equation for the percent increase in nonpayroll related inputs (NP_t), the CPI was raised by one percentage point each year to account for the average differential between the overall CPI

and its component for medical equipment and supplies. To determine the wage differential for hospital employees above the overall compensation rate, historical series were compared. The average differential (excluding the period of the Economic Stabilization Program, ESP) was approximately 1.5 percent, and this figure was applied as the projected value for fiscal years 1979 through 1982. A higher figure was used for fiscal year 1978 to account for the "catch-up" effects of the post-ESP period. The value for 1983 assumes a tapering off of the need for a higher rate of increase for hospital workers.

The labor intensity factor (that is, increases in staff-patient ratios) is also projected on the basis of a review of historical trends (pre- and post-ESP). A similar approach was used for projecting percent increases in nonlabor intensity factors (for instance, increased tests, expanded technology). Also, in determining these values, comparisons were made with similar projections done by the Social Security Administration and the Office of the Assistant Secretary for Planning and Evaluation.

Finally, utilization projections were made on the basis of recent trends in the size of the beneficiary population and in both the numbers of admissions and the lengths of stay per beneficiary. Based on these trends, which indicate slight increases both in beneficiaries and in admissions and a small downward movement in lengths of stay, a 3 percent annual increase is projected for this period.

The weighting factors for labor and nonlabor inputs were based on estimates developed by the Office of the Assistant Secretary for Planning and Evaluation. Projections for administrative costs are based on those developed by the SSA actuaries.

Supplementary Medical Insurance. SMI outlays are projected to increase at an average annual rate of approximately 16 percent over the next five years. For the purpose of this projection, the program is divided into two components: the aged population, and the disabled and renal populations. Estimates are then based on determination of growth in medical prices, the number of beneficiaries who receive services under SMI, and their level of per capita utilization. The following presents a discussion of the equations used to project outlays for each of these components.

For SMI benefits for the aged:

$$\text{Outlays}_t = \text{Outlays}_{t-1} (1 + \text{MCPI}_t) (1 + U_t) (1 + P_t)$$

where

$Outlays_t$ = aggregate benefits paid to aged SMI beneficiaries in year t

$MCPI_t$ = yearly percent change in medical CPI lagged 18 months

U_t = overall percent change in utilization, including increased physician visits per patient, greater use of specialists, more utilization of technology, and so forth

P_t = percent change in the number of eligible beneficiaries actually using services in year t

For SMI benefits for the disabled and CRD populations:

$$Outlays_{t,i} = \frac{Outlays_{(t-1),i}}{B_{(t-1),i}} (1 + MCPI_t) (1 + U_{t,i}) (B_{t,i})$$

where

$Outlays_{t,i}$ = aggregate benefits paid in year t

$U_{t,i}$ = percent change in level of utilization per eligible beneficiary in year t

$B_{t,i}$ = number of eligible beneficiaries in year t

and i refers to either the disabled (d) or CRD (c) beneficiaries

The values determined for these variables are given in Table 23. All numbers are expressed in percentage point increases over the previous year with the exception of beneficiary levels ($B_{t,c}$ and $B_{t,d}$), which represent the actual number of beneficiaries (in thousands) in year t.

Projections for the MCPI are based on a CBO model relating the medical care component of the CPI to the overall CPI. Although recognized physicians' fees under SMI are adjusted by both a fee screen and an economic index, examination of the historical impact of these two restraints on actual physicians' charges brings the percent increase to approximately the same level as that of the MCPI. Thus, the MCPI is used as a proxy for allowable increases in physicians' fees.

Estimated increases in the level of participation among the aged eligible population were determined through application of time trend

TABLE 23. DATA USED FOR SMI PROJECTIONS: BY FISCAL YEARS

	1979	1980	1981	1982	1983
SMI (aged)					
MCPI _t <u>a/</u>	9.6	9.8	8.5	7.7	7.2
U _t	3.2	3.2	3.2	3.2	3.2
P _t	3.0	2.8	2.7	2.7	2.7
SMI (disabled)					
MCPI _t <u>a/</u>	9.6	9.8	8.5	7.7	7.2
U _{td}	7.1	5.0	4.0	3.2	3.2
B _{td} <u>b/</u>	2580	2796	3034	3293	3574
SMI (CRD)					
MCPI _t <u>a/</u>	9.6	9.8	8.5	7.7	7.2
U _{tc}	1.5	1.5	1.5	1.5	1.5
B _{tc} <u>b/ c/</u>	22.0	24.0	26.0	27.0	28.0

a/ MCPI values are lagged eighteen months.

b/ In thousands.

c/ The number of beneficiaries includes only those who are not also eligible under the aged group.

analysis of data from fiscal years 1967-1977. Participation increases reflect the relative year-to-year percentage of participants who actually filed claims that exceeded the deductible. Beneficiary levels for the disabled and CRD populations are based on SSA projections.

For the aged population, inflation and increases in the participation rate were factored out of the overall percent increase in benefit payments, and the residual historical increases were defined as a utilization factor. Based on an average annual utilization increase for fiscal years 1969 through

1973 (fiscal year 1968, the ESP period, and the post-ESP period were omitted because of the newness of the program or the atypical problems of utilization), a projected value was determined for fiscal years 1978 through 1983. Because of the limited experience with the SMI disabled program, a similar approach was not possible for determining a utilization factor. In this case, SSA projections were adopted for fiscal year 1979 and, for fiscal years 1980 through 1983, an assumption was made that utilization increases would start to level off and approach those applied to the aged. The basis for this supposition is that, as the program continues and as the number of new beneficiaries starts to stabilize and their familiarity with the program increases, utilization will become similar to that of the aged group.

For the CRD beneficiaries, it is assumed that increases in the level of utilization per beneficiary will be comparatively small. Again, employing the limited historical experience and factoring out the effects of inflation, a 1.5 percent annual increase was observed. This rate of increase was used as the projected value for fiscal years 1978 through 1983.

Finally, based on historical experience, administrative costs were calculated as 9.5 percent of overall benefit levels in a given year.

Medicaid

Projections for the medicaid program are based on percent changes in an adjusted medical CPI, in the number of program recipients, and in the overall medicaid utilization rate. The projected outlays include total medical vendor payments (MVP) (adjusted to reflect the actual federal share), plus administrative costs. The equation used in this model can be written as:

$$MVP_t = (1 + (1.09 MCPI_t)) (1 + REC_t) (1 + U_t) MVP_{t-1}$$

where MVP_t represents medical vendor payments in year t and $MCPI_t$, REC_t , and U_t represent percent changes in the medical CPI, the number of recipients, and the utilization rate, expressed in decimal form. Outlays for medicaid increase at an average annual rate of about 7 percent. This is the result of projected increases in the MCPI, a projected leveling off of increases in the number of recipients, and a decline in the utilization rate.

The medical CPI is projected from a multiple regression model developed by CBO. The independent variables used include a lagged medical CPI variable, the overall CPI, and dummy variables representing medicare and the Economic Stabilization Program. To reflect the higher rate of medical price increases that occur in the medicaid program, this index is adjusted upward by a factor of 1.09. This adjustment factor was derived

from historical observation of the differences between medicaid cost increases and the general medical CPI. It should also be noted that this adjustment figure appears to have leveled off at approximately 9 percent and is assumed, for the purpose of these projections, to be at that level over the five-year period. Thus, if the medical CPI increases by 10 percent, the medicaid CPI increases by 10.9 percent.

It is assumed that there will be no percent changes in the number of program recipients (REC_t) over the projection period. While there are a number of factors that affect the size of the medicaid recipient population, three have been of particular significance in recent years -- the growth (or decline) in the number of AFDC cash assistance beneficiaries, changes in the SSI beneficiary level, and trends in the overall unemployment rate. Although the medicaid program has demonstrated significant growth in recent years and there will continue to be new recipients entering the program, these increases will be offset by projected declines in both the number of AFDC cash assistance recipients and the unemployment rate. Also, the growth seen in the SSI program between 1974 and 1976, which had a significant impact on the number of aged and disabled beneficiaries entering medicaid, has now leveled off and thus will not continue to increase the medicaid population. Based on these considerations, the CBO modeling of the medicaid program indicates that, over the next few years, no significant net changes in the recipient population will occur.

The utilization rate (U_t) is estimated to decrease by approximately 1 percent a year. Historical observation and time trend analysis of real utilization since 1974 shows a sharp decrease at first, then a general leveling off at a 1 percent per year rate of decline. It is estimated that this pattern will continue through the projection period.

The federal share of total medical vendor payments is calculated using a straight-line projection of changes in the current overall federal/state split in expenditures. To this total for federal medical vendor payments, federal administrative costs are added. These are calculated on the basis of the fiscal year 1977 ratio of administrative costs to medical vendor payments. The same ratio is assumed over the projection period.

For medicaid, budget authority in any given fiscal year is projected to equal outlays.

NOTE: For both medicaid and medicare, five-year projections also assume legislative proposals (for instance, cost-containment and rural health clinics) included in the second concurrent resolution for fiscal year 1978. The projections for this legislation are based on CBO cost estimates on the relevant bills.

Cost-Containment

Five-year projections for the health function assume the enactment of hospital cost-containment legislation included in the second concurrent resolution. Although no specific bill has been passed to date, it was assumed in the resolution that legislation to control current growth in hospital expenditures and capital expansion would be in effect by the end of the third quarter of fiscal year 1978. Projected savings in 1979-1983 are based on the differential between the proposed growth ceiling and CBO projections for hospital cost increases under current law. These savings as applied to medicare and medicaid are projected (in billions of dollars) to be:

	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>
Medicare	2.6	4.0	5.9	8.3	9.6
Medicaid	<u>0.2</u>	<u>0.4</u>	<u>0.6</u>	<u>0.9</u>	<u>1.0</u>
Total	2.8	4.4	6.5	9.2	10.6

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. Both budget authority and outlays are projected to increase at an average annual rate of about 8.5 percent, from approximately \$8 billion in fiscal year 1978 to about \$12 billion in fiscal year 1983.

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 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. ^{6/} 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.

^{6/} This characteristic also applies to medicare and medicaid programs, and to certain veterans programs.

TABLE 24. HEALTH, ^{a/} BY MAJOR PROGRAM: BY FISCAL YEARS, IN MILLIONS OF DOLLARS

		1978 Second Concurrent Resolution	Projections				
			1979	1980	1981	1982	1983
Medicare							
Hospital insurance	BA	19,836	--	--	--	--	--
	O	18,190	21,010	23,348	28,752	32,890	38,187
Supplementary medical insurance	BA	8,964	9,773	11,194	12,703	14,750	16,775
	O	7,592	9,048	10,663	12,388	14,248	16,269
Medicaid	BA	--	11,869	12,732	13,568	14,487	15,480
	O	10,989	11,869	12,732	13,568	14,487	15,480
Cost-Containment	BA	--	-230	-390	-600	-870	-980
	O	-301	-2,830	-4,430	-6,530	-9,170	-10,610
Other Health Services	BA	2,872	3,163	3,481	3,817	4,178	4,578
	O	2,701	3,092	3,374	3,682	4,025	4,407
National Institute of Health	BA	2,723	2,952	3,196	3,451	3,718	4,018
	O	2,480	2,815	3,038	3,279	3,534	3,813
Other Health Research and Education	BA	848	907	981	1,058	1,138	1,229
	O	814	998	1,020	1,058	1,110	1,177
Prevention and Control of Health Problems	BA	1,151	1,241	1,338	1,434	1,534	1,642
	O	1,141	1,168	1,291	1,394	1,495	1,601
Health Planning and Construction	BA	473	512	557	603	650	701
	O	584	544	556	581	620	666
Offsetting Receipts and Other	BA	-9	-8	-9	-9	-10	-10
	O	-10	-8	-9	-9	-10	-10
Total	BA	47,682	52,778	58,080	67,695	76,815	84,643
	O	44,180	47,706	51,583	58,163	63,229	70,979

^{a/} Function 550.

Outlays for the income security function are projected to increase at an average annual rate of 9.4 percent, from \$146 billion in fiscal year 1978 to \$230 billion in fiscal year 1983. 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 supplements 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 7.8 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 tax receipts, caused by real growth in the economy and inflation.

General retirement and disability

Social Security (OASDI). The major part of general retirement and disability is social security payments. Outlays from the Old Age and Survivors Insurance (OASI) trust fund and the Disability Insurance (DI) trust fund are projected to rise at an average annual rate of 10.4 percent, from the fiscal year 1978 level of \$95.3 billion to \$156.5 billion in fiscal year 1983. The automatic cost-of-living adjustments continue to be the major factor driving OASI and DI costs upward during the projection period. These adjustments, based on changes in the level of the consumer price index, account for approximately one-half of the total cost increase between fiscal years 1977 and 1983. The remainder of the increase primarily results from rising recipient levels and the increasing wage bases of new retirees. Recipient levels for OASI are projected to increase from \$28.9 million at the end of fiscal year 1977 and to \$31.8 million at the end of fiscal year 1983. Recipient levels for DI are projected to increase at an average annual rate of 5.6 percent, from \$4.9 million at the end of fiscal year 1977 to \$6.8 million at the end of fiscal year 1983.

Budget authority, or gross trust fund income, for the two funds is also projected to increase over the projection period, rising from an estimated \$89.5 billion in fiscal year 1978 to \$141.4 billion in fiscal year 1983. The principal components of budget authority are social insurance tax receipts and interest on the trust fund reserves that are invested in U. S. government securities, these two sources account for more than 98 percent of budget authority.

Tax receipts between fiscal years 1977 and 1983 increase largely because of three factors -- a rise in the number of workers paying social security taxes, the automatic adjustment of the maximum taxable wage that is triggered by changes in average earnings, and previously legislated increases in the tax rate that are effective at various points in the projection period. Interest income is a function of the estimated trust fund balances and the interest rate paid on government securities.

In the absence of additional legislation, budget authority in fiscal years 1978 through 1983 would be less than outlays (see Table 25). The resultant deficits are projected to deplete the disability trust fund during fiscal year 1979 and the combined OASDI funds during fiscal year 1982 (see Table 26). The OASI fund itself is estimated to be depleted by fiscal year 1984.

TABLE 25. OASI AND DI DEFICITS UNDER CURRENT LAW: BY FISCAL YEARS, IN BILLIONS OF DOLLARS

	1978	1979	1980	1981	1982	1983
OASI	3.3	4.1	3.9	5.0	5.3	6.4
DI	2.6	3.5	4.5	5.2	6.5	8.7
OASDI	5.9	7.6	8.5	10.2	11.9	15.1

TABLE 26. OASI AND DI TRUST FUNDS AT END OF FISCAL YEAR, UNDER CURRENT LAW: IN BILLIONS OF DOLLARS

	1978	1979	1980	1981	1982	1983
OASI	31.8	27.7	23.8	18.8	13.4	7.0
DI	1.7	-1.8	-6.3	-11.5	-18.0	-26.7
OASDI	33.5	25.9	17.4	7.3	-4.6	-19.7

However, a conference agreement was recently reached on amendments to the social security act. The amendments will increase income to the OASI and DI trust funds and also somewhat reduce projected outlays. Table 27 shows the approximate effect of the agreement on budget authority and outlays.

TABLE 27. EFFECT OF SOCIAL SECURITY ACT AMENDMENTS ON PROJECTED BUDGET AUTHORITY AND OUTLAYS FOR OASDI: BY FISCAL YEARS, IN BILLIONS OF DOLLARS

	1979	1980	1981	1982	1983
Budget Authority	4	9	17	25	31
Outlays	-1	-1	-2	-2	-3

The five-year projections for outlays and budget authority were generated by separate processes, which produced cost and income estimates for each of the two trust funds.

CBO uses a multi-equation model for estimating the total payments to the beneficiaries of these programs. ^{7/} There are basically three sets of equations in the model that are used to calculate the number of beneficiaries, direct benefits, and nonrecurring benefits. The first set of equations estimates recipient levels for 26 classes of beneficiaries, which can be divided into three subclasses -- retirees (including special age 72 beneficiaries), survivors, and the disabled. Retired and disabled beneficiaries receive direct payments from the system. Payments are also received by the larger number of dependents groups of the retired and disabled workers, and by survivors, who are in effect another category of dependents.

The second set of equations is used to estimate average benefits for different beneficiary categories. Finally, nonrecurring benefits are calculated, and include such items as lump sum death benefits and retroactive payments.

^{7/} The CBO model is based on a model developed by Lawrence H. Thompson and Paul N. Van de Water. See Department of Health, Education, and Welfare, The Short-Run Behavior of the Social Security Trust Fund, Office of Income Security Policy, Office of the Assistant Secretary for Planning and Evaluation, Technical Analysis Paper No. 8, (July 1976).

Each of the equations in the system are specified using various functional forms. Primarily, the estimating relationships are time trends, using lagged dependent variables, along with some economic variables and relevant population ratios. The categories for the dependent beneficiaries are largely a function of the primary beneficiaries' characteristics. The estimated coefficients are used in a separate program to forecast future expenditures within each program, and then merged with a revenue model to indicate the course the two trust funds will take.

CBO has been using this model as a primary method of determining the effects of changes in unemployment, inflation, and other economic variables on costs to the Social Security system. The model has been updated in a number of ways in the past year.

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.

Table 28 gives projections of OASI and DI recipient levels for the baseline economic path. In addition, it lists the cost-of-living adjustments that are projected to take effect from fiscal year 1978 to fiscal year 1983.

Railroad Retirement and Special Benefits for Disabled Coal Miners (Black Lung). Projections for railroad retirement are based on agency estimates, which show the recipient population remaining relatively stable over the next five years. The increases in outlays are almost entirely the result of cost-of-living increases. Black lung benefits for disabled coal miners are provided through two separate programs in the Departments of Labor and Health, Education, and Welfare. The number of beneficiaries for these programs is expected to decline during fiscal years 1979-1983. Benefits, however, increase at the same rates as pay scales for federal employees (general schedule), more than offsetting the decline in the number of beneficiaries.

Federal employee retirement and disability

Projections for the Civil Service Retirement and Disability trust fund outlays and budget authority are estimated by two computer models, one for outlays and the other for budget authority. Inputs to the models include the

TABLE 28. BASELINE PATH VALUES FOR THE OASI AND DI FUNDS:
BY FISCAL YEARS IN BILLIONS OF DOLLARS

Fiscal Period	Number of Beneficiaries in Current Payment Status, End of Fiscal Year (in millions)		July Cost-of-Living Adjustment (percent)
	OASI	DI	
1978	29.2	5.1	6.2
1979	29.6	5.4	5.9
1980	30.2	5.7	5.9
1981	30.7	6.2	5.5
1982	31.2	6.5	5.6
1983	31.8	6.8	5.8

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 1978 and 1983. 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 1977. 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:

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

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, 1977, as well as the initial average benefit payments for annuitants (P_A) and survivors (P_S) (see Table 29). 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.

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, 1977) 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 29 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 1978 and 1983, is estimated as the sum of the following sources of trust fund income:

- Employee Contributions
- Agency Contributions
- Postal Service Contributions

TABLE 29. DATA USED TO COMPUTE OUTLAYS

Beneficiary Base Figures, as of October 1, 1977			
	Number of Beneficiaries	Average Monthly Benefit Payments (in dollars)	
Annuitants	1,116,100	654.96	
Survivors	412,100	263.29	
Beneficiary Change Data			
	Monthly Growth (Loss) Rates of Beneficiaries	Average Monthly Benefit Payments (in dollars)	Monthly Growth in Average Benefit Payments
Annuitant Increases	0.006623	690.00	a/
Annuitant Losses	0.003898	446.58	0.002136
Survivor Increases	0.002788	426.00	0.000188

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

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, 1977) are shown in

Table 30, 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 6-8 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. The Postal Service will renegotiate the contract with its employees in July 1978. During the July 1975 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 30. FISCAL YEAR 1978 COVERED PAYROLL BASES: IN MILLIONS OF DOLLARS

General Schedule	24,714
Wage Board	6,952
Postal Service	9,373

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 each year 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 increases. Since annual pay increases have been assumed, the projections amortize the additional unfunded liability created by the payraises over 30 years, as provided 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. 8/ The military service credit is increased by a fixed factor each year to produce the projections. 9/ 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 \$139.4 million.

8/ Under current law, 80 percent of the interest on the unfunded liability for fiscal year 1978 is paid. In fiscal year 1979, the payment increases to 90 percent. In 1980 and subsequent years, the payment is 100 percent. The difference between 100 percent payment and the payment made increases the unfunded liability.

9/ The military service credit is subject to the same increasing percentage payments as interest on unfunded liability.

Table 31 summarizes the data provided by the CSC for the budget authority projection.

TABLE 31. DATA USED IN THE MODEL OF CIVIL SERVICE RETIREMENT BUDGET AUTHORITY a/

Federal Amortization Base <u>b/</u>	1,737.070
Postal Amortization Base <u>b/</u>	446.455
Unfunded Liability Base <u>b/</u>	116,110.2
Military Service Credit Base <u>b/</u>	722.5
Military Service Credit Growth Factor	1.029
Fund Interest Base <u>b/</u>	2,825.073
Fund Balance Base <u>b/</u>	49,608.350
Average Earnings Rate on Existing Portfolio	0.06727

a/ Base figures as of October 1, 1977.

b/ In millions of dollars.

Unemployment insurance

The unemployment insurance system has two major components. The first, the Unemployment trust fund, is composed of Regular and Extended Benefit (EB) programs, as well as the Railroad Unemployment Insurance program. The second component is the Federal Unemployment Benefit Allowance (FUBA) account, which includes Unemployment Compensation for Ex-Servicemen and Federal Employees, and Trade Adjustment Assistance. The Regular program is entirely state funded, and the EB program is 50 percent state and 50 percent federally funded. The rest of the programs are federally funded.

A statistical analysis of the basic underlying relationships within the unemployment insurance system has been developed. This analysis forms the basis of the projection model used by CBO. The model estimates quarterly outlays for all of the major unemployment programs through a series of multiple regression equations. These equations rely on key macroeconomic variables (such as the unemployment rate, real GNP, and the CPI) to estimate the major parameters in the unemployment insurance system

including the insured unemployment rate, the covered wage force, and average weekly benefits. ^{10/}

For the Unemployment trust fund, outlays are projected to decrease from \$11.5 billion in fiscal year 1978 to \$11.1 billion in fiscal year 1980, and then to increase to \$12.1 billion in 1983. Outlays in the FUBA account are projected to decline slightly throughout the five-year period, from \$885 million in fiscal year 1978 to \$843 million in fiscal year 1983.

The reduction in unemployment insurance outlays is primarily the result of two factors. First, over the five-year projection period, the unemployment rate is projected to decline. This decline affects the number of individuals receiving benefits in the regular 26 week unemployment program as well as the number of states triggering into the EB program. For example, the average annual number of weekly beneficiaries estimated to receive benefits in the regular 26 week program is projected to decline from approximately 2.1 million in fiscal year 1978 to 1.8 million in fiscal year 1983. Second, the projections assume that two emergency unemployment programs will expire. The Special Unemployment Assistance program in the FUBA account is scheduled to expire in March 1978, and the Federal Supplemental Benefits program, which is part of the Unemployment Trust Fund, will expire in December 1977.

The slow decline in outlays, followed by an increase at the end of the projection period, reflects the impact of inflation and a growing civilian labor force. The increase in the average weekly benefit and the costs of new coverage provided for in the Unemployment Compensation Amendments of 1976 enacted by the 94th Congress offset the decline in outlays resulting from lower unemployment. In addition, under the economic assumptions used for this projection, the civilian labor force increases from 99.4 million in fiscal year 1978 to 107.8 million in fiscal year 1983.

Budget authority for the unemployment trust fund is based on trust fund income. The major component of this income is unemployment insurance tax receipts. The methodology for projecting these receipts is described in Chapter IV as part of the discussion on social insurance revenues.

It should be mentioned that, because of the increased revenue generated by the unemployment compensation amendments and the im-

^{10/} For more detail on the estimation of unemployment outlays, see Estimating Outlays for Unemployment Compensation Programs, CBO Technical Analysis Paper No. 1, October 1976.

proved economic conditions assumed for the end of the projection period, the Unemployment trust fund is estimated to be operating at a surplus by the end of fiscal year 1981.

Income supplements and housing assistance

Food Stamps. Total federal costs of the food stamp program are projected to increase at an average annual rate of 5.4 percent from the fiscal year 1978 level of \$5.3 billion to \$6.9 billion by fiscal year 1983. Most of the growth in costs occurs in fiscal year 1979, when estimated outlays are \$6.1 billion. Growth in food stamp costs reflect recent legislation (Public Law 95-113). Key amendments to the law are uniform income deduction levels, net income eligibility for households with incomes below poverty, and elimination of the requirement that food stamp households purchase their food stamps. The latter change will lead to an initial increase in food stamp participation rates. A second major factor in increased program costs is moderate food price inflation brought about partially by the same legislation, which established acreage set aside for wheat and feed grains and would also develop a federal grain reserve. An initial increase in food stamp participation and in moderate food price inflation combine to result in increased federal costs over the five-year projection period.

Two models were used to generate the food stamp projections. The first model projects beneficiaries and average payment levels for both public assistance (PA) and nonpublic assistance (NPA) recipients under the pre-reform food stamp law. Public assistance recipients are almost exclusively composed of individuals who receive benefits in the Aid to Families with Dependent Children (AFDC) program. PA recipients are projected as a function of the expected number of AFDC recipients. NPA recipients are projected as a function of the unemployment rate and a shift variable for Puerto Rico. All projections were based on pre-reform eligibility standards.

The average transfer (bonus value of food stamps) per recipient is a function of the estimated food stamp allotment levels, which are calculated from the projected changes in the CPI for food. Table 32 shows the projected fiscal year average food stamp allotment for a four-person family in the 50 states and the District of Columbia.

Aggregate estimates from the first model were adjusted using a microsimulation of the reform law effects on a statistical sample of food stamp households participating in the pre-reform program in September 1975. The reform simulation indicated that pre-reform program costs would increase by about 4.6 percent. This adjustment factor was applied to the estimates developed from the first model.

TABLE 32. AVERAGE MONTHLY FOOD STAMP ALLOTMENT, FAMILY OF FOUR: BY FISCAL YEARS, IN DOLLARS

<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>
184	194	204	214	226

Child nutrition and related programs. Total costs for child nutrition and related programs are projected to grow at an average annual rate of 6 percent, from \$3.5 billion in fiscal year 1978 to \$4.7 billion by fiscal year 1983. 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 dollars are estimated using a model that computes the reimbursement rates based on changes in the CPI food-away-from-home specialized deflator.

Table 33 shows that total costs for the lunch program are projected to be \$2.3 billion in fiscal year 1979, and will increase at an average rate of 5 percent, to a total of \$2.9 billion by fiscal year 1983. Two factors underlie the projections for the school lunch program.

- o Overall, elementary school enrollments are projected to decline initially, then stabilize during the five-year period (Table 33); secondary school enrollments will continue to decline. 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 in fiscal years 1979 and 1980 (from 4.18 billion meals to 4.16 billion meals), and then increase slightly over the remainder of the projection period (to 4.27 billion meals by fiscal year 1983).

TABLE 33. COMPONENTS OF SCHOOL LUNCH PROGRAM PROJECTIONS: BY FISCAL YEARS

Fiscal Period	Elementary Enrollment (in millions)	Secondary Enrollment (in millions)	Total Lunches Served (in billions)	Total Expenditures (in billions of dollars)
1979	32.7	15.5	4.18	2.3
1980	32.1	15.1	4.16	2.5
1981	31.8	14.6	4.18	2.6
1982	31.8	13.6	4.22	2.8
1983	32.1	13.3	4.27	2.9

- 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 9.7 cents over the five-year period. (The three categories of lunches are the paid lunch, which received a subsidy of 13.3 cents per meal in fiscal year 1977, the reduced price lunch, which received a subsidy of 63.2 cents, and the free lunch, which received a subsidy of 73.2 cents).

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

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 elderly 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.

||| |||

Aid to Families with Dependent Children (AFDC). Federal outlays for the AFDC program are estimated to increase at an average annual rate of 4 percent, from \$6.2 billion in fiscal year 1978 to \$7.5 billion in fiscal year 1983. The federal share of benefit payments to AFDC recipients represents approximately 90 percent of AFDC outlays. The remaining 10 percent is mostly for administrative expenses. The projected overall rise in public assistance expenditures is primarily the result of increased average payments to AFDC beneficiaries. While the number of beneficiaries is expected to decrease, the increase in average benefits would be large enough to cause a net increase in total benefit payments.

Recipient levels are projected to decline continually from 11.1 million in fiscal year 1977 to 10.0 million in fiscal year 1983. The lower recipient levels are based on statistical analysis of historical data, which included multiple regression equations that indicate higher recipient levels when there are more female headed families, when there is greater unemployment, and when the population of children (particularly pre-school children) is greater. While it is estimated that female headed families will increase in the future, this increase is more than offset by an expected improvement in employment conditions and a lower number of children. The net result is that the anticipated number of recipients falls steadily from fiscal years 1977 through 1983. (It should be noted that the model employed in making these projections is highly sensitive to the unemployment rate. Obviously, if the present CBO assumption of continual decline in this rate does not materialize, different results would occur.)

Average monthly federal, state, and local payments to recipients are projected to rise from \$76 in fiscal year 1977 to \$104 by fiscal year 1983 (see Table 34). This rise in the average monthly payment assumes that states will maintain the current real benefit by raising the nominal benefit enough to adjust for projected increases in the CPI over the projections period. (It should also be noted that, although monthly payments have generally been adjusted for changes in the cost of living, most states do not adjust the payment automatically. For these states, payment levels are enacted through each state's legislative process.)

Supplemental Security Income (SSI). Federal outlays for SSI are projected to increase from \$5.8 billion in fiscal year 1978 to \$7.6 billion in fiscal year 1983. This represents an average annual increase of 5.7 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 transfer

TABLE 34. 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)
1977	11.1	76
1978	10.8	79
1979	10.7	84
1980	10.6	88
1981	10.4	93
1982	10.2	99
1983	10.0	104

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 35.

Housing assistance. This category includes the budget authority and outlays for the HUD assisted housing programs. The calculation of budget

TABLE 35. PROJECTED BASIC BENEFIT LEVELS FOR SUPPLEMENTAL SECURITY INCOME RECIPIENTS: BY FISCAL YEARS, IN DOLLARS

	Singles	Couples
July 1979	200.50	300.80
July 1980	211.70	317.60
July 1981	223.50	335.30
July 1982	236.20	354.30
July 1983	250.20	375.20

authority involves two steps. First, the total new contract authority provided in fiscal year 1978 was allocated among the various assistance programs, based on the allocation implicit in the fiscal year 1978 appropriations, and inflated for future years. Then, the projected contract authority for each program in each year was multiplied by the maximum term into which an obligation can be entered 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.

Under the discretionary inflation assumptions, 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 Section 8 program and public housing account for most of the 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 income. For this estimate, it was assumed the tenant contribution would be 20 percent of income during the projection period. It was also assumed that tenant incomes would increase at the rate estimated for that of the lowest quintile of family income. For the newly constructed housing program, rent levels for the first year of occupancy 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 average rent was calculated by a weighted average of the published fair market rent levels for fiscal year 1977. This base was then increased at the same rate as the CBO estimate of the CPI for rent. 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 found by indexing the fiscal year 1978 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 five-year period. As with Section 8, outlays are determined by the rate at which units come under payment, which was based on past program experience.

Other programs

This category includes miscellaneous accounts such as general departmental management for the Department of Health, Education, and Welfare, special assistance to refugees, and the regional rail transportation protective account. Outlays are projected to decline slightly, starting in fiscal year 1979, because of the assumed phaseout of special assistance to refugees from Cambodia, Laos, and Vietnam. The large decline in budget authority in fiscal year 1979 reflects the almost \$700 million in fiscal year 1978 budget authority for this category that was assumed in the second concurrent resolution but has not yet been enacted or been required, as a result of estimates of social security, civil service, or unemployment trust fund income. This \$700 million was not projected into fiscal years 1979 through 1983.

Veterans' Benefits and Services (Function 700)

Veterans' benefits and services consist of those federal programs designed for veterans, their dependents, and their survivors. Three accounts -- compensation and pensions, readjustment benefits, and medical care -- account for approximately 95 percent of the outlays assumed in the second concurrent resolution. Veterans' benefits and services is one of the few remaining programs that provide benefits to individuals and are not directly indexed for inflation under current law. Historically, however, these direct benefit accounts have been adjusted for inflation through annual

TABLE 36. INCOME SECURITY, ^{a/} BY MAJOR PROGRAM: BY FISCAL YEARS, IN MILLIONS OF DOLLARS

		1978 Second Concurrent Resolution	Projections				
			1979	1980	1981	1982	1983
Social Security (OASDI)	BA	89,461	97,729	107,245	117,213	128,878	141,383
	O	95,343	105,279	115,713	127,381	140,734	156,476
Railroad Retirement	BA	2,217	2,469	2,568	2,719	2,804	2,862
	O	2,342	2,826	2,925	3,007	3,075	3,121
Special Benefits for Disabled Coal Miners	BA	1,115	1,343	1,482	1,146	1,135	1,122
	O	1,113	1,343	1,482	1,146	1,135	1,122
Federal Employee Retirement and Disability	BA	17,669	20,037	22,510	24,372	26,475	28,607
	O	10,806	12,138	13,653	15,170	17,045	19,047
Unemployment Compensation	BA	14,562	14,541	14,880	14,990	15,082	14,947
	O	11,492	11,427	11,140	10,947	11,002	12,043
Food Stamps	BA	5,619	6,185	6,385	6,544	6,676	6,922
	O	5,321	6,143	6,377	6,537	6,671	6,922
Child Nutrition and Other Food Programs	BA	3,059	3,297	3,806	4,027	4,390	4,747
	O	3,500	3,627	3,798	3,989	4,380	4,716
Public Assistance (AFDC)	BA	6,182	6,394	6,712	6,694	7,233	7,525
	O	6,182	6,394	6,712	6,964	7,233	7,525
SSI	BA	5,336	6,263	6,603	6,951	7,289	7,638
	O	5,775	6,225	6,563	6,909	7,245	7,592
Housing Assistance	BA	32,252	34,611	36,936	39,342	41,923	44,626
	O	3,700	5,120	6,565	8,049	9,528	11,055
Other Programs	BA	1,128	409	384	380	383	406
	O	526	369	347	342	342	359
Total	BA	178,600	193,278	209,511	224,647	224,647	260,785
	O	146,100	160,891	175,274	190,442	208,389	229,979

^{a/} Function 600.

or semiannual legislated rate increases. The current policy projections shown for such accounts (compensation and pensions and readjustment benefits) thus assume annual cost-of-living increases.

Veterans' pensions

The estimated number of pension beneficiaries was derived by relating veteran pension recipients to total veterans in civil life, and pension

widows to the total number of females in the population. Real average benefit amounts were projected using a trend model, and the results were adjusted by assumed changes in the consumer price index. The adjusted average benefit amounts were then applied to beneficiary forecasts to produce outlay estimates through fiscal year 1983.

Although the bulk of the increase in pension outlays is the result of assumed cost-of-living adjustments, 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 1,042,000 in fiscal year 1979 to 1,137,000 in fiscal year 1983, while the level of survivor cases rises from 1,277,000 to 1,310,000 during the same period.

Veterans' compensation

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 of 2,256,000 in fiscal year 1979 to 2,284,000 in fiscal year 1983; the survivor cases showed a slight decline, from 363,000 in fiscal year 1979 to 358,000 in fiscal year 1983. Although this program is not indexed for inflation under current law, annual legislated rate increases are assumed for the purpose of this projection.

Other income security for veterans

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

Veterans' readjustment benefits

Under current law, readjustment benefit payments are projected to decrease from \$3.7 billion in fiscal year 1977 to \$1.6 billion in fiscal year 1983. When benefit payments are adjusted to reflect inflation, total payments still decline, but only to \$2.5 billion in fiscal year 1983.

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 GI bill (chapter 34), however, are by far the largest component of the estimate, in terms of both the number of trainees and the amount of expenditures.

Outlays for veterans' readjustment benefits are the product of three factors: the number of veterans eligible for benefits, the percent of those eligible who choose to train, and the average benefit level.

The estimated decline in outlays is primarily the result of a projected decrease in trainees, brought about because fewer veterans are projected to be eligible to train under the GI bill. Estimates of the number of veterans eligible for training were obtained from the Veterans' Administration. Table 37 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 1977-1983.

TABLE 37. NUMBER OF VETERANS ELIGIBLE TO TRAIN UNDER THE GI BILL a/

September 30 of Fiscal Year	Number Eligible to Train (in millions)
1977	6.0
1978	5.1
1979	5.0
1980	4.2
1981	3.5
1982	2.9
1983	2.5

a/ Veterans Administration Bulletin (IB 04-77-4), April 1977.

Participation among those veterans eligible to train under the GI bill is determined by several factors. A CBO analysis using multiple regression 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. 11/

11/ Further details on CBO's estimation procedures for veterans' readjustment benefits will be published in Determinants of GI Bill Spending, a forthcoming CBO Technical Analysis Paper.

This equation is used to project the percentage of eligible veterans who choose to train.

$$P_Y = 0.084Y^{-0.33}B^{0.92}UR^{0.18}P_{Y-1}^{0.38}D^{-0.14}$$

where

P_Y = the percent of eligible veterans who train in the Yth fiscal year after separation

Y = number of years since separation

B = average real benefit level

UR = unemployment rate

D = a dummy variable set equal one in fiscal year 1977 and set equal to zero in prior years

Current policy projections of average benefit levels are based on real benefit levels, the projected percent of veterans with dependents, and assumed changes in the CPI. For current law projections that do not include discretionary inflation, average benefits are not increased with the CPI.

Table 38 shows the estimated number of veterans trained of those eligible for training, and the monthly rate of payment. 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 CBO assumptions).

When there are increases in the monthly benefits, there will be an almost proportional increase in average cost. In addition, there will be more trainees when adjustments are made for inflation than when they are not made. Outlays under conditions of annual cost-of-living increases are higher than without these increases, both because of a relatively greater average cost and because of a relatively greater number of trainees.

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. Under existing law commitments, purchases were held at fiscal year 1977 levels; for the projection with further adjustments for inflation, they were increased using the deflator for federal purchases of services.

TABLE 38. PROJECTED NUMBER OF VETERANS WHO TRAIN AND MONTHLY BENEFIT PAYMENTS: BY FISCAL YEARS

	With Inflationary Adjustments		Without Inflationary Adjustments	
	Number of Trainees	Monthly Benefit Level (in dollars)	Number of Trainees	Monthly Benefit Level (in dollars)
1977 a/	1,752,000	292	1,752,000	292
1978	1,440,000	311	1,440,000	311
1979	1,222,000	330	1,163,000	311
1980	1,008,000	349	898,000	311
1981	803,000	368	666,000	311
1982	634,000	389	488,000	311
1983	503,000	411	359,000	311

a/ 1977 actuals.

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.

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 percent. Budget authority increases from \$550 million to \$779 million and outlays increase from \$549 million to \$775 million.

Law Enforcement and Justice (Function 750)

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

TABLE 39. VETERANS BENEFITS AND SERVICES, a/ BY FISCAL YEARS, IN MILLIONS OF DOLLARS

		1978 Second Concurrent Resolution	Projections				
			1979	1980	1981	1982	1983
Veterans' Compensation and Pensions	BA	9,990	10,511	11,301	12,097	12,932	13,816
	O	10,364	10,449	11,235	12,031	12,863	13,742
Other Income Security for Veterans	BA	510	530	539	522	543	564
	O	103	223	263	243	276	312
Veterans' Education and Training	BA	3,229	3,347	3,317	3,016	2,656	2,450
	O	3,840	3,668	3,276	2,972	2,635	2,438
Hospital and Medical Care							
Veterans' medical construction	BA	650	706	772	836	901	971
	O	395	457	621	735	817	872
Medical care: administration and research	BA	4,871	5,248	5,654	6,058	6,472	6,911
	O	4,859	5,250	5,616	6,014	6,427	6,863
Other medical expenses	BA	51	54	59	63	68	73
	O	61	55	55	59	63	68
Veterans' Housing	BA	--	--	--	--	--	--
	O	-12	6	-6	3	-69	-74
Other Veterans' Benefits and Services	BA	601	647	697	746	797	852
	O	592	621	668	715	764	817
Offsetting Receipts	BA	-2	-2	-2	-3	-3	-3
	O	-2	-2	-2	-3	-3	-3
Total	BA	19,900	21,041	22,337	23,335	24,366	25,633
	O	20,200	20,726	21,725	22,769	23,774	25,036

a/ Function 700.

Budget authority for this function is projected to increase at an average annual rate of about 7 percent between 1978 and 1983. Resulting outlays would grow at a slightly slower rate (5 to 6 percent), because fiscal year 1978 outlays of the Law Enforcement Assistance Administration (LEAA) include unusually high outlays from prior balances, stemming from the high appropriation levels in fiscal years 1976 and 1977.

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 non-criminal cases.

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 justice activities

All remaining accounts were projected using the simple inflation method. The LEAA account was inflated primarily by the deflator for purchases by state and local governments, and most other accounts were projected using the deflators for federal pay and federal purchases of goods and services.

TABLE 40. LAW ENFORCEMENT AND JUSTICE, a/ BY MAJOR PROGRAM: BY FISCAL YEARS, IN MILLIONS OF DOLLARS

		1978 Second Concurrent Resolution	Projections				
			1979	1980	1981	1982	1983
Federal Law Enforcement and Prosecution	BA	2,338	2,513	2,705	2,895	3,090	3,301
	O	2,331	2,506	2,692	2,877	3,070	3,279
Law Enforcement Assistance Administration	BA	647	693	740	790	847	912
	O	761	741	749	764	791	848
Other Law Enforcement and Justice	BA	759	816	876	936	998	1,064
	O	759	795	874	922	983	1,048
Offsetting Receipts and Other	BA	56	-7	-7	-7	-8	-8
	O	149	-7	-7	-7	-8	-8
Total	BA	3,800	4,015	4,314	4,614	4,927	5,268
	O	4,000	4,035	4,307	4,556	4,836	5,167

a/ Function 750.

General Government (Function 800)

This function includes the general overhead costs of the federal government, including legislative and executive activities; provision of central fiscal, personnel, and property activities, and the provision of services that cannot reasonably be classified in any other major function.

Budget authority for this function is projected to increase at an average annual rate of 6 to 7 percent from fiscal year 1978 to fiscal year

1983. Outlays are projected to grow at a slightly slower pace, primarily because of an expected decline in outlays of the federal buildings fund and the completion of several Congressional construction projects.

Central fiscal operations

This subfunction includes the Internal Revenue Service and other central fiscal management operations, primarily in the Treasury Department. Projections for most accounts were calculated using the simple inflation method. Revolving fund accounts were generally projected at zero.

Other general government activities

These subfunctions include legislative functions, executive direction and management, and other general government activities. As with the other components of the general government function, most individual accounts were projected by the simple inflation method. The primary deflators used were those for federal pay and federal purchases of services and supplies and materials. 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.

TABLE 41. GENERAL GOVERNMENT, a/ BY MAJOR PROGRAM: BY FISCAL YEARS, IN MILLIONS OF DOLLARS

		1978 Second Concurrent Resolution	Projections				
			1979	1980	1981	1982	1983
Central Fiscal Operations	BA	2,022	2,173	2,346	2,517	2,692	2,882
	O	2,027	2,144	2,328	2,500	2,675	2,863
Other General Government	BA	1,755	1,881	1,985	2,109	2,212	2,355
	O	1,856	1,935	2,095	2,110	2,165	2,293
Offsetting Receipts and Other	BA	23	-161	-172	-182	-193	-204
	O	-33	-161	-172	-182	-193	-204
Total	BA	3,800	3,893	4,159	4,443	4,711	5,032
	O	3,850	3,918	4,252	4,428	4,647	4,951

a/ Function 800.

Revenue Sharing and 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 (subfunction 851) and general purpose fiscal assistance programs (subfunction 852). 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. Included in the function are 16 expenditure and 2 offsetting receipt accounts, all of which were individually projected. Table 42 shows the projections for this function.

TABLE 42. REVENUE SHARING AND GENERAL PURPOSE FISCAL ASSISTANCE, ^{a/} BY MAJOR PROGRAM: BY FISCAL YEARS, IN MILLIONS OF DOLLARS

		1978 Second Concurrent Resolution	Projections				
			1979	1980	1981	1982	1983
General Revenue Sharing	BA	6,855	6,855	6,855	7,313	7,837	8,427
	O	6,814	6,862	6,862	7,205	7,713	8,286
Office of Revenue Sharing	BA	7	8	9	9	9	10
	O	7	8	9	9	9	10
Antirecession Financial Assistance Fund	BA	1,400	1,040	465	--	--	--
	O	1,550	1,040	465	--	--	--
Other General Purpose Fiscal Assistance	BA	1,338	1,325	1,424	1,506	1,589	1,686
	O	1,329	1,325	1,424	1,506	1,588	1,685
Total	BA	9,600	9,228	8,752	8,827	9,435	10,122
	O	9,700	9,235	8,759	8,720	9,310	9,981

^{a/} Function 850.

Outlays for this function are projected to decline through fiscal year 1981 from a level of \$9.7 billion in fiscal year 1978 to \$8.7 billion in fiscal year 1981. This decline reflects assumed phaseout of the antirecession financial assistance program. In fiscal years 1982 and 1983 projected outlays increase at about 7 percent per year, largely because of discretionary inflation increases assumed for the renewal of the general revenue sharing program.

The general revenue sharing program was renewed in September 1976 at \$6.855 billion for fiscal years 1978-1980. It was assumed that the program would again be renewed after expiration in fiscal year 1980. The renewal projection under existing law commitments was assumed to be at a level of \$6.855 billion. The projection for fiscal years 1981-1983 with full inflation adjustments used the state and local government deflator, with fiscal year 1980 as the current policy base.

The antirecession financial assistance fund was transferred from subfunction 451 (community and regional development) to subfunction 852, in fiscal year 1978. Funding for this program is triggered at 6 percent unemployment, and is assumed to continue as long as that jobless rate is exceeded. The authorization ceiling was extended to \$2,250 million for fiscal year 1978 to meet the needs of the states and localities experiencing high unemployment. Quarterly payments for this program are authorized on the basis of the unemployment rate in the calendar quarter that ended three months prior. At 6 percent unemployment, \$125 million is authorized, and for each tenth of a percentage point over that mark an additional \$30 million is authorized. As shown in Table 43, current CBO projections indicate that unemployment will drop below 6 percent in the first quarter of 1980. Thus, the projections assume program funding through the third quarter of fiscal year 1980.

TABLE 43. QUARTERLY COSTS OF THE ANTIRECESSION FISCAL ASSISTANCE FUND: IN MILLIONS OF DOLLARS

Fiscal Year Quarter	Relevant Calendar Year Quarter	Relevant Calendar Quarter Unemployment Statistics (percent)	Quarter Costs (in millions)
78:1	77:2	6.9	395
78:2	77:3	7.0	425
78:3	77:4	6.9	395
78:4	78:1	6.7	335
79:1	78:2	6.6	305
79:2	78:3	6.5	275
79:3	78:4	6.4	245
79:4	79:1	6.3	215
80:1	79:2	6.2	185
80:2	79:3	6.1	155
80:3	79:4	6.0	125
80:4	80:1	5.9	--

Another major account in subfunction 852 is the federal payment to the District of Columbia. Three funds are contained in the account -- a general fund and two funds for the payment of water and sewage. The general fund has a \$300 million ceiling. Under the projection with

discretionary inflation, the ceiling is reached in fiscal year 1978; the other two funds were inflated for each of the five years. The projections under existing law commitments were held constant at the fiscal year 1978 level.

Other general purpose fiscal assistance projections are approximately the same with and without inflation because almost all of the accounts have permanent authority. Some of these accounts involve the return to the states or localities of certain receipts from 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 projections of offsetting receipts in natural resources, environment, and energy (function 300). 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)

Budget authority and outlays for the interest function increase at an average annual rate of 5.9 percent, from \$41.7 billion in fiscal year 1978 to \$55.6 billion in fiscal year 1983. This function is the sum of two main components -- interest on the public debt and other interest. The first is projected to grow at an average annual rate of about 5.6 percent. Other interest, which is composed almost entirely of offsetting receipts, is projected to decline (become more negative) at a rate of 4 percent per year.

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 currently projected as growing by about \$66 billion in fiscal year 1978, and about \$258 billion by the end of fiscal year 1983. 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. ^{12/}

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 at the end of fiscal year 1979 than assumed for this

^{12/} For more detail on the estimating technique used here, see Estimating Outlays for the Interest on the Public Debt, CBO Technical Analysis Paper, October 1977.

projection, for example, and if the Treasury were to finance the debt by issuance of new securities, the interest estimate for fiscal year 1979 would increase by approximately \$330 million. An increase in the average interest rate on all debt securities in fiscal year 1979 by one-half of one percentage point would raise interest cost in that year by approximately \$4.0 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 miscellaneous offsetting receipts. The largest receipts are for interest received from government agencies on loans made to them by the Treasury. Projections of these receipts are based on Administration estimates.

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 44.

TABLE 44. NET INTEREST IMPACT, a/ BY FISCAL YEARS, IN BILLIONS OF DOLLARS

	1978	1979	1980	1981	1982	1983
Interest on the Public Debt	47.4	52.1	55.6	58.7	61.2	62.5
Other Interest	-5.2	-5.5	-5.9	-6.2	-6.5	-6.9
Other Function 900	-0.5	--	--	--	--	--
Interest Function	41.7	46.6	49.7	52.5	54.7	55.6
Interest Received by Trust Funds	-9.1	-10.0	-10.8	-11.7	-12.6	-13.4
Deposit of Earnings, Federal Reserve	-6.2	-6.7	-7.1	-7.5	-8.0	-8.4
Net Impact	26.4	29.9	31.8	33.3	34.1	33.8

a/ Outlays with further adjustments for inflation.

Payroll bases for each succeeding year are calculated by multiplying the fiscal year 1978 payroll base by (1 + pay increase) of each intervening year.

$$PB_t = PB_{1978} \prod_{i=1}^t (1 + PI_i)$$

where

PB_t = the payroll base for year 1978 + t

PI_i = the pay increase percentage for year 1978 + 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 1978 + (t + 1)

A_{t+1} = the adjustment factor for year 1978 + (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 generally 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 for allowances is projected as less than outlays in each year. This reflects the fact that, although this function contains outlays for payraises for the administration of social security and other trust funds, the budget authority for these trust funds is based on income to the funds. Therefore, there is no budget authority in the allowances function related to those payraises. 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 cannot reasonably be assigned to any other single function. Intragovernmental receipts are payments from one part of the government to another; proprietary receipts come from the public. Undistributed offsetting receipts are projected to increase at a rate of about 7 percent per year, from \$16.8 billion in fiscal year 1978 to \$23.7 billion in fiscal year 1983. The increasing receipts reflect larger government contributions to employee retirement and larger interest receipts by trust funds on Treasury securities.

The government's contributions to its employees' retirement and disability plans are recorded as intragovernmental receipts in subfunction 951. Employer share of employee retirement 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 of the government's employees are covered under the civil service plan, and the government's contribution to that trust fund is well over half of the dollar amount of these intragovernmental receipts.

Current policy 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.

Interest is paid to trust funds on their investments in 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 8.4 percent.

Proprietary receipts in subfunction 953 stem from the sale of leases of outer continental shelf (OCS) lands and the royalties from mineral production on the OCS. OCS receipts are volatile, and estimates for 1979 through 1983 depend on the scheduling of sales, the attitude of businesses bidding on leases, and the outcome of pending legislation. Estimates of receipts from anticipated sales are shown in Table 47. 15/

15/ For more detail on the derivation of projections estimates, see "Revenues from the Outer Continental Shelf, Five-Year Projections," an internal CBO Working Paper, October 28, 1976.

TABLE 47. OCS ESTIMATES: IN BILLIONS OF DOLLARS

Fiscal Year 1979	
65 Eastern Gulf of Mexico	0.4
51 Gulf of Mexico	0.6
49 Mid-Atlantic	0.7
Rents and Royalties	1.1
Total	2.8

Fiscal Year 1980	
48 Southern California	0.3
58 Gulf of Mexico	0.7
54 South Atlantic	0.5
-- Beaufort Sea (Alaska)	0.2
Rents and Royalties	1.3
Total	3.0

Fiscal Year 1981	
55 Gulf of Alaska	0.2
62 Gulf of Mexico	0.6
46 Kodiak Island (Alaska)	0.1
52 North Atlantic	1.0
Rents and Royalties	1.5
Total	3.4

Fiscal Year 1982	
53 Northern California	0.1
60 Cook Inlet	0.3
56 South Atlantic	0.5
59 Mid-Atlantic	1.0
66 Gulf of Mexico	0.5
Rents and Royalties	1.7
Total	4.1

(Continued)

TABLE 47. (Continued)

Fiscal Year 1983	
57 Bering Sea	0.1
XX three unscheduled sales	1.2
Rents and Royalties	1.0
Total	3.3

TABLE 48. UNDISTRIBUTED OFFSETTING RECEIPTS, a/ BY MAJOR PROGRAM: BY FISCAL YEARS, IN MILLIONS OF DOLLARS

		1978 Second Concurrent Resolution	Projections				
			1979	1980	1981	1982	1983
Employer Share of Employee Retirement	BA	-4,836	-5,257	-5,614	-5,983	-6,478	-6,908
	O	-4,836	-5,257	-5,614	-5,983	-6,478	-6,908
Interest Received by Trust Funds	BA	-9,100	-10,000	-10,800	-11,700	-12,600	-13,400
	O	-9,100	-10,000	-10,800	-11,700	-12,600	-13,400
OCS Receipts	BA	-3,000	-2,800	-3,000	-3,400	-4,100	-3,300
	O	-3,000	-2,800	-3,000	-3,400	-4,100	-3,300
Other Function 950	BA	136	--	--	--	--	--
	O	136	--	--	--	--	--
Total	BA	-16,800	-18,057	-19,414	-21,083	-23,078	-23,608
	O	-16,800	-18,057	-19,414	-21,083	-23,078	-23,608

a/ Function 950.

CHAPTER IV. PROJECTION OF CURRENT POLICY RECEIPTS

Under the current CBO baseline assumptions and current tax policy, total federal revenues will rise from \$457 billion for fiscal year 1979 to \$751 billion for fiscal year 1983. Table 49 shows the receipts by individual source for each year. Because the projections were made before the House and Senate Conference Agreement on Social Security, the CBO projections do not include any additional receipts from social security legislation passed by both Houses of Congress on December 15.

TABLE 49. PROJECTIONS OF CURRENT POLICY RECEIPTS BY SOURCE: BY FISCAL YEARS, IN BILLIONS OF DOLLARS a/

Source	1977 Actual	1978 Second Concurrent Resolution	Current Policy Projections				
			1979	1980	1981	1982	1983
Individual Income Taxes	156.7	175.0	213	250	290	338	389
Corporation Income Taxes	54.9	59.0	67	76	86	95	106
Social Insurance Taxes and Contributions <u>b/</u>	108.7	124.4	137	150	168	186	203
Excise Taxes	17.5	20.3	20	21	22	24	25
Estate and Gift Taxes	7.3	5.6	6	7	7	8	8
Customs Duties	5.2	5.4	6	7	8	9	10
Miscellaneous Receipts	6.5	7.3	8	8	9	9	10
Total	356.9	397.0 <u>c/</u>	457	519	590	668	751

a/ This table is a corrected version of Table 12 in the five-year projections report.

b/ These estimates do not include additional amounts that would be raised under legislation passed by both Houses of Congress on December 15, 1977.

c/ The Second Concurrent Resolution on the Budget for Fiscal Year 1978 assumed energy legislation would reduce budget receipts by \$1.1 billion in fiscal year 1978 to reach the level shown.

This chapter gives a detailed description of the way in which the various estimates are prepared. The individual income tax is discussed first, followed by the corporate income tax, social insurance components, and other sources.

INDIVIDUAL INCOME TAX

Individual income tax receipts are estimated to be \$175.0 billion in fiscal year 1978, or about 44 percent of total federal tax revenues. They are projected to more than double by fiscal year 1983, and would amount to 52 percent of all receipts.

The government collects taxes on individual income in three ways:

- o withholding of tax at the source;
- o declaratory 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 are determined by referring to tables prepared by the Internal Revenue Service; the amount withheld is based on income level and family size. These amounts are remitted periodically to the U. S. Treasury.

Declarations are payments on estimated tax liability 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 an individual's 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 actually 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 1974 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 1974.

Calendar year liability (LIAB) is based on an assumed elasticity with respect to taxable personal income (TPY) of 1.41.

$$\frac{\text{LIAB}_{t+1} - \text{LIAB}_t}{\text{LIAB}_t} = 1.41 * \frac{\text{TPY}_{t+1} - \text{TPY}_t}{\text{TPY}_t}$$

Taxable personal income is equal to the sum of wages and salaries, proprietors' income, rental income, dividends, and interest income. Liability is increased by 3 percent to account for readjustments and back-year tax payments.

Withholding is forecast on a quarterly basis according to the relationship:

$$\frac{\text{withholding}}{\text{employment}} = 0.0016 * \left(\frac{\text{wages and salaries}}{\text{employment}} \right)^{1.58}$$

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 57 percent of nonwithheld liability (net of refunds) collected; the remaining 43 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 the fiscal year two years following by a 93/7 percent split.

The effect of the 1975, 1976, and 1977 tax law changes is deducted from estimated collections under 1974 law.

CORPORATION INCOME TAX

Federal corporation tax receipts are estimated to be \$59.0 billion in fiscal year 1978, or 15 percent of total federal tax receipts. This percentage is projected to decrease to about 14 percent by fiscal year 1983.

Corporation income tax receipts are estimated on a National Income Accounts (NIA) basis, using a simple quarterly econometric model. Results are then translated to a unified budget basis.

The first step in the estimation process is the calculation of the appropriate tax base; that is, corporate profits minus other items that should be excluded or that require separate attention elsewhere. Items subtracted from corporate profits are state and local corporate tax receipts (which are at least partially deductible for federal tax purposes), profits of Federal Reserve Banks (which enter both profits and receipts in the NIA), and corporate profits from sources outside the United States (which, for a variety of reasons, are taxed at a lower effective rate). This "modified tax base" is then multiplied by the statutory federal tax rate to determine the amount of corporate profits tax before credits (BASERATE).

The second step involves measuring the effect of the investment tax credit (ITC) on corporate tax receipts. An estimate of the value of the ITC for a given period is simply obtained as the product of the statutory credit rate of 10 percent and current-dollar investment in producers' durable equipment, which is used as a proxy for the applicable tax credit base.

In the third step, estimates of net corporate taxes (total corporate profits minus the corporate profits of Federal Reserve Banks) are generated. These net taxes are a function of BASERATE, ITC, corporate profits in the rest-of-the-world sector (ROW), and a variable which reflects special tax provisions for Domestic International Sales Corporations (DISC).

$$\text{NETTAX} = - 1.356 + 0.855 * \text{BASERATE} - 0.134 * \text{ITC} - 0.826 * \text{DISC} \\ + 0.212 * \text{ROW}$$

The model predicts liability, which is then translated to collections by adding to it an estimate of the timing adjustment. During normal times (that is, when the economy is growing, as it is over the forecast period), collections usually lag behind liability. Thus, the estimate of the timing adjustment is negative, and it grows only slightly over time.

SOCIAL INSURANCE TAXES AND CONTRIBUTIONS

Social insurance taxes and contributions are estimated to be \$124.4 billion in fiscal year 1978, 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 decrease slightly to about 27 percent by fiscal year 1983.

Old Age, Survivors', Disability, and Health Insurance (OASDHI) revenues comprise about 83 percent of all social insurance taxes and contributions in 1978, and are estimated within a single model. The other items in this receipts category are unemployment insurance, supplementary medical insurance (SMI) 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 1977, FICA taxes amount to 11.7 percent of wages and salaries that are below the taxable earnings maximum (\$16,500) earned in employment covered by the social security program; SECA taxes amount to 7.9 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 (OASI), Disability Insurance (DI), and Health Insurance (HI).

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 the following economic assumptions: wages and salaries (broken down by private, military, and government civilian), proprietors' income, the unemployment rate, the consumer price index (CPI), the gross national product (GNP), 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 by measuring the percent of covered wages that is taxed. This proportion is a function of the total amount of covered wages and salaries, total amount of covered proprietors' income, and the taxable earnings maximum. The key to measuring these taxable wage bases is the relationship of the size and distribution of covered

wages, 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 then 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 current law, ^{1/} the total tax rate for OASDHI would increase from 11.7 percent to 12.1 percent in calendar year 1978, and to 12.6 percent in 1981. These changes are incorporated into the estimates that appear in the five-year projection report.

Unemployment Insurance

Unemployment insurance (UI) revenues are estimated to be \$13.6 billion in fiscal year 1978, and are projected to increase to \$14.8 billion by fiscal year 1983. 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 federal payroll is defined as total wages up to \$6,000 for 1978 and later years. The state taxable wage base varies between states.

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 of these 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. This system penalizes employers whose workers experience high levels of unemployment by imposing higher tax rates on them. Each state sets a minimum tax rate -- which may be as small as zero -- and a maximum tax rate.

To estimate unemployment revenues, state and federal UI tax rates are applied to total taxable wages, which are computed in three steps. First, covered employment -- that is, the number of workers in firms covered by the program -- is estimated as a function of economy-wide employment, plus seasonal variables to reflect the cyclical characteristics of employment, plus a variable to reflect a 1972 expansion in unemployment insurance. Currently, about 85 percent of all wage earners work in covered firms.

^{1/} The law in effect at the time these projections were made does not include legislation passed by both Houses of Congress on December 15, 1977.

$$\log CE = -4.64 + 1.37 * \log E + 0.064 * D\text{-cov} + 0.025 * S2 + 0.039 * S3 + 0.028 * S4$$

where

- CE = covered employment
 E = employment
 D-cov = dummy variable for extension of unemployment compensation coverage, set equal to 1 from 1972 on, zero elsewhere
 S2, S3, S4 = dummy variables for second, third, and fourth calendar quarters, respectively

Second, covered wages are estimated as a function of total wages and salaries, the coverage dummy, and seasonal factors.

$$\log CW = -1.58 + 0.969 * \log WS + 0.069 * D\text{-cov} + 0.029 * S2 + 0.038 * S3 + 0.071 * S4$$

where

- CW = covered wages
 WS = wages and salaries

Third, total quarterly taxable wages are computed based on the ratio of taxable wages to covered wages. This ratio is estimated as a function of the ratio of the taxable wage base, divided by four, to the average covered wage for each of the four quarters of the year, plus a quarterly time trend variable.

$$\frac{\text{total taxable wages}}{\text{total covered wages}} = 1.310 * \left(\frac{WB_1}{AW_1}\right)^{1/2} + 0.873 * \left(\frac{WB_2}{AW_2}\right)^{1/2} + 0.511 * \left(\frac{WB_3}{AW_3}\right)^{1/2} + 0.364 * \left(\frac{WB_4}{AW_4}\right)^{1/2} - 0.00151 * T$$

where

$\frac{WB_i}{AW_i}$ = one-fourth of the taxable wage base divided by average covered wages in quarter i

T = quarterly time trend, set equal to 1 in 1965:3

The federal taxable wage base is set by law at \$6,000 throughout the projection period. For purposes of this equation, the state wage base is set in calendar year 1978 at \$6,254 (a weighted average of state tax bases in that year) and grows by \$10 every year.

Finally, effective tax rates are applied to the appropriate total taxable wage base. Federal tax revenue is equal to 0.007 times total taxable wages. The average state tax rate is determined endogenously as a function of UI outlays by states and their year-to-year UI trust fund balances. These average federal and state rates are then applied to taxable wages and added to federal UI tax revenues to determine total UI revenues.

Supplementary Medical Insurance

SMI provides medical insurance -- 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 that are estimated to be \$2.3 billion in fiscal year 1978. These receipts, plus general revenue appropriations, ^{2/} finance the SMI program.

SMI participation is voluntary, but is available to all individuals age 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 \$7.60 and are paid by all participants. (This rate is applicable for the period July 1, 1977 to June 30, 1978.) 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.

^{2/} These appropriations are intragovernmental transfers and are excluded from the unified budget.



Civil Service and Railroad Retirement Contributions

The civil service retirement system, which provides retirement and disability benefits for federal civil service employees, is operated out of a separate trust fund. Total contributions from employees are estimated to be \$3.0 billion in fiscal year 1978. Trust fund income equals 7 percent of employees' wages, plus a matching amount by 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 \$1.8 billion in fiscal year 1978. These calculations are made according to techniques developed by the Office of Management and Budget.

OTHER TAXES AND RECEIPTS

There are five major components of other taxes and receipts -- excise taxes, estate and gift taxes, customs duties, Federal Reserve Board earnings, and all other miscellaneous receipts. In fiscal year 1978, total revenues from all five of these sources are estimated to be \$38.6 billion, or less than 10 percent of total federal receipts. This percentage is projected to decrease to 7 percent by 1983.

Excise taxes are the largest of these revenue sources. About 42 percent of excise taxes are accounted for by revenues earmarked for the highway trust fund and the airport and airway trust fund. The remaining 58 percent include excises on alcohol, tobacco, and manufacturing. Excise taxes are computed as the average of a declining proportion of fiscal nominal GNP and a constant percentage of fiscal real GNP.

Estate and gift taxes are projected as a proportion of fiscal nominal GNP from which the effect of the Tax Reform Act of 1976 is subtracted. The ratio of customs duties to GNP is assumed to increase slowly from 1979

to 1983. Deposits of earnings of Federal Reserve Banks would grow by about 6 percent each year. The remaining miscellaneous items would increase about \$0.1 billion per year over the projection period.



CHAPTER V. CLOSING THE FISCAL POLICY LOOP

Because of the progressive nature of 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. Before proceeding with that discussion, however, the effects of the recently passed social security act amendments are presented.

EFFECT OF THE SOCIAL SECURITY ACT AMENDMENTS

Tables 50 and 51 present the effects of the social security act amendments on estimates of current policy revenues, current policy outlays, and the fiscal drag offset, and update Tables 2 and B-1 in the five-year report. These amendments increase current policy revenues \$27 billion by fiscal year 1983, and reduce current policy outlays \$3 billion by that date. Therefore, if the economy is to continue to grow at a rate of 4.8 percent until the unemployment rate declines to 4.5 percent, the Congress will have to have enacted by fiscal year 1983 approximately \$30 billion in tax cuts or new spending programs over the levels shown in the five-year projections report.

METHODOLOGY

The Congressional Budget Office (CBO) model for estimating the size of the fiscal drag offset is discussed extensively in a recently published technical analysis paper.^{1/} Briefly, the methodology involves making assumptions about the strength of demand in the nonfederal sectors of the economy -- namely, consumption, investment, state and local government purchases, and net exports -- and then calculating the tax cuts and spending increases needed to reach the assumed growth rates for the economy. The model makes no explicit assumptions about monetary policy, which should be construed as one of the important determinants of the vigor of nonfederal demand.

^{1/} Closing the Fiscal Policy Loop: A Long-Run Analysis, CBO Technical Analysis Paper, December 1977.

TABLE 50. FIVE-YEAR BUDGET PROJECTIONS, INCLUDING EFFECTS OF CONFERENCE AGREEMENT ON SOCIAL SECURITY: BY FISCAL YEARS, IN BILLIONS OF DOLLARS

	1978 Second Concurrent Resolution	Projections				
		1979	1980	1981	1982	1983
Current Policy Receipts	397.0	460	528	606	692	777
Current Policy Outlays	458.25	494	528	563	603	651
Current Policy Margin	-61.25	-34	--	43	88	126
Fiscal Drag Offset	-- <u>a/</u>	33	61	92	127	145
Deficit (-) or Surplus	-61.25	-67	-61	-49	-39	-19

TABLE 51. FIVE-YEAR BUDGET PROJECTIONS, INCLUDING EFFECTS OF CONFERENCE AGREEMENT ON SOCIAL SECURITY, ASSUMING STRONG NONFEDERAL DEMAND: BY FISCAL YEARS, IN BILLIONS OF DOLLARS

	1978 Second Concurrent Resolution	Projections				
		1979	1980	1981	1982	1983
Current Policy Receipts	397.0	460	528	606	692	777
Current Policy Outlays	458.25	494	528	563	603	651
Current Policy Margin	-61.25	-34	--	43	88	126
Fiscal Drag Offset	-- <u>a/</u>	21	41	64	88	94
Deficit (-) or Surplus	-61.25	-55	-41	-21	--	32

a/ It is assumed that the spending ceiling and revenue floor in the second concurrent resolution are consistent with the fiscal stimulus needed for the economy to grow at the rate of 4.8 percent in fiscal year 1978. If more or less fiscal stimulus is required, corresponding adjustments would have to be made in the estimates of the fiscal drag offset for fiscal years 1979-1983.

Figure 3, taken from the technical analysis paper on the model, shows the model flow. Nonfederal demand parameters, assumed expenditures and taxes, and an assumed GNP level are the basic input. If total demand equals the assumed gross national product (GNP) level, a solution has been achieved. If total demand does not equal the assumed GNP level, the model adjusts the tax receipts or expenditures. The tax cuts and expenditure increases equal the difference between the current policy levels and the levels needed to make total demand and the assumed GNP level the same.

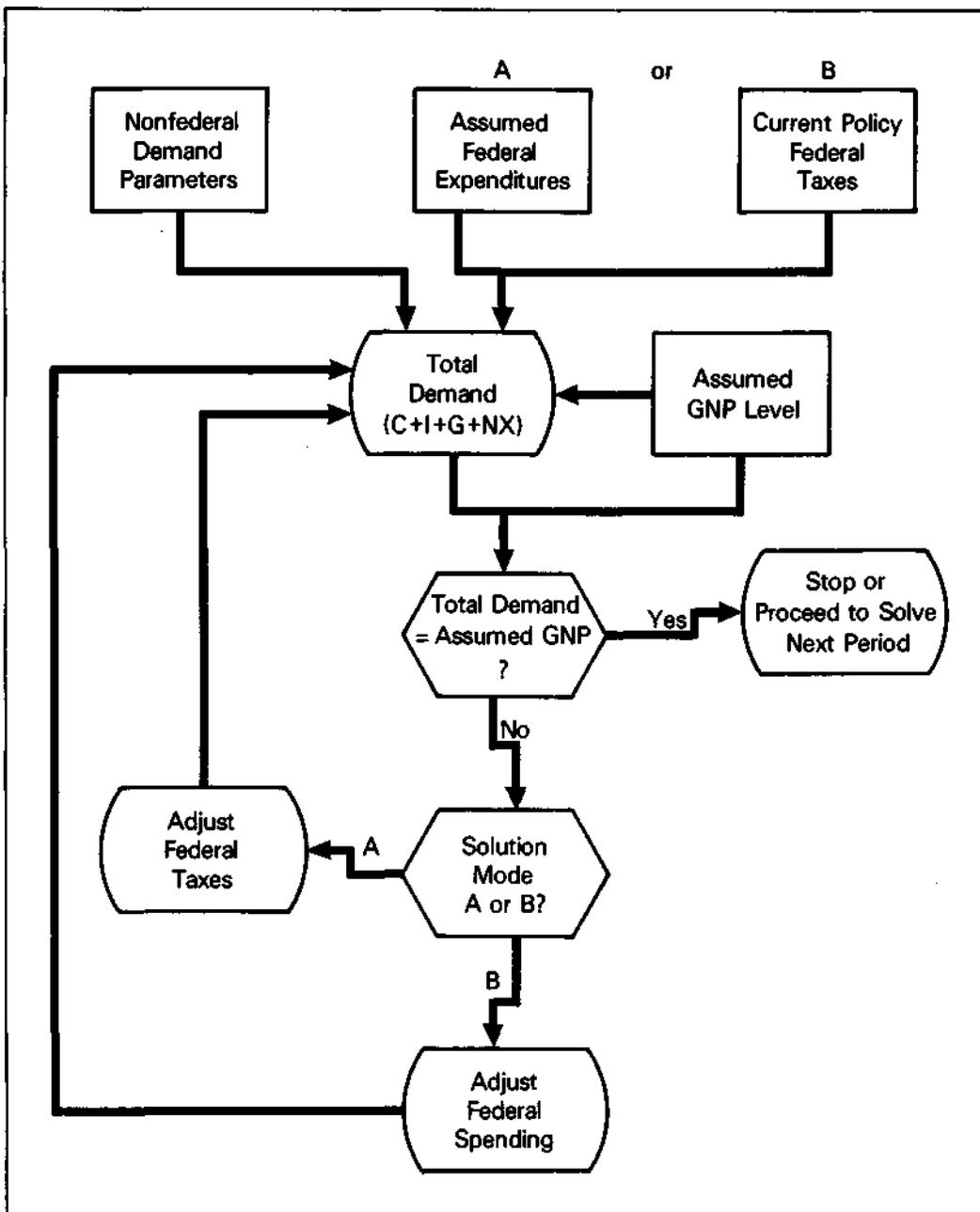
ASSUMPTIONS AND RELATIONSHIPS AMONG VARIABLES

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 fiscal drag exerted by current policy budgets. Stronger nonfederal demand means smaller tax cuts and spending increases are necessary. Conversely, weaker nonfederal demand would require larger tax cuts or spending increases. 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 by the real rate of growth in investment. For state and local government purchases, the strength is expressed as the rate of growth of non-grant-induced state and local government 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 52.

TABLE 52. AVERAGE ANNUAL ASSUMPTIONS IN THE MODERATE AND OPTIMISTIC NONFEDERAL DEMAND SCENARIOS

	Moderate	Optimistic
Personal Saving Rate	5.9 %	5.8%
Real Investment Growth Rate	7 %	8 %
Real State and Local Government Purchases Growth Rate	3.0 %	3.5%
Real Net Exports (in billions of dollars)	--	3

FIGURE 3
MODEL FLOW CHART

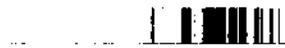


The model enforces the full set of relationships required for consistency among different variables. For example, personal disposable income equals the difference between personal income and personal taxes (including contributions for social insurance, income taxes, estate and gift taxes, and state and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

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 multipliers 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.

APPENDIX



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 calendar year quarter.

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

	1978		1979	
	Fiscal	Calendar	Fiscal	Calendar
Real GNP (in billions of 1972 dollars)	1,387.2	1,402.6	1,450.8	1,467.9
Percent Change	5.2	4.8	4.6	4.7
Nominal GNP (in billions of dollars)	2,056.6	2,107.4	2,273.8	2,333.8
Percent Change	11.7	11.0	10.6	10.7
GNP Deflator (1972 = 1.0)	1.48	1.50	1.57	1.59
Percent Change	6.26	5.96	5.71	5.81
Unemployment Rate	6.67	6.54	6.27	6.17
Civilian Labor Force	99,391	100,029	101,705	102,158
Employment	92,732	93,452	95,329	95,859
Consumer Price Index	1.89	1.92	2.01	2.04
Percent Change	5.97	5.76	5.98	6.01
Wholesale Price Index	2.04	2.08	2.19	2.22
Percent Change	6.62	6.96	7.07	6.63
WPI -- Farm	2.08	2.10	2.16	2.18
Percent Change	5.03	4.02	3.94	3.95
WPI -- Fuel	3.26	3.35	3.58	3.65
Percent Change	10.84	11.24	9.80	8.90
Taxable Personal Income	1,415.4	1,450.0	1,564.0	1,605.6
Share of GNP	68.98	68.92	68.79	68.80
Wages and salaries	1,080.0	1,107.2	1,194.1	1,225.7
Share of GNP	52.63	52.63	52.53	52.52
Nonwage income	335.4	342.7	369.8	379.9
Share of GNP	16.35	16.29	16.27	16.28
Corporate Profits	187.6	192.2	207.8	213.5
Share of GNP	9.15	9.15	9.15	9.15
Sum of Shares	78.13	78.07	77.94	77.95
Treasury Bill Rate	5.94	5.98	6.02	6.02
Moody's Rate	8.05	8.08	8.13	8.13

(Continued)

TABLE A-1. (Continued)

	1980		1981	
	Fiscal	Calendar	Fiscal	Calendar
Real GNP (in billions of 1972 dollars)	1,520.4	1,538.4	1,593.4	1,612.2
Percent Change	4.8	4.8	4.8	4.8
Nominal GNP (in billions of dollars)	2,518.6	2,582.2	2,782.8	2,853.9
Percent Change	10.8	10.6	10.5	10.5
GNP Deflator (1972 = 1.0)	1.66	1.68	1.75	1.77
Percent Change	5.70	5.58	5.43	5.46
Unemployment Rate	5.81	5.69	5.32	5.20
Civilian Labor Force	103,452	103,870	105,046	105,417
Employment	97,445	97,963	99,455	99,934
Consumer Price Index	2.12	2.15	2.24	2.27
Percent Change	5.81	5.68	5.52	5.54
Wholesale Price Index	2.31	2.34	2.44	2.48
Percent Change	5.83	5.72	5.59	5.61
WPI -- Farm	2.24	2.27	2.33	2.36
Percent Change	4.00	4.00	4.00	4.00
WPI -- Fuel	3.86	3.94	4.17	4.25
Percent Change	8.00	8.00	8.00	8.00
Taxable Personal Income	1,736.6	1,782.0	1,924.5	1,974.7
Share of GNP	68.95	69.01	69.16	69.19
Wages and salaries	1,325.3	1,359.7	1,467.7	1,505.7
Share of GNP	52.62	52.66	52.74	52.76
Nonwage income	411.3	422.2	456.8	468.9
Share of GNP	16.33	16.35	16.41	16.43
Corporate Profits	230.4	236.3	254.6	261.1
Share of GNP	9.15	9.15	9.15	9.15
Sum of Shares	78.10	78.16	78.31	78.34
Treasury Bill Rate	6.02	6.02	6.02	6.02
Moody's Rate	8.13	8.13	8.13	8.13

(Continued)

TABLE A-1. (Continued)

	1982		1983	
	Fiscal	Calendar	Fiscal	Calendar
Real GNP (in billions of 1972 dollars)	1,669.9	1,688.3	1,736.4	1,751.4
Percent Change	4.8	4.7	4.0	3.7
Nominal GNP (in billions of dollars)	3,079.2	3,156.4	3,386.5	3,465.2
Percent Change	10.7	10.6	10.0	9.8
GNP Deflator (1972 = 1.0)	1.84	1.87	1.95	1.98
Percent Change	5.58	5.62	5.77	5.83
Unemployment Rate	4.83	4.71	4.52	4.52
Civilian Labor Force	106,474	106,824	107,849	108,166
Employment	101,328	101,793	102,970	103,272
Consumer Price Index	2.46	2.40	2.50	2.54
Percent Change	5.64	5.68	5.84	5.90
Wholesale Price Index	2.58	2.62	2.73	2.77
Percent Change	5.68	5.72	5.84	5.88
WPI -- Farm	2.43	2.45	2.52	2.55
Percent Change	4.00	4.00	4.00	4.00
WPI -- Fuel	4.51	4.59	4.87	4.96
Percent Change	8.00	8.00	8.00	8.00
Taxable Personal Income	2,133.9	2,189.0	2,355.6	2,412.3
Share of GNP	69.30	69.35	69.56	69.61
Wages and salaries	1,626.6	1,668.4	1,793.9	1,836.5
Share of GNP	52.82	52.86	52.97	53.00
Nonwage income	507.3	520.7	561.7	575.8
Share of GNP	16.47	16.49	16.59	16.62
Corporate Profits	281.7	288.8	309.9	317.1
Share of GNP	9.15	9.15	9.15	9.15
Sum of Shares	78.45	78.50	78.71	78.76
Treasury Bill Rate	6.02	6.02	6.02	6.02
Moody's Rate	8.13	8.13	8.13	8.13

TABLE A-2. ASSUMPTIONS FOR THE CONSUMER PRICE INDEX AND THE UNEMPLOYMENT RATE

Calendar Year Quarter	CPI Percent Increase from Previous Quarter	Unemployment Rate
78:1	6.27	6.69
78:2	5.40	6.59
78:3	5.74	6.49
78:4	6.16	6.39
79:1	6.14	6.35
79:2	6.17	6.23
79:3	5.97	6.11
79:4	5.81	5.99
80:1	5.57	5.87
80:2	5.56	5.75
80:3	5.47	5.63
80:4	5.43	5.51
81:1	5.57	5.38
81:2	5.57	5.26
81:3	5.58	5.14
81:4	5.64	5.02
82:1	5.67	4.89
82:2	5.72	4.77
82:3	5.78	4.65
82:4	5.85	4.52
83:1	5.91	4.52
83:2	5.96	4.52
83:3	6.01	4.52
83:4	6.06	4.52

TABLE A-3. SPECIALIZED PRICE INDEXES: BY CALENDAR YEAR QUARTER

	1977:1	1977:4	1978:1	1978:2	1978:3	1978:4
Durables	1.000	1.014	1.028	1.045	1.065	1.088
X CHANGE	8.50X	5.64X	5.61X	6.72X	7.89X	8.91X
Aircraft	1.000	1.012	1.026	1.042	1.061	1.092
Z CHANGE	6.11X	5.97X	5.30X	6.63X	7.57X	7.95X
Ships	1.000	1.020	1.038	1.059	1.084	1.116
Z CHANGE	21.81X	8.39X	7.17X	8.19X	9.96X	12.20X
Other: Defense	1.000	1.017	1.036	1.054	1.076	1.102
Z CHANGE	6.03X	7.09X	7.41X	7.48X	8.60X	9.68X
Weapons	1.000	1.017	1.041	1.051	1.074	1.099
Z CHANGE	6.99X	6.97X	9.86X	3.65X	9.42X	9.40X
Fire Control Eqpt.	1.000	1.021	1.039	1.054	1.079	1.104
Z CHANGE	6.89X	8.76X	7.18X	5.87X	10.01X	9.68X
Vehicles	1.000	1.020	1.030	1.040	1.052	1.075
Z CHANGE	3.15X	8.15X	4.22X	3.73X	4.65X	9.24X
Tractors	1.000	1.019	1.037	1.055	1.079	1.110
Z CHANGE	4.48X	7.71X	7.28X	7.38X	9.32X	11.89X
Tires and Tubes	1.000	1.019	1.040	1.061	1.110	1.132
Z CHANGE	18.34X	7.77X	8.46X	8.39X	19.70X	8.22X
Diesel Engines	1.000	1.020	1.039	1.059	1.084	1.114
Z CHANGE	6.22X	8.41X	7.64X	7.96X	9.50X	11.71X
Engine Components	1.000	1.016	1.032	1.050	1.080	1.111
Z CHANGE	2.57X	6.68X	6.18X	7.92X	11.16X	11.93X
Mech Pwr Transmissions	1.000	1.025	1.044	1.063	1.085	1.115
Z CHANGE	6.55X	10.34X	7.71X	7.40X	8.45X	11.83X
Bearings	1.000	1.024	1.045	1.064	1.087	1.119
Z CHANGE	6.69X	9.88X	8.56X	7.64X	8.58X	12.60X
Metalworking Mach.	1.000	1.022	1.040	1.062	1.088	1.118
Z CHANGE	6.45X	9.00X	7.33X	8.87X	10.01X	11.56X
Special Industry Eqpt.	1.000	1.022	1.040	1.060	1.085	1.114
Z CHANGE	8.38X	8.97X	7.17X	8.09X	9.76X	11.17X

	1979:1	1979:2	1979:3	1979:4	1980:1	1980:2
Durables	1.112	1.135	1.158	1.181	1.203	1.224
X CHANGE	9.12X	8.83X	8.35X	8.11X	7.77X	7.18X
Aircraft	1.104	1.127	1.149	1.171	1.192	1.212
Z CHANGE	8.59X	8.62X	8.03X	7.58X	7.42X	7.11X
Ships	1.144	1.171	1.198	1.226	1.251	1.275
Z CHANGE	10.33X	9.81X	9.58X	9.79X	8.44X	7.91X
Other: Defense	1.126	1.148	1.171	1.194	1.216	1.234
Z CHANGE	9.23X	8.12X	8.03X	8.25X	7.52X	6.15X
Weapons	1.131	1.144	1.169	1.193	1.222	1.229
Z CHANGE	12.24X	4.74X	9.10X	8.31X	10.01X	2.52X
Fire Control Eqpt.	1.126	1.143	1.164	1.186	1.209	1.224
Z CHANGE	7.99X	6.25X	7.49X	8.70X	7.27X	5.10X
Vehicles	1.089	1.098	1.110	1.133	1.144	1.151
Z CHANGE	5.03X	3.72X	4.33X	8.31X	3.94X	2.64X
Tractors	1.140	1.169	1.209	1.255	1.297	1.338
Z CHANGE	11.16X	10.74X	14.34X	15.98X	14.16X	13.42X
Tires and Tubes	1.152	1.171	1.215	1.235	1.254	1.270
Z CHANGE	7.26X	6.76X	16.13X	6.65X	6.14X	5.34X
Diesel Engines	1.141	1.167	1.194	1.223	1.240	1.273
Z CHANGE	9.92X	9.66X	9.61X	10.06X	8.40X	8.05X
Engine Components	1.141	1.166	1.188	1.207	1.230	1.251
Z CHANGE	11.49X	8.79X	7.92X	6.45X	7.93X	6.89X
Mech Pwr Transmissions	1.141	1.165	1.190	1.218	1.240	1.261
Z CHANGE	9.33X	8.77X	8.77X	9.88X	7.56X	6.82X
Bearings	1.151	1.181	1.210	1.241	1.267	1.290
Z CHANGE	11.94X	10.74X	10.16X	10.80X	8.56X	7.36X
Metalworking Mach.	1.140	1.164	1.189	1.217	1.238	1.258
Z CHANGE	8.09X	8.77X	8.66X	9.91X	6.93X	6.70X
Special Industry Eqpt.	1.135	1.158	1.181	1.208	1.229	1.251
Z CHANGE	7.80X	8.38X	6.84X	9.54X	7.29X	7.29X

TABLE A-3. (Continued)

	1980:3	1980:4	1981:1	1981:2	1981:3	1981:4
Durables	1.244	1.264	1.283	1.302	1.323	1.344
X CHANGE	6.56%	6.45%	6.19%	6.26%	6.38%	6.64%
Aircraft	1.232	1.251	1.269	1.288	1.307	1.327
X CHANGE	6.60%	6.16%	5.98%	6.08%	6.20%	6.25%
Ships	1.297	1.321	1.345	1.371	1.396	1.423
X CHANGE	7.00%	7.56%	7.42%	7.91%	7.53%	6.18%
Other Defense	1.252	1.272	1.292	1.310	1.330	1.352
X CHANGE	6.01%	6.42%	6.39%	5.85%	6.10%	6.03%
Weapons	1.253	1.273	1.300	1.306	1.227	1.348
X CHANGE	7.37%	6.56%	8.72%	1.49%	6.67%	6.56%
Fire Control Eqpt.	1.243	1.266	1.287	1.302	1.322	1.347
X CHANGE	6.27%	7.69%	6.61%	4.89%	6.30%	7.80%
Vehicles	1.160	1.180	1.191	1.199	1.208	1.230
X CHANGE	3.03%	7.24%	3.63%	2.70%	3.22%	7.56%
Tractors	1.379	1.424	1.467	1.511	1.556	1.605
X CHANGE	12.79%	13.78%	12.60%	12.50%	12.29%	13.34%
Tires and Tubes	1.314	1.335	1.359	1.380	1.431	1.455
X CHANGE	14.70%	6.53%	7.21%	6.37%	15.61%	6.98%
Diesel Engines	1.275	1.320	1.343	1.369	1.395	1.423
X CHANGE	7.24%	7.85%	7.29%	7.91%	7.74%	8.44%
Engine Components	1.270	1.283	1.304	1.326	1.348	1.367
X CHANGE	6.29%	4.36%	6.44%	6.91%	6.93%	5.78%
Mech Pwr Transmissions	1.280	1.304	1.324	1.345	1.366	1.393
X CHANGE	6.20%	7.56%	6.25%	6.62%	6.45%	6.14%
Bearings	1.311	1.336	1.359	1.383	1.407	1.436
X CHANGE	6.82%	7.75%	6.93%	9.30%	7.24%	8.53%
Metalworking Mach.	1.277	1.303	1.323	1.345	1.367	1.397
X CHANGE	6.20%	8.26%	6.46%	6.82%	6.76%	8.85%
Special Industry Eqpt.	1.271	1.297	1.319	1.343	1.366	1.395
X CHANGE	6.42%	8.43%	7.09%	7.54%	6.92%	8.75%

	1982:1	1982:2	1982:3	1982:4	1983:1	1983:2	1983:3
Durables	1.366	1.380	1.411	1.434	1.462	1.488	1.515
X CHANGE	6.64%	6.72%	6.81%	7.24%	7.29%	7.34%	7.37%
Aircraft	1.348	1.369	1.392	1.415	1.439	1.464	1.490
X CHANGE	6.37%	6.56%	6.69%	6.81%	6.99%	7.15%	7.18%
Ships	1.450	1.479	1.508	1.539	1.570	1.603	1.636
X CHANGE	7.73%	8.25%	7.95%	8.60%	8.26%	8.69%	8.38%
Other Defense	1.375	1.396	1.418	1.443	1.469	1.493	1.518
X CHANGE	6.83%	6.28%	6.56%	7.28%	7.27%	6.67%	6.96%
Weapons	1.378	1.386	1.410	1.435	1.468	1.479	1.510
X CHANGE	9.12%	2.34%	7.94%	7.15%	9.53%	3.06%	8.87%
Fire Control Eqpt.	1.370	1.387	1.409	1.437	1.462	1.482	1.507
X CHANGE	6.79%	5.11%	6.68%	8.18%	7.17%	5.41%	6.95%
Vehicles	1.242	1.251	1.262	1.286	1.300	1.311	1.323
X CHANGE	3.84%	2.91%	3.55%	7.96%	4.36%	3.36%	3.90%
Tractors	1.651	1.699	1.748	1.805	1.858	1.914	1.973
X CHANGE	12.06%	12.03%	12.10%	13.51%	12.49%	12.62%	12.87%
Tires and Tubes	1.461	1.506	1.564	1.593	1.624	1.652	1.716
X CHANGE	7.37%	6.69%	16.43%	7.74%	7.93%	7.07%	16.44%
Diesel Engines	1.450	1.479	1.508	1.541	1.571	1.603	1.637
X CHANGE	7.61%	8.25%	8.22%	8.89%	7.98%	8.59%	8.80%
Engine Components	1.393	1.421	1.450	1.475	1.507	1.538	1.570
X CHANGE	7.79%	8.36%	8.53%	7.05%	8.77%	8.63%	8.51%
Mech Pwr Transmissions	1.416	1.441	1.467	1.499	1.526	1.555	1.584
X CHANGE	6.89%	7.26%	7.29%	8.91%	7.50%	7.78%	7.73%
Bearings	1.462	1.490	1.520	1.559	1.596	1.635	1.675
X CHANGE	7.50%	7.63%	8.49%	10.54%	9.88%	10.19%	10.00%
Metalworking Mach.	1.422	1.449	1.477	1.513	1.543	1.575	1.607
X CHANGE	7.35%	7.97%	8.03%	9.99%	8.18%	8.56%	8.50%
Special Industry Eqpt.	1.420	1.448	1.474	1.507	1.535	1.565	1.595
X CHANGE	7.44%	8.04%	7.41%	9.11%	7.62%	8.22%	7.71%

TABLE A-3. (Continued)

Construction Mach.	1977:1	1977:4	1978:1	1978:2	1978:3	1978:4
X CHANGE	1.000	1.019	1.037	1.055	1.079	1.110
Material Handling Eqpt	4.40X	7.71X	7.20X	7.38X	9.32X	11.89X
X CHANGE	1.000	1.022	1.042	1.060	1.082	1.111
Refrigeration Eqpt.	6.58X	8.94X	8.25X	7.20X	8.39X	11.25X
X CHANGE	1.000	1.019	1.033	1.050	1.072	1.101
Pumps and Accessories	6.03X	7.68X	5.77X	6.67X	8.90X	10.92X
X CHANGE	1.000	1.024	1.046	1.073	1.106	1.145
Heating Eqpt.	80.66X	10.12X	8.78X	10.58X	12.62X	15.12X
X CHANGE	1.000	1.020	1.036	1.054	1.076	1.108
Valves and Fittings	6.29X	8.06X	6.59X	7.04X	8.91X	12.11X
X CHANGE	1.000	1.022	1.041	1.067	1.101	1.134
Hairt. Equipment	11.15X	8.92X	7.99X	10.22X	13.19X	12.79X
X CHANGE	1.000	1.019	1.038	1.060	1.084	1.112
Hand Tools	9.49X	8.02X	7.54X	8.75X	9.40X	10.76X
X CHANGE	1.000	1.019	1.032	1.047	1.068	1.094
Measuring Tools	7.33X	7.81X	5.00X	6.18X	8.12X	10.30X
X CHANGE	1.000	1.022	1.040	1.062	1.088	1.118
Hardware and Abrasives	6.45X	9.00X	7.33X	8.87X	10.01X	11.56X
X CHANGE	1.000	1.019	1.032	1.047	1.068	1.094
Prefab. Structures	7.33X	7.93X	5.00X	6.18X	8.12X	10.30X
X CHANGE	1.000	1.021	1.047	1.071	1.110	1.151
Communication Eqpt.	11.44X	8.54X	10.71X	9.52X	15.35X	15.60X
X CHANGE	1.000	1.015	1.036	1.059	1.081	1.104
Electrical Eqpt.	4.61X	6.17X	8.68X	9.19X	8.18X	8.79X
X CHANGE	1.000	1.016	1.029	1.045	1.066	1.089
Motors and Generators	4.31X	6.51X	5.14X	6.66X	7.98X	9.10X
X CHANGE	1.000	1.013	1.026	1.048	1.083	1.120
Lighting and Lamps	6.19X	5.33X	5.29X	8.82X	13.80X	14.75X
X CHANGE	1.000	1.016	1.029	1.045	1.066	1.089
Drugs	4.31X	6.33X	5.14X	6.66X	7.98X	9.10X
	1.000	1.019	1.033	1.045	1.066	1.084
Construction Mach.	1979:1	1979:2	1979:3	1979:4	1980:1	1980:2
X CHANGE	1.140	1.169	1.209	1.255	1.297	1.338
Material Handling Eqpt	11.16X	10.74X	14.34X	15.98X	14.16X	13.42X
X CHANGE	1.138	1.165	1.192	1.217	1.237	1.254
Refrigeration Eqpt.	10.19X	9.67X	9.65X	8.57X	6.60X	5.64X
X CHANGE	1.122	1.144	1.166	1.190	1.206	1.222
Pumps and Accessories	8.01X	8.23X	7.91X	8.33X	5.59X	5.33X
X CHANGE	1.178	1.213	1.245	1.281	1.310	1.339
Heating Eqpt.	12.07X	12.09X	11.29X	11.81X	9.58X	9.20X
X CHANGE	1.135	1.161	1.190	1.220	1.247	1.273
Valves and Fittings	10.31X	9.48X	10.29X	10.46X	9.29X	8.34X
X CHANGE	1.161	1.189	1.218	1.250	1.275	1.301
Hairt. Equipment	9.81X	9.99X	10.26X	10.68X	8.45X	8.22X
X CHANGE	1.136	1.161	1.185	1.211	1.232	1.253
Hand Tools	8.70X	9.01X	8.56X	9.28X	7.19X	6.73X
X CHANGE	1.113	1.133	1.152	1.176	1.191	1.204
Measuring Tools	7.09X	7.13X	7.14X	8.49X	5.10X	4.62X
X CHANGE	1.140	1.164	1.189	1.217	1.238	1.258
Hardware and Abrasives	8.09X	8.77X	8.66X	9.91X	6.93X	6.70X
X CHANGE	1.113	1.133	1.152	1.176	1.191	1.204
Prefab. Structures	7.09X	7.13X	7.14X	8.49X	5.10X	4.62X
X CHANGE	1.196	1.234	1.275	1.313	1.355	1.385
Communication Eqpt.	16.47X	13.61X	13.86X	12.49X	13.22X	9.18X
X CHANGE	1.129	1.155	1.179	1.202	1.225	1.247
Electrical Eqpt.	9.67X	9.54X	8.40X	8.10X	8.00X	7.11X
X CHANGE	1.112	1.131	1.149	1.166	1.183	1.198
Motors and Generators	8.54X	7.27X	6.42X	5.93X	5.95X	5.40X
X CHANGE	1.161	1.189	1.215	1.235	1.262	1.286
Lighting and Lamps	15.11X	10.16X	9.01X	6.76X	9.17X	7.56X
X CHANGE	1.112	1.131	1.149	1.166	1.183	1.198
Drugs	8.54X	7.27X	6.42X	5.93X	5.95X	5.40X
	1.096	1.110	1.123	1.135	1.148	1.160

TABLE A-3. (Continued)

Construction Mach.	1981:1	1981:1	1981:1	1981:2	1981:3	1981:4	
X CHANGE	1.379	1.424	1.467	1.511	1.556	1.603	
Material Handling Eqpt	12.79X	13.78X	12.60X	12.50X	12.29X	13.34X	
X CHANGE	1.269	1.288	1.304	1.322	1.339	1.360	
Refrigeration Eqpt.	5.08X	6.07X	5.18X	5.37X	5.30X	6.62X	
X CHANGE	1.237	1.257	1.273	1.291	1.309	1.333	
Pumps and Accessories	5.13X	6.56X	5.27X	5.62X	5.84X	7.28X	
X CHANGE	1.365	1.394	1.423	1.455	1.485	1.520	
Heating Eqpt.	7.77X	8.84X	8.48X	9.41X	8.65X	9.78X	
X CHANGE	1.297	1.324	1.350	1.376	1.403	1.421	
Valves and Fittings	7.91X	8.41X	8.13X	8.05X	7.95X	8.42X	
X CHANGE	1.326	1.356	1.383	1.412	1.441	1.474	
Maint. Equipment	7.85X	9.33X	8.41X	8.64X	8.45X	9.52X	
X CHANGE	1.271	1.294	1.314	1.336	1.356	1.382	
Hand Tools	6.08X	7.41X	6.37X	6.61X	6.43X	7.88X	
X CHANGE	1.218	1.238	1.253	1.268	1.284	1.306	
Measuring Tools	4.54X	6.90X	4.90X	4.88X	5.08X	7.18X	
X CHANGE	1.277	1.303	1.323	1.345	1.367	1.397	
Hardware and Abrasives	6.20X	8.26X	6.46X	6.82X	6.76X	8.85X	
X CHANGE	1.218	1.238	1.253	1.268	1.284	1.306	
Prefab. Structures	4.54X	6.90X	4.90X	4.88X	5.08X	7.18X	
X CHANGE	1.416	1.450	1.497	1.535	1.574	1.613	
Communication Eqpt.	9.25X	10.01X	13.81X	10.39X	10.65X	10.24X	
X CHANGE	1.265	1.284	1.304	1.324	1.343	1.364	
Electrical Eqpt.	6.08X	5.97X	6.37X	6.39X	5.94X	6.23X	
X CHANGE	1.212	1.225	1.241	1.257	1.273	1.289	
Motors and Generators	4.53X	4.37X	5.21X	5.57X	5.08X	5.14X	
X CHANGE	1.307	1.318	1.341	1.366	1.392	1.411	
Lighting and Lamps	6.78X	3.62X	6.93X	7.68X	7.78X	5.82X	
X CHANGE	1.212	1.225	1.241	1.257	1.273	1.289	
Drugs	4.53X	4.37X	5.21X	5.57X	5.08X	5.14X	
	1.172	1.184	1.196	1.209	1.221	1.234	
Construction Mach.	1982:1	1982:2	1982:3	1982:4	1983:1	1983:2	1983:3
X CHANGE	1.651	1.699	1.748	1.885	1.858	1.914	1.973
Material Handling Eqpt	12.06X	12.03X	12.10X	13.51X	12.49X	12.42X	12.87X
X CHANGE	1.379	1.399	1.418	1.443	1.465	1.488	1.511
Refrigeration Eqpt.	5.67X	5.75X	5.78X	7.15X	6.24X	6.35X	6.34X
X CHANGE	1.352	1.374	1.398	1.427	1.452	1.477	1.504
Pumps and Accessories	6.06X	6.64X	7.02X	8.53X	7.13X	7.28X	7.38X
X CHANGE	1.555	1.593	1.630	1.671	1.712	1.756	1.800
Heating Eqpt.	9.31X	10.28X	9.51X	10.63X	9.99X	10.86X	10.18X
X CHANGE	1.457	1.483	1.510	1.539	1.569	1.599	1.629
Valves and Fittings	7.46X	7.31X	7.41X	8.03X	7.92X	7.81X	7.82X
X CHANGE	1.506	1.540	1.575	1.614	1.651	1.690	1.730
Maint. Equipment	9.05X	9.34X	9.22X	10.20X	9.59X	9.94X	9.76X
X CHANGE	1.406	1.431	1.456	1.487	1.514	1.543	1.572
Hand Tools	7.06X	7.35X	7.21X	8.61X	7.59X	7.83X	7.62X
X CHANGE	1.323	1.340	1.358	1.383	1.402	1.421	1.441
Measuring Tools	5.18X	5.18X	5.44X	7.66X	5.69X	5.62X	5.72X
X CHANGE	1.422	1.449	1.477	1.513	1.543	1.575	1.607
Hardware and Abrasives	7.35X	7.97X	8.03X	9.99X	8.18X	8.56X	3.50X
X CHANGE	1.323	1.340	1.358	1.383	1.402	1.421	1.441
Prefab. Structures	5.18X	5.18X	5.44X	7.66X	5.69X	5.62X	5.72X
X CHANGE	1.665	1.706	1.751	1.799	1.863	1.914	1.967
Communication Eqpt.	13.49X	10.20X	10.95X	11.42X	14.99X	11.41X	11.66X
X CHANGE	1.386	1.408	1.429	1.452	1.476	1.501	1.524
Electrical Eqpt.	6.72X	6.64X	6.11X	6.38X	6.91X	6.89X	6.37X
X CHANGE	1.308	1.328	1.347	1.366	1.387	1.409	1.429
Motors and Generators	5.85X	6.29X	5.83X	5.77X	6.38X	6.51X	5.90X
X CHANGE	1.442	1.477	1.514	1.542	1.581	1.619	1.658
Lighting and Lamps	9.03X	10.06X	10.33X	7.71X	10.31X	10.11X	10.04X
X CHANGE	1.308	1.328	1.347	1.366	1.387	1.409	1.429
Drugs	5.85X	6.29X	5.83X	5.77X	6.38X	6.51X	5.90X
	1.247	1.261	1.274	1.288	1.304	1.319	1.334

TABLE A-3. (Continued)

Construction Mach.	1977:3	1977:4	1978:1	1978:2	1978:3	1978:4
	1.000	1.019	1.037	1.055	1.079	1.110
X CHANGE	4.48X	7.71X	7.28X	7.34X	9.32X	11.89X
Material Handling Eqpt	1.000	1.022	1.042	1.060	1.082	1.111
X CHANGE	6.58X	8.94X	8.25X	7.20X	6.39X	11.25X
Refrigeration Eqpt.	1.000	1.019	1.033	1.050	1.072	1.101
X CHANGE	6.03X	7.68X	5.77X	6.67X	8.90X	10.92X
Pumps and Accessories	1.000	1.024	1.046	1.073	1.106	1.145
X CHANGE	80.66X	10.12X	8.78X	10.58X	12.82X	15.12X
Heating Eqpt.	1.000	1.020	1.036	1.054	1.076	1.108
X CHANGE	6.29X	8.06X	6.59X	7.04X	8.91X	12.11X
Valves and Fittings	1.000	1.022	1.041	1.067	1.101	1.134
X CHANGE	11.15X	8.92X	7.99X	10.22X	13.19X	12.79X
Maint. Equipment	1.000	1.019	1.036	1.060	1.084	1.112
X CHANGE	9.49X	6.02X	7.54X	8.75X	9.40X	10.76X
Hand Tools	1.000	1.019	1.032	1.047	1.068	1.094
X CHANGE	7.33X	7.83X	5.00X	6.18X	8.12X	10.30X
Measuring Tools	1.000	1.022	1.040	1.062	1.088	1.118
X CHANGE	6.45X	9.00X	7.33X	8.87X	10.01X	11.56X
Hardware and Abrasives	1.000	1.019	1.032	1.047	1.068	1.094
X CHANGE	7.33X	7.83X	5.00X	6.18X	8.12X	10.30X
Prefab. Structures	1.000	1.021	1.047	1.071	1.110	1.151
X CHANGE	11.44X	8.54X	10.71X	9.52X	15.35X	15.60X
Communication Eqpt.	1.000	1.015	1.036	1.059	1.081	1.104
X CHANGE	4.61X	6.17X	8.68X	9.19X	8.18X	8.79X
Electrical Eqpt.	1.000	1.016	1.029	1.045	1.066	1.089
X CHANGE	4.31X	6.53X	5.14X	6.66X	7.98X	7.10X
Motors and Generators	1.000	1.013	1.026	1.048	1.088	1.120
X CHANGE	6.19X	5.33X	5.29X	8.82X	13.80X	14.75X
Lighting and Lamps	1.000	1.016	1.029	1.045	1.066	1.089
X CHANGE	4.31X	6.53X	5.14X	6.66X	7.98X	9.10X
Drugs	1.000	1.019	1.033	1.045	1.066	1.084
X CHANGE	-1.37X	7.92X	5.32X	4.88X	8.22X	7.12X
	1979:1	1979:2	1979:3	1979:4	1980:1	1980:2
Construction Mach.	1.140	1.169	1.209	1.255	1.297	1.338
X CHANGE	11.16X	10.74X	14.34X	15.98X	14.16X	13.42X
Material Handling Eqpt	1.136	1.165	1.192	1.217	1.237	1.254
X CHANGE	10.19X	9.67X	9.65X	8.57X	6.60X	5.64X
Refrigeration Eqpt.	1.122	1.144	1.166	1.190	1.206	1.222
X CHANGE	8.01X	8.23X	7.91X	8.33X	5.59X	5.33X
Pumps and Accessories	1.178	1.213	1.245	1.281	1.310	1.339
X CHANGE	12.07X	12.09X	11.29X	11.81X	9.58X	9.20X
Heating Eqpt.	1.135	1.161	1.190	1.220	1.247	1.273
X CHANGE	10.31X	9.48X	10.29X	10.46X	9.29X	8.34X
Valves and Fittings	1.161	1.189	1.218	1.250	1.275	1.301
X CHANGE	9.81X	9.99X	10.26X	10.68X	8.45X	8.22X
Maint. Equipment	1.136	1.161	1.185	1.211	1.232	1.253
X CHANGE	8.70X	9.01X	8.56X	9.28X	7.19X	6.73X
Hand Tools	1.113	1.133	1.152	1.176	1.191	1.204
X CHANGE	7.09X	7.13X	7.14X	8.49X	5.10X	4.62X
Measuring Tools	1.140	1.164	1.189	1.217	1.238	1.258
X CHANGE	8.09X	8.77X	8.66X	9.91X	6.93X	6.70X
Hardware and Abrasives	1.113	1.133	1.152	1.176	1.191	1.204
X CHANGE	7.09X	7.13X	7.14X	8.49X	5.10X	4.62X
Prefab. Structures	1.196	1.234	1.275	1.313	1.355	1.385
X CHANGE	16.47X	13.61X	13.86X	12.49X	13.22X	9.18X
Communication Eqpt.	1.129	1.155	1.179	1.202	1.225	1.247
X CHANGE	9.67X	9.54X	8.40X	8.10X	8.00X	7.11X
Electrical Eqpt.	1.112	1.131	1.149	1.166	1.183	1.198
X CHANGE	8.54X	7.27X	6.42X	5.93X	5.95X	5.40X
Motors and Generators	1.161	1.189	1.215	1.235	1.262	1.286
X CHANGE	15.11X	10.16X	9.01X	6.76X	9.17X	7.56X
Lighting and Lamps	1.112	1.131	1.149	1.166	1.183	1.198
X CHANGE	8.54X	7.27X	6.42X	5.93X	5.95X	5.40X
Drugs	1.096	1.110	1.123	1.135	1.148	1.160
X CHANGE	4.59X	5.10X	4.60X	4.32X	4.70X	4.44X

TABLE A-3. (Continued)

Construction Mach.	1969:1	1980:4	1981:1	1981:2	1981:3	1981:4	
% CHANGE	1.379	1.424	1.467	1.511	1.556	1.605	
Material Handling Eqpt	12.79X	13.70X	12.60X	12.50X	12.29X	13.34X	
% CHANGE	1.269	1.288	1.304	1.322	1.339	1.360	
Refrigeration Eqpt.	5.08X	6.07X	5.18X	5.37X	5.30X	6.62X	
% CHANGE	1.237	1.257	1.273	1.291	1.309	1.333	
Pumps and Accessories	5.13X	6.56X	5.27X	5.62X	5.84X	7.28X	
% CHANGE	1.365	1.394	1.423	1.455	1.485	1.520	
Heating Eqpt.	7.77X	8.84X	8.46X	9.41X	8.65X	9.78X	
% CHANGE	1.297	1.324	1.350	1.376	1.403	1.431	
Valves and fittings	7.91X	8.41X	8.13X	8.05X	7.95X	8.42X	
% CHANGE	1.326	1.356	1.393	1.412	1.441	1.474	
Maint. Equipment	7.35X	9.33X	8.41X	8.64X	8.45X	9.52X	
% CHANGE	1.271	1.294	1.314	1.336	1.356	1.382	
Hand Tools	6.08X	7.41X	6.37X	6.61X	6.43X	7.88X	
% CHANGE	1.218	1.238	1.253	1.268	1.284	1.306	
Measuring Tools	4.54X	6.90X	4.90X	4.88X	5.08X	7.18X	
% CHANGE	1.277	1.303	1.323	1.345	1.367	1.397	
Hardware and Abrasives	6.20X	8.26X	6.46X	6.82X	6.76X	8.85X	
% CHANGE	1.218	1.233	1.253	1.268	1.284	1.306	
Prefab. Structures	4.54X	6.90X	4.90X	4.98X	5.08X	7.18X	
% CHANGE	1.416	1.450	1.497	1.535	1.574	1.613	
Communication Eqpt.	9.25X	10.01X	13.81X	10.39X	10.65X	10.24X	
% CHANGE	1.265	1.284	1.304	1.324	1.343	1.364	
Electrical Eqpt.	6.08X	5.97X	6.37X	6.39X	5.94X	6.23X	
% CHANGE	1.212	1.225	1.241	1.257	1.273	1.289	
Motors and Generators	4.53X	4.37X	5.21X	5.57X	5.08X	5.14X	
% CHANGE	1.397	1.318	1.341	1.366	1.392	1.411	
Lighting and Lamps	6.78X	3.62X	6.93X	7.68X	7.78X	5.82X	
% CHANGE	1.212	1.225	1.241	1.257	1.273	1.289	
Drugs	4.53X	4.37X	5.21X	5.57X	5.08X	5.14X	
% CHANGE	1.172	1.184	1.196	1.209	1.221	1.234	
	4.20X	4.02X	4.24X	4.36X	4.21X	4.15X	
Construction Mach.	1982:1	1982:2	1982:3	1982:4	1983:1	1983:2	1983:3
% CHANGE	1.651	1.699	1.748	1.805	1.858	1.914	1.973
Material Handling Eqpt	12.06X	12.03X	12.10X	13.51X	12.49X	12.62X	12.87X
% CHANGE	1.379	1.399	1.418	1.443	1.465	1.488	1.511
Refrigeration Eqpt.	5.67X	5.75X	5.78X	7.15X	6.24X	6.35X	6.34X
% CHANGE	1.352	1.374	1.398	1.427	1.452	1.477	1.504
Pumps and Accessories	6.06X	6.64X	7.02X	8.53X	7.13X	7.28X	7.38X
% CHANGE	1.555	1.593	1.630	1.671	1.712	1.756	1.800
Heating Eqpt.	9.31X	10.28X	9.51X	10.63X	9.99X	10.86X	10.18X
% CHANGE	1.457	1.483	1.510	1.539	1.569	1.599	1.629
Valves and Fittings	7.46X	7.31X	7.41X	8.03X	7.92X	7.81X	7.82X
% CHANGE	1.506	1.540	1.575	1.614	1.651	1.690	1.730
Maint. Equipment	9.05X	9.34X	9.22X	10.20X	9.59X	9.94X	9.76X
% CHANGE	1.406	1.431	1.456	1.487	1.514	1.543	1.572
Hand Tools	7.00X	7.35X	7.21X	8.61X	7.59X	7.83X	7.62X
% CHANGE	1.323	1.340	1.358	1.383	1.402	1.421	1.441
Measuring Tools	5.18X	5.18X	5.44X	7.66X	5.69X	5.62X	5.72X
% CHANGE	1.422	1.449	1.477	1.513	1.543	1.575	1.607
Hardware and Abrasives	7.35X	7.97X	8.03X	9.99X	8.18X	8.56X	8.50X
% CHANGE	1.323	1.340	1.358	1.383	1.402	1.421	1.441
Prefab. Structures	5.18X	5.18X	5.44X	7.66X	5.69X	5.62X	5.72X
% CHANGE	1.665	1.706	1.751	1.799	1.863	1.914	1.967
Communication Eqpt.	13.49X	10.20X	10.95X	11.42X	14.99X	11.41X	11.66X
% CHANGE	1.386	1.408	1.429	1.452	1.476	1.501	1.524
Electrical Eqpt.	6.72X	6.64X	6.11X	6.38X	6.91X	6.89X	6.37X
% CHANGE	1.308	1.328	1.347	1.366	1.387	1.409	1.429
Motors and Generators	5.85X	6.29X	5.83X	5.77X	6.38X	6.51X	5.90X
% CHANGE	1.442	1.477	1.514	1.542	1.581	1.619	1.658
Lighting and Lamps	9.03X	10.08X	10.33X	7.71X	10.31X	10.11X	10.04X
% CHANGE	1.308	1.328	1.347	1.366	1.387	1.409	1.429
Drugs	5.85X	6.29X	5.83X	5.77X	6.38X	6.51X	5.90X
% CHANGE	1.247	1.261	1.274	1.288	1.304	1.319	1.334
	4.40X	4.36X	4.41X	4.44X	4.84X	4.87X	4.64X

TABLE A-3. (Continued)

	1977:1	1977:4	1978:1	1978:2	1978:3	1978:4
Training Aids	1.000	1.015	1.033	1.053	1.074	1.097
% CHANGE	4.47%	6.34%	7.02%	8.01%	8.09%	8.94%
Furniture	1.000	1.011	1.016	1.023	1.033	1.041
% CHANGE	6.63%	4.31%	2.02%	2.84%	3.92%	3.32%
Household Furniture	1.000	1.011	1.016	1.023	1.033	1.041
% CHANGE	6.63%	4.31%	2.02%	2.84%	3.92%	3.32%
Cooking Eqpt.	1.000	1.011	1.016	1.023	1.033	1.041
% CHANGE	6.63%	4.31%	2.02%	2.84%	3.92%	3.32%
Office Machines	1.000	1.020	1.039	1.056	1.076	1.098
% CHANGE	-1.80%	8.41%	7.32%	6.80%	7.95%	8.39%
NASA Equipment	1.000	1.017	1.036	1.054	1.076	1.102
% CHANGE	6.03%	7.09%	7.41%	7.48%	8.60%	9.68%
Other: Defense	1.000	1.017	1.036	1.054	1.076	1.102
% CHANGE	6.03%	7.09%	7.41%	7.48%	8.60%	9.68%
Sales of Durables	1.000	1.017	1.036	1.054	1.076	1.102
% CHANGE	6.03%	7.09%	7.41%	7.48%	8.60%	9.68%
Other: Defense	1.000	1.017	1.036	1.054	1.076	1.102
% CHANGE	6.33%	7.09%	7.41%	7.48%	8.60%	9.68%
Sales of Timber	1.000	1.045	1.093	1.137	1.181	1.215
% CHANGE	8.19%	19.29%	19.68%	17.20%	16.30%	12.03%
NPICB	1.000	1.045	1.093	1.137	1.181	1.215
% CHANGE	8.19%	19.29%	19.68%	17.20%	16.30%	12.03%
Nondurables	1.000	1.023	1.041	1.078	1.098	1.124
% CHANGE	6.01%	9.53%	7.36%	14.68%	7.88%	9.56%
Fuel	1.000	1.014	1.030	1.091	1.112	1.133
% CHANGE	10.79%	5.96%	6.45%	25.70%	8.12%	7.47%
NPICS	1.000	1.014	1.030	1.091	1.112	1.133
% CHANGE	10.79%	5.96%	6.45%	25.70%	8.12%	7.47%
Sup & Mats: Defense	1.000	1.033	1.054	1.066	1.084	1.115
% CHANGE	1.57%	14.00%	8.31%	4.44%	7.07%	11.99%
	1979:1	1979:2	1979:3	1979:4	1980:1	1980:2
Training Aids	1.121	1.144	1.165	1.185	1.206	1.224
% CHANGE	9.15%	8.49%	7.49%	7.10%	7.06%	6.33%
Furniture	1.052	1.063	1.073	1.081	1.090	1.099
% CHANGE	4.16%	4.17%	3.79%	3.37%	3.29%	3.23%
Household Furniture	1.052	1.063	1.073	1.081	1.090	1.099
% CHANGE	4.16%	4.17%	3.79%	3.37%	3.29%	3.23%
Cooking Eqpt.	1.052	1.063	1.073	1.081	1.090	1.099
% CHANGE	4.16%	4.17%	3.79%	3.37%	3.29%	3.23%
Office Machines	1.117	1.136	1.154	1.171	1.189	1.206
% CHANGE	6.94%	7.00%	6.49%	6.03%	6.29%	6.00%
NASA Equipment	1.126	1.148	1.171	1.194	1.216	1.234
% CHANGE	9.23%	8.12%	8.03%	8.25%	7.52%	6.15%
Other: Defense	1.126	1.148	1.171	1.194	1.216	1.234
% CHANGE	9.23%	8.12%	8.03%	8.25%	7.52%	6.15%
Sales of Durables	1.126	1.148	1.171	1.194	1.216	1.234
% CHANGE	9.23%	8.12%	8.03%	8.25%	7.52%	6.15%
Other: Defense	1.126	1.148	1.171	1.194	1.216	1.234
% CHANGE	9.23%	8.12%	8.03%	8.25%	7.52%	6.15%
Sales of Timber	1.232	1.246	1.265	1.288	1.296	1.305
% CHANGE	5.54%	4.73%	6.23%	7.40%	2.70%	2.66%
NPICB	1.232	1.246	1.265	1.288	1.296	1.305
% CHANGE	5.54%	4.73%	6.23%	7.40%	2.70%	2.66%
Nondurables	1.143	1.161	1.180	1.204	1.225	1.247
% CHANGE	7.20%	6.20%	6.83%	6.44%	7.05%	7.31%
Fuel	1.155	1.177	1.200	1.223	1.247	1.271
% CHANGE	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%
NPICS	1.155	1.177	1.200	1.223	1.247	1.271
% CHANGE	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%
Sup & Mats: Defense	1.132	1.143	1.159	1.185	1.202	1.222
% CHANGE	6.25%	4.06%	5.40%	9.26%	6.07%	6.76%

TABLE A-3. (Continued)

	1980:3	1980:4	1981:1	1981:2	1981:3	1981:4
Training Aids	1.240	1.256	1.274	1.293	1.311	1.329
% CHANGE	5.37%	5.24%	5.84%	6.02%	5.55%	5.74%
Furniture	1.108	1.116	1.124	1.132	1.141	1.150
% CHANGE	3.17%	3.18%	2.65%	2.99%	3.28%	3.30%
Household Furniture	1.108	1.116	1.124	1.132	1.141	1.150
% CHANGE	3.17%	3.19%	2.65%	2.99%	3.28%	3.30%
Cooking Eqpt.	1.108	1.116	1.124	1.132	1.141	1.150
% CHANGE	3.17%	3.18%	2.65%	2.99%	3.28%	3.30%
Office Machines	1.221	1.239	1.256	1.274	1.293	1.311
% CHANGE	5.64%	5.38%	5.78%	5.87%	5.79%	5.73%
NASA Equipment	1.252	1.272	1.292	1.310	1.330	1.352
% CHANGE	6.31%	6.42%	6.39%	5.85%	6.10%	6.83%
Other: Defense	1.252	1.272	1.292	1.310	1.330	1.352
% CHANGE	6.31%	6.42%	6.39%	5.85%	6.10%	6.83%
Sales of Durables	1.252	1.272	1.292	1.310	1.330	1.352
% CHANGE	6.01%	6.42%	6.39%	5.85%	6.10%	6.83%
Other: Defense	1.252	1.272	1.292	1.310	1.330	1.352
% CHANGE	6.01%	6.42%	6.39%	5.85%	6.10%	6.83%
Sales of Timber	1.323	1.344	1.375	1.403	1.427	1.456
% CHANGE	5.88%	6.57%	9.50%	8.40%	6.95%	8.52%
NPICs	1.323	1.344	1.375	1.403	1.427	1.456
% CHANGE	5.88%	6.57%	9.50%	8.40%	6.95%	8.52%
Non durables	1.265	1.289	1.311	1.335	1.355	1.381
% CHANGE	6.08%	7.92%	6.94%	7.37%	6.25%	7.98%
Fuel	1.296	1.321	1.347	1.373	1.400	1.427
% CHANGE	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%
NPICs	1.296	1.321	1.347	1.373	1.400	1.427
% CHANGE	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%
Sup & Maint Defense	1.234	1.258	1.276	1.297	1.310	1.337
% CHANGE	3.89%	8.14%	5.79%	6.80%	4.15%	8.27%

	1982:1	1982:2	1982:3	1982:4	1983:1	1983:2	1983:3
Training Aids	1.349	1.371	1.391	1.412	1.435	1.458	1.480
% CHANGE	6.32%	6.48%	5.98%	6.11%	6.67%	6.72%	6.16%
Furniture	1.157	1.165	1.173	1.182	1.187	1.194	1.200
% CHANGE	2.49%	2.55%	3.02%	3.08%	1.71%	2.15%	1.95%
Household Furniture	1.157	1.165	1.173	1.182	1.187	1.194	1.200
% CHANGE	2.49%	2.55%	3.02%	3.08%	1.71%	2.15%	1.95%
Cooking Eqpt.	1.157	1.165	1.173	1.182	1.187	1.194	1.200
% CHANGE	2.49%	2.55%	3.02%	3.08%	1.71%	2.15%	1.95%
Office Machines	1.330	1.350	1.370	1.390	1.413	1.435	1.458
% CHANGE	6.10%	6.02%	6.06%	6.13%	6.62%	6.56%	6.34%
NASA Equipment	1.375	1.396	1.418	1.443	1.469	1.493	1.518
% CHANGE	6.83%	6.28%	6.56%	7.28%	7.27%	6.67%	6.96%
Other: Defense	1.375	1.396	1.418	1.443	1.469	1.493	1.518
% CHANGE	6.83%	6.28%	6.56%	7.28%	7.27%	6.67%	6.96%
Sales of Durables	1.375	1.396	1.418	1.443	1.469	1.493	1.518
% CHANGE	6.83%	6.28%	6.56%	7.28%	7.27%	6.67%	6.96%
Other: Defense	1.375	1.396	1.418	1.443	1.469	1.493	1.518
% CHANGE	6.83%	6.28%	6.56%	7.28%	7.27%	6.67%	6.96%
Sales of Timber	1.485	1.517	1.547	1.573	1.597	1.622	1.646
% CHANGE	8.26%	8.65%	8.38%	6.78%	6.35%	6.36%	6.12%
NPICs	1.485	1.517	1.547	1.573	1.597	1.622	1.646
% CHANGE	8.26%	8.65%	8.38%	6.78%	6.35%	6.36%	6.12%
Non durables	1.405	1.430	1.453	1.481	1.507	1.535	1.559
% CHANGE	6.97%	7.39%	6.46%	8.16%	7.15%	7.54%	6.54%
Fuel	1.455	1.483	1.512	1.541	1.571	1.601	1.633
% CHANGE	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%
NPICs	1.455	1.483	1.512	1.541	1.571	1.601	1.633
% CHANGE	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%
Sup & Maint Defense	1.356	1.378	1.394	1.423	1.444	1.469	1.486
% CHANGE	5.83%	6.82%	4.54%	8.61%	6.16%	7.12%	4.66%

TABLE A-3. (Continued)

	1977:1	1977:4	1978:1	1978:2	1978:3	1978:4
Ammunition and Explos.	1.000	1.020	1.049	1.072	1.088	1.123
% CHANGE	0.41%	11.70%	8.22%	9.23%	6.24%	13.49%
Hose and Tubing	1.000	1.026	1.047	1.071	1.104	1.139
% CHANGE	11.60%	19.92%	8.44%	9.51%	12.65%	13.36%
Lumber	1.000	1.045	1.093	1.137	1.181	1.215
% CHANGE	8.19%	19.29%	19.68%	17.20%	16.30%	12.03%
Chemicals	1.000	1.024	1.040	1.056	1.104	1.126
% CHANGE	14.34%	10.07%	6.39%	6.31%	19.51%	8.02%
Office Supplies	1.000	1.022	1.043	1.063	1.090	1.116
% CHANGE	-1.91%	8.97%	8.64%	7.97%	10.65%	9.83%
Cleaning Supplies	1.000	1.019	1.033	1.045	1.066	1.084
% CHANGE	-1.37%	7.92%	5.32%	4.86%	8.22%	7.12%
Paints and Preserv	1.000	1.007	1.020	1.036	1.056	1.076
% CHANGE	4.65%	2.95%	5.00%	6.40%	7.94%	7.96%
Containers	1.000	1.018	1.039	1.064	1.108	1.143
% CHANGE	11.88%	7.46%	8.48%	9.89%	17.69%	13.37%
Textiles	1.000	1.026	1.044	1.057	1.071	1.084
% CHANGE	-3.88%	10.84%	7.29%	4.79%	5.51%	5.11%
Clothing	1.000	1.026	1.044	1.057	1.071	1.084
% CHANGE	-3.88%	10.84%	7.29%	4.79%	5.51%	5.11%
Toiletries	1.000	1.022	1.043	1.063	1.090	1.116
% CHANGE	-3.91%	8.97%	8.64%	7.97%	10.65%	9.83%
Fertilizers	1.000	0.954	1.032	1.037	1.027	0.925
% CHANGE	-11.06%	-17.15%	36.88%	2.11%	-3.84%	-34.34%
Food	1.000	1.044	1.065	1.057	1.072	1.102
% CHANGE	1.97%	18.96%	8.25%	-2.93%	5.63%	11.64%
Fabricated Nonmetals	1.000	1.023	1.041	1.058	1.077	1.097
% CHANGE	-2.20%	9.66%	7.07%	6.77%	7.42%	7.40%
Iron and Steel	1.000	1.023	1.046	1.075	1.112	1.147
% CHANGE	6.12%	9.41%	9.29%	11.87%	14.32%	13.23%
Secondary Metals	1.000	1.017	1.046	1.091	1.141	1.181
% CHANGE	6.55%	7.12%	11.86%	10.12%	19.91%	14.59%
	1979:1	1979:2	1979:3	1979:4	1980:1	1980:2
Ammunition and Explos.	1.149	1.175	1.190	1.224	1.246	1.268
% CHANGE	9.29%	9.59%	5.20%	11.86%	7.56%	7.12%
Hose and Tubing	1.170	1.202	1.235	1.265	1.289	1.310
% CHANGE	11.38%	11.39%	11.37%	10.09%	7.78%	6.90%
Lumber	1.232	1.246	1.265	1.288	1.296	1.305
% CHANGE	5.54%	4.73%	6.23%	7.40%	2.70%	2.66%
Chemicals	1.146	1.165	1.187	1.212	1.235	1.258
% CHANGE	7.17%	6.92%	7.91%	8.44%	8.00%	7.55%
Office Supplies	1.136	1.153	1.169	1.184	1.200	1.215
% CHANGE	7.05%	6.18%	5.77%	5.17%	5.67%	5.00%
Cleaning Supplies	1.096	1.110	1.123	1.135	1.148	1.160
% CHANGE	4.59%	5.10%	4.60%	4.32%	4.70%	4.44%
Paints and Preserv	1.094	1.112	1.130	1.149	1.166	1.182
% CHANGE	6.88%	6.66%	6.83%	6.61%	6.17%	5.80%
Containers	1.175	1.207	1.247	1.276	1.302	1.325
% CHANGE	11.42%	11.35%	14.13%	9.41%	8.36%	7.32%
Textiles	1.096	1.111	1.124	1.137	1.151	1.164
% CHANGE	4.25%	5.57%	4.95%	4.54%	5.11%	4.80%
Clothing	1.096	1.111	1.124	1.137	1.151	1.164
% CHANGE	4.25%	5.57%	4.95%	4.54%	5.11%	4.80%
Toiletries	1.136	1.153	1.169	1.184	1.200	1.215
% CHANGE	7.05%	6.18%	5.77%	5.17%	5.67%	5.00%
Fertilizers	1.008	1.014	0.998	0.995	1.084	1.090
% CHANGE	41.08%	2.36%	-5.85%	-1.33%	40.91%	1.97%
Food	1.107	1.095	1.106	1.125	1.137	1.156
% CHANGE	3.97%	-4.48%	4.04%	7.31%	4.10%	6.94%
Fabricated Nonmetals	1.112	1.126	1.140	1.155	1.172	1.186
% CHANGE	5.61%	5.14%	5.04%	5.67%	6.07%	4.64%
Iron and Steel	1.179	1.214	1.250	1.280	1.304	1.326
% CHANGE	11.64%	12.53%	12.27%	9.91%	7.57%	7.22%
Secondary Metals	1.211	1.245	1.284	1.316	1.342	1.372
% CHANGE	10.57%	11.70%	13.30%	10.36%	7.87%	9.27%

TABLE A-3. (Continued)

	1980:3	1980:4	1981:1	1981:2	1981:3	1981:4	
Ammunition and Explos.	1.277	1.309	1.331	1.354	1.365	1.399	
% CHANGE	3.01%	10.31%	6.79%	7.01%	3.32%	10.50%	
Hose and Tubing	1.332	1.356	1.381	1.406	1.432	1.460	
% CHANGE	6.87%	7.39%	7.48%	7.35%	7.83%	7.95%	
Lumber	1.323	1.344	1.375	1.402	1.427	1.456	
% CHANGE	5.68%	6.57%	9.50%	8.40%	6.95%	8.52%	
Chemicals	1.283	1.310	1.335	1.359	1.385	1.413	
% CHANGE	8.16%	8.64%	7.93%	7.39%	7.95%	8.35%	
Office Supplies	1.229	1.245	1.263	1.282	1.300	1.317	
% CHANGE	4.86%	5.28%	5.78%	6.19%	5.70%	5.29%	
Cleaning Supplies	1.172	1.184	1.196	1.209	1.221	1.234	
% CHANGE	4.20%	4.02%	4.24%	4.30%	4.21%	4.15%	
Paints and Preserv	1.199	1.215	1.231	1.248	1.265	1.282	
% CHANGE	5.68%	5.58%	5.41%	5.40%	5.58%	5.71%	
Containers	1.358	1.381	1.409	1.435	1.474	1.502	
% CHANGE	10.29%	7.25%	8.17%	7.75%	11.19%	7.87%	
Textiles	1.177	1.190	1.204	1.217	1.229	1.242	
% CHANGE	4.46%	4.52%	4.72%	4.43%	3.98%	4.23%	
Clothing	1.177	1.190	1.204	1.217	1.229	1.242	
% CHANGE	4.46%	4.52%	4.72%	4.43%	3.98%	4.23%	
Toiletries	1.229	1.245	1.263	1.282	1.300	1.317	
% CHANGE	4.86%	5.28%	5.78%	6.19%	5.70%	5.29%	
Fertilizers	1.073	1.044	1.130	1.143	1.125	1.067	
% CHANGE	-6.08%	-10.36%	41.40%	1.87%	-6.25%	-18.98%	
Food	1.166	1.185	1.197	1.217	1.228	1.248	
% CHANGE	3.62%	6.62%	4.07%	6.85%	3.77%	6.57%	
Fabricated Nonmetals	1.198	1.214	1.232	1.246	1.259	1.277	
% CHANGE	4.09%	5.61%	5.87%	4.57%	4.55%	5.63%	
Iron and Steel	1.150	1.374	1.298	1.423	1.451	1.477	
% CHANGE	7.31%	7.12%	7.18%	7.39%	8.09%	7.36%	
Secondary Metals	1.409	1.443	1.469	1.496	1.531	1.562	
% CHANGE	11.41%	10.03%	7.30%	7.57%	9.64%	8.46%	
	1982:1	1982:2	1982:3	1982:4	1983:1	1983:2	1983:3
Ammunition and Explos.	1.422	1.446	1.460	1.498	1.525	1.553	1.568
% CHANGE	6.77%	6.98%	3.70%	10.96%	7.33%	7.50%	3.96%
Hose and Tubing	1.488	1.517	1.549	1.582	1.617	1.651	1.687
% CHANGE	7.92%	8.05%	8.66%	8.92%	8.93%	8.77%	8.98%
Lumber	1.485	1.517	1.547	1.573	1.597	1.622	1.646
% CHANGE	8.26%	8.65%	8.38%	6.78%	6.35%	6.36%	6.12%
Chemicals	1.441	1.467	1.497	1.528	1.559	1.586	1.620
% CHANGE	8.03%	7.62%	8.34%	8.64%	8.20%	7.67%	8.33%
Office Supplies	1.335	1.354	1.372	1.391	1.410	1.429	1.449
% CHANGE	5.75%	5.57%	5.56%	5.56%	5.74%	5.54%	5.49%
Cleaning Supplies	1.247	1.261	1.274	1.288	1.304	1.319	1.334
% CHANGE	4.40%	4.36%	4.41%	4.44%	4.84%	4.87%	4.64%
Paints and Preserv	1.300	1.319	1.339	1.359	1.380	1.401	1.424
% CHANGE	5.77%	5.85%	6.08%	6.21%	6.25%	6.37%	6.58%
Containers	1.534	1.566	1.612	1.649	1.689	1.729	1.784
% CHANGE	8.63%	8.71%	12.41%	9.34%	10.11%	9.90%	13.35%
Textiles	1.256	1.271	1.285	1.299	1.313	1.327	1.340
% CHANGE	4.72%	4.63%	4.71%	4.36%	4.50%	4.25%	4.03%
Clothing	1.256	1.271	1.285	1.299	1.313	1.327	1.340
% CHANGE	4.72%	4.63%	4.71%	4.36%	4.50%	4.25%	4.03%
Toiletries	1.335	1.354	1.372	1.391	1.410	1.429	1.449
% CHANGE	5.75%	5.57%	5.56%	5.56%	5.74%	5.54%	5.49%
Fertilizers	1.168	1.173	1.154	1.141	1.248	1.254	1.234
% CHANGE	43.31%	1.90%	-6.45%	-4.41%	43.09%	2.05%	-6.35%
Food	1.261	1.282	1.294	1.315	1.329	1.351	1.365
% CHANGE	4.16%	6.82%	4.02%	6.71%	4.21%	6.92%	4.08%
Fabricated Nonmetals	1.295	1.309	1.324	1.342	1.362	1.378	1.395
% CHANGE	5.70%	4.44%	4.61%	5.81%	5.94%	4.86%	4.84%
Iron and Steel	1.501	1.528	1.558	1.587	1.616	1.646	1.680
% CHANGE	6.88%	7.21%	8.06%	7.70%	7.54%	7.81%	9.36%
Secondary Metals	1.586	1.613	1.650	1.684	1.710	1.743	1.786
% CHANGE	6.20%	7.02%	9.52%	8.36%	6.52%	7.81%	10.34%

TABLE A-3. (Continued)

	1977:3	1977:4	1978:1	1978:2	1978:3	1978:4
S & M: Nondefense	1.000	1.019	1.338	1.358	1.087	1.112
% CHANGE	1.76X	7.91X	7.72X	7.69X	11.46X	9.62X
Ammunition and Explos.	1.000	1.820	1.349	*1.072	1.088	1.123
% CHANGE	0.41X	11.70X	8.22X	9.23X	6.24X	13.49X
Hose and Tubing	1.000	1.026	1.047	1.071	1.104	1.139
% CHANGE	11.60X	10.92X	8.44X	5.51X	12.65X	13.36X
Lumber	1.000	1.045	1.093	1.137	1.181	1.215
% CHANGE	8.19X	19.29X	19.68X	17.20X	16.30X	12.01X
Chemicals	1.000	1.024	1.040	1.056	1.104	1.126
% CHANGE	14.34X	10.07X	6.19X	6.31X	19.51X	8.02X
Office Supplies	1.000	1.022	1.043	1.063	1.090	1.116
% CHANGE	-1.91X	8.97X	8.64X	7.97X	10.65X	9.83X
Cleaning Supplies	1.000	1.019	1.033	1.045	1.066	1.084
% CHANGE	-1.37X	7.92X	5.32X	4.88X	8.22X	7.12X
Paints and Preserv	1.000	1.007	1.020	1.036	1.056	1.076
% CHANGE	4.65X	2.95X	5.00X	6.40X	7.94X	7.96X
Containers	1.000	1.018	1.039	1.064	1.108	1.143
% CHANGE	11.88X	7.46X	8.48X	9.09X	17.69X	13.37X
Textiles	1.000	1.028	1.044	1.057	1.071	1.084
% CHANGE	-3.88X	10.94X	7.29X	4.79X	5.51X	5.11X
Clothing	1.000	1.026	1.044	1.057	1.071	1.084
% CHANGE	-3.88X	10.84X	7.29X	4.79X	5.51X	5.11X
Toiletries	1.000	1.022	1.043	1.063	1.090	1.116
% CHANGE	-1.91X	8.97X	8.64X	7.97X	10.65X	9.83X
Fertilizers	1.000	0.954	1.032	1.037	1.027	0.925
% CHANGE	-11.06X	-17.15X	36.88X	2.11X	-3.84X	-34.34X
Food	1.000	1.044	1.065	1.057	1.072	1.102
% CHANGE	1.97X	18.96X	8.25X	-2.93X	5.63X	11.64X
Fabricated Nonmetals	1.000	1.023	1.041	1.058	1.077	1.097
% CHANGE	-2.20X	9.66X	7.02X	6.77X	7.42X	7.40X
Iron and Steel	1.000	1.023	1.046	1.075	1.112	1.147
	1979:1	1979:2	1979:3	1979:4	1980:1	1980:2
S & M: Nondefense	1.132	1.152	1.172	1.191	1.209	1.226
% CHANGE	7.53X	7.01X	7.38X	6.43X	6.32X	5.63X
Ammunition and Explos.	1.149	1.175	1.190	1.224	1.246	1.268
% CHANGE	9.79X	9.59X	5.20X	11.86X	7.56X	7.12X
Hose and Tubing	1.170	1.202	1.235	1.265	1.289	1.310
% CHANGE	11.38X	11.39X	11.37X	10.09X	7.78X	6.90X
Lumber	1.232	1.246	1.265	1.288	1.296	1.305
% CHANGE	5.54X	4.73X	6.23X	7.40X	2.70X	2.66X
Chemicals	1.146	1.165	1.187	1.212	1.235	1.258
% CHANGE	7.17X	6.92X	7.91X	8.44X	8.00X	7.55X
Office Supplies	1.136	1.153	1.169	1.184	1.200	1.215
% CHANGE	7.05X	6.18X	5.77X	5.17X	5.67X	5.00X
Cleaning Supplies	1.096	1.110	1.123	1.135	1.148	1.160
% CHANGE	4.59X	5.10X	4.80X	4.32X	4.70X	4.44X
Paints and Preserv	1.094	1.112	1.130	1.149	1.166	1.182
% CHANGE	6.88X	6.66X	6.83X	6.61X	6.17X	5.80X
Containers	1.175	1.207	1.247	1.276	1.302	1.325
% CHANGE	11.42X	11.35X	14.13X	9.41X	8.36X	7.32X
Textiles	1.096	1.111	1.124	1.137	1.151	1.164
% CHANGE	4.25X	5.57X	4.95X	4.54X	5.11X	4.80X
Clothing	1.096	1.111	1.124	1.137	1.151	1.164
% CHANGE	4.25X	5.57X	4.95X	4.54X	5.11X	4.80X
Toiletries	1.136	1.153	1.169	1.184	1.200	1.215
% CHANGE	7.05X	6.18X	5.77X	5.17X	5.67X	5.00X
Fertilizers	1.008	1.014	0.998	0.995	1.084	1.090
% CHANGE	41.08X	2.36X	-5.85X	-1.33X	40.91X	1.97X
Food	1.167	1.095	1.106	1.125	1.137	1.156
% CHANGE	1.97X	-4.48X	4.04X	7.31X	4.10X	6.94X
Fabricated Nonmetals	1.112	1.126	1.140	1.155	1.172	1.186
% CHANGE	5.61X	5.14X	5.04X	5.67X	6.07X	4.64X
Iron and Steel	1.179	1.214	1.250	1.280	1.304	1.326

TABLE A-3. (Continued)

S & M: Nondefense	1980:1	1980:2	1981:1	1981:2	1981:3	1981:4	
X CHANGE	1.244	1.262	1.281	1.301	1.322	1.341	
Ammunition and Explos.	6.04X	5.85X	6.29X	6.24X	6.60X	6.02X	
X CHANGE	1.277	1.309	1.331	1.354	1.365	1.399	
Hose and Tubing	3.01X	10.21X	6.79X	7.01X	3.32X	10.50X	
X CHANGE	1.332	1.356	1.381	1.406	1.432	1.460	
Lumber	6.87X	7.39X	7.48X	7.35X	7.83X	7.95X	
X CHANGE	1.323	1.344	1.375	1.403	1.427	1.456	
Chemicals	5.68X	6.57X	9.50X	8.40X	6.95X	8.52X	
X CHANGE	1.283	1.310	1.335	1.359	1.385	1.413	
Office Supplies	8.16X	8.64X	7.93X	7.39X	7.95X	8.35X	
X CHANGE	1.229	1.245	1.263	1.282	1.300	1.317	
Cleaning Supplies	4.36X	5.23X	5.78X	6.19X	5.70X	5.29X	
X CHANGE	1.172	1.184	1.196	1.209	1.221	1.234	
Paints and Preserv	4.29X	4.02X	4.24X	4.30X	4.21X	4.15X	
X CHANGE	1.199	1.215	1.231	1.248	1.265	1.282	
Containers	5.68X	5.58X	5.41X	5.40X	5.58X	5.71X	
X CHANGE	1.358	1.381	1.409	1.435	1.474	1.502	
Textiles	10.28X	7.25X	8.17X	7.75X	11.19X	7.87X	
X CHANGE	1.177	1.190	1.204	1.217	1.229	1.242	
Clothing	4.46X	4.52X	4.72X	4.43X	3.98X	4.23X	
X CHANGE	1.177	1.190	1.204	1.217	1.229	1.242	
Toiletries	4.16X	4.52X	4.72X	4.41X	3.98X	4.23X	
X CHANGE	1.229	1.245	1.263	1.282	1.300	1.317	
Fertilizers	4.36X	5.23X	5.78X	6.19X	5.70X	5.29X	
X CHANGE	1.073	1.044	1.138	1.141	1.125	1.067	
Food	-6.08X	-10.36X	41.40X	1.87X	-6.25X	-18.98X	
X CHANGE	1.166	1.185	1.197	1.217	1.228	1.248	
Fabricated Nonmetals	3.62X	6.62X	4.07X	6.85X	3.77X	6.57X	
X CHANGE	1.198	1.214	1.232	1.246	1.259	1.277	
Iron and Steel	4.09X	5.61X	5.87X	4.57X	4.95X	5.63X	
	1.350	1.374	1.398	1.421	1.451	1.477	
S & M: Nondefense	1982:1	1982:2	1982:3	1982:4	1983:1	1983:2	1983:3
X CHANGE	1.362	1.383	1.407	1.429	1.453	1.476	1.502
Ammunition and Explos.	6.43X	6.27X	6.96X	6.53X	6.82X	6.60X	7.21X
X CHANGE	1.422	1.446	1.460	1.498	1.525	1.551	1.568
Hose and Tubing	6.77X	6.98X	3.70X	10.96X	7.33X	7.50X	3.96X
X CHANGE	1.488	1.517	1.549	1.582	1.617	1.651	1.687
Lumber	7.92X	8.05X	8.66X	8.92X	8.93X	8.77X	8.98X
X CHANGE	1.485	1.517	1.547	1.573	1.597	1.622	1.646
Chemicals	8.26X	8.65X	8.38X	6.78X	6.35X	6.36X	6.12X
X CHANGE	1.441	1.467	1.497	1.528	1.559	1.588	1.620
Office Supplies	8.03X	7.62X	8.34X	8.64X	8.20X	7.67X	8.33X
X CHANGE	1.335	1.354	1.372	1.391	1.410	1.429	1.449
Cleaning Supplies	5.75X	5.57X	5.56X	5.56X	5.74X	5.54X	5.49X
X CHANGE	1.247	1.261	1.274	1.288	1.304	1.319	1.334
Paints and Preserv	4.40X	4.36X	4.41X	4.44X	4.84X	4.87X	4.64X
X CHANGE	1.300	1.319	1.339	1.359	1.380	1.401	1.424
Containers	5.77X	5.85X	6.08X	6.21X	6.25X	6.37X	6.58X
X CHANGE	1.534	1.566	1.612	1.649	1.689	1.729	1.784
Textiles	8.63X	8.71X	12.41X	9.34X	10.11X	9.90X	13.35X
X CHANGE	1.256	1.271	1.285	1.299	1.313	1.327	1.340
Clothing	4.72X	4.63X	4.71X	4.36X	4.50X	4.25X	4.03X
X CHANGE	1.335	1.354	1.372	1.391	1.410	1.429	1.449
Toiletries	5.75X	5.57X	5.56X	5.56X	5.74X	5.54X	5.49X
X CHANGE	1.168	1.173	1.154	1.141	1.248	1.254	1.234
Fertilizers	43.31X	1.90X	-6.45X	-4.41X	43.09X	2.05X	-6.35X
X CHANGE	1.261	1.282	1.294	1.315	1.329	1.351	1.365
Food	4.16X	6.82X	4.02X	6.71X	4.21X	6.92X	4.08X
X CHANGE	1.295	1.309	1.324	1.342	1.362	1.378	1.395
Fabricated Nonmetals	5.70X	4.44X	4.61X	5.81X	5.94X	4.86X	4.84X
X CHANGE	1.501	1.528	1.558	1.587	1.618	1.646	1.689
Iron and Steel							

TABLE A-3. (Continued)

	1977:3	1977:4	1978:1	1978:2	1978:3	1978:4
Secondary Metals	1.000	1.017	1.046	1.091	1.141	1.181
% CHANGE	6.55%	7.12%	11.86%	18.12%	19.91%	14.59%
Sales of Nondurables	1.000	1.019	1.039	1.058	1.087	1.112
% CHANGE	1.76%	7.91%	7.72%	7.69%	11.46%	9.62%
S & M: Nondefense	1.000	1.019	1.038	1.058	1.087	1.112
% CHANGE	1.76%	7.91%	7.72%	7.69%	11.46%	9.62%
Services	1.000	1.019	1.039	1.057	1.086	1.106
% CHANGE	12.17%	7.90%	7.97%	7.08%	11.54%	7.62%
Trans of People	1.000	1.012	1.026	1.041	1.063	1.079
% CHANGE	4.96%	4.96%	5.39%	6.29%	8.72%	5.88%
Food	1.000	1.009	1.019	1.032	1.046	1.058
% CHANGE	4.65%	3.76%	4.03%	4.93%	5.66%	4.72%
Gas	1.000	1.012	1.027	1.046	1.056	1.070
% CHANGE	14.78%	4.69%	6.26%	7.63%	3.90%	5.33%
Rail	1.000	1.009	1.019	1.026	1.054	1.073
% CHANGE	11.06%	3.68%	4.07%	6.75%	7.35%	7.26%
Air	1.000	1.014	1.029	1.045	1.074	1.091
% CHANGE	9.72%	5.68%	5.92%	6.62%	11.39%	6.49%
Trans of Freight	1.000	1.026	1.068	1.113	1.160	1.189
% CHANGE	16.52%	10.86%	17.31%	18.08%	17.74%	10.64%
Rail Freight	1.000	1.026	1.068	1.113	1.160	1.189
% CHANGE	16.52%	10.86%	17.31%	18.08%	17.74%	10.64%
Motor Freight	1.000	1.026	1.068	1.113	1.160	1.189
% CHANGE	16.52%	10.86%	17.31%	18.08%	17.74%	10.64%
Water Freight	1.000	1.026	1.068	1.113	1.160	1.189
% CHANGE	16.52%	10.86%	17.31%	18.08%	17.74%	10.64%
Air Freight	1.000	1.026	1.068	1.113	1.160	1.189
% CHANGE	16.52%	10.86%	17.31%	18.08%	17.74%	10.64%
Rent Comm Utils	1.000	1.014	1.028	1.060	1.075	1.089
% CHANGE	7.66%	5.84%	5.46%	12.58%	5.95%	5.41%

	1979:1	1979:2	1979:3	1979:4	1980:1	1980:2
Secondary Metals	1.211	1.245	1.284	1.316	1.342	1.372
% CHANGE	10.57%	11.70%	13.30%	10.36%	7.87%	9.27%
Sales of Nondurables	1.132	1.152	1.172	1.191	1.209	1.226
% CHANGE	7.53%	7.01%	7.38%	6.43%	6.32%	5.63%
S & M: Nondefense	1.132	1.152	1.172	1.191	1.209	1.226
% CHANGE	7.53%	7.01%	7.38%	6.43%	6.32%	5.63%
Services	1.130	1.149	1.181	1.204	1.227	1.245
% CHANGE	8.92%	6.94%	11.55%	7.98%	7.99%	5.84%
Trans of People	1.096	1.112	1.135	1.151	1.167	1.183
% CHANGE	6.66%	5.97%	8.66%	5.62%	5.74%	5.56%
Food	1.073	1.089	1.105	1.119	1.133	1.146
% CHANGE	5.66%	6.10%	5.88%	5.31%	4.82%	4.81%
Gas	1.098	1.108	1.118	1.123	1.133	1.144
% CHANGE	10.89%	3.70%	3.72%	1.79%	1.75%	3.77%
Rail	1.050	1.107	1.124	1.143	1.161	1.178
% CHANGE	6.45%	6.33%	6.49%	6.78%	6.30%	6.05%
Air	1.107	1.124	1.155	1.173	1.192	1.210
% CHANGE	6.21%	6.12%	11.23%	6.56%	6.57%	6.27%
Trans of Freight	1.239	1.293	1.348	1.402	1.454	1.504
% CHANGE	17.80%	18.48%	18.24%	16.93%	15.70%	14.56%
Rail Freight	1.239	1.293	1.348	1.402	1.454	1.504
% CHANGE	17.80%	18.48%	18.24%	16.93%	15.70%	14.56%
Motor Freight	1.239	1.293	1.348	1.402	1.454	1.504
% CHANGE	17.80%	18.48%	18.24%	16.93%	15.70%	14.56%
Water Freight	1.239	1.293	1.348	1.402	1.454	1.504
% CHANGE	17.80%	18.48%	18.24%	16.93%	15.70%	14.56%
Air Freight	1.239	1.293	1.348	1.402	1.454	1.504
% CHANGE	17.80%	18.48%	18.24%	16.93%	15.70%	14.56%
Rent Comm Utils	1.105	1.121	1.137	1.154	1.171	1.188
% CHANGE	5.71%	5.88%	5.97%	6.02%	6.09%	6.12%

TABLE A-3. (Continued)

	1980:3	1980:4	1981:1	1981:2	1981:3	1981:4	
Secondary Metals	1.409	1.443	1.469	1.496	1.531	1.562	
% CHANGE	11.41%	10.03%	7.30%	7.57%	9.64%	8.46%	
Sales of Durables	1.244	1.262	1.261	1.301	1.322	1.341	
% CHANGE	6.14%	5.85%	6.29%	6.24%	6.60%	6.02%	
S & M: Nondefense	1.244	1.262	1.231	1.301	1.322	1.341	
% CHANGE	6.04%	5.85%	6.29%	6.24%	6.60%	6.02%	
Services	1.261	1.304	1.329	1.347	1.382	1.407	
% CHANGE	11.97%	7.49%	7.80%	5.75%	10.56%	7.59%	
Trans of People	1.206	1.221	1.237	1.254	1.280	1.297	
% CHANGE	8.06%	5.01%	5.38%	5.51%	8.40%	5.53%	
Food	1.159	1.172	1.186	1.200	1.215	1.231	
% CHANGE	4.69%	4.63%	4.60%	4.87%	5.11%	5.35%	
Gas	1.155	1.160	1.174	1.188	1.202	1.209	
% CHANGE	3.78%	1.86%	4.80%	4.82%	4.83%	2.59%	
Rail	1.195	1.213	1.229	1.245	1.263	1.282	
% CHANGE	6.02%	8.25%	5.21%	5.35%	5.85%	6.11%	
Air	1.241	1.259	1.277	1.296	1.329	1.349	
% CHANGE	10.68%	5.90%	5.86%	5.95%	10.79%	6.19%	
Trans of Freight	1.555	1.609	1.666	1.725	1.785	1.848	
% CHANGE	14.34%	14.56%	14.97%	14.90%	14.68%	14.89%	
Rail Freight	1.555	1.609	1.666	1.725	1.785	1.848	
% CHANGE	14.34%	14.56%	14.97%	14.90%	14.68%	14.89%	
Motor Freight	1.555	1.609	1.666	1.725	1.785	1.848	
% CHANGE	14.34%	14.56%	14.97%	14.90%	14.68%	14.89%	
Water Freight	1.555	1.609	1.666	1.725	1.785	1.848	
% CHANGE	14.34%	14.56%	14.97%	14.90%	14.68%	14.89%	
Air Freight	1.555	1.609	1.666	1.725	1.785	1.848	
% CHANGE	14.34%	14.56%	14.97%	14.90%	14.68%	14.89%	
Rent Com Utilis	1.206	1.224	1.241	1.258	1.276	1.294	
% CHANGE	6.08%	6.00%	5.79%	5.71%	5.72%	5.73%	
	1982:1	1982:2	1982:3	1982:4	1983:1	1983:2	1983:3
Secondary Metals	1.506	1.613	1.650	1.684	1.710	1.743	1.786
% CHANGE	6.20%	7.02%	9.52%	8.36%	6.52%	7.81%	10.34%
Sales of Durables	1.362	1.383	1.407	1.429	1.453	1.476	1.502
% CHANGE	6.43%	6.27%	6.96%	6.55%	6.82%	6.60%	7.21%
S & M: Nondefense	1.362	1.383	1.407	1.429	1.453	1.476	1.502
% CHANGE	6.43%	6.27%	6.96%	6.55%	6.82%	6.60%	7.21%
Services	1.436	1.459	1.497	1.527	1.558	1.584	1.633
% CHANGE	8.54%	6.39%	11.08%	8.12%	8.53%	6.70%	13.02%
Trans of People	1.314	1.333	1.362	1.382	1.403	1.426	1.458
% CHANGE	5.54%	5.77%	8.96%	6.13%	6.22%	6.52%	9.51%
Food	1.245	1.259	1.275	1.291	1.304	1.318	1.332
% CHANGE	4.63%	4.65%	5.30%	5.14%	3.85%	4.39%	4.16%
Gas	1.218	1.227	1.236	1.240	1.252	1.264	1.277
% CHANGE	2.95%	2.97%	2.99%	1.22%	3.94%	3.96%	3.97%
Rail	1.302	1.321	1.346	1.369	1.388	1.409	1.433
% CHANGE	6.46%	6.80%	7.01%	7.10%	5.67%	6.03%	6.06%
Air	1.371	1.391	1.433	1.459	1.487	1.515	1.562
% CHANGE	6.44%	6.78%	11.92%	7.50%	7.72%	7.95%	12.98%
Trans of Freight	1.916	1.988	2.063	2.135	2.212	2.293	2.376
% CHANGE	15.49%	15.99%	15.97%	14.69%	15.15%	15.42%	15.32%
Rail Freight	1.916	1.988	2.063	2.135	2.212	2.293	2.376
% CHANGE	15.49%	15.99%	15.97%	14.69%	15.15%	15.42%	15.32%
Motor Freight	1.916	1.988	2.063	2.135	2.212	2.293	2.376
% CHANGE	15.49%	15.99%	15.97%	14.69%	15.15%	15.42%	15.32%
Water Freight	1.916	1.988	2.063	2.135	2.212	2.293	2.376
% CHANGE	15.49%	15.99%	15.97%	14.69%	15.15%	15.42%	15.32%
Air Freight	1.916	1.988	2.063	2.135	2.212	2.293	2.376
% CHANGE	15.49%	15.99%	15.97%	14.69%	15.15%	15.42%	15.32%
Rent Com Utilis	1.312	1.330	1.349	1.368	1.387	1.406	1.426
% CHANGE	5.61%	5.62%	5.77%	5.88%	5.70%	5.73%	5.75%

TABLE A-3. (Continued)

	1977:3	1977:4	1978:1	1978:2	1978:3	1978:4
CPI Rent	1.000	1.016	1.026	1.036	1.048	1.060
X CHANGE	7.53X	6.40X	4.03X	3.92X	4.84X	4.66X
CPI Phone	1.000	1.014	1.029	1.042	1.053	1.061
X CHANGE	2.82X	5.80X	5.95X	5.32X	4.06X	2.96X
CPI Water & Sewer	1.000	1.002	1.003	1.006	1.011	1.023
X CHANGE	2.27X	0.79X	0.55X	1.00X	2.17X	4.78X
WPICS	1.000	1.014	1.030	1.091	1.112	1.133
X CHANGE	10.79X	5.86X	6.45X	25.70X	8.12X	7.47X
Printing	1.000	1.022	1.043	1.063	1.090	1.116
X CHANGE	-3.91X	9.97X	8.64X	7.97X	10.65X	9.83X
WPIC9	1.000	1.022	1.043	1.063	1.090	1.116
X CHANGE	-3.91X	8.97X	8.64X	7.97X	10.65X	9.83X
EE275	1.000	1.011	1.030	1.048	1.072	1.083
X CHANGE	2.77X	4.60X	7.59X	7.08X	9.47X	4.43X
Research & Development	1.000	1.020	1.039	1.052	1.083	1.103
X CHANGE	13.64X	8.04X	7.82X	5.04X	12.44X	7.51X
Defense R&D	1.000	1.020	1.039	1.053	1.082	1.102
X CHANGE	13.59X	8.06X	7.67X	5.52X	11.63X	7.47X
NASA R&D	1.000	1.020	1.039	1.053	1.082	1.102
X CHANGE	13.59X	8.06X	7.67X	5.52X	11.63X	7.47X
Other Nondefense R&D	1.000	1.019	1.039	1.050	1.085	1.105
X CHANGE	13.73X	8.01X	8.06X	4.26X	13.80X	7.58X
Other Services	1.000	1.019	1.037	1.052	1.080	1.100
X CHANGE	11.50X	7.90X	7.25X	5.93X	11.06X	7.72X
Maint. of Aircraft	1.000	1.016	1.032	1.050	1.070	1.090
X CHANGE	9.96X	6.73X	6.27X	7.06X	8.05X	7.59X
FPJ502	1.000	1.016	1.032	1.050	1.070	1.090
X CHANGE	9.96X	6.73X	6.27X	7.06X	8.05X	7.59X
FPJ533	1.000	1.016	1.032	1.050	1.070	1.090
X CHANGE	9.96X	6.73X	6.27X	7.06X	8.05X	7.59X
Maint. of Vessels	1.000	1.025	1.043	1.062	1.087	1.112
	1979:1	1979:2	1979:3	1979:4	1980:1	1980:2
CPI Rent	1.074	1.089	1.105	1.119	1.134	1.148
X CHANGE	5.36X	5.90X	5.79X	5.43X	5.23X	5.16X
CPI Phone	1.066	1.072	1.077	1.084	1.092	1.101
X CHANGE	2.21X	1.99X	2.16X	2.55X	2.96X	3.23X
CPI Water & Sewer	1.043	1.069	1.101	1.136	1.173	1.206
X CHANGE	7.81X	10.51X	12.49X	13.54X	13.38X	12.05X
WPICS	1.155	1.177	1.200	1.223	1.247	1.271
X CHANGE	6.00X	8.00X	8.00X	8.00X	8.00X	8.00X
Printing	1.136	1.153	1.169	1.184	1.200	1.215
X CHANGE	7.05X	6.18X	5.77X	5.17X	5.67X	5.00X
WPIC9	1.136	1.153	1.169	1.184	1.200	1.215
X CHANGE	7.05X	6.18X	5.77X	5.17X	5.67X	5.00X
EE275	1.102	1.120	1.146	1.159	1.179	1.197
X CHANGE	6.96X	6.72X	9.67X	4.60X	6.99X	6.33X
Research & Development	1.126	1.141	1.174	1.195	1.216	1.230
X CHANGE	8.54X	5.41X	12.34X	7.24X	7.37X	4.39X
Defense R&D	1.126	1.143	1.174	1.194	1.216	1.230
X CHANGE	9.33X	6.04X	11.31X	7.00X	7.44X	4.85X
NASA R&D	1.126	1.143	1.174	1.194	1.216	1.230
X CHANGE	9.33X	6.04X	11.31X	7.00X	7.44X	4.85X
Other Nondefense R&D	1.124	1.136	1.174	1.196	1.217	1.228
X CHANGE	7.26X	4.40X	14.05X	7.65X	7.24X	3.63X
Other Services	1.123	1.141	1.171	1.192	1.214	1.230
X CHANGE	8.48X	6.46X	10.99X	7.50X	7.58X	5.34X
Maint. of Aircraft	1.118	1.141	1.163	1.182	1.203	1.224
X CHANGE	10.70X	8.56X	7.65X	6.73X	7.60X	6.90X
FPJ502	1.118	1.141	1.163	1.182	1.203	1.224
X CHANGE	10.70X	8.56X	7.65X	6.73X	7.60X	6.90X
FPJ533	1.118	1.141	1.163	1.182	1.203	1.224
X CHANGE	10.70X	8.56X	7.65X	6.73X	7.60X	6.90X
Maint. of Vessels	1.137	1.158	1.184	1.210	1.236	1.255

TABLE A-3. (Continued)

	1980:3	1980:4	1981:1	1981:2	1981:3	1981:4	
CPI Rent	1.163	1.177	1.191	1.205	1.220	1.235	
% CHANGE	5.14%	5.13%	4.73%	4.70%	5.02%	5.07%	
CPI Phone	1.110	1.119	1.127	1.135	1.143	1.151	
% CHANGE	3.32%	3.25%	3.08%	2.99%	2.75%	2.68%	
CPI Water & Sewer	1.235	1.258	1.274	1.285	1.292	1.301	
% CHANGE	9.94%	7.52%	5.25%	3.50%	2.56%	2.53%	
WPICS	1.296	1.321	1.347	1.373	1.400	1.427	
% CHANGE	8.00%	8.60%	8.00%	8.00%	8.00%	8.00%	
Printing	1.229	1.245	1.263	1.282	1.300	1.317	
% CHANGE	4.86%	5.28%	5.78%	6.19%	5.70%	5.29%	
WPIC9	1.229	1.245	1.263	1.282	1.300	1.317	
% CHANGE	4.86%	5.28%	5.78%	6.19%	5.70%	5.29%	
EE275	1.223	1.234	1.255	1.274	1.302	1.314	
% CHANGE	8.34%	3.92%	6.74%	6.35%	8.90%	4.02%	
Research & Development	1.270	1.292	1.315	1.329	1.366	1.389	
% CHANGE	13.92%	7.06%	7.39%	4.29%	11.56%	7.03%	
Defense R&D	1.272	1.294	1.317	1.331	1.366	1.389	
% CHANGE	14.36%	6.98%	7.47%	4.67%	10.53%	6.86%	
NASA R&D	1.272	1.294	1.317	1.333	1.366	1.389	
% CHANGE	14.36%	6.98%	7.47%	4.67%	10.53%	6.86%	
Other Nondefense R&D	1.267	1.289	1.312	1.324	1.366	1.390	
% CHANGE	13.71%	7.20%	7.24%	3.67%	13.29%	7.32%	
Other Services	1.264	1.285	1.307	1.324	1.356	1.379	
% CHANGE	11.33%	6.91%	7.23%	5.13%	9.95%	7.01%	
Maint. of Aircraft	1.258	1.278	1.300	1.319	1.340	1.360	
% CHANGE	11.70%	6.44%	6.99%	6.13%	6.39%	6.20%	
FPJ502	1.258	1.278	1.300	1.319	1.340	1.360	
% CHANGE	11.70%	6.44%	6.99%	6.13%	6.39%	6.20%	
FPJ503	1.258	1.278	1.300	1.319	1.340	1.360	
% CHANGE	11.70%	6.44%	6.99%	6.13%	6.39%	6.20%	
Maint. of Vessels	1.279	1.302	1.328	1.356	1.376	1.403	
	1982:1	1982:2	1982:3	1982:4	1983:1	1983:2	1983:3
CPI Rent	1.249	1.262	1.276	1.291	1.303	1.315	1.327
% CHANGE	4.49%	4.26%	4.55%	4.66%	3.77%	3.74%	3.74%
CPI Phone	1.158	1.166	1.174	1.182	1.190	1.198	1.206
% CHANGE	2.67%	2.70%	2.74%	2.77%	2.78%	2.76%	2.72%
CPI Water & Sewer	1.312	1.328	1.350	1.379	1.414	1.452	1.493
% CHANGE	3.37%	4.91%	6.84%	8.80%	10.43%	11.42%	11.60%
WPICS	1.455	1.483	1.512	1.541	1.571	1.601	1.633
% CHANGE	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%
Printing	1.335	1.354	1.372	1.391	1.410	1.429	1.449
% CHANGE	5.75%	5.57%	5.56%	5.56%	5.74%	5.54%	5.49%
WPIC9	1.335	1.354	1.372	1.391	1.410	1.429	1.449
% CHANGE	5.75%	5.57%	5.56%	5.56%	5.74%	5.54%	5.49%
EE275	1.337	1.359	1.390	1.406	1.432	1.456	1.491
% CHANGE	7.00%	6.83%	9.50%	4.63%	7.45%	7.11%	9.77%
Research & Development	1.418	1.435	1.476	1.504	1.533	1.553	1.609
% CHANGE	8.32%	5.01%	12.00%	7.67%	8.11%	5.34%	15.04%
Defense R&D	1.419	1.438	1.475	1.502	1.532	1.554	1.612
% CHANGE	8.74%	5.49%	10.87%	7.54%	8.24%	5.86%	15.58%
NASA R&D	1.419	1.438	1.475	1.502	1.532	1.554	1.612
% CHANGE	8.74%	5.49%	10.87%	7.54%	8.24%	5.86%	15.58%
Other Nondefense R&D	1.416	1.431	1.478	1.506	1.535	1.552	1.674
% CHANGE	7.63%	4.22%	13.89%	7.89%	7.91%	4.48%	14.15%
Other Services	1.405	1.425	1.460	1.487	1.516	1.538	1.594
% CHANGE	7.97%	5.64%	10.36%	7.54%	8.02%	6.00%	12.38%
Maint. of Aircraft	1.388	1.412	1.435	1.459	1.487	1.515	1.561
% CHANGE	8.59%	7.03%	6.59%	6.92%	7.96%	7.60%	12.97%
FPJ502	1.388	1.412	1.435	1.459	1.487	1.515	1.561
% CHANGE	8.59%	7.03%	6.59%	6.92%	7.96%	7.60%	12.97%
FPJ503	1.388	1.412	1.435	1.459	1.487	1.515	1.561
% CHANGE	8.59%	7.03%	6.59%	6.92%	7.96%	7.60%	12.97%
Maint. of Vessels	1.432	1.456	1.486	1.516	1.549	1.576	1.610

TABLE A-3. (Continued)

	1977:3	1977:4	1978:1	1978:2	1978:3	1978:4
Maint. of Electronics	1.300	1.015	1.036	1.059	1.081	1.104
% CHANGE	-4.61%	6.17%	8.68%	9.19%	8.18%	8.79%
Maint. of Equipment	1.000	1.017	1.037	1.058	1.080	1.106
% CHANGE	4.56%	6.84%	8.08%	8.41%	8.67%	10.12%
Modfctn. of Aircraft	1.000	1.016	1.032	1.050	1.070	1.090
% CHANGE	9.96%	6.73%	6.27%	7.06%	8.05%	7.59%
Mod. Aircraft Engines	1.000	1.016	1.032	1.050	1.070	1.090
% CHANGE	9.96%	6.73%	6.27%	7.06%	8.05%	7.59%
Modfctn. of Missiles	1.000	1.016	1.032	1.050	1.070	1.090
% CHANGE	9.96%	6.73%	6.27%	7.06%	8.05%	7.59%
Modfctn. of Vessels	1.000	1.025	1.043	1.062	1.087	1.112
% CHANGE	13.69%	10.42%	7.36%	7.17%	9.95%	9.54%
Modfctn. of Electronic	1.000	1.015	1.036	1.059	1.081	1.104
% CHANGE	4.61%	6.17%	8.68%	9.19%	8.18%	8.79%
Op & Maint. Electronics	1.000	1.015	1.036	1.059	1.081	1.104
% CHANGE	4.61%	6.17%	8.68%	9.19%	8.18%	8.79%
Op & Maint. Govt Owned	1.000	1.030	1.049	1.064	1.090	1.109
% CHANGE	6.45%	12.42%	7.55%	6.19%	9.93%	7.02%
Engin. & Architect.	1.000	1.019	1.039	1.050	1.085	1.105
% CHANGE	13.73%	8.01%	8.06%	4.26%	12.60%	7.58%
Road Maint.	1.000	0.945	0.877	0.928	0.946	0.894
% CHANGE	7.94%	-20.32%	-25.66%	25.16%	7.94%	-20.32%
Sales of Services	1.000	1.019	1.037	1.052	1.080	1.100
% CHANGE	11.50%	7.90%	7.25%	5.93%	11.06%	7.72%
Other Services	1.000	1.019	1.037	1.052	1.080	1.100
% CHANGE	11.50%	7.90%	7.25%	5.93%	11.06%	7.72%
CPI	1.000	1.012	1.027	1.041	1.055	1.071
% CHANGE	5.18%	4.77%	6.07%	5.64%	5.59%	6.10%
CPI Food at Home	1.000	0.990	0.995	0.999	1.008	0.999
% CHANGE	2.49%	-4.08%	1.99%	1.74%	3.69%	-3.40%

	1979:1	1979:2	1979:3	1979:4	1980:1	1980:2
Maint. of Electronics	1.129	1.155	1.179	1.202	1.225	1.247
% CHANGE	9.67%	9.54%	8.40%	8.10%	8.00%	7.11%
Maint. of Equipment	1.134	1.161	1.192	1.225	1.256	1.286
% CHANGE	10.31%	10.06%	10.95%	11.50%	10.69%	9.88%
Modfctn. of Aircraft	1.118	1.141	1.163	1.182	1.203	1.224
% CHANGE	10.70%	8.56%	7.65%	6.73%	7.60%	6.90%
Mod. Aircraft Engines	1.118	1.141	1.163	1.182	1.203	1.224
% CHANGE	10.70%	8.56%	7.65%	6.73%	7.60%	6.90%
Modfctn. of Missiles	1.118	1.141	1.163	1.182	1.203	1.224
% CHANGE	10.70%	8.56%	7.65%	6.73%	7.60%	6.90%
Modfctn. of Vessels	1.137	1.158	1.184	1.210	1.236	1.255
% CHANGE	9.22%	7.66%	9.35%	8.86%	8.79%	6.52%
Modfctn. of Electronic	1.129	1.155	1.179	1.202	1.225	1.247
% CHANGE	9.67%	9.54%	8.40%	8.10%	8.00%	7.11%
Op & Maint. Electronics	1.129	1.155	1.179	1.202	1.225	1.247
% CHANGE	9.67%	9.54%	8.40%	8.10%	8.00%	7.11%
Op & Maint. Govt Owned	1.131	1.146	1.171	1.194	1.220	1.236
% CHANGE	8.15%	5.59%	9.13%	7.94%	9.13%	5.15%
Engin. & Architect.	1.124	1.136	1.174	1.196	1.217	1.228
% CHANGE	7.26%	4.40%	14.05%	7.65%	7.24%	3.63%
Road Maint.	0.830	0.878	0.894	0.845	0.785	0.830
% CHANGE	-25.69%	25.16%	7.93%	-20.33%	-25.69%	25.16%
Sales of Services	1.123	1.141	1.171	1.192	1.214	1.230
% CHANGE	8.48%	6.46%	10.59%	7.50%	7.58%	5.34%
Other Services	1.123	1.141	1.171	1.192	1.214	1.230
% CHANGE	8.48%	6.46%	10.99%	7.50%	7.58%	5.34%
CPI	1.087	1.104	1.120	1.135	1.150	1.166
% CHANGE	6.23%	6.41%	5.71%	5.54%	5.54%	5.49%
CPI Food at Home	1.004	1.008	1.017	1.008	1.013	1.016
% CHANGE	1.88%	1.68%	3.65%	-3.39%	1.75%	1.42%

TABLE A-3. (Continued)

	1980:3	1980:4	1981:1	1981:2	1981:3	1981:4	
Maint. of Electronics	1.265	1.284	1.304	1.324	1.343	1.364	
% CHANGE	6.38%	5.97%	6.57%	6.39%	5.94%	6.23%	
Maint. of Equipment	1.314	1.344	1.374	1.405	1.435	1.468	
% CHANGE	9.05%	9.45%	9.18%	9.17%	8.85%	9.51%	
Modfctn. of Aircraft	1.258	1.279	1.300	1.319	1.340	1.360	
% CHANGE	11.70%	6.44%	6.99%	6.13%	6.39%	6.20%	
Mod. Aircraft Engines	1.258	1.279	1.300	1.319	1.340	1.360	
% CHANGE	11.70%	6.44%	6.99%	6.13%	6.39%	6.20%	
Modfctn. of Missiles	1.258	1.278	1.300	1.319	1.340	1.360	
% CHANGE	11.70%	6.44%	6.99%	6.13%	6.39%	6.20%	
Modfctn. of Vessels	1.279	1.302	1.328	1.350	1.376	1.403	
% CHANGE	7.70%	7.59%	8.16%	6.67%	8.12%	8.05%	
Modfctn. of Electronic	1.265	1.284	1.304	1.324	1.343	1.364	
% CHANGE	6.08%	5.97%	6.37%	6.39%	5.94%	6.23%	
Op & Maint. Electronics	1.265	1.284	1.304	1.324	1.343	1.364	
% CHANGE	6.38%	5.97%	6.37%	6.39%	5.94%	6.23%	
Op & Maint. Govt Owned	1.261	1.284	1.312	1.329	1.358	1.384	
% CHANGE	8.40%	7.62%	6.91%	5.45%	6.72%	7.92%	
Engin. & Architect.	1.267	1.289	1.312	1.324	1.366	1.390	
% CHANGE	13.21%	7.20%	7.24%	3.67%	13.29%	7.32%	
Road Maint.	0.846	0.799	0.742	0.785	0.800	0.756	
% CHANGE	7.9%	-20.3%	-25.6%	25.16%	7.9%	-20.3%	
Sales of Services	1.264	1.205	1.307	1.324	1.356	1.379	
% CHANGE	11.33%	6.91%	7.23%	5.13%	9.95%	7.01%	
Other Services	1.264	1.205	1.307	1.324	1.356	1.379	
% CHANGE	11.33%	6.91%	7.23%	5.13%	9.95%	7.01%	
CPI	1.181	1.197	1.214	1.231	1.248	1.265	
% CHANGE	5.47%	5.42%	5.86%	5.55%	5.64%	5.73%	
CPI Food at Home	1.025	1.016	1.020	1.024	1.033	1.024	
% CHANGE	3.40%	-3.61%	1.76%	1.47%	3.50%	-3.40%	
	1982:1	1982:2	1982:3	1982:4	1983:1	1983:2	1983:3
Maint. of Electronics	1.386	1.408	1.429	1.452	1.476	1.501	1.524
% CHANGE	6.72%	6.64%	6.11%	6.38%	6.91%	6.89%	6.37%
Maint. of Equipment	1.500	1.534	1.567	1.604	1.641	1.679	1.718
% CHANGE	9.21%	9.17%	8.94%	9.77%	9.59%	9.66%	9.53%
Modfctn. of Aircraft	1.388	1.412	1.435	1.459	1.487	1.515	1.561
% CHANGE	8.59%	7.03%	6.59%	6.92%	7.96%	7.60%	12.97%
Mod. Aircraft Engines	1.388	1.412	1.435	1.459	1.487	1.515	1.561
% CHANGE	8.59%	7.03%	6.59%	6.92%	7.96%	7.60%	12.97%
Modfctn. of Missiles	1.388	1.412	1.435	1.459	1.487	1.515	1.561
% CHANGE	8.59%	7.03%	6.59%	6.92%	7.96%	7.60%	12.97%
Modfctn. of Vessels	1.432	1.456	1.486	1.516	1.549	1.576	1.610
% CHANGE	8.56%	6.76%	8.46%	8.32%	8.95%	7.16%	8.96%
Modfctn. of Electronic	1.386	1.408	1.429	1.452	1.476	1.501	1.524
% CHANGE	6.72%	6.64%	6.11%	6.38%	6.91%	6.89%	6.37%
Op & Maint. Electronics	1.386	1.408	1.429	1.452	1.476	1.501	1.524
% CHANGE	6.72%	6.64%	6.11%	6.38%	6.91%	6.89%	6.37%
Op & Maint. Govt Owned	1.415	1.433	1.465	1.493	1.528	1.549	1.585
% CHANGE	9.39%	5.31%	8.97%	8.03%	9.64%	5.66%	9.54%
Engin. & Architect.	1.416	1.431	1.478	1.506	1.535	1.552	1.604
% CHANGE	7.63%	4.22%	13.89%	7.89%	7.91%	4.48%	14.15%
Road Maint.	0.702	0.742	0.756	0.715	0.664	0.702	0.715
% CHANGE	-25.69%	25.16%	7.93%	-20.33%	-25.69%	25.16%	7.93%
Sales of Services	1.405	1.425	1.460	1.487	1.516	1.538	1.584
% CHANGE	7.97%	5.64%	10.36%	7.54%	8.02%	6.00%	12.38%
Other Services	1.405	1.425	1.460	1.487	1.516	1.538	1.584
% CHANGE	7.97%	5.64%	10.36%	7.54%	8.02%	6.00%	12.38%
CPI	1.283	1.300	1.319	1.338	1.357	1.377	1.397
% CHANGE	5.64%	5.67%	5.77%	5.85%	6.01%	5.97%	5.96%
CPI Food at Home	1.028	1.032	1.042	1.033	1.038	1.042	1.051
% CHANGE	1.84%	1.56%	3.68%	-3.37%	1.87%	1.61%	3.65%

TABLE A-3. (Continued)

	1977:1	1977:4	1978:1	1978:2	1978:3	1978:4
CPINECMS	1.000	1.022	1.045	1.068	1.091	1.114
% CHANGE	9.72%	9.35%	9.18%	8.97%	8.77%	8.66%
CPI Services	1.300	1.615	1.831	1.947	1.964	1.883
% CHANGE	5.25%	6.00%	6.68%	6.46%	6.45%	7.17%
ERDA Plant and Capital	1.000	1.014	1.029	1.058	1.079	1.100
% CHANGE	6.44%	5.52%	6.41%	11.53%	8.43%	7.29%
El. and Sec. Education	1.000	1.020	1.044	1.066	1.088	1.109
% CHANGE	7.85%	8.16%	9.88%	8.62%	6.39%	8.18%
Higher Education	1.000	1.020	1.044	1.065	1.086	1.107
% CHANGE	6.59%	8.71%	9.92%	8.24%	8.25%	8.10%
Fed. Aid to Highways	1.000	0.998	0.992	1.026	1.047	1.047
% CHANGE	8.27%	-0.90%	-2.44%	14.79%	8.17%	0.23%
NPI Railroad Eqpt.	1.300	1.620	1.841	1.968	1.999	1.833
% CHANGE	7.74%	8.29%	8.45%	10.66%	12.22%	13.09%
Sewage Plants	1.000	1.020	1.040	1.058	1.082	1.109
% CHANGE	10.59%	8.16%	8.35%	6.78%	9.47%	10.52%
Comp. per Manhour	1.000	1.021	1.047	1.067	1.089	1.111
% CHANGE	8.80%	8.59%	10.76%	7.64%	8.60%	8.42%
GMP Deflator	1.000	1.017	1.029	1.042	1.058	1.073
% CHANGE	7.19%	7.06%	4.73%	5.32%	6.04%	5.89%
S & L Gov't. Deflator	1.000	1.015	1.035	1.051	1.069	1.087
% CHANGE	16.82%	6.18%	8.25%	6.08%	7.14%	6.87%
Nonres Structures Def.	1.300	1.610	1.826	1.943	1.965	1.886
% CHANGE	7.77%	3.88%	6.87%	6.52%	8.96%	8.08%

	1979:1	1979:2	1979:3	1979:4	1980:1	1980:2
CPINECMS	1.137	1.160	1.184	1.207	1.231	1.254
% CHANGE	8.56%	8.50%	8.35%	8.20%	6.07%	7.93%
CPI Services	1.102	1.122	1.141	1.159	1.178	1.198
% CHANGE	7.23%	7.67%	6.74%	6.59%	6.85%	6.77%
ERDA Plant and Capital	1.121	1.142	1.162	1.181	1.201	1.221
% CHANGE	7.88%	7.46%	7.16%	6.88%	6.83%	6.86%
El. and Sec. Education	1.130	1.151	1.172	1.193	1.215	1.237
% CHANGE	7.65%	7.72%	7.50%	7.33%	7.54%	7.47%
Higher Education	1.128	1.150	1.171	1.192	1.214	1.237
% CHANGE	7.78%	7.83%	7.60%	7.39%	7.63%	7.57%
Fed. Aid to Highways	1.046	1.075	1.095	1.097	1.095	1.121
% CHANGE	-0.65%	11.57%	7.87%	0.51%	-0.65%	10.06%
NPI Railroad Eqpt.	1.170	1.211	1.251	1.289	1.323	1.354
% CHANGE	13.77%	14.67%	13.69%	12.93%	11.03%	9.78%
Sewage Plants	1.132	1.150	1.174	1.200	1.222	1.241
% CHANGE	8.57%	6.47%	8.38%	9.42%	7.55%	6.16%
Comp. per Manhour	1.133	1.154	1.176	1.198	1.221	1.244
% CHANGE	7.94%	7.98%	7.79%	7.57%	7.86%	7.81%
GMP Deflator	1.088	1.103	1.120	1.137	1.151	1.166
% CHANGE	5.70%	5.62%	6.17%	6.16%	5.25%	5.40%
S & L Gov't. Deflator	1.101	1.120	1.138	1.156	1.175	1.194
% CHANGE	5.25%	7.81%	6.58%	6.38%	6.83%	6.86%
Nonres Structures Def.	1.109	1.130	1.150	1.170	1.189	1.210
% CHANGE	8.48%	7.75%	7.48%	7.12%	6.77%	7.22%

TABLE A-3. (Continued)

	1980:1	1980:4	1981:1	1981:2	1981:3	1981:4
CPINEDNS	1.270	1.302	1.326	1.351	1.375	1.400
% CHANGE	7.81%	7.69%	7.67%	7.54%	7.47%	7.41%
CPI Services	1.218	1.237	1.258	1.278	1.299	1.320
% CHANGE	6.81%	6.65%	6.90%	6.48%	6.63%	6.66%
ERDA Plant and Capital	1.241	1.261	1.282	1.305	1.328	1.352
% CHANGE	6.69%	6.55%	6.92%	7.23%	7.31%	7.37%
El. and Sec. Education	1.259	1.282	1.306	1.330	1.355	1.380
% CHANGE	7.45%	7.53%	7.54%	7.57%	7.61%	7.71%
Higher Education	1.259	1.283	1.306	1.331	1.355	1.381
% CHANGE	7.55%	7.59%	7.60%	7.64%	7.71%	7.79%
Fed. Aid to Highways	1.139	1.141	1.141	1.168	1.188	1.191
% CHANGE	6.60%	0.41%	0.03%	9.95%	6.84%	1.33%
MPI Railroad Eqpt.	1.382	1.409	1.436	1.463	1.492	1.521
% CHANGE	8.32%	8.01%	7.95%	7.96%	8.19%	8.02%
Sewage Plants	1.265	1.292	1.318	1.337	1.363	1.388
% CHANGE	8.07%	8.79%	8.32%	5.96%	7.88%	7.57%
Comp. per Manhour	1.268	1.292	1.316	1.342	1.368	1.394
% CHANGE	7.80%	7.86%	7.84%	7.91%	7.98%	8.05%
GNP Deflator	1.182	1.198	1.213	1.225	1.246	1.265
% CHANGE	5.30%	5.61%	5.08%	5.62%	5.42%	6.39%
S & L Gov't. Deflator	1.214	1.235	1.256	1.278	1.301	1.324
% CHANGE	6.97%	6.92%	7.00%	7.16%	7.29%	7.39%
Nonres Structures Def.	1.232	1.253	1.275	1.300	1.327	1.355
% CHANGE	7.23%	7.02%	7.48%	8.10%	8.69%	8.61%

	1982:1	1982:2	1982:3	1982:4	1983:1	1983:2	1983:3
CPINEDNS	1.425	1.450	1.476	1.502	1.528	1.555	1.582
% CHANGE	7.35%	7.29%	7.25%	7.22%	7.21%	7.19%	7.17%
CPI Services	1.342	1.364	1.386	1.409	1.433	1.457	1.481
% CHANGE	6.78%	6.70%	6.70%	6.91%	6.93%	6.89%	6.76%
ERDA Plant and Capital	1.376	1.401	1.428	1.455	1.482	1.510	1.539
% CHANGE	7.45%	7.58%	7.73%	7.86%	7.55%	7.86%	7.79%
El. and Sec. Education	1.406	1.432	1.461	1.489	1.518	1.548	1.578
% CHANGE	7.77%	7.86%	7.98%	8.09%	8.02%	8.00%	8.05%
Higher Education	1.407	1.435	1.463	1.492	1.521	1.551	1.581
% CHANGE	7.85%	7.95%	8.07%	8.18%	8.08%	8.08%	8.12%
Fed. Aid to Highways	1.193	1.221	1.242	1.268	1.293	1.282	1.304
% CHANGE	0.61%	9.60%	6.98%	1.96%	1.57%	9.67%	7.08%
MPI Railroad Eqpt.	1.551	1.582	1.614	1.647	1.681	1.717	1.755
% CHANGE	8.08%	8.10%	8.30%	8.44%	8.74%	8.84%	8.96%
Sewage Plants	1.419	1.442	1.474	1.506	1.543	1.568	1.603
% CHANGE	9.32%	6.69%	9.19%	8.79%	10.23%	6.81%	9.12%
Comp. per Manhour	1.422	1.450	1.480	1.510	1.541	1.573	1.605
% CHANGE	8.15%	8.26%	8.39%	8.50%	8.41%	8.39%	8.46%
GNP Deflator	1.281	1.298	1.316	1.336	1.354	1.373	1.392
% CHANGE	4.99%	5.36%	5.72%	6.47%	5.42%	5.62%	5.56%
S & L Gov't. Deflator	1.347	1.372	1.399	1.427	1.451	1.481	1.511
% CHANGE	7.25%	7.60%	8.00%	8.35%	6.93%	8.41%	8.48%
Nonres Structures Def.	1.383	1.412	1.443	1.476	1.505	1.538	1.572
% CHANGE	8.44%	8.63%	9.12%	9.42%	8.29%	8.98%	9.09%

TABLE A-3. (Continued)

	1977:1	1977:4	1978:1	1978:2	1978:3	1978:4
Res. Structures Def.	1.000	1.023	1.042	1.063	1.085	1.105
% CHANGE	2.37%	9.66%	7.49%	8.21%	8.67%	7.56%
MPI	1.000	1.020	1.039	1.059	1.080	1.100
% CHANGE	-0.02%	8.44%	7.30%	8.08%	8.09%	7.50%
MPI Industrial Cosmod.	1.000	1.021	1.040	1.063	1.086	1.107
% CHANGE	0.86%	8.69%	7.78%	8.95%	8.90%	8.24%
MPI US Trade Partners	1.000	1.007	1.022	1.045	1.063	1.078
% CHANGE	0.53%	3.02%	6.05%	9.32%	7.03%	5.80%
MPI01	1.000	1.010	1.020	1.030	1.040	1.050
% CHANGE	0.46%	4.01%	4.17%	3.93%	3.89%	3.85%
MPI02	1.000	1.023	1.039	1.053	1.068	1.082
% CHANGE	-4.36%	9.56%	6.33%	5.47%	5.80%	5.30%
MPI03	1.000	1.026	1.044	1.057	1.071	1.084
% CHANGE	-2.88%	10.84%	7.29%	4.79%	5.51%	5.11%
MPI05	1.000	1.014	1.030	1.091	1.112	1.133
% CHANGE	10.79%	5.86%	6.45%	25.70%	8.12%	7.47%
MPI06	1.000	1.019	1.033	1.045	1.066	1.084
% CHANGE	-1.37%	7.92%	5.32%	4.88%	8.22%	7.12%
MPI07	1.000	1.023	1.038	1.056	1.076	1.092
% CHANGE	-2.82%	9.37%	6.10%	7.18%	7.73%	6.09%
MPI08	1.000	1.045	1.093	1.137	1.181	1.215
% CHANGE	8.19%	19.29%	19.68%	17.20%	16.30%	12.03%
MPI09	1.000	1.022	1.043	1.063	1.090	1.116
% CHANGE	-3.91%	8.97%	8.64%	7.97%	10.65%	9.83%
MPI10	1.000	1.023	1.046	1.070	1.100	1.123
% CHANGE	0.53%	9.72%	9.04%	9.27%	11.92%	8.48%
MPI11	1.000	1.020	1.039	1.056	1.076	1.098
% CHANGE	-1.30%	8.41%	7.32%	6.80%	7.95%	8.39%
MPI14	1.000	1.017	1.032	1.045	1.060	1.089
% CHANGE	-4.47%	7.02%	5.79%	5.23%	5.77%	11.72%
	1979:1	1979:2	1979:3	1979:4	1980:1	1980:2
Res. Structures Def.	1.124	1.145	1.165	1.184	1.204	1.223
% CHANGE	7.24%	7.50%	7.17%	6.65%	6.82%	6.69%
MPI	1.115	1.132	1.148	1.164	1.181	1.197
% CHANGE	5.60%	6.14%	5.85%	5.84%	5.79%	5.55%
MPI Industrial Cosmod.	1.124	1.142	1.159	1.176	1.194	1.211
% CHANGE	6.17%	6.38%	6.12%	6.19%	6.03%	5.77%
MPI US Trade Partners	1.100	1.122	1.144	1.167	1.188	1.210
% CHANGE	8.17%	8.33%	8.10%	8.27%	7.48%	7.61%
MPI01	1.060	1.071	1.081	1.092	1.103	1.113
% CHANGE	4.60%	4.00%	4.00%	4.00%	4.00%	4.00%
MPI02	1.094	1.110	1.124	1.137	1.152	1.167
% CHANGE	4.62%	5.88%	5.28%	4.80%	5.36%	5.04%
MPI03	1.096	1.111	1.124	1.137	1.151	1.164
% CHANGE	4.25%	5.57%	4.95%	4.54%	5.11%	4.80%
MPI05	1.155	1.177	1.200	1.223	1.247	1.271
% CHANGE	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%
MPI06	1.096	1.110	1.123	1.135	1.148	1.160
% CHANGE	4.59%	5.10%	4.60%	4.32%	4.70%	4.44%
MPI07	1.104	1.119	1.133	1.145	1.160	1.174
% CHANGE	4.43%	5.46%	5.14%	4.36%	5.28%	4.98%
MPI08	1.232	1.246	1.265	1.288	1.296	1.305
% CHANGE	5.54%	4.73%	6.23%	7.40%	2.70%	2.66%
MPI09	1.136	1.153	1.169	1.184	1.200	1.215
% CHANGE	7.05%	6.18%	5.77%	5.17%	5.67%	5.00%
MPI10	1.140	1.159	1.178	1.195	1.216	1.236
% CHANGE	6.34%	6.86%	6.53%	5.97%	7.15%	6.71%
MPI11	1.117	1.136	1.154	1.171	1.189	1.206
% CHANGE	6.94%	7.60%	6.49%	6.03%	6.29%	6.00%
MPI14	1.103	1.115	1.127	1.152	1.163	1.175
% CHANGE	5.14%	4.34%	4.60%	8.99%	3.91%	4.02%

TABLE A-3. (Continued)

Res. Structures Def.	1980:3	1980:4	1981:1	1981:2	1981:3	1981:4	
% CHANGE	1.243	1.264	1.284	1.305	1.326	1.349	
MPI	6.63X	6.81X	6.42X	6.66X	6.82X	6.94X	
% CHANGE	1.213	1.233	1.247	1.264	1.281	1.299	
MPI Industrial Commod.	5.37X	5.71X	5.69X	5.67X	5.50X	5.77X	
% CHANGE	1.227	1.245	1.263	1.281	1.299	1.319	
MPI US Trade Partners	5.61X	6.03X	5.90X	5.91X	5.72X	6.08X	
% CHANGE	1.229	1.247	1.267	1.287	1.309	1.333	
MPI01	6.51X	5.76X	6.51X	6.75X	6.86X	7.52X	
% CHANGE	1.124	1.136	1.147	1.158	1.169	1.181	
MPI02	4.00X	4.00X	4.00X	4.00X	4.00X	4.00X	
% CHANGE	1.180	1.194	1.209	1.225	1.240	1.255	
MPI03	4.74X	4.74X	5.34X	5.15X	4.95X	4.89X	
% CHANGE	1.177	1.193	1.204	1.217	1.229	1.242	
MPI05	4.46X	4.52X	4.72X	4.43X	3.98X	4.23X	
% CHANGE	1.296	1.321	1.347	1.373	1.400	1.427	
MPI06	8.00X	8.00X	8.00X	8.00X	8.00X	8.00X	
% CHANGE	1.172	1.184	1.196	1.209	1.221	1.234	
MPI07	4.20X	4.02X	4.24X	4.30X	4.21X	4.15X	
% CHANGE	1.186	1.199	1.215	1.230	1.244	1.258	
MPI08	4.17X	4.59X	5.32X	4.91X	4.73X	4.54X	
% CHANGE	1.323	1.344	1.375	1.403	1.427	1.456	
MPI09	5.68X	6.57X	9.50X	8.40X	6.95X	8.52X	
% CHANGE	1.229	1.245	1.263	1.282	1.300	1.317	
MPI10	4.86X	5.20X	5.78X	6.19X	5.70X	5.29X	
% CHANGE	1.254	1.274	1.294	1.314	1.334	1.353	
MPI11	6.17X	6.52X	6.50X	6.34X	6.00X	5.79X	
% CHANGE	1.223	1.239	1.256	1.274	1.293	1.311	
MPI14	5.64X	5.38X	5.78X	5.87X	5.79X	5.73X	
% CHANGE	1.186	1.209	1.220	1.231	1.243	1.260	
	3.82X	8.04X	3.62X	3.97X	3.95X	8.16X	
Res. Structures Def.	1982:1	1982:2	1982:3	1982:4	1983:1	1983:2	1983:3
% CHANGE	1.370	1.392	1.416	1.440	1.462	1.486	1.509
MPI	6.45X	6.57X	7.01X	7.12X	6.27X	6.52X	6.43X
% CHANGE	1.316	1.336	1.355	1.375	1.394	1.414	1.434
MPI Industrial Commod.	5.75X	5.74X	5.77X	5.91X	5.88X	5.86X	5.80X
% CHANGE	1.338	1.357	1.377	1.398	1.419	1.440	1.461
MPI US Trade Partners	5.94X	5.96X	6.00X	6.18X	6.10X	6.06X	6.02X
% CHANGE	1.357	1.380	1.402	1.425	1.446	1.471	1.497
MPI01	7.52X	6.71X	6.69X	6.65X	6.10X	7.02X	7.21X
% CHANGE	1.193	1.204	1.216	1.228	1.240	1.253	1.265
MPI02	4.00X						
% CHANGE	1.271	1.288	1.305	1.321	1.339	1.358	1.376
MPI03	5.48X	5.31X	5.30X	5.27X	5.55X	5.63X	5.38X
% CHANGE	1.256	1.271	1.285	1.299	1.313	1.327	1.340
MPI05	4.72X	4.63X	4.71X	4.36X	4.56X	4.25X	4.03X
% CHANGE	1.455	1.481	1.512	1.541	1.571	1.601	1.633
MPI06	8.00X						
% CHANGE	1.247	1.261	1.274	1.288	1.304	1.319	1.334
MPI07	4.40X	4.36X	4.41X	4.44X	4.84X	4.87X	4.64X
% CHANGE	1.273	1.288	1.303	1.318	1.335	1.352	1.369
MPI08	5.02X	4.80X	4.82X	4.66X	5.22X	5.25X	5.03X
% CHANGE	1.485	1.517	1.547	1.573	1.597	1.622	1.646
MPI09	8.26X	8.65X	8.38X	6.78X	6.35X	6.36X	6.12X
% CHANGE	1.335	1.354	1.372	1.391	1.410	1.429	1.449
MPI10	5.75X	5.97X	5.56X	5.56X	5.74X	5.54X	5.49X
% CHANGE	1.372	1.391	1.411	1.431	1.453	1.475	1.498
MPI11	5.83X	5.80X	5.85X	5.70X	6.27X	6.20X	6.35X
% CHANGE	1.330	1.350	1.370	1.390	1.413	1.435	1.458
MPI14	6.10X	6.02X	6.06X	6.13X	6.62X	6.56X	6.34X
% CHANGE	1.282	1.297	1.312	1.328	1.352	1.366	1.380
	4.44X	4.69X	4.70X	8.23X	4.19X	4.24X	4.35X

TABLE A-3. (Continued)

AHE Construction	1977:1	1977:4	1978:1	1978:2	1978:3	1978:4	
% CHANGE	1.300	1.027	1.044	1.761	1.086	1.116	
AHE Aircraft and Parts	9.652	11.372	8.332	5.132	9.842	11.382	
% CHANGE	1.000	1.020	1.037	1.056	1.078	1.097	
AHE Ships	13.172	8.152	7.092	7.432	8.452	7.292	
% CHANGE	1.000	1.630	1.049	1.064	1.090	1.109	
House Construction	6.452	12.422	7.552	6.192	9.932	7.022	
% CHANGE	1.000	1.028	1.957	1.985	1.115	1.144	
Med Care Facility	8.552	11.652	11.932	10.802	11.772	10.682	
% CHANGE	1.000	1.022	1.943	1.059	1.083	1.109	
Hospital Constr.	7.992	9.022	8.462	6.542	9.172	10.112	
% CHANGE	1.000	1.022	1.045	1.062	1.087	1.113	
Office Bldg. Constr.	8.512	9.392	8.882	6.972	9.412	10.252	
% CHANGE	1.000	1.022	1.044	1.062	1.087	1.116	
WPI1172AS	9.182	9.162	8.952	6.932	9.852	10.862	
% CHANGE	1.000	1.020	1.041	1.064	1.080	1.104	
	-12.722	8.352	8.222	9.232	6.342	8.892	
AHE Construction	1979:1	1979:2	1979:3	1979:4	1980:1	1980:2	
% CHANGE	1.135	1.149	1.175	1.206	1.227	1.242	
AHE Aircraft and Parts	7.132	4.932	9.212	10.932	7.112	4.962	
% CHANGE	1.130	1.153	1.174	1.191	1.213	1.233	
AHE Ships	12.502	8.522	7.342	6.012	7.742	6.732	
% CHANGE	1.131	1.146	1.171	1.194	1.220	1.236	
House Construction	8.152	5.592	9.132	7.942	9.132	5.152	
% CHANGE	1.163	1.180	1.201	1.224	1.241	1.255	
Med Care Facility	6.932	5.952	7.242	7.962	5.502	4.512	
% CHANGE	1.114	1.154	1.177	1.203	1.228	1.246	
Hospital Constr.	9.042	7.282	8.402	9.222	8.272	6.302	
% CHANGE	1.138	1.158	1.183	1.210	1.235	1.254	
Office Bldg. Constr.	9.072	7.312	8.882	9.372	8.502	6.462	
% CHANGE	1.142	1.164	1.190	1.219	1.245	1.265	
WPI1172AS	9.912	7.832	9.322	9.882	8.992	6.432	
% CHANGE	1.126	1.145	1.164	1.179	1.191	1.202	
	8.272	6.912	6.882	5.182	4.272	3.812	
AHE Construction	1980:3	1980:4	1981:1	1981:2	1981:3	1981:4	
% CHANGE	1.269	1.303	1.325	1.341	1.370	1.407	
AHE Aircraft and Parts	9.302	11.002	6.952	4.812	9.182	10.952	
% CHANGE	1.280	1.301	1.326	1.346	1.367	1.388	
AHE Ships	16.102	6.662	7.812	6.172	6.552	6.162	
% CHANGE	1.251	1.284	1.312	1.329	1.358	1.384	
House Construction	8.402	7.622	8.912	5.452	8.722	7.922	
% CHANGE	1.273	1.294	1.321	1.342	1.365	1.391	
Med Care Facility	5.932	6.872	8.822	6.752	6.742	7.712	
% CHANGE	1.268	1.294	1.318	1.338	1.362	1.390	
Hospital Constr.	7.182	8.302	7.832	6.112	7.352	8.392	
% CHANGE	1.278	1.304	1.330	1.350	1.376	1.404	
Office Bldg. Constr.	7.302	8.572	8.092	6.252	7.742	8.482	
% CHANGE	1.288	1.315	1.342	1.363	1.389	1.418	
WPI1172AS	7.622	8.612	8.562	6.402	7.732	8.562	
% CHANGE	1.212	1.224	1.235	1.246	1.260	1.276	
	3.432	3.882	3.592	3.752	4.532	5.152	
AHE Construction	1982:1	1982:2	1982:3	1982:4	1983:1	1983:2	1983:3
% CHANGE	1.431	1.448	1.481	1.521	1.547	1.566	1.602
AHE Aircraft and Parts	7.032	4.962	9.392	11.192	7.172	5.052	9.482
% CHANGE	1.422	1.448	1.471	1.496	1.528	1.557	1.622
AHE Ships	10.412	7.412	6.512	7.012	8.742	7.962	17.762
% CHANGE	1.415	1.433	1.465	1.493	1.528	1.549	1.595
House Construction	9.392	5.312	8.972	8.032	9.642	5.662	9.542
% CHANGE	1.418	1.440	1.466	1.493	1.520	1.545	1.571
Med Care Facility	7.552	6.892	7.392	7.532	7.432	6.632	7.052
% CHANGE	1.416	1.438	1.464	1.494	1.523	1.548	1.577
Hospital Constr.	7.802	8.212	7.402	8.582	8.112	6.592	7.742
% CHANGE	1.431	1.452	1.480	1.511	1.540	1.565	1.596
Office Bldg. Constr.	7.822	6.142	7.782	8.622	8.132	6.552	8.142
% CHANGE	1.447	1.469	1.498	1.530	1.564	1.590	1.622
WPI1172AS	8.442	6.402	7.982	9.052	8.972	6.892	8.402
% CHANGE	-1.291	1.307	1.323	1.341	1.358	1.376	1.393
	6.772	4.942	4.962	5.612	5.182	5.342	5.232