

96th Congress, 2d Session

1980
SUPPLEMENT TO
Economic Indicators

HISTORICAL AND DESCRIPTIVE
BACKGROUND

Prepared for the Joint Economic Committee

by the

*Office of Federal Statistical Policy and Standards,
Department of Commerce, the Council of Economic
Advisers, and the Source Agencies*

Printed for the use of the Joint Economic Committee

[JOINT COMMITTEE PRINT]

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LETTERS OF TRANSMITTAL

OCTOBER 31, 1980.

To the Members of the Joint Economic Committee:

I am pleased to transmit for the use of the members of the Joint Economic Committee, other Members of Congress, and the interested public the *1980 Supplement to Economic Indicators*.

This eighth edition of the *Supplement* contains historical and descriptive background material which explains in nontechnical language the data that go into the *Economic Indicators* published monthly by the Joint Economic Committee. This edition of the *Supplement* incorporates the major revisions of the *Economic Indicators* which were adopted in 1976.

The preparation of the *1980 Supplement* was coordinated by the Office of Federal Statistical Policy and Standards of the Department of Commerce at the request of the Joint Economic Committee. The tables were prepared by the staff of the Council of Economic Advisers and each of the source agencies also contributed to the effort.

Sincerely,

LLOYD BENTSEN,
Chairman, Joint Economic Committee.

OCTOBER 27, 1980.

HON. LLOYD BENTSEN,
*Chairman, Joint Economic Committee,
Congress of the United States, Washington, D.C.*

DEAR MR. CHAIRMAN: I am pleased to transmit the *1980 Supplement to Economic Indicators*.

This edition of the *1980 Supplement* explains the data that go into the *Economic Indicators* and includes the revisions of the *Indicators* adopted in 1976.

The *1980 Supplement* was coordinated and reviewed by Norman Frumkin with the assistance of Pamela Powell-Hill under the direction of Joseph W. Duncan, Director of the Office of Federal Statistical Policy and Standards, U.S. Department of Commerce. The tables were prepared by Catherine H. Furlong with the assistance of Earnestine Reid and Natalie V. Rentfro of the staff of the Council of Economic Advisers, and the descriptive material was supplied by the source agencies of the Federal Government. The project was supervised for the Joint Economic Committee by Richard F. Kaufman with the assistance of Marian Sayre.

Sincerely,

JOHN M. ALBERTINE,
Executive Director, Joint Economic Committee.

(III)

FOREWORD

By Senator Lloyd Bentsen, Chairman

The *1980 Supplement to Economic Indicators* is the eighth edition of this publication and has been prepared at a time of great uncertainty about the course of the economy for both the near term and medium term future. It is thus more important than ever for policymakers to understand how the various economic statistical series released monthly by the Federal Government are constructed, their significance and their limitations. It is time, in short, to go back to basics.

The *Economic Indicators* is the monthly statistical publication which tells us on a continuously updated fashion how the economy is doing in terms of production, employment, income, prices, and other measures. The *1980 Supplement to Economic Indicators* contains historical and descriptive background material intended to explain in nontechnical language how the data that go into the *Indicators* are obtained and the series derived, its relation to other series, and its principal uses and limitations. References are provided to primary publications and sources containing more detailed data and more complete and technical explanations. Publication of this edition of the *Supplement* is significant because it incorporates the series of major revisions of the *Economic Indicators* which were adopted in 1976. The revisions were planned and coordinated by the staff of the Joint Economic Committee and were the result of a cooperative effort by the Joint Economic Committee and the Council of Economic Advisers.

Among the new statistical series added to the *Economic Indicators* in the course of the 1976 revisions are three of particular importance concerning productivity, housing, and international trends.

A new series on labor productivity and related cost measures serves as a means for explaining the relationship between productivity, wages, profits, and costs of production.

The new series concerning housing units completed, sold, and for sale reflects changes in the market demand for houses.

The series entitled "Industrial Production and Consumer Prices—Major Industrial Countries" provides policymakers with a basis for comparing the productivity and price levels of the United States with our leading trade partners including Germany, Japan, the United Kingdom, Canada, and Italy.

The new series and other new features of the *Supplement* should make it a useful reference work for government officials, the business community, scholars, and all those interested in understanding the performance of our economy.

The *1980 Supplement to Economic Indicators* was compiled at the request of the Joint Economic Committee. It was coordinated by the Office of Federal Statistical Policy and Standards of the Department of Commerce with the cooperation and assistance of the Council of Economic Advisers and each of the source agencies.

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TOTAL OUTPUT, INCOME, AND SPENDING

The Gross National Product and major components of the national income and product accounts are published quarterly by the Bureau of Economic Analysis of the Department of Commerce.

In addition, the personal income, outlay and saving measures are published monthly.

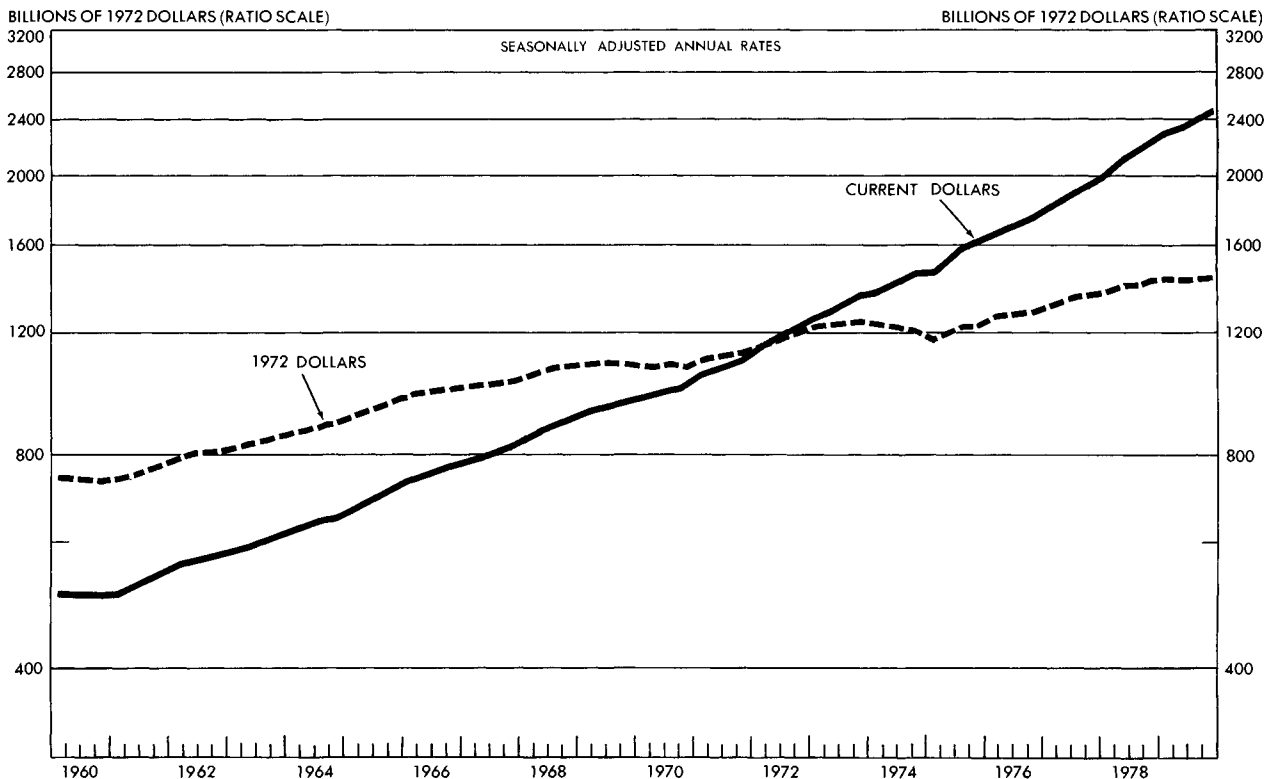
GROSS NATIONAL PRODUCT

DESCRIPTION OF SERIES

Gross National Product (GNP) is the total national output of goods and services. It is published in both current and constant dollars (the latter is deflated for price change). It measures output in terms of expenditures in final markets. The expenditures encompass four major market categories: (1) personal consumption expenditures,

(2) gross private domestic investment, (3) net exports of goods and services, and (4) government purchases of goods and services. The goods and services included in the GNP are for the most part within the framework of money transactions in the market economy. There are some nonmarket items, the most important of which is the imputed rental value of owner-occupied dwellings.

Chart 1.—GROSS NATIONAL PRODUCT



SOURCE: DEPARTMENT OF COMMERCE.

TABLE 1.—Gross National Product, 1929-79

[Billions of current dollars]

Year	Gross national product	Personal consumption expenditures	Gross private domestic investment	Exports and imports of goods and services			Government purchases of goods and services					Final sales
				Net exports	Exports	Imports	Total	Federal			State and local	
								Total	National defense	Non-defense		
1929	103.4	77.3	16.2	1.1	7.0	5.9	8.8	1.4			7.4	101.7
1930	90.7	69.9	10.2	1.0	5.4	4.4	9.5	1.6			8.0	91.1
1931	76.1	60.5	5.6	.5	3.6	3.1	9.5	1.6			7.8	77.2
1932	58.3	48.6	1.0	.4	2.5	2.1	8.3	1.6			6.7	60.8
1933	55.8	45.8	1.4	.4	2.4	2.0	8.2	2.1			6.1	57.4
1934	65.3	51.3	3.3	.6	3.0	2.4	10.0	3.1			6.9	66.0
1935	72.5	55.8	6.4	.1	3.3	3.1	10.2	3.0			7.2	71.4
1936	82.7	62.0	8.5	.1	3.5	3.4	12.2	5.0			7.1	81.5
1937	90.7	66.6	11.8	.3	4.6	4.3	12.0	4.7			7.3	88.2
1938	85.0	64.0	6.5	1.3	4.3	3.0	13.2	5.5			7.7	85.9
1939	90.8	67.0	9.3	1.1	4.4	3.4	13.5	5.2	1.2	3.9	8.3	90.4
1940	100.0	71.0	13.1	1.7	5.4	3.6	14.2	6.1	2.2	3.9	8.1	97.8
1941	124.9	80.8	17.9	1.3	5.9	4.6	24.9	16.9	13.7	3.2	8.0	120.4
1942	158.3	88.6	9.9	.0	4.8	4.8	59.8	52.0	49.4	2.6	7.8	156.5
1943	192.0	99.4	5.8	-2.0	4.4	6.5	88.9	81.3	79.7	1.6	7.5	192.5
1944	210.5	108.2	7.2	-1.8	5.3	7.1	97.0	89.4	87.4	2.0	7.6	211.5
1945	212.3	119.5	10.6	-.6	7.2	7.8	82.8	74.6	73.5	1.1	8.2	213.4
1946	209.6	143.8	30.7	7.6	14.8	7.2	27.5	17.6	14.8	2.8	9.9	203.2
1947	232.8	161.7	34.0	11.6	19.8	8.2	25.5	12.7	9.0	3.7	12.8	233.2
1948	259.1	174.7	45.9	6.5	16.9	10.4	32.0	16.7	10.7	6.0	15.3	254.4
1949	258.0	178.1	35.3	6.2	15.9	9.6	38.4	20.4	13.2	7.2	18.0	261.1
1950	286.2	192.0	53.8	1.9	13.9	12.0	38.5	18.7	14.0	4.7	19.8	279.4
1951	330.2	207.1	59.2	3.8	18.9	15.1	60.1	38.3	33.5	4.8	21.8	319.9
1952	347.2	217.1	52.1	2.4	18.2	15.8	75.6	52.4	45.8	6.5	23.2	344.0
1953	366.1	229.7	53.3	.6	17.1	16.6	82.5	57.5	48.6	8.9	25.0	365.7
1954	366.3	235.8	52.7	2.0	18.0	16.0	75.8	47.9	41.1	6.8	27.8	367.8
1955	399.3	253.7	68.4	2.2	20.0	17.8	75.0	44.5	38.4	6.0	30.6	393.3
1956	420.7	266.0	71.0	4.3	23.9	19.6	79.4	45.9	40.2	5.7	33.5	416.0
1957	442.8	280.4	69.2	6.1	26.7	20.7	87.1	50.0	44.0	5.9	37.1	441.4
1958	448.9	289.5	61.9	2.5	23.3	20.8	95.0	53.9	45.6	8.3	41.1	450.4
1959	486.5	310.8	77.6	.6	23.7	23.2	97.6	53.9	45.6	8.3	43.7	481.2
1960	506.0	324.9	76.4	4.4	27.6	23.2	100.3	53.7	44.5	9.3	46.5	502.2
1961	523.3	335.0	74.3	5.8	28.9	23.1	108.2	57.4	47.0	10.4	50.8	521.1
1962	563.8	355.2	85.2	5.4	30.6	25.2	118.0	63.7	51.1	12.7	54.3	557.3
1963	594.7	374.6	90.2	6.3	32.7	26.4	123.7	64.6	50.3	14.3	59.0	588.8
1964	635.7	400.4	96.6	8.9	37.4	28.4	129.8	65.2	49.0	16.2	64.6	629.9
1965	688.1	430.2	112.0	7.6	39.5	32.0	138.4	67.3	49.4	17.8	71.1	678.6
1966	753.0	464.8	124.5	5.1	42.8	37.7	158.7	78.8	60.3	18.5	79.8	738.7
1967	796.3	490.4	120.8	4.9	45.6	40.6	180.2	90.9	71.5	19.5	89.3	786.2
1968	868.5	535.9	131.5	2.3	49.9	47.7	198.7	98.0	76.9	21.2	100.7	860.8
1969	935.5	579.7	146.2	1.8	54.7	52.9	207.9	97.5	76.3	21.2	110.4	926.2
1970	982.4	618.8	140.8	3.9	62.5	58.5	218.9	95.6	73.5	22.1	123.2	978.6
1971	1,063.4	668.2	160.0	1.6	65.6	64.0	233.7	96.2	70.2	26.0	137.5	1,057.1
1972	1,171.1	733.0	188.3	-3.3	72.7	75.9	253.1	102.1	73.5	28.6	151.0	1,161.7
1973	1,306.6	809.9	220.0	7.1	101.6	94.4	269.5	102.2	73.5	28.7	167.3	1,288.6
1974	1,412.9	889.6	214.6	6.0	137.9	131.9	302.7	111.1	77.0	34.1	191.5	1,404.0
1975	1,528.8	979.1	190.9	20.4	147.3	126.9	338.4	123.1	83.7	39.4	215.4	1,539.6
1976	1,702.2	1,089.9	243.0	8.0	163.3	155.4	361.3	129.7	86.4	43.3	231.6	1,692.1
1977	1,899.5	1,210.0	303.3	-9.9	175.9	185.8	396.2	144.4	93.7	50.6	251.8	1,877.6
1978	2,127.6	1,350.8	351.5	-10.3	207.2	217.5	435.6	152.6	99.0	53.6	283.0	2,105.2
1979	2,368.8	1,509.8	387.2	-4.6	257.5	262.1	476.4	166.6	108.3	58.4	309.8	2,350.6

Source: Department of Commerce, Bureau of Economic Analysis.

The GNP series measures the product attributable to the factors of production—labor and property—supplied by residents of the Nation. GNP total also includes earnings of American employees of the United States Government stationed abroad, foreign interest and dividends received by Americans, and the profits from foreign branches of American business. It excludes earnings of foreign employees of foreign governments and international institutions stationed in the United States, interest and dividends paid by Americans to foreigners, and the profits from American branches of foreign-owned business.

“Personal consumption expenditures” consists of the market value of purchases of goods and services by persons and nonprofit institutions and the value of food, clothing, housing, and financial services received by them as income in kind. It includes the rental value of owner-occupied houses but does not include purchases of dwellings, which are classified as capital goods. This series is described below, in the section on Disposition of Personal Income.

Gross private domestic investment consists of the net acquisitions of fixed capital goods by private business and nonprofit institutions; commissions arising in the sale and purchase of new and existing fixed assets, principally real estate; and the value of the change in the volume of inventories by business. It covers all private dwellings including those acquired by persons for their own

occupancy. This component of GNP is described below, in a separate section.

Net exports of goods and services measures the balance of goods and services, excluding transfers under military grants. Exports of goods and services are included in the GNP because they are produced by the Nation’s economy. Since imports of foreign goods and services are included in the purchases of the various market groups (consumer, government, etc.) distinguished in the GNP breakdown, they must be deducted from the sum of these purchases to derive a measure of output attributable to the Nation’s economy. These measures of exports and imports are derived from the balance of payments accounts, although there are differences in coverage in the two series.

Government purchases of goods and services consists of the net purchases of goods and services by Federal, State, and local governments and of the gross investment of government enterprises. Government purchases consist of employee compensation and net purchases from business and from abroad. They exclude the acquisition of land, currently outlays of government interests, and subsidies as well as transactions in financial claims.

The GNP series on government purchases differs from expenditures shown in the Federal Budget, which include many but not all of these items. Differences may also arise because of variation in the time at which expenditures occur and are recorded.

TABLE 2.—Gross National Product in 1972 Dollars, 1929-79

[Billions of 1972 dollars]

Year	Gross national product	Personal consumption expenditures	Gross private domestic investment			Exports of goods and services			Government purchases of goods and services			Final sales
			Non-residential fixed	Residential fixed	Change in business inventories	Net exports	Exports	Imports	Total	Federal	State and local	
1929	314.6	215.6	37.0	14.3	4.6	2.2	15.6	13.4	40.9	7.0	33.8	310.0
1930	285.2	200.0	30.4	8.7	-3.0	2.0	13.8	11.8	44.7	8.0	36.7	285.7
1931	263.3	192.1	19.6	7.1	-3.0	1.3	11.8	10.4	46.2	8.2	38.0	266.3
1932	227.1	174.1	11.4	3.7	-7.2	.9	9.4	8.6	44.2	8.6	35.6	234.2
1933	222.1	170.7	10.4	2.9	-4.9	.2	9.4	9.3	42.8	10.9	31.9	226.9
1934	239.0	177.2	12.4	4.0	-3.3	.5	9.7	9.2	48.2	14.3	33.9	242.3
1935	260.5	188.1	15.5	5.6	2.9	-1.1	10.2	11.3	49.5	14.2	35.2	257.5
1936	295.4	206.8	21.3	7.2	3.8	-1.3	10.8	12.1	57.8	22.6	35.2	291.6
1937	309.2	214.3	25.7	7.8	6.3	-.7	13.0	13.6	55.7	20.5	35.2	302.9
1938	296.4	209.2	18.7	7.9	-2.6	2.6	13.1	10.5	60.6	23.6	37.0	299.0
1939	318.8	220.3	20.7	11.3	1.6	2.0	13.3	11.4	62.9	22.8	40.2	317.2
1940	343.3	230.4	25.7	12.8	6.2	3.0	14.6	11.5	65.2	26.7	38.5	337.1
1941	398.5	244.1	30.3	13.5	12.0	.8	14.7	14.0	97.7	61.0	36.7	386.4
1942	460.3	241.7	17.6	6.8	5.2	-2.5	10.3	12.8	191.5	157.4	34.1	455.1
1943	530.6	248.7	14.0	4.0	.1	-7.3	9.0	16.3	271.2	239.6	31.6	530.5
1944	568.6	255.7	18.7	3.4	-2.3	-7.2	10.0	17.3	300.3	269.7	30.6	570.9
1945	560.0	271.4	27.6	3.8	-3.6	-4.5	13.5	18.0	265.3	233.7	31.6	563.6
1946	476.9	301.4	42.0	16.8	12.2	11.6	26.1	14.6	93.0	58.2	34.7	464.7
1947	468.3	306.2	48.9	21.5	-.2	16.6	30.2	13.6	75.4	36.1	39.3	468.5
1948	487.7	312.8	51.0	25.8	5.5	8.5	24.2	15.7	84.1	42.4	41.8	482.2
1949	490.7	320.0	46.0	24.0	-4.4	8.8	24.2	15.4	96.2	48.9	47.4	495.1
1950	533.5	338.1	50.0	33.2	10.6	4.0	21.7	17.7	97.7	47.0	50.7	522.9
1951	576.5	342.3	52.9	27.5	13.7	7.4	25.9	18.5	132.7	81.3	51.3	562.8
1952	598.5	350.9	52.1	26.8	4.3	4.9	24.9	20.0	159.5	107.0	52.5	594.2
1953	621.8	364.2	56.3	27.8	1.5	2.0	23.8	21.8	170.0	114.6	55.4	620.3
1954	613.7	370.9	55.4	30.2	-2.2	4.5	25.3	20.8	154.9	95.2	59.7	615.8
1955	654.8	395.1	61.2	35.1	7.7	4.7	27.9	23.2	150.9	86.9	64.0	647.1
1956	668.8	406.3	65.2	31.9	5.8	7.3	32.3	25.0	152.4	85.9	66.5	663.0
1957	680.9	414.7	66.0	29.7	1.5	8.9	34.8	26.0	160.1	89.8	70.3	679.4
1958	679.5	419.0	58.9	30.6	-1.8	3.5	30.7	27.2	169.3	92.8	76.4	681.3
1959	720.4	441.5	62.9	38.1	6.5	.9	31.5	30.6	170.7	91.8	78.9	714.0
1960	736.8	453.0	66.0	35.0	4.4	5.5	35.8	30.3	172.9	90.8	82.0	732.4
1961	755.3	462.2	65.6	35.1	2.9	6.7	37.0	30.3	182.8	95.6	87.1	752.4
1962	799.1	482.9	70.9	38.4	8.1	5.8	39.6	33.9	193.1	103.1	90.0	791.0
1963	830.7	501.4	73.5	43.2	7.8	7.3	42.2	35.0	197.6	102.2	95.4	823.0
1964	874.4	528.7	81.0	43.8	7.3	10.9	47.8	36.9	202.7	100.6	102.1	867.1
1965	925.9	558.1	95.6	43.2	11.3	8.2	49.1	41.0	209.6	100.5	109.1	914.6
1966	981.0	586.1	106.1	38.5	16.7	4.3	51.6	47.3	229.3	112.5	116.8	964.3
1967	1,007.7	603.2	103.5	37.2	12.0	3.5	54.2	50.7	248.3	125.3	123.1	995.7
1968	1,051.8	633.4	108.0	42.8	8.7	-.4	58.5	58.9	259.2	128.3	130.9	1,043.1
1969	1,078.8	655.4	114.3	43.2	10.6	-1.3	62.2	63.5	256.7	121.8	134.9	1,068.2
1970	1,075.3	668.9	110.0	40.4	4.3	1.4	67.1	65.7	250.2	110.7	139.5	1,071.0
1971	1,107.5	691.9	108.0	52.2	6.6	-.6	67.9	68.5	249.4	103.9	145.5	1,100.9
1972	1,171.1	733.0	116.8	62.0	9.4	-3.3	72.7	75.9	253.1	102.1	151.0	1,161.7
1973	1,235.0	767.7	131.0	59.7	16.5	7.6	87.4	79.9	252.5	96.6	155.9	1,218.5
1974	1,217.8	760.7	130.6	45.0	8.0	15.9	93.0	77.1	257.7	95.8	161.8	1,209.9
1975	1,202.3	774.6	113.6	38.8	-9.8	22.6	90.0	67.5	262.6	96.5	166.1	1,212.1
1976	1,273.0	820.6	119.0	47.8	6.6	15.8	96.1	80.4	263.3	96.4	166.9	1,266.4
1977	1,340.5	861.7	129.3	57.7	13.1	10.3	98.4	88.2	268.5	100.6	167.9	1,327.4
1978	1,399.2	900.8	140.1	60.1	14.1	11.0	108.9	97.9	273.2	98.6	174.6	1,385.1
1979	1,431.6	924.5	148.8	56.7	9.7	17.6	119.9	102.3	274.3	99.4	174.9	1,421.9

Source: Department of Commerce, Bureau of Economic Analysis.

For a more extended discussion, see the section on "Federal Budget, National Income Accounts Basis."

STATISTICAL PROCEDURES

Hundreds of basic economic series are evaluated, adjusted, and combined in the process of preparing the GNP estimates. For example, consumer expenditures and purchases of producer durable equipment are estimated for the quinquennial benchmark years as part of the preparation of the input-output table primarily from data in the censuses of business and manufacturing, and reports of the Department of Agriculture, Internal Revenue Service, and Interstate Commerce Commission. Current annual and quarterly estimates are carried forward by using the Census Bureau's *Annual Survey of Manufacturers* and *Monthly Report on Retail Trade*, and data from other sources. Construction activity is estimated primarily from the Census Bureau's monthly measures of the value of new construction put in place. For details of the methods used, reference should be made to *Readings in Concepts and Methods of National Income Statistics*, the *Gross National Product Data Improvement Project Report*, and "The Input-Output Structure of the U.S. Economy, 1972," *Survey of Current Business*, February 1979.

The methods used to eliminate seasonal variation differ with the particular series to be adjusted. For most components the Census X-11 method has been employed.

The GNP is also "deflated" or expressed in dollars of constant purchasing power. The procedure in general is to divide detailed components of the current dollar GNP by appropriate price indexes, utilizing as fine a product breakdown as possible, and then to sum the components to obtain the constant dollar or real GNP.

The price information, which in most cases is available in greater detail than the current dollar estimates, is combined into composite indexes applicable to the various current dollar series. The deflation makes use of price indexes and other information from such sources as the Bureau of Labor Statistics, Census Bureau, Economics, Statistics, and Cooperative Service, Interstate Commerce Commission, etc. Weights for constructing the composites, approximating expenditures for the products represented by the price series, have been obtained from the quinquennial economic censuses again in the course of the preparation of the input-output table.

Quantity data also are utilized in lieu of price deflation in a number of instances, most notably in the case of government compensation.

TABLE 3.—*Implicit Price Deflators for Gross National Product, 1929-79*

[1972=100]

Year	Gross national product	Personal consumption expenditures				Gross private domestic investment		Exports and imports of goods and services		Government purchases of goods and services	
		Total	Durable goods	Non-durable goods	Services	Nonresidential fixed	Residential fixed	Exports	Imports	Federal	State and local
1929	32.87	35.8	43.1	38.4	31.6	28.2	28.2	45.0	43.8	20.5	21.8
1930	31.80	35.0	42.0	36.4	32.1	26.9	27.7	39.5	37.4	19.5	21.7
1931	28.89	31.5	37.5	31.1	30.9	25.4	25.2	31.0	29.9	19.7	20.6
1932	25.67	27.9	32.8	26.5	28.8	23.5	20.7	26.2	24.1	18.4	18.9
1933	25.14	26.8	31.7	26.8	26.1	22.8	20.7	25.5	22.1	19.4	19.2
1934	27.32	29.0	34.0	30.2	26.8	25.4	22.8	30.7	25.8	21.8	20.3
1935	27.83	29.7	33.2	31.5	26.8	26.3	22.4	31.9	27.7	21.1	20.4
1936	28.01	30.0	33.1	31.6	27.2	26.0	23.5	32.7	28.2	22.3	20.3
1937	29.34	31.1	34.6	32.7	28.3	28.1	25.8	35.1	31.2	23.1	20.7
1938	28.66	30.6	35.2	31.1	29.1	28.3	26.5	33.1	29.0	23.2	20.8
1939	28.48	30.4	34.9	30.5	29.2	28.2	26.6	33.3	29.6	22.7	20.7
1940	29.13	30.8	35.7	30.9	29.5	29.1	27.4	36.8	31.5	22.7	21.0
1941	31.34	33.1	39.1	33.6	30.8	30.9	29.9	40.2	33.2	27.8	21.7
1942	34.39	36.7	42.1	39.1	32.4	33.8	32.4	46.5	37.4	33.0	22.9
1943	36.18	40.0	45.0	43.7	34.2	35.7	34.9	49.2	39.6	34.0	23.8
1944	37.03	42.3	49.5	46.2	36.1	36.6	38.1	52.6	41.1	33.1	24.9
1945	37.92	44.0	53.7	47.8	37.3	36.6	40.8	53.6	43.6	31.9	25.9
1946	43.95	47.7	61.1	52.1	38.9	39.9	44.6	56.7	49.7	30.2	28.6
1947	49.70	52.8	66.8	58.7	41.7	46.8	53.7	65.8	60.7	35.1	32.5
1948	53.13	55.9	69.1	62.3	44.4	51.3	58.1	69.8	66.1	39.4	36.6
1949	52.59	55.7	69.1	60.3	46.1	52.8	58.7	65.5	62.7	41.8	38.0
1950	53.64	56.8	70.8	60.7	47.4	54.3	60.0	64.0	67.8	39.9	39.0
1951	57.27	60.5	74.7	65.8	49.9	58.9	64.4	73.1	81.8	47.1	42.4
1952	58.00	61.9	74.8	66.6	52.6	59.9	66.4	73.0	79.1	48.9	44.2
1953	58.88	63.1	75.5	66.3	55.4	61.0	66.9	71.9	75.8	50.2	45.1
1954	59.69	63.6	73.2	66.6	57.2	61.4	67.1	71.2	76.9	50.4	46.6
1955	60.98	64.2	74.0	66.3	58.5	62.6	68.7	71.8	76.8	51.1	47.8
1956	62.90	65.5	76.0	67.3	60.2	67.0	70.9	73.9	78.3	53.4	50.4
1957	65.02	67.6	79.2	69.4	62.2	70.7	71.3	76.4	79.5	55.7	52.8
1958	66.06	69.1	79.4	71.0	64.2	70.6	71.2	75.7	76.5	58.1	53.8
1959	67.52	70.4	81.9	71.4	66.0	72.0	71.0	75.4	75.7	58.7	55.4
1960	68.67	71.7	82.1	72.6	68.0	72.2	71.4	77.1	76.7	59.1	56.8
1961	69.28	72.5	82.7	73.3	69.1	71.8	71.3	78.0	76.1	60.0	58.3
1962	70.55	73.6	83.9	73.9	70.4	72.3	71.5	77.3	74.5	61.8	60.3
1963	71.59	74.7	84.8	74.9	71.7	72.9	70.9	77.5	75.6	63.3	61.9
1964	72.71	75.7	85.7	75.8	72.8	73.6	71.2	78.3	77.1	64.8	63.3
1965	74.32	77.1	85.6	77.3	74.3	74.5	72.3	80.5	78.0	67.0	65.1
1966	76.76	79.3	85.7	80.1	76.5	76.8	74.6	82.8	79.7	70.1	68.4
1967	79.02	81.3	87.4	81.9	78.8	79.3	77.0	84.0	80.1	72.6	72.5
1968	82.57	84.6	90.7	85.3	82.0	82.6	80.7	85.3	80.9	76.4	76.9
1969	86.72	88.5	93.1	89.4	86.1	86.6	87.7	87.9	83.3	80.0	81.9
1970	91.36	92.5	95.5	93.6	90.5	91.3	90.6	93.1	89.1	86.4	88.3
1971	96.02	96.6	99.0	96.6	95.8	96.4	94.9	96.6	93.5	92.6	94.5
1972	100.00	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1973	105.80	105.5	101.6	107.9	104.7	103.8	110.8	116.2	118.2	105.8	107.3
1974	116.02	116.9	108.4	123.8	113.6	115.3	122.3	148.3	171.0	115.9	118.4
1975	127.15	126.4	117.7	133.4	123.2	132.2	132.8	163.6	188.0	127.5	129.7
1976	133.71	132.8	124.3	138.1	131.2	138.5	142.5	169.9	193.3	134.6	138.8
1977	141.70	140.4	129.4	144.7	140.7	146.6	159.3	178.7	210.7	143.6	150.0
1978	152.05	150.0	136.5	154.6	150.9	157.8	179.7	190.3	222.1	154.8	162.1
1979	165.46	163.3	144.8	171.0	163.4	171.3	201.4	214.8	256.2	167.6	177.1

Source: Department of Commerce, Bureau of Economic Analysis.

The GNP implicit deflator is a weighted average of the detailed price indexes used in the deflation of GNP. In each period, it uses as weights the composition of constant-dollar output in that period. Changes in the implicit price deflator reflect both changes in the composition of output and changes in prices.

Other measures of price changes also are prepared. The fixed-weighted price index uses as weights the composition of output in 1972. Accordingly, comparisons over any time span reflect only changes in prices. The chain price index uses as weights the composition of output in the prior period, and therefore, reflects only changes in prices between the two periods. However, comparisons of the percent changes in the chain index reflect changes in the composition of output.

RELATION TO OTHER SERIES

Two other series widely used as indicators of the general level of economic activity are National income and the Federal Reserve Index of Industrial Production. Gross national product and national income are compiled from the same series of accounts, but while the GNP measures the market value of total output, national income measures only the earnings of the factors of production:

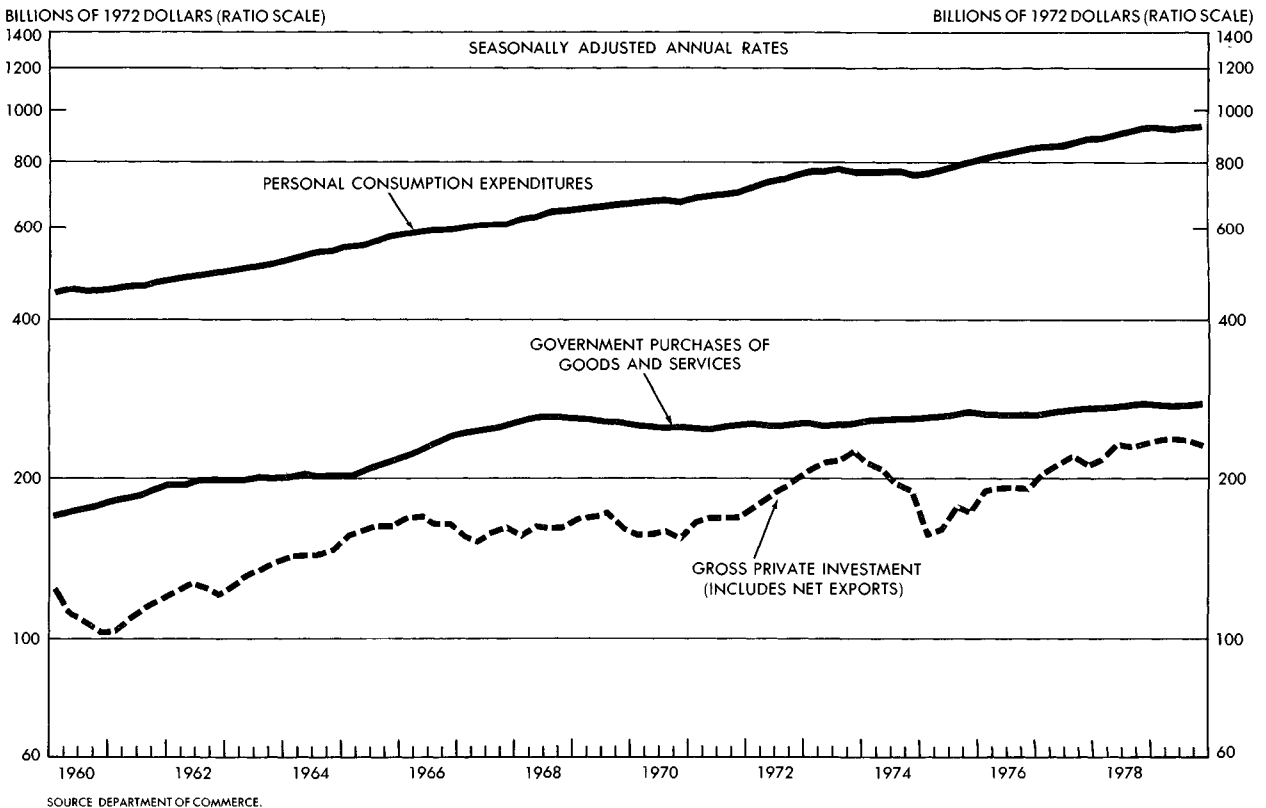
Labor and property (net of capital consumption) which flow from that output. National income is smaller than the GNP chiefly because the former is a "net" estimate excluding (1) allowances for depreciation and other capital consumption, and (2) indirect business taxes (such as sales and excise taxes).

The GNP measures total output, while the industrial production index covers only selected industries—manufacturing, mining, electricity, and gas. The products in the GNP series are final product (i.e. no further processing), while the production index includes both final and intermediate product, and thus may show an increase or decrease in activity to be reflected later or not at all in the flow of final output. The GNP series in current dollars combines price and volume and in constant dollars measures physical volume. The industrial production index only measures physical volume.

USES AND LIMITATIONS

The GNP is the most comprehensive measure of trends in the Nation's economic activity. It has high value as an analytic tool, since the movements of many sectors of the economy, including the sales of many industries and enterprises, are quite closely related to changes in the level of GNP.

Chart 2 — MAJOR COMPONENTS OF GROSS NATIONAL PRODUCT



The GNP in current dollars combines the effects of changes in both the price level and the physical volume of output. GNP estimates corrected for price changes (real GNP) show annual and quarterly changes in the total volume of national output as well as in the major components. One of the most important characteristics of the GNP is that changes in the total can be analyzed by examination of changes in its components, notably purchases by consumers, private business investment, government expenditures, and the movement of foreign trade. It thus provides a useful framework for assessing economic policy and for preparing economic projections.

Two independent estimates of GNP in current dollars are prepared: One is measured as the sum of products; the other is measured as the sum of incomes. The sum of products estimate is used as the GNP because the source data underlying its prep-

aration is considered more accurate. The difference between the two estimates, the statistical discrepancy, is a measure of the imperfections in the source data. (The statistical discrepancy is published in the regular GNP release but is not shown in *Economic Indicators*.) The relationship between the two measures and GNP as well as a more detailed discussion of the use of the GNP is described in "The National Income and Product Accounts of the United States: An Overview," *Survey of Current Business*, October 1979. It should also be kept in mind that the preliminary estimates are revised as more complete and accurate source data become available.

REFERENCES

See National Income.

NONFINANCIAL CORPORATE BUSINESS—OUTPUT, COSTS, AND PROFITS

DESCRIPTION OF SERIES

The gross domestic product of nonfinancial corporate business is the output less intermediate purchases of nonfinancial corporations. It is measured from the income side of the accounts and is the sum of: (1) capital consumption allowances

with capital consumption adjustment; (2) indirect business tax and nontax liability; (3) business transfer payments less subsidies; (4) compensation of employees; (5) net interest; and (6) corporate profits with inventory valuation and capital consumption adjustments.

TABLE 4.—Nonfinancial Corporate Business—Output, Costs, and Profits, 1948–79

Year	Gross domestic product of nonfinancial corporate business (billions of dollars)		Current-dollar cost and profit per unit of output (dollars) ¹								Output per hour of all employees (1972 dollars)	Com-pensation per hour of all employees (dollars)
	Cur-rent dollars	1972 dollars	Total cost and profit ²	Capital con-sumption allow-ances with capital con-sumption adjust-ment	In-direct busi-ness taxes ³	Com-pen-sation of em-ployees	Net in-terest	Corporate profits with inventory valuation and capital consumption adjustments				
								Total	Profits tax lia-bility	Profits after tax ⁴		
1948.....	137.3	229.7	0.598	0.047	0.053	0.382	0.004	0.112	0.051	0.061	-----	-----
1949.....	133.5	219.9	.607	.053	.057	.388	.004	.105	.042	.062	-----	-----
1950.....	151.9	247.5	.614	.051	.057	.383	.004	.120	.068	.051	-----	-----
1951.....	174.5	270.2	.646	.054	.056	.408	.004	.124	.079	.045	-----	-----
1952.....	182.3	275.2	.663	.057	.061	.430	.004	.110	.065	.046	-----	-----
1953.....	195.0	292.0	.668	.058	.062	.441	.004	.102	.063	.039	-----	-----
1954.....	191.9	283.5	.677	.063	.061	.446	.006	.101	.055	.046	-----	-----
1955.....	216.7	315.1	.688	.061	.061	.439	.005	.121	.064	.057	-----	-----
1956.....	231.6	324.1	.715	.066	.064	.467	.005	.112	.062	.050	-----	-----
1957.....	242.3	328.3	.738	.072	.068	.484	.007	.106	.058	.048	-----	-----
1958.....	236.3	313.4	.754	.080	.073	.497	.009	.096	.052	.044	5.206	2.589
1959.....	265.7	347.3	.765	.075	.073	.494	.009	.114	.060	.055	5.432	2.684
1960.....	277.3	358.9	.773	.075	.079	.505	.010	.104	.053	.051	5.544	2.797
1961.....	284.5	366.7	.776	.076	.082	.505	.011	.102	.053	.049	5.720	2.887
1962.....	311.0	399.7	.778	.072	.083	.500	.011	.112	.052	.061	5.997	2.998
1963.....	330.9	425.4	.778	.070	.084	.495	.011	.118	.054	.064	6.236	3.089
1964.....	357.6	455.2	.786	.068	.084	.497	.012	.125	.053	.072	6.465	3.213
1965.....	392.1	494.6	.793	.066	.083	.497	.012	.134	.055	.079	6.665	3.316
1966.....	430.7	532.9	.808	.067	.080	.513	.014	.134	.055	.078	6.804	3.492
1967.....	452.9	545.8	.830	.072	.084	.535	.016	.123	.051	.072	6.881	3.680
1968.....	498.4	581.6	.857	.074	.089	.553	.017	.124	.058	.066	7.110	3.931
1969.....	541.8	607.3	.892	.079	.094	.589	.022	.109	.055	.055	7.137	4.197
1970.....	560.6	600.6	.933	.088	.103	.628	.028	.086	.045	.041	7.139	4.482
1971.....	602.5	619.3	.973	.094	.110	.645	.029	.095	.048	.046	7.377	4.758
1972.....	671.0	671.0	1.000	.093	.110	.661	.028	.107	.050	.057	7.608	5.032
1973.....	752.0	720.4	1.044	.095	.112	.699	.032	.105	.055	.050	7.767	5.431
1974.....	808.8	695.0	1.164	.116	.123	.796	.043	.086	.061	.024	7.480	5.951
1975.....	874.1	680.0	1.285	.142	.136	.848	.045	.113	.060	.053	7.720	6.549
1976.....	988.0	730.4	1.353	.146	.137	.890	.042	.138	.072	.066	7.967	7.092
1977.....	1,106.3	770.7	1.436	.151	.140	.951	.043	.151	.077	.074	8.052	7.654
1978.....	1,246.9	818.7	1.523	.155	.143	1.020	.048	.157	.084	.073	8.122	8.281
1979.....	1,387.7	844.1	1.644	.167	.150	1.115	.056	.157	.089	.068	8.088	9.014

¹ Output is measured by gross domestic product of nonfinancial corporate business in 1972 dollars.

² This is equal to the deflator for gross domestic product of nonfinancial corporate business with the decimal point shifted two places to the left.

³ Indirect business tax and nontax liability plus business transfer payments less subsidies.

⁴ With inventory valuation and capital consumption adjustments.

Sources: Department of Commerce (Bureau of Economic Analysis) and Department of Labor (Bureau of Labor Statistics).

The constant dollar gross domestic product of nonfinancial corporation is the value expressed in 1972 prices.

The current dollar cost and profit per unit of output is the current dollar product divided by the constant dollar product.

RELATION TO OTHER SERIES

The nonfinancial corporation group is comparable to the similarly named sector of the flow of

NATIONAL INCOME

DESCRIPTION OF SERIES

National Income is the aggregate of earnings by labor and property which arise in the current production of goods and services by the Nation's economy. It is the sum of five major items: (1) compensation of employees; (2) proprietors' income; (3) rental income of persons; (4) net interest; and (5) corporate profits.

Compensation of employees is the sum of wages, salaries, and supplements to wages and salaries such as employer contributions to social insurance funds and for employee benefit plans.

Proprietors' income with inventory valuation and capital consumption allowances measures the monetary earnings and income in kind of sole proprietorships and partnerships, including the independent professionals, and producers' cooperatives, exclusive of capital gains or losses on inventory or other asset holdings. Interest and dividend income received by proprietors', and rental income received by persons who are not primarily engaged in the real estate business are excluded. The farm proprietors income shown here excludes salaries paid to corporate officers which are included in farm operators' net income including adjustment for inventory changes, as shown in the section on Farm Income. The inventory valuation and capital consumption adjustments are described below.

Rental income of persons with capital consumption adjustment consists of (1) monetary income to persons from rental of real property except the income of persons primarily engaged in the real estate business, (2) imputed net rental value of owner occupants of nonfarm dwellings, and (3) royalties received from patents, copyrights, and rights to natural resources.

Net interest measures the excess of interest payments of the domestic business system over its interest receipts, plus net interest received from abroad. Interest paid by consumers and by government, including government enterprises, is not added into this computation because it is not treated as a factor cost of production. Net interest can also be defined as interest received by the personal sector less interest paid by consumers plus net interest received by government. In addition

funds accounts of the Federal Reserve Board. It is also consistent with the net and gross stocks of reproducible fixed capital and inventories produced by BEA.

This conceptual consistency permits a wide range of analyses of corporate production, capital usage, and financing.

to monetary interest flows, net interest includes imputed interest arising in connection with the operation of financial intermediaries. A portion of imputed interest is equal to the value of financial services received by persons without explicit payment; the remainder represents property income received by life insurance companies and noninsured pension funds less profit of life insurance companies. Imputed interest is also earned on individuals' pension and life insurance reserves.

Corporate profits with inventory valuation and capital consumption allowance is the earnings of corporations organized for profit and of mutual financial institutions which accrue to residents of this Nation measured before Federal and State profit taxes, but without deduction of depletion charges and exclusive of capital gains and losses. (For a more extended discussion, see section on Corporate Profits.)

Corporate inventory valuation adjustment measures the excess of the value of the change in the physical volume of corporate inventories (valued at average prices during the period) over the change in terms of book values. This adjustment is made to profits to remove the inventory profit or loss that occurs in business accounting when the book cost of inventories differs from the current replacement cost. Valuation in current prices of the cost of inventories used puts sales and costs on a consistent basis, and is necessary to derive measures of national output in current prices.

Capital consumption adjustment is the tax-return based capital consumption allowances less capital consumption allowances that are based on estimates of economic service lives, straight-line depreciation, and replacement cost. It corrects reported book profits for the effects of the miscellaneous mixture of accounting techniques valued at historical cost by converting them to a consistent accounting basis valued at current replacement cost.

STATISTICAL PROCEDURES

The methods of estimating national income are described in detail in *Readings in Concepts and Methods of National Income Statistics, Business Statistics, Gross National Product Data Improve-*

ment Project Report, and the Input-Output article in the February 1979 *Survey of Current Business*. Personal income and personal outlays are described in an article in the November 1979 *Survey*.

Compensation of employees—reliable data are available each year from the unemployment insurance system, with current monthly estimates resting chiefly on employer reports on employment and earnings to the Bureau of Labor Statistics.

Proprietors' income is estimated from income tax returns to the Internal Revenue Service with current quarterly data derived from analysis of trends in noncorporate as well as corporate sales and corporate profits in individual industries.

Rental income of persons is estimated from a variety of Census Bureau, Internal Revenue Serv-

ice, and other data on rents paid and on the distribution of property ownership and rental income between persons and business.

Net interest is estimated from reports on interest and debt to the Internal Revenue Service, Board of Governors of the Federal Reserve System, and other agencies.

Seasonally unadjusted estimates are not available for the income components of the national accounts, with the exception of corporation profits. This is due to the fact that the basic data source does not provide a completely unadjusted monthly series for wages and salaries and because in the case of proprietors' income and net interest actual income data are lacking altogether on a quarterly basis.

TABLE 5.—National Income, 1929–79

[Billions of dollars]

Year	National income	Compensation of employees ¹	Proprietors' income with inventory valuation and capital consumption adjustments		Rental income of persons with capital consumption adjustment	Corporate profits with inventory valuation and capital consumption adjustments					
			Farm	Non-farm		Profits with inventory valuation adjustment and without capital consumption adjustment			Inventory valuation adjustment	Capital consumption adjustment	Net interest
						Profits before tax	Total	Total			
			Total	Total		Total	Total	Total			
1929	84.8	51.1	6.2	8.8	4.9	9.2	10.5	10.0	0.5	-1.3	4.7
1930	73.8	46.8	4.3	7.4	4.4	5.9	7.0	3.7	3.3	-1.0	4.9
1931	58.6	39.7	3.4	5.6	3.6	1.3	2.0	-4	2.4	-7	5.0
1932	42.4	31.1	2.1	3.5	2.9	-1.7	-1.3	-2.3	1.0	-5	4.6
1933	39.9	29.5	2.6	3.2	2.2	-1.7	-1.2	1.0	-2.1	-5	4.1
1934	48.7	34.3	3.0	4.6	1.7	1.0	1.7	2.3	-6	-7	4.1
1935	56.5	37.3	5.3	5.4	1.8	2.6	3.4	3.6	-2	-8	4.7
1936	64.3	42.9	4.3	6.6	1.8	4.9	5.6	6.3	-7	-7	3.6
1937	72.3	47.9	6.0	7.1	1.9	5.6	6.8	6.8	-0	-1.2	3.6
1938	66.0	45.0	4.4	6.8	2.4	3.8	4.9	4.0	1.0	-1.1	3.1
1939	71.3	48.1	4.4	7.3	2.6	5.3	6.3	7.0	-7	-1.0	3.8
1940	79.7	52.1	4.5	8.4	2.7	8.7	9.8	10.0	-2	-1.1	3.3
1941	102.6	64.8	6.4	10.9	3.1	14.1	15.2	17.7	-2.5	-1.1	3.3
1942	135.7	85.3	9.8	14.3	4.0	19.3	20.3	21.5	-1.2	-1.0	3.1
1943	169.1	109.5	11.7	17.3	4.4	23.5	24.4	25.1	-8	-8	2.7
1944	181.9	121.2	11.6	18.6	4.5	23.6	23.8	24.1	-3	-2	2.4
1945	180.6	123.1	12.2	19.4	4.6	19.0	19.2	19.7	-6	-1	2.2
1946	178.3	118.1	14.9	21.6	5.5	16.6	19.3	24.6	-5.3	-2.7	1.6
1947	194.6	129.2	15.2	20.6	5.3	22.2	25.6	31.5	-5.9	-3.4	2.1
1948	219.0	141.4	17.5	23.2	5.7	29.1	33.0	35.2	-2.2	-3.9	2.1
1949	212.7	141.3	12.7	23.5	6.1	26.9	30.8	28.9	1.9	-3.8	2.2
1950	236.2	154.8	13.5	24.9	7.1	33.7	37.6	42.6	-5.0	-4.0	2.3
1951	272.3	181.0	15.8	27.0	7.7	38.1	42.7	43.9	-1.2	-4.6	2.7
1952	285.8	195.7	14.9	28.0	8.8	35.4	39.8	38.9	1.0	-4.5	3.0
1953	299.7	209.6	12.9	28.4	10.0	35.5	39.5	40.5	-1.0	-4.1	3.4
1954	299.1	208.4	12.3	28.5	11.0	34.6	37.8	38.1	-3	-3.2	4.3
1955	328.0	224.9	11.3	31.2	11.3	44.6	46.7	48.4	-1.7	-2.1	4.8
1956	346.9	243.5	11.2	32.4	11.6	42.9	45.9	48.6	-2.7	-3.0	5.2
1957	362.3	256.5	11.0	33.9	12.2	42.1	45.4	46.9	-1.5	-3.3	6.5
1958	364.0	258.2	13.1	34.3	12.9	37.5	40.8	41.1	-3	-3.4	8.0
1959	397.1	279.6	10.7	36.6	13.2	48.2	51.2	51.6	-5	-2.9	8.8
1960	412.0	294.9	11.4	35.6	13.8	46.6	48.9	48.5	.3	-2.3	9.8
1961	424.2	303.6	11.8	36.4	14.3	46.9	48.7	48.6	.1	-1.8	11.2
1962	457.4	325.1	11.9	37.7	15.0	54.9	53.7	53.6	.1	1.2	12.8
1963	482.8	342.9	11.6	38.7	15.7	59.6	57.6	57.7	-2	2.1	14.3
1964	519.2	368.0	10.3	42.0	16.1	67.0	64.2	64.7	-5	2.8	15.9
1965	566.0	396.5	12.6	44.1	17.1	77.1	73.3	75.2	-1.9	3.8	18.5
1966	622.2	439.3	13.6	46.7	18.2	82.5	78.6	80.7	-2.1	3.9	21.9
1967	655.8	471.9	12.1	48.9	19.4	79.3	75.6	77.3	-1.7	3.7	24.3
1968	714.4	519.8	12.0	51.4	18.6	85.8	82.1	85.6	-3.4	3.7	26.8
1969	767.9	571.4	13.9	52.3	18.1	81.4	77.9	83.4	-5.5	3.5	30.8
1970	798.4	609.2	13.9	51.2	18.6	67.9	66.4	71.5	-5.1	1.5	37.5
1971	858.1	650.3	14.3	53.4	20.1	77.2	76.9	82.0	-5.0	.3	42.8
1972	951.9	715.1	18.0	58.1	21.5	92.1	89.6	96.2	-6.6	2.5	47.0
1973	1,064.6	799.2	32.0	60.4	21.6	99.1	97.2	115.8	-18.6	1.9	52.3
1974	1,136.0	875.8	25.4	60.9	21.4	83.6	86.5	126.9	-40.4	-2.9	69.0
1975	1,215.0	931.1	23.5	63.5	22.4	95.9	107.9	120.4	-12.4	-12.0	78.6
1976	1,359.8	1,037.8	18.3	71.0	22.1	126.8	141.3	156.0	-14.6	-14.5	83.8
1977	1,525.8	1,156.9	19.6	80.5	24.7	150.0	162.0	177.1	-15.2	-12.0	94.0
1978	1,724.3	1,304.5	27.7	89.1	25.9	167.7	180.8	206.0	-25.2	-13.1	109.5
1979	1,924.8	1,459.2	32.8	98.0	26.9	178.2	194.9	236.6	-41.8	-16.7	129.7

¹ Includes employer contributions for social insurance. (See also table 6.)

Source: Department of Commerce, Bureau of Economic Analysis.

USE AND LIMITATIONS

The national income is a useful measure of the rate of flow of earnings from current output. By definition it excludes income from the revaluation of past output—e.g., capital gains and losses. The movements of this series correspond with movements in production. However, the value of the national income series lies more in the composition than in the total. It may mean little to know that national income (unadjusted for price changes) has gone up; but it may be very important to know the relative contribution of wages and profits to that increase.

The chief cautions for use result partly from the definitions used, and partly from the nature of the basic data. For example, variations in wages and profits do not necessarily indicate changes in the welfare of workers or in the ability of corporations to provide new capital. For such purposes, these variations must be considered in the light of other factors such as the cost of living, the cost of new plant and equipment. With respect to the basic data—which is particularly applicable to the current data on net interest, proprietors' income, and rental income of persons—it should be recognized that many of the available data permit only fair approximations of the phenomena being measured, and therefore these statistics should not be considered as instruments of precise measurement.

REFERENCES

The official quarterly estimates for the series included in the national income and product ac-

counts are published by the Bureau of Economic Analysis, Department of Commerce, in the *Survey of Current Business*; except for corporate profits, a preliminary estimate is published in the *Survey* in the first month after the close of the quarter; revised figures for each quarter are shown in the next issue of the *Survey*; and a second revision is published in the third month after the close of the quarter. For corporate profits, the first estimate appears in the second month following the close of the quarter and this estimate is revised the next month. For the fourth quarter, the preliminary and revised estimates each appear one month later. The figures also appear in *Economic Indicators*. Preliminary annual estimates are published by the Bureau of Economic Analysis in the January issue of the *Survey*, revised estimates are published in February, March, and again in the July issue. (The first annual estimate of corporate profits appears in the March issue, and it is revised in April and again in July.) Complete annual and quarterly statistics for 1929-72 were published in *The National Income and Products Accounts of the United States, 1929-74, Statistical Tables*.

A statistical evaluation report including recommendations for improving the source data and a description of the methodology used in preparing the national accounts was published in the *Gross National Product Data Improvement Project Report*. This report was issued by the Office of Federal Statistical Policy and Standards, U.S. Department of Commerce.

TABLE 6.—Sources of Personal Income, 1929-79

[Billions of dollars]

Year	Total personal income	Wage and salary disbursements ¹	Other labor income ^{1,2}	Proprietors' income ³		Rental income of persons ⁴	Dividends	Personal interest income	Transfer payments ⁵	Less: Personal contributions for social insurance	Non-farm personal income ⁶
				Farm	Non-farm						
1929	84.9	50.5	0.5	6.2	8.8	4.9	5.8	6.9	1.5	0.1	
1930	76.2	46.2	.5	4.3	7.4	4.4	5.5	6.4	1.5	.1	
1931	65.4	39.2	.5	3.4	5.6	3.6	4.1	6.5	2.7	.2	
1932	50.0	30.5	.4	2.1	3.5	2.9	2.5	6.1	2.2	.2	
1933	46.9	29.0	.4	2.6	3.2	2.2	2.0	5.5	2.1	.2	
1934	53.7	33.7	.4	3.0	4.6	1.7	2.6	5.7	2.2	.2	
1935	60.3	36.7	.4	5.3	5.4	1.8	2.8	5.6	2.4	.2	
1936	68.4	42.0	.5	4.3	6.6	1.8	4.5	5.4	3.5	.2	
1937	73.8	46.1	.5	6.0	7.1	1.9	4.7	5.5	2.4	.6	
1938	68.0	43.0	.5	4.4	6.8	2.4	3.2	5.3	2.8	.6	
1939	72.4	46.0	.6	4.4	7.3	2.6	3.8	5.4	3.0	.6	
1940	77.8	49.9	.6	4.5	8.4	2.7	4.0	5.3	3.1	.7	
1941	95.3	62.1	.7	6.4	10.9	3.1	4.4	5.3	3.1	.8	
1942	122.4	82.1	.9	9.8	14.3	4.0	4.3	5.2	3.1	1.2	
1943	150.7	105.6	1.1	11.7	17.3	4.4	4.4	5.1	3.0	1.8	
1944	164.4	116.9	1.5	11.6	18.6	4.5	4.6	5.2	3.6	2.2	
1945	169.8	117.5	1.8	12.2	19.4	4.6	4.6	5.9	6.2	2.3	
1946	177.3	112.0	2.0	14.9	21.6	5.5	5.6	6.4	11.3	2.0	159.6
1947	189.8	123.1	2.4	15.2	20.6	5.3	6.3	7.3	11.7	2.1	171.5
1948	208.5	135.5	2.7	17.5	23.2	5.7	7.0	7.7	11.3	2.2	187.7
1949	205.6	134.8	2.9	12.7	23.5	6.1	7.2	8.2	12.5	2.2	189.9
1950	226.1	147.0	3.7	13.5	24.9	7.1	8.8	8.9	15.2	2.9	209.3
1951	253.7	171.3	4.6	15.8	27.0	7.7	8.5	9.6	12.6	3.4	234.4
1952	270.4	185.4	5.2	14.9	28.0	8.8	8.5	10.3	13.1	3.8	252.0
1953	286.1	198.6	5.9	12.9	28.4	10.0	8.8	11.4	14.1	4.0	269.9
1954	288.2	196.8	6.1	12.3	28.5	11.0	9.1	12.7	16.2	4.6	272.7
1955	308.8	211.7	7.0	11.3	31.2	11.3	10.3	13.8	17.5	5.2	294.3
1956	330.9	228.3	8.0	11.2	32.4	11.6	11.1	15.3	18.7	5.8	316.4
1957	349.3	239.3	9.0	11.0	33.9	12.2	11.5	17.4	21.6	6.7	335.0
1958	359.3	240.5	9.4	13.1	34.3	12.9	11.3	18.8	25.9	6.9	342.6
1959	382.1	258.9	10.6	10.7	36.6	13.2	12.2	20.9	27.0	7.9	367.7
1960	399.7	271.9	11.2	11.4	35.6	13.8	12.9	23.3	28.9	9.3	384.4
1961	415.0	279.5	11.8	11.8	36.4	14.3	13.3	24.6	32.8	9.7	399.0
1962	440.7	298.0	13.0	11.9	37.7	15.0	14.4	27.1	33.8	10.3	424.5
1963	463.1	313.4	14.0	11.6	38.7	15.7	15.5	30.2	35.8	11.8	447.0
1964	495.7	336.1	15.7	10.3	42.0	16.1	17.3	33.3	37.4	12.6	480.7
1965	537.0	362.0	17.8	12.6	44.1	17.1	19.1	37.2	40.4	13.3	519.5
1966	584.9	398.4	19.9	13.6	46.7	18.2	19.4	41.8	44.7	17.8	566.1
1967	626.6	427.5	21.7	12.1	48.9	19.4	20.1	45.0	52.6	20.6	609.1
1968	685.2	469.5	25.1	12.0	51.4	18.6	21.9	49.6	59.9	22.8	667.5
1969	745.8	514.6	28.2	13.9	52.3	18.1	22.6	55.9	66.5	26.3	725.8
1970	801.3	546.5	32.0	13.9	51.2	18.6	22.9	64.3	79.9	28.0	780.7
1971	859.1	579.4	36.2	14.3	53.4	20.1	23.0	69.3	94.1	30.8	838.0
1972	942.5	633.8	42.0	18.0	58.1	21.5	24.6	74.6	104.1	34.2	917.3
1973	1,052.4	701.3	48.7	32.0	60.4	21.6	27.8	84.1	118.9	42.2	1,011.9
1974	1,154.9	764.6	55.6	25.4	60.9	21.4	31.0	103.0	140.8	47.7	1,119.3
1975	1,255.5	805.9	65.1	23.5	63.5	22.4	31.9	115.5	178.2	50.5	1,220.8
1976	1,381.6	890.0	77.4	18.3	71.0	22.1	37.5	127.0	193.8	55.6	1,350.6
1977	1,531.6	984.0	91.8	19.6	80.5	24.7	42.1	141.7	208.4	61.3	1,498.1
1978	1,717.4	1,103.3	106.5	27.7	89.1	25.9	47.2	163.3	224.1	69.6	1,674.2
1979	1,924.2	1,227.6	122.7	32.8	98.0	26.9	52.7	192.1	252.0	80.7	1,873.4

¹ The total of wage and salary disbursements and other labor income differs from compensation of employees (see table 5) in that it excludes employer contributions for social insurance and the excess of wage accruals over wage disbursements.

² Consists of employer contributions to private pension, health, and welfare funds; workmen's compensation; directors' fees; and a few other minor items.

³ With inventory valuation and capital consumption adjustments.

⁴ With capital consumption adjustment.

⁵ Consists mainly of social insurance benefits, direct relief, and veterans payments.

⁶ Personal income exclusive of farm proprietors' income, farm wages, farm other labor income, and agricultural net interest.

Source: Department of Commerce, Bureau of Economic Analysis.

SOURCES OF PERSONAL INCOME

DESCRIPTION OF SERIES

Personal income is the current income received by persons from all sources, inclusive of transfers from government and business but exclusive of transfers among persons. Not only individuals (including owners of unincorporated enterprises), but nonprofit institutions, private trust funds, and private health and welfare funds are classified as "persons". Personal income is measured on a before-tax basis, as the sum of wage and salary disbursements, other labor income, proprietors' and rental income, interest and dividends, and transfer payments, minus personal contributions for social insurance.

Labor income is principally wages and salaries. It excludes employer contributions for social insurance. *Proprietors' income* and *Rental income of persons* are defined in the section on National Income. *Dividends* are payments in cash or other assets excluding stock by corporations organized for profit to stockholders who are United States persons. *Personal interest income* is the sum of the *Net interest* component of National Income, total interest paid by consumers to business, interest paid by government to persons and business, less

DISPOSITION OF PERSONAL INCOME

DESCRIPTION OF SERIES

Disposable personal income is equal to personal income less taxes on individuals (including income and other taxes not deductible as business expense) and other general government nontax payments of individuals.

Personal outlays are the sum of personal consumption expenditures, interest paid by business to consumers, and personal transfer payments to foreigners (net).

interest received by government. *Transfer payments* include payments not resulting from current production, such as social security benefits, and military pensions.

RELATION TO OTHER SERIES

Personal income differs from national income by including transfer payments, net interest paid by government, and consumer interest, and by excluding employee and employer contributions for social insurance, the portion of corporate profits either paid out in taxes or retained by the corporation, and wage accruals less disbursements.

USES AND LIMITATIONS

The estimates for personal income and components and for disposable income (see next section) measure trends in spending power of individuals. The inclusion of substantial nonmonetary items—imputed rent, interest, food, fuel—should be noted, but the effect of these items should not be overemphasized. They tend to make income estimates more stable, but have little effect on the ability of the estimates to show when a change is occurring and the direction of the shift.

Personal consumption expenditures is the sum of monetary and imputed expenditures made by persons (individuals, nonprofit institutions such as hospitals, etc.) for goods and services. The expenditure total covers total purchase cost to persons including general sales taxes. The full cost of automobiles, refrigerators, furniture, and the like is included in the period when sold—month, quarter, or year—regardless of when payments are made or completed.

TABLE 7.—Personal Consumption Expenditures, 1929-79

[Billions of dollars, except as noted]

Year	Total personal consumption expenditures	Durable goods								Retail sales of new passenger cars (millions of units)	
		Total durable goods ¹	Motor vehicles and parts	Furniture and household equipment	Nondurable goods				Domes- tics	Imports	
					Total non-durable goods ¹	Food	Clothing and shoes	Gasoline and oil			Services
1929	77.3	9.2	3.3	4.7	37.7	19.5	9.4	1.8	30.3		
1930	66.9	7.2	2.2	3.8	34.0	18.0	8.0	1.7	28.7		
1931	60.5	5.5	1.6	3.0	29.0	14.7	6.9	1.5	26.0		
1932	48.6	3.6	1.0	2.1	22.7	11.4	5.1	1.5	22.2		
1933	45.8	3.5	1.1	1.9	22.3	11.5	4.6	1.5	20.1		
1934	51.3	4.2	1.4	2.2	26.7	14.2	5.7	1.6	20.4		
1935	55.8	5.1	1.9	2.5	29.3	16.2	6.0	1.7	21.3		
1936	62.0	6.3	2.4	3.1	32.9	18.4	6.6	1.9	22.8		
1937	66.6	6.9	2.5	3.5	35.2	19.9	6.8	2.1	24.5		
1938	64.0	5.7	1.7	3.1	34.0	18.9	6.8	2.1	24.4		
1939	67.0	6.7	2.3	3.4	35.1	19.1	7.1	2.2	25.2		
1940	71.0	7.8	2.8	3.8	37.0	20.2	7.5	2.3	26.2		
1941	80.8	9.7	3.5	4.8	42.9	23.4	8.8	2.6	28.2		
1942	88.6	6.9	.7	4.6	50.8	28.4	11.0	2.1	31.0		
1943	99.4	6.5	.8	3.9	58.6	33.2	13.4	1.3	34.3		
1944	108.2	6.7	.8	3.8	64.3	36.7	14.6	1.4	37.1		
1945	119.5	8.0	1.0	4.5	71.9	40.6	16.5	1.8	39.6		
1946	143.8	15.8	4.1	8.4	82.7	47.4	18.2	3.4	45.3		
1947	161.7	20.4	6.6	10.6	90.9	52.3	18.8	4.0	50.4		
1948	174.7	22.9	8.0	11.5	96.6	54.2	20.1	4.8	55.3		
1949	178.1	25.0	10.6	11.3	94.9	52.5	19.3	5.3	58.2		
1950	192.0	30.8	13.7	13.7	98.2	53.9	19.6	5.5	63.0		
1951	207.1	29.8	12.2	14.0	108.8	60.4	21.2	6.1	68.5	5.1	
1952	217.1	29.1	11.3	14.0	113.9	63.4	21.9	6.8	74.0	4.2	
1953	229.7	32.5	13.9	14.6	116.5	64.4	22.1	7.4	80.6	5.8	
1954	235.8	31.8	13.0	14.6	118.0	65.4	22.1	7.8	86.1	5.5	
1955	253.7	38.6	17.8	16.2	122.9	67.2	23.1	8.6	92.1	7.4	
1956	266.0	37.9	15.8	17.1	128.9	69.9	24.1	9.4	99.2	5.8	
1957	280.4	39.3	17.2	16.9	135.2	73.6	24.3	10.2	105.9	5.8	
1958	289.5	36.8	14.8	16.6	139.8	76.4	24.7	10.6	112.8	4.3	
1959	310.8	42.4	18.9	17.8	146.4	79.1	26.1	11.3	121.9	5.5	
1960	324.9	43.1	19.7	17.7	151.1	81.1	26.7	12.0	130.7	6.1	
1961	355.0	41.6	17.8	17.9	155.3	83.2	27.4	12.0	138.1	5.6	
1962	355.2	46.7	21.5	18.9	161.6	85.5	28.7	12.6	147.0	6.8	
1963	374.6	51.4	24.4	20.3	167.1	87.8	29.5	12.9	156.1	7.3	
1964	400.4	56.3	26.0	22.8	176.9	92.7	31.9	13.5	167.1	7.6	
1965	430.2	62.8	29.8	24.7	188.6	98.9	33.5	14.7	178.7	8.8	
1966	464.8	67.7	30.1	27.7	204.7	106.6	36.6	16.0	192.4	8.4	0.7
1967	490.4	69.6	29.7	29.5	212.6	109.6	38.2	17.0	208.1	7.6	0.8
1968	535.9	80.0	35.8	32.6	230.4	118.3	41.8	18.4	225.6	8.6	1.0
1969	579.7	85.5	37.7	35.0	247.0	126.1	45.1	20.4	247.2	8.5	1.1
1970	618.8	84.9	34.9	36.7	264.7	136.3	46.6	22.0	269.1	7.1	1.3
1971	668.2	97.1	43.8	39.4	277.7	140.6	50.5	23.4	293.4	8.7	1.6
1972	733.0	111.2	50.6	44.8	299.3	150.4	55.1	24.9	322.4	9.3	1.6
1973	809.9	123.7	55.2	50.7	333.8	168.1	61.3	27.8	352.3	9.7	1.8
1974	889.6	122.0	48.0	54.9	376.3	189.8	65.3	36.4	391.3	7.5	1.4
1975	979.1	132.6	53.4	58.0	408.9	209.6	70.1	39.5	437.5	7.1	1.6
1976	1,089.9	157.4	70.0	64.0	443.9	227.1	75.9	42.9	488.5	8.6	1.5
1977	1,210.0	178.8	81.6	70.9	481.3	246.7	82.4	46.7	549.8	9.1	2.1
1978	1,350.8	200.3	91.2	77.6	530.6	271.7	91.2	50.9	619.8	9.3	2.0
1979	1,509.8	213.0	91.5	85.6	596.9	302.0	99.2	65.1	699.8	8.3	2.3

¹ Total includes other items not shown separately.

Source: Department of Commerce, Bureau of Economic Analysis.

The purchase of homes is not included as a personal consumption expenditure; instead, the expenditure is included as an investment expenditure, and the estimated rental value to the homeowner is included in PCE if he occupies the home.

Durable goods are those items which on average last three years or longer in use. "Nondurable goods" are tangible commodities with a shorter life.

Services include purchases such as housing, telephone, electricity, shoe repair, gas and water, and also such items as the expense of handling life insurance, and banking services furnished without a specific charge.

Personal saving is personal income less the sum of personal outlays and personal tax and nontax payments. It is the current saving of individuals (including proprietors), nonprofit institutions, private noninsured welfare funds, and private trust funds. Personal saving equals the change in the net worth of persons, which may also be viewed as the sum of net acquisition of financial assets (such as cash and deposits, securities, and the net equity of individuals in life insurance and in private noninsured pension funds) and physical assets (housing) less the sum of net borrowing and of capital consumption allowances.

Per capita disposable personal income is the disposable personal income series divided by the

Census Bureau estimate of total population of the United States including armed forces overseas and the institutionalized population for the middle of the period covered.

Per capita disposable personal income in 1972 prices is obtained by dividing the current dollar series by the implicit deflator for personal consumption expenditures on a 1972 base used in the GNP series.

STATISTICAL PROCEDURES

For benchmark years, the allocation of output among intermediate products and the various categories of final demand is done in the course of the construction of the input-output tables for the years when the quinquennial economic censuses are available. To these estimates in producers' prices are added input-output estimates of transportation charges, trade markups, and taxes to arrive at the purchasers' values appropriate for personal consumption expenditure.

Estimates of consumption expenditures for years between benchmarks and quarterly consumption expenditures estimates rest chiefly on the trends shown by the Census Bureau's retail sales figures by kind of store, and other source data.

For information on seasonal adjustments, see the discussion in the sections on Gross National Product or Expenditure, and National Income.

TABLE 8.—Disposition of Personal Income, 1929-79

Year	Personal income	Less: Personal tax and nontax payments	Equals: Disposable personal income	Less: Personal outlays ¹	Equals: Personal saving	Per capita disposable personal income		Per capita personal consumption expenditures		Saving as percent of disposable personal income	Population (thousands) ²
						Current dollars	1972 dollars	Current dollars	1972 dollars		
	Billions of dollars					Dollars					
1929-----	84.9	2.6	82.3	79.1	3.1	675	1,886	634	1,769	3.8	121,875
1930-----	76.2	2.5	73.7	71.1	2.6	598	1,709	567	1,624	3.5	123,188
1931-----	65.4	1.8	63.5	61.4	2.1	512	1,625	487	1,547	3.3	124,149
1932-----	50.0	1.4	48.6	49.3	- .7	389	1,395	389	1,393	-1.4	124,949
1933-----	46.9	1.4	45.5	46.5	-1.0	362	1,350	364	1,358	-2.2	125,690
1934-----	53.7	1.6	52.1	52.0	.1	412	1,420	406	1,401	.2	126,485
1935-----	60.3	1.9	58.4	56.4	2.0	458	1,544	438	1,477	3.4	127,362
1936-----	68.4	2.2	66.2	62.8	3.4	517	1,722	484	1,613	5.2	128,181
1937-----	73.8	2.9	70.9	67.5	3.4	549	1,767	516	1,662	4.7	128,961
1938-----	68.0	2.8	65.1	64.9	.3	501	1,637	492	1,610	.4	129,969
1939-----	72.4	2.4	69.9	67.8	2.1	534	1,756	511	1,681	3.0	131,028
1940-----	77.8	2.6	75.2	72.0	3.3	570	1,849	537	1,744	4.4	132,122
1941-----	95.3	3.3	92.0	81.8	10.2	690	2,084	605	1,830	11.1	133,402
1942-----	122.4	5.9	116.5	89.4	27.0	863	2,353	657	1,792	23.2	134,860
1943-----	150.7	17.8	132.9	100.1	32.7	972	2,429	727	1,819	24.6	136,739
1944-----	164.4	18.9	145.5	109.0	36.5	1,051	2,485	781	1,847	25.1	138,397
1945-----	169.8	20.8	149.0	120.4	28.5	1,065	2,420	854	1,939	19.2	139,928
1946-----	177.3	18.7	158.6	145.2	13.4	1,122	2,351	1,017	2,131	8.5	141,389
1947-----	189.8	21.4	168.4	163.5	4.9	1,168	2,212	1,122	2,124	2.9	144,126
1948-----	208.5	21.0	187.4	176.9	10.6	1,278	2,288	1,192	2,133	5.7	146,631
1949-----	205.6	18.5	187.1	180.4	6.7	1,254	2,253	1,194	2,145	3.6	149,188
1950-----	226.1	20.6	205.5	194.7	10.8	1,355	2,386	1,266	2,229	5.3	151,684
1951-----	253.7	28.9	224.8	210.0	14.8	1,457	2,408	1,342	2,219	6.6	154,287
1952-----	270.4	34.0	236.4	220.4	16.0	1,506	2,434	1,383	2,236	6.8	150,954
1953-----	286.1	35.5	250.7	233.7	17.0	1,571	2,491	1,439	2,283	6.8	159,565
1954-----	288.2	32.5	255.7	240.1	15.6	1,574	2,476	1,452	2,284	6.1	162,391
1955-----	308.8	35.4	273.4	258.5	14.9	1,654	2,577	1,535	2,391	5.4	165,275
1956-----	330.9	39.7	291.3	271.6	19.7	1,731	2,643	1,581	2,415	6.8	168,221
1957-----	349.3	42.4	306.9	286.4	20.6	1,792	2,650	1,637	2,421	6.7	171,274
1958-----	359.3	42.1	317.1	295.4	21.7	1,821	2,636	1,662	2,406	6.8	174,141
1959-----	382.1	46.0	336.1	317.3	18.8	1,898	2,696	1,755	2,493	5.6	177,073
1960-----	399.7	50.4	349.4	332.3	17.1	1,934	2,697	1,798	2,507	4.9	180,671
1961-----	415.0	52.1	362.9	342.7	20.2	1,976	2,725	1,824	2,516	5.6	183,691
1962-----	440.7	56.8	383.9	363.5	20.4	2,058	2,796	1,904	2,589	5.3	186,538
1963-----	463.1	60.3	402.8	384.0	18.8	2,128	2,849	1,979	2,649	4.7	189,242
1964-----	495.7	58.6	437.0	410.9	26.1	2,278	3,009	2,087	2,755	6.0	191,889
1965-----	537.0	64.9	472.2	441.9	30.3	2,430	3,152	2,214	2,872	6.4	194,303
1966-----	584.9	74.5	510.4	477.4	33.0	2,597	3,274	2,365	2,982	6.5	196,560
1967-----	626.6	82.1	544.5	503.7	40.9	2,740	3,371	2,468	3,035	7.5	198,712
1968-----	685.2	97.1	588.1	550.1	38.1	2,930	3,464	2,670	3,156	6.5	200,706
1969-----	745.8	115.4	630.4	595.3	35.1	3,111	3,515	2,860	3,234	5.6	202,677
1970-----	801.3	115.3	685.9	635.4	50.6	3,348	3,619	3,020	3,265	7.4	204,878
1971-----	859.1	116.3	742.8	685.5	57.3	3,588	3,714	3,227	3,342	7.7	207,053
1972-----	942.5	141.2	801.3	751.9	49.4	3,837	3,837	3,510	3,510	6.2	208,846
1973-----	1,052.4	150.8	901.7	831.3	70.3	4,285	4,062	3,849	3,648	7.8	210,410
1974-----	1,154.9	170.3	984.6	913.0	71.7	4,646	3,973	4,197	3,589	7.3	211,945
1975-----	1,255.5	168.8	1,086.7	1,003.0	83.6	5,088	4,025	4,584	3,627	7.7	213,566
1976-----	1,381.6	197.1	1,184.5	1,115.9	68.6	5,504	4,144	5,064	3,813	5.8	215,203
1977-----	1,531.6	226.4	1,305.1	1,240.2	65.0	6,017	4,285	5,579	3,973	5.0	216,898
1978-----	1,717.4	259.0	1,458.4	1,386.4	72.0	6,672	4,449	6,179	4,121	4.9	218,594
1979-----	1,924.2	299.9	1,624.3	1,550.5	73.8	7,367	4,512	6,848	4,193	4.5	220,464

¹ Includes personal consumption expenditures, interest paid by consumers to business, and personal transfer payments to foreigners (net).

² Includes Armed Forces abroad. Annual data are for July 1 through 1973 and are averages of quarterly data beginning 1974.

Source: Department of Commerce (Bureau of Economic Analysis and Bureau of the Census).

RELATION TO OTHER SERIES

Estimates of personal consumption expenditures will show much the same movements from quarter to quarter as the figures for total retail sales. However, personal consumption expenditures also include a variety of services and such items as food produced and consumed on farms which are outside of retail trade. Conversely, retail trade includes some commodity items, such as building material, which are not part of personal consumption expenditures.

The estimate of personal net saving and the similar estimate of the Federal Reserve Board's flow of funds accounts differ in level and trend. For a detailed reconciliation of the two series, see the table on individual saving in the flow of funds accounts of the Federal Reserve.

USES AND LIMITATIONS

Disposable personal income is often used as a measure of income available for spending or sav-

FARM INCOME

DESCRIPTION OF SERIES

The Economics, Statistics, and Cooperatives Service (ESCS) of the U.S. Department of Agriculture prepares the farm income estimates. The basic income series have been estimated for calendar years starting with 1910, and quarterly at seasonally adjusted annual rates from 1929. Current descriptions are consistent with these historical estimates in terms of component parts, although in recent years there has been some rearrangement of components accompanied by changes in presentation format.

The farm income accounts treat farming as a business sector within the U.S. economy. Production of farm commodities is essentially viewed as taking place on one large farm in each State. The accounts measure the sector's value added product and income of farm operators and operator landlords. Returns to nonoperator landlords are not included as farm income. Certain transactions between farms, such as within State sales of livestock, are not included. Conceptually these cancel within the sector, although the estimated gross receipts and expenses are less than the direct sum of such items for all farms.

Gross farm income consists of cash marketing receipts, the value of physical changes in farm inventories of crops and livestock, direct Government payments, other farm cash income, the value of farm products consumed directly in farm households, and an imputed gross rental value of farm dwellings. Farm production expenses are the sum of all current operating expenses and overhead charges including those on farm dwellings. Net farm income, a residual component, represents the

ing. For measuring changes, in real terms, i.e., in consumers' buying power, the estimate of disposable income in constant prices are to be preferred.

The estimates of personal consumption expenditures represent a generally useful, reliable measure of trends in consumer purchases. They may be used to study trends in the ratio of wages, or more generally of income, to expenditure, and to review the division of the national output between consumer demand, business capital formation, and government defense or other expenditures.

The estimates of personal saving are residual from two larger estimates. The errors and limitations present in the hundreds of series, developed for other purposes, which must be used at present in estimating the national income may not completely cancel out. To this extent these errors are transmitted into the saving estimate. Quarter-to-quarter changes for recent periods are subject to revision as better data become available.

return to farm operators for their family labor, management, and capital investment in the farm. It measures the net return from the current year's output. A second net measure—net cash income—is the difference between gross income and expenses that are limited to cash items. This latter series is only available on an annual basis.

STATISTICAL PROCEDURES

Cash marketing receipts are estimated from an extensive data base; estimates are built by State to U.S. totals for over 100 commodities or commodity groups. All major items are based on data collected by State or Regional Crop and Livestock Reporting Offices. In general, farm surveys determine crop production and disposition while monthly surveys of mills and elevators determine quantities marketed and prices paid to farmers. Included in cash receipts from crop marketings is the net value of commodity price support loans known as Commodity Credit Corporation nonrecourse loans. Monthly value and quantity data are received from the administering agency. Crop receipt estimates cover all farm sales; interfarm purchases for feed and seed are also covered in the expenses.

For livestock receipts, all sales are measured except those between farms within the same State. Interfarm transactions involving the movement of livestock across State lines are measured both in cash receipts and production expenses. As with crops, market channel information is the primary source of monthly receipt patterns while producer surveys largely determine calendar or production year levels.

Farm marketings in a calendar year are from current production as well as from the unsold output of earlier years. Shifts in marketing can significantly distort cash income during a specific period relative to the value of that period's production. Thus, in addition to cash receipts, physical changes in farm inventories must be taken into account in measuring earnings from the current year's production activity. In general, January 1 crop inventories are constructed through an accounting of each crop. The physical change is determined and valued at the average price received during the year. With livestock the inventory is taken as the number of head on farms, and the change is valued at the average of the two January 1 values per head. For some types of animals, the inventory and value are as of December 1.

Government payments to farmers comprise all Federal payments made directly to farmers in which a sale or title transfer to the Government is not involved. Farm program provisions under which payments have been made in recent years include: deficiency, diversion, disaster, storage, conservation, emergency feed, and the Wool Act. Data received from the administering agency count payments to landlords as well as to farm operators. Such amounts estimated as being paid by farm operators to nonoperator landlords are deducted as an expense because the latter are not included in the farm sector. Farm operators also receive cash from activities closely associated with their farms; such as custom work, renting out of equipment, and providing recreational services. This "other cash income" is estimated through special surveys and benchmarked to quinquennial Census of Agriculture data.

Gross farm income is also composed of several nonmoney elements. Direct consumption of farm products in households on farms where produced represents a form of income. Information on the volume of home consumption is obtained from farmers (annually for livestock items, less frequently for crop products) and valued at prices received by farmers for sale of similar products.

A second and more sizable nonmoney item is an imputed gross rental value of farm dwellings. The estimate is constructed to represent the amount which would have to be paid if all farm dwellings were rented separately from the farm. Expenses on dwellings in the form of taxes, insurance, interest, maintenance, and depreciation are part of the production expense accounts. The practice used resembles that used in the National Income and Product Accounts, in which the net rental value of owner-occupied dwellings is treated as an income flow.

Production expenses are estimated for about 50 separate accounts. Due to data limitations, many of the accounts are estimated at the U.S. level and then allocated to States. Census of Agriculture data have historically been used to benchmark many of the expenses; examples include purchased feed and seed, fertilizer, petroleum fuel and oil, custom work, and cash wages. In moving from benchmark figures, ESCS analysts use such current information as prices paid, special surveys, private trade data, and data of other Government agencies. Among major accounts not benchmarked to Census of Agriculture data are property taxes, interest payments, and livestock purchases. Interest is estimated based on outstanding agricultural debts and prevailing interest rates, while taxes and purchases of livestock are estimated using special survey information.

Depreciation is figured on a replacement cost basis. It covers dwellings, service buildings, other farm structures, motor vehicles, and farm machinery and equipment, plus accidental damage to farm buildings. The estimates are constructed on a "declining balance method" in which constant percentages represent the annual rates of depreciation for each type of capital. These are applied to the estimated values at the beginning of each year. Thus, the estimated outlays in current prices represent what farmers would need to spend if they were to replace plant and equipment consumed during the years.

TABLE 9.—Farm Income, 1929-79

[Billions of dollars]

Income of farm operators from farming									
Gross farm income									
Year	Total ¹	Cash marketing receipts			Value of inventory changes ²	Production expenses	Net farm income		Net cash income ⁴
		Total	Livestock and products	Crops			Current dollars	1967 dollars ³	
1929	13.8	11.3	6.2	5.1	-0.1	7.7	6.2	12.0	3.9
1930	11.2	9.1	5.2	3.9	-.3	6.9	4.3	8.5	2.6
1931	8.9	6.4	3.8	2.5	.5	5.5	3.3	7.3	1.5
1932	6.5	4.7	2.8	2.0	.1	4.5	2.0	5.0	.9
1933	6.9	5.3	2.8	2.5	-.2	4.4	2.6	6.6	1.7
1934	7.6	6.4	3.3	3.0	-.9	4.7	2.9	7.3	2.5
1935	10.4	7.1	4.1	3.0	.7	5.1	5.3	12.8	2.8
1936	10.0	8.4	4.7	3.6	-.8	5.6	4.3	10.4	3.1
1937	12.2	8.9	4.9	3.9	.8	6.2	6.0	14.0	3.1
1938	10.3	7.7	4.5	3.2	.1	5.9	4.4	10.3	2.5
1939	10.7	7.9	4.5	3.3	.1	6.3	4.4	10.6	2.5
1940	11.3	8.4	4.9	3.5	.3	6.9	4.5	10.7	2.3
1941	14.3	11.1	6.5	4.6	.4	7.8	6.5	14.7	3.7
1942	19.9	15.6	9.0	6.5	1.1	10.0	9.9	20.2	6.4
1943	23.3	19.6	11.5	8.1	-.1	11.6	11.7	22.7	9.3
1944	24.0	20.5	11.4	9.2	-.4	12.3	11.7	22.2	9.0
1945	25.4	21.7	12.0	9.7	-.4	13.1	12.3	22.8	9.3
1946	29.6	24.8	13.8	11.0	.0	14.5	15.1	25.8	10.5
1947	32.4	29.6	16.5	13.1	-1.8	17.0	15.4	23.0	11.5
1948	36.5	30.2	17.1	13.1	1.7	18.8	17.7	24.5	9.7
1949	30.8	27.8	15.4	12.4	-.9	18.0	12.8	17.9	8.1
1950	33.1	28.5	16.1	12.4	.8	19.5	13.6	18.9	7.7
1951	38.3	32.9	19.6	13.2	1.2	22.3	15.9	20.5	9.5
1952	37.8	32.5	18.2	14.3	.9	22.8	15.0	18.8	9.2
1953	34.4	31.0	16.9	14.1	-.6	21.5	13.0	16.2	8.9
1954	34.2	29.8	16.3	13.6	.5	21.8	12.4	15.4	8.1
1955	33.5	29.5	16.0	13.5	.2	22.2	11.3	14.1	7.5
1956	34.0	30.4	16.4	14.0	-.5	22.7	11.3	13.8	8.6
1957	34.8	29.7	17.4	12.3	.6	23.7	11.1	13.1	7.5
1958	39.0	33.5	19.2	14.2	.8	25.8	13.2	15.2	8.8
1959	37.9	33.6	18.9	14.7	.0	27.2	10.7	12.3	7.0
1960	38.9	34.2	19.0	15.3	.4	27.4	11.5	13.0	8.1
1961	40.5	35.2	19.5	15.7	.3	28.6	12.0	12.3	8.5
1962	42.3	36.5	20.2	16.3	.6	30.3	12.1	13.3	8.1
1963	43.4	37.5	20.0	17.4	.6	31.6	11.8	12.8	7.6
1964	42.3	37.3	19.9	17.2	-.8	31.8	10.5	11.3	7.7
1965	46.5	39.4	21.9	17.5	1.0	33.7	12.9	13.7	8.0
1966	50.5	43.4	25.0	18.4	-.1	36.5	14.0	14.4	9.7
1967	50.5	42.8	24.4	18.4	.7	38.2	12.3	12.3	6.9
1968	51.8	44.2	25.5	18.7	.1	39.5	12.3	11.8	8.5
1969	56.4	48.2	28.6	19.6	.1	42.1	14.3	13.4	10.5
1970	58.6	50.5	29.6	21.0	.0	44.4	14.2	12.2	10.2
1971	62.0	52.9	30.6	22.3	1.4	47.4	14.6	12.1	9.6
1972	71.0	61.2	35.7	25.5	.9	52.3	18.7	14.9	13.6
1973	98.9	87.1	45.9	41.1	3.4	65.6	33.3	25.1	23.5
1974	98.3	92.4	41.4	51.1	-1.6	72.2	26.1	17.7	20.3
1975	100.3	88.2	43.0	45.1	3.4	75.9	24.5	15.2	14.2
1976	101.8	94.8	46.1	48.7	-2.4	83.1	18.7	11.0	13.2
1977	108.5	95.7	47.4	48.2	1.1	88.8	19.8	10.9	9.9
1978	126.0	111.0	59.0	52.1	1.1	98.1	27.9	14.3	16.8
1979	146.7	128.9	67.2	61.7	4.4	113.4	33.3	15.3	-----

¹ Cash marketing receipts and inventory changes plus Government payments, other farm cash income, and nonmoney income furnished by farms.² Physical changes in end-of-year inventory of crop and livestock commodities valued at average prices during the year.³ Income in current dollars divided by the consumer price index (Department of Labor).⁴ Differs from net farm income by nonmoney income, value of inventory changes, net capital investments, and value of perquisites to hired workers.

Source: Department of Agriculture, except as noted.

For farm rents, only the net rents paid to non-operator landlords are included as an expense. Other farm rents paid to landlords who also operate farms constitute offsetting items of income and expense for farm operators as a group.

Except for cash receipts from marketings and direct Government payments, monthly or quarterly information on other components of farm income and expenses is insufficient to apply standard methods of seasonal adjustment. The resulting quarterly estimates involve a considerable amount of judgement and interpretation of annual data.

RELATION TO OTHER SERIES

The Department of Commerce uses the farm income estimates to prepare the farm sector's income and product estimates for the national accounts. The national accounts measure of farm proprietor's income differs from net farm income in that an adjustment is made for corporate farm profits and corporate officer salaries. Occasionally differences occur in these closely related series because of timing of estimates and revision schedules.

USES AND LIMITATIONS

The farm income estimates measure the farm sector in the aggregate. As a result, their most appropriate use is in the context of the National Income and Product Accounts. These accounts treat the economy in terms of interactions between and among sectors with respect to product and income flows. While certain types of transactions within the farm sector are not measured, estimated receipts and expenses do serve as meaningful measures of the sector's economic activity. For example, cash receipts estimates by commodity and State have been widely used by businesses which serve agriculture and by public officials to explain changing agricultural conditions among and within States.

One limitation of the net farm income series is that it does not provide a complete picture of the financial condition of farm operators. As a group, farm operator families have significant amounts of income from sources other than farming. And historically, investments in farm real estate have had greater nominal returns in the form of capital gains than in current earnings. Therefore, the overall debt, equity, and cash flow situation, in addition to current income, should be included in a broader analysis of the condition of the farm sector.

Sector measures are of course quite limited in providing a means to determine income and wealth distributions. As the farm income accounts have existed, they relate to farm operators, and as the balance sheet of the Farming Sector has been developed, it is associated with holders of farm assets and liabilities. These two groups overlap consid-

erably; yet neither group is well defined in terms of policy issues that typically arise. For policy purposes, it would be desirable to have information about who realizes the capital gains and receives the net income originating in agriculture, as well as who holds the appreciating assets. What other sources of income and wealth do these households command? Regional estimates of the relevant financial measures by types and sizes of farms or family incomes would be extremely valuable to complete the aggregate measures. Current, timely estimates of this type will require a much different, more extensive data base than currently exist.

Statistical properties of the current set of farm income estimates are difficult to assess. Other than for administrative data on Government payments and Commodity Credit Corporation loans, analysts rely on indirect estimation procedures. To a large extent, underlying data used are collected for purposes other than farm income; the data vary greatly in statistical soundness. Cash receipt estimates are computed using relatively satisfactory commodity data at the State level. Few data are collected by State Crop and Livestock Reporting Offices on commodities relatively small in value. Production expense estimates vary more in reliability than do gross income components. Other than for Census of Agriculture years and special surveys, the information base for developing expense estimates has been weak. The annual Farm Production Expenditure Survey, a relatively recent addition, should improve the reliability of many farm income expense account estimates.

Several general observations can be made concerning the accuracy of farm income estimates. These would also apply to most series constructed to measure aggregate economic activity. For one, totals are more accurate than most of their component parts. Second, such estimates tend to be better measures of change over the years than of absolute levels in any 1 year. Longterm trends are more accurately represented than are short-term fluctuations. Third, a residual component such as net farm income is subject to larger error than either of the two totals from which it is derived.

Thus, estimates of net farm income are probably less reliable than estimates of either gross farm income or farm production expenses. Further, over time, as production expenses have taken an increasing share of gross income, the possibility of error in residual net income increases. This problem is most acute in early estimates, that is, before all the underlying data have been received.

REFERENCES

Farm Income Statistics, an annual statistical bulletin normally published in July by ESCS, represents the basic release of farm income data. Currently-year data and discussions of outlook

appear in ESCS's monthly *Agricultural Outlook*. Some of the principal series on farm income are published in the Department of Agriculture's annual *Agricultural Statistics*. An annual supplement to *Farm Income Statistics* is published, generally in August or September, called *State Farm Income Statistics*.

The methods used to estimate farm income are examined in greater detail in *Agricultural Hand-*

book No. 365, *Major Statistical Series of the U.S. Department of Agriculture, Volume 3, Gross and Net Farm Income*, published in 1969. An examination of some data and conceptual issues associated with the farm income estimates appear in an article in the *Proceedings of Workshop on Farm Sector Financial Accounts*, published by ESCS as *Agricultural Economic Report 412*, November 1978.

CORPORATE PROFITS

DESCRIPTION OF SERIES

The corporate profits and related series of the Bureau of Economic Analysis, Department of Commerce, pertain to all United States corporations organized for profit and to mutual financial institutions. Data are shown for broad industry groups, and estimates are made of the distribution of profits between corporate tax liability, dividends, and undistributed profits.

The national income concept of profit is used in these series. Dividends received by corporations are deducted from profits (and dividends) to obtain unduplicated totals reflecting income originating in the United States corporations. Profits are calculated inclusive of domestic depletion, which is not considered an element of capital consumption or of other expenses in the income and product accounts. (Depletion allowances are not included in the capital consumption allowance estimates). Capital gains and losses are eliminated from profits because they do not measure gains or losses originating from current production. Bad debt expenses are measured by actual losses, not additions to reserves; and the profit or loss of bankrupt firms includes the gain from unpaid debt. Adjustments for international flows affecting profits are made. In these respects the national income measure of profits differs from those shown in the Internal Revenue Service tabulations of tax returns. The national income profits measure also differs from those commonly shown in company reports and from the financial reports series of the Federal Trade Commission.

STATISTICAL PROCEDURES

The annual data published in the corporate profits series are, except for the most recent year

or two, based on tabulations by the Internal Revenue Service of unaudited corporate income tax returns. The data in these tabulations are adjusted to make them comparable, statistically and conceptually, with other entries in the national income accounts. The important conceptual accounting adjustments are suggested by the statement above of differences between the tax-return concept of profit and the national income concept. In addition, the tax-return figures are augmented by the audit adjustment, which makes allowances for additional profit that would be disclosed by a complete auditing of the income tax returns by the Internal Revenue.

The estimates for the most recent year or two and for quarters are made by extrapolating the latest available estimates based on Internal Revenue tabulation of corporation tax returns. The extrapolators for manufacturing, mining, and trade corporations are based on the *FTC Quarterly Financial Report*; those federally regulated industries are obtained from reports to the Federal regulatory agencies; and those for other industries are based on nongovernmental surveys and miscellaneous sources of varying reliability. When the Internal Revenue tabulations of tax returns for a given year become available, the estimates for that year are revised to conform to the Internal Revenue tabulations.

The adjustment of corporate profits estimates for seasonal variation is difficult because of the volatility of profits. A diversity in seasonal patterns exists among the various industries, so the adjustment is made in considerable industry detail. For most industry components the ratio-to-moving average method has been used. The correction for seasonal variation is made in terms of corporate profits before tax. The inventory valuation adjustment is calculated directly on a seasonally adjusted basis.

TABLE 10.—Corporate Profits, 1929-79

[Billions of dollars]

Year	Profits (before tax) with inventory valuation adjustment ¹						Profits after tax					
	Domestic industries						Profits before tax	Tax liability	Profits after tax			
	Total ²	Total	Financial	Nonfinancial					Total	Dividends	Undistributed profits	Inventory valuation adjustment
				Total ³	Manufacturing	Wholesale and retail trade						
1929	10.5	10.2	1.3	8.9	5.2	1.0	10.0	1.4	8.6	5.8	2.8	0.5
1930	7.0	6.8	.5	6.4	3.9	.9	3.7	.8	2.9	5.5	-2.6	3.3
1931	2.0	2.0	.2	1.9	1.3	.3	-.4	.5	-.9	4.1	-4.9	2.4
1932	-1.3	-1.2	.2	-1.4	-.5	-.3	-2.3	.4	-2.7	2.5	-5.2	1.0
1933	-1.2	-1.2	.3	-1.5	-.4	-.5	1.0	.5	.4	2.0	-1.6	-2.1
1934	1.7	1.7	.3	1.4	1.1	.4	2.3	.7	1.6	2.6	-1.0	-.6
1935	3.4	3.2	.4	2.8	2.1	.6	3.6	1.0	2.6	2.8	-.2	-.2
1936	5.6	5.5	.8	4.7	3.2	.8	6.3	1.4	4.9	4.5	.4	-.7
1937	6.8	6.6	.8	5.8	3.8	1.0	6.8	1.5	5.3	4.7	.6	-.0
1938	4.9	4.7	.8	3.9	2.3	.8	4.0	1.0	2.9	3.2	-.2	1.0
1939	6.3	6.1	.8	5.3	3.3	.7	7.0	1.4	5.6	3.8	1.8	-.7
1940	9.8	9.6	1.0	8.6	5.5	1.2	10.0	2.8	7.2	4.0	3.2	-.2
1941	15.2	15.0	1.1	14.0	9.5	1.4	17.7	7.6	10.1	4.4	5.7	-2.5
1942	20.3	20.1	1.2	18.9	11.8	2.2	21.5	11.4	10.1	4.3	5.9	-1.2
1943	24.4	24.1	1.3	22.8	13.8	3.0	25.1	14.1	11.1	4.4	6.6	-.8
1944	23.8	23.5	1.6	21.9	13.2	3.2	24.1	12.9	11.2	4.6	6.5	-.3
1945	19.2	18.9	1.7	17.3	9.7	3.3	19.7	10.7	9.0	4.6	4.4	-.6
1946	19.3	18.9	2.1	16.8	9.0	3.8	24.6	9.1	15.5	5.6	9.9	-5.3
1947	25.6	24.9	1.7	23.2	13.6	4.6	31.5	11.3	20.2	6.3	13.9	-5.9
1948	33.0	32.2	2.6	29.6	17.6	5.5	35.2	12.4	22.7	7.0	15.7	-2.2
1949	30.8	29.9	3.1	26.8	16.2	4.5	28.9	10.2	18.7	7.2	11.5	1.9
1950	37.6	36.7	3.1	33.5	20.9	5.0	42.6	17.9	24.7	8.8	15.9	-5.0
1951	42.7	41.5	3.6	37.9	24.6	5.0	43.9	22.6	21.3	8.5	12.8	-1.2
1952	39.8	38.7	4.0	34.7	21.7	4.8	38.9	19.4	19.5	8.5	11.0	1.0
1953	39.5	38.4	4.5	33.9	22.0	3.8	40.5	20.3	20.2	8.8	11.5	-1.0
1954	37.8	36.4	4.6	31.8	19.9	3.8	38.1	17.6	20.5	9.1	11.4	-.3
1955	46.7	45.1	4.8	40.3	26.0	5.0	48.4	22.0	26.4	10.3	16.1	-1.7
1956	45.9	44.1	5.0	39.1	24.7	4.5	48.6	22.0	26.6	11.1	15.5	-2.7
1957	45.4	43.5	5.2	38.3	24.0	4.4	46.9	21.4	25.5	11.5	14.0	-1.5
1958	40.8	39.1	5.7	33.5	19.4	4.6	41.1	19.0	22.1	11.3	10.8	-.3
1959	51.2	49.4	6.8	42.6	26.2	5.9	51.6	23.6	28.0	12.2	15.8	-5.5
1960	48.9	47.0	7.2	39.8	23.9	4.9	48.5	22.7	25.8	12.9	13.0	.3
1961	48.7	46.3	7.0	39.3	23.0	4.9	48.6	22.8	25.8	13.3	12.5	.1
1962	53.7	51.1	7.3	43.8	26.0	5.7	53.6	24.0	29.6	14.4	15.2	.1
1963	57.6	54.9	6.8	48.1	28.7	5.9	57.7	26.2	31.5	15.5	16.0	-.2
1964	64.2	61.0	6.9	54.1	31.9	7.4	64.7	28.0	36.7	17.3	19.4	-.5
1965	73.3	70.1	7.5	62.5	38.3	7.9	75.2	30.9	44.3	19.1	25.2	-1.9
1966	78.6	75.9	8.5	67.4	41.6	8.0	80.7	33.7	47.1	19.4	27.6	-2.1
1967	75.6	72.6	9.0	63.6	37.9	8.9	77.3	32.5	44.9	20.1	24.7	-1.7
1968	82.1	78.9	10.4	68.5	41.2	10.1	85.6	39.4	46.2	21.9	24.2	-3.4
1969	77.9	74.2	11.3	62.9	36.8	10.1	83.4	39.7	43.8	22.6	21.2	-5.5
1970	66.4	62.6	12.6	50.1	27.1	9.4	71.5	34.5	37.0	22.9	14.1	-5.1
1971	76.9	72.4	14.1	58.2	32.4	11.7	82.0	37.7	44.3	23.0	21.3	-5.0
1972	89.6	84.7	15.4	69.3	40.6	13.3	96.2	41.5	54.6	24.6	30.0	-6.6
1973	97.2	90.4	16.2	74.1	44.1	14.7	115.8	48.7	67.1	27.8	39.3	-13.6
1974	86.5	76.9	14.4	62.5	36.6	12.9	126.9	52.4	74.5	31.0	43.6	-40.4
1975	107.9	101.8	13.0	88.9	48.3	20.7	120.4	49.8	70.6	31.9	38.7	-12.4
1976	141.3	133.1	17.8	115.3	65.7	23.3	156.0	63.8	92.2	37.5	54.7	-14.6
1977	162.0	152.1	23.8	128.3	73.5	24.1	177.1	72.6	104.5	42.1	62.4	-15.2
1978	180.8	170.6	29.7	140.9	81.7	23.0	206.0	84.5	121.5	47.2	74.3	-25.2
1979	194.9	181.6	33.2	148.5	88.8	23.7	236.6	92.5	144.1	52.7	91.4	-41.8

¹ See Table 5 for profits with inventory valuation and capital consumption adjustments.² Includes rest of the world, not shown separately.³ Includes industries not shown separately.

Source: Department of Commerce, Bureau of Economic Analysis.

Quarterly corporate income tax liability estimates are derived by multiplying the quarterly estimates of profits before taxes by annual ratios of taxes to profits before taxes. For current quarters, the ratios of taxes to profits before tax for the latest full year are used with any necessary adjustments, such as to allow for new Federal tax legislation. Quarterly net corporate dividends are estimated from a sample of publicly reported dividends which currently account for about two-fifths of total dividend disbursements. Other profit components are estimated as residuals: profits after tax being equal to profits before tax less corporate income tax liability, and undistributed corporate profits being equal to profits after tax less dividends. As such, undistributed profits equal the change in corporate net worth stemming from current operations. It may also be viewed as purchases of physical assets plus net acquisition of financial assets less capital consumption allowances, borrowing, and new stock issues.

RELATION TO OTHER SERIES

The corporate profits series is designed primarily to measure the contribution of corporate profits to the national income. It is consistent with the concepts of the national income accounts, and with other series which are a part of those accounts, and can be used in conjunction with the other national income series (e.g., net interest, proprietors' and rental income, compensation of employees, etc.).

The corporate profits series is based on reports from companies rather than establishments. This limits the industrial comparability of profits with series based upon reports from establishments. Furthermore, surveys based on the establishment unit of classification are not confined to establishments of corporations but include establishments of other forms of organization as well. The corporate profits series, or any other series based on company reports, cannot safely be assumed to be directly comparable with these establishment series unless the reports on the different bases have been reconciled. These factors are more important when series for specific industries are being compared, however, than when the broad aggregates published in *Economic Indicators* are compared.

The series on expenditures for new plant and equipment and monthly sales and inventories are also based primarily on company reports. The plant and equipment expenditures and the sales and inventories series, however, cover unincorporated as well as incorporated business. These three series cover closely related economic phenomena and can be used to supplement one another analytically.

USE AND LIMITATIONS

The corporate profits series is an important economic indicator, reflecting the state of health of a

substantial part of the Nation's business community. Certain limitations of the series require that it be used with caution, however.

(1) As its title indicates, the series measures only the profits of corporations. It does not, therefore, portray fully the profit position of all business.

(2) The corporate profits estimates contained in *Economic Indicators* are rather broad aggregates and need to be supplemented by data pertaining to specific industries for some analytical uses.

(3) The quarterly corporate profits estimates are less reliable than the annual estimates, especially the annual estimates for periods more than two years prior to the current year. There are two

principal reasons for this: (a) quarterly income statements, on which the quarterly series are based, are inherently less reliable than annual income statements; and (b) wide gaps in the financial data available quarterly for some industries, such as services, make the underlying basis of the quarterly estimates weaker than that of the annual estimates.

REFERENCES

See National Income. A statement of the methods and sources of data used in preparing these estimates is presented in the *Readings in Concepts and Methods of National Income Statistics, Business Statistics, and Gross National Product Data Improvement Project Report*.

GROSS PRIVATE DOMESTIC INVESTMENT

DESCRIPTION OF SERIES

Gross Private Domestic Investment is one of the major components of gross national product. The series consists of the net acquisitions of fixed capital goods by private business and nonprofit institutions; commissions arising in the sale and purchase of new and existing fixed assets, principally real estate; and the value of the change in the volume of inventories held by business. It covers all private dwellings including those acquired by persons for their own occupancy.

Separate statistical series are published for *Fixed investment*, which in turn consists of separate series for *Nonresidential fixed investment* and *Residential fixed investment* and for *Change in business inventories*. The *Structures* series used in computing gross private domestic investment is based on the private construction component of the new construction series described below, with the additions of estimates for oil- and gas-well drilling, commissions arising in the sale of new and existing structures, and net purchases of structures from government.

Quarterly estimates of producers' durable equipment and change in business inventories are revised annually to reflect more complete data than were available when the initial estimates were made. The revisions in the *Change in business inventories* series have sometimes been quite sizable,

and have resulted primarily from revisions in the basic book value inventory aggregates.

STATISTICAL PROCEDURES

The principal method of estimation used for the *Producers' durable equipment* series is again the commodity-flow technique currently embodied in the input-output table.

For benchmark years, the allocation of output among intermediate products and the various categories of final demand is done in the course of the construction of the input-output tables for the years when the economic census are available. To these estimates in producers' prices are added I-0 estimates of transportation charges, trade markups, and taxes to arrive at the purchasers' values appropriate for producer's durable equipment in greater detail than was possible in other years. Annual updates are based on data collected by the Bureau of the Census in its annual sample survey of manufacturers, trade source data, and on BEA's Plant and Equipment Expenditures Survey. Quarterly estimates for most of the period were interpolated by similar series based on the Plant and Equipment Expenditures Survey and estimates from the Census Bureau surveys of manufacturers' shipments and trade source data. The estimates include purchases of equipment by private business from government, dealers margins on the sale of used equipment, and capitalized installation charges, and net of exports of used equipment and the sale of scrapped equipment.

TABLE 11.—*Gross Private Domestic Investment, 1929-79*

[Billions of dollars]

Year	Gross private domestic investment	Nonresidential fixed investment					Residential fixed investment				Change in business inventories	
		Total	Structures		Producers' durable equipment		Total	Non-farm structures	Farm structures	Producers' durable equipment		
			Total	Non-farm	Total	Non-farm					Total	Non-farm
1929-----	16.2	10.5	5.0	4.8	5.5	4.8	4.0	3.8	0.2	0.1	1.7	1.8
1930-----	10.2	8.2	4.0	3.9	4.2	3.6	2.4	2.2	.1	.1	-.4	-.1
1931-----	5.6	5.0	2.3	2.3	2.6	2.3	1.8	1.6	.1	.1	-1.1	-1.6
1932-----	1.0	2.7	1.2	1.2	1.5	1.3	.8	.7	.0	.0	-2.5	-2.6
1933-----	1.4	2.4	.9	.9	1.4	1.3	.6	.5	.0	.0	-1.6	-1.4
1934-----	3.3	3.1	1.1	1.0	2.1	1.8	.9	.8	.1	.1	-.7	.2
1935-----	6.4	4.1	1.2	1.2	2.8	2.4	1.3	1.1	.1	.1	1.1	.4
1936-----	8.5	5.5	1.6	1.6	3.9	3.3	1.7	1.5	.1	.1	1.3	2.1
1937-----	11.8	7.2	2.4	2.4	4.8	4.0	2.0	1.8	.1	.1	2.5	1.7
1938-----	6.5	5.3	1.9	1.8	3.4	2.8	2.1	1.9	.1	.1	-.9	-1.0
1939-----	9.3	5.8	2.0	1.9	3.9	3.3	3.0	2.8	.1	.1	.4	.3
1940-----	13.1	7.5	2.3	2.2	5.2	4.5	3.5	3.2	.2	.1	2.2	1.9
1941-----	17.9	9.4	2.9	2.8	6.4	5.5	4.0	3.7	.2	.1	4.5	4.0
1942-----	9.9	6.0	1.9	1.8	4.1	3.5	2.2	1.9	.2	.1	1.8	.7
1943-----	5.8	5.0	1.3	1.2	3.7	3.2	1.4	1.2	.2	.0	-.6	-.6
1944-----	7.2	6.8	1.8	1.7	5.0	4.2	1.3	1.1	.1	.0	-1.0	-.6
1945-----	10.6	10.1	2.8	2.6	7.3	6.3	1.6	1.4	.1	.0	-1.0	-.6
1946-----	30.7	16.8	6.8	6.1	9.9	9.0	7.5	6.8	.5	.2	6.4	6.4
1947-----	34.0	22.9	7.6	6.8	15.3	13.4	11.5	10.5	.7	.3	-.5	1.3
1948-----	45.9	26.2	8.9	8.1	17.3	14.7	15.0	13.8	.9	.3	4.7	3.0
1949-----	35.3	24.3	8.6	7.8	15.7	12.8	14.1	12.9	.8	.3	-3.1	-2.2
1950-----	53.8	27.1	9.3	8.6	17.8	14.9	19.9	18.7	.8	.4	6.8	6.0
1951-----	59.2	31.1	11.3	10.5	19.9	16.9	17.7	16.6	.8	.4	10.3	9.1
1952-----	52.1	31.2	11.5	10.6	19.7	17.1	17.8	16.6	.8	.4	3.1	2.1
1953-----	53.3	34.3	12.8	12.0	21.5	18.7	18.6	17.5	.8	.4	.4	1.1
1954-----	52.7	34.0	13.2	12.4	20.8	18.4	20.3	19.2	.7	.4	-1.5	-2.1
1955-----	68.4	38.3	14.4	13.7	23.9	21.3	24.1	23.0	.6	.4	6.0	5.5
1956-----	71.0	43.7	17.4	16.6	26.3	24.1	22.6	21.4	.7	.5	4.7	5.1
1957-----	69.2	46.7	18.1	17.4	28.6	26.2	21.2	20.0	.7	.5	1.3	.8
1958-----	61.9	41.6	16.7	16.0	24.9	21.9	21.8	20.7	.7	.5	-1.5	-2.3
1959-----	77.6	45.3	17.0	16.1	28.3	25.2	27.0	25.8	.7	.6	5.2	5.3
1960-----	76.4	47.7	18.2	17.3	29.5	27.0	25.0	23.9	.6	.5	3.8	3.5
1961-----	74.3	47.1	18.4	17.5	28.7	26.1	25.0	23.8	.7	.5	2.2	1.9
1962-----	85.2	51.2	19.4	18.5	31.8	28.9	27.4	26.3	.6	.5	6.5	5.8
1963-----	90.2	53.6	19.6	18.6	34.0	30.6	30.6	29.4	.7	.6	6.0	5.2
1964-----	96.6	59.7	21.5	20.5	38.2	34.6	31.2	29.9	.7	.6	5.8	6.4
1965-----	112.0	71.3	26.1	25.1	45.1	41.2	31.2	29.9	.6	.7	9.5	8.5
1966-----	124.5	81.4	29.2	28.1	52.2	47.9	28.7	27.4	.7	.7	14.3	14.5
1967-----	120.8	82.1	29.5	28.2	52.6	48.0	28.6	27.2	.7	.7	10.1	9.4
1968-----	131.5	89.3	31.6	30.4	57.7	53.4	34.5	33.1	.6	.8	7.7	7.6
1969-----	146.2	98.9	35.7	34.3	63.3	58.9	37.9	36.3	.7	.9	9.4	9.2
1970-----	140.8	100.5	37.7	36.1	62.8	58.1	36.6	35.1	.6	.9	3.8	3.7
1971-----	160.0	104.1	39.3	37.8	64.7	59.9	49.6	47.9	.7	1.0	6.4	5.1
1972-----	188.3	116.8	42.5	41.1	74.3	69.1	62.0	60.3	.7	1.1	9.4	8.8
1973-----	220.0	136.0	49.0	46.9	87.0	80.1	66.1	64.3	.6	1.2	17.9	14.7
1974-----	214.6	150.6	54.5	51.8	96.2	88.2	55.1	52.7	1.2	1.2	8.9	10.8
1975-----	190.9	150.2	53.8	51.3	96.4	87.4	51.5	49.5	.9	1.1	-10.7	-14.3
1976-----	243.0	164.9	57.3	54.7	107.6	97.4	68.1	65.7	1.1	1.3	10.0	12.1
1977-----	303.3	189.4	62.6	59.8	126.8	116.3	91.9	88.8	1.5	1.6	21.9	20.7
1978-----	351.5	221.1	76.5	73.3	144.6	132.6	108.0	104.4	1.8	1.9	22.3	21.3
1979-----	387.2	254.9	92.6	88.9	162.2	147.8	114.1	110.2	1.9	2.0	18.2	16.5

Source: Department of Commerce, Bureau of Economic Analysis.

Private new construction is the dominant component of the structure series. The construction estimates are based primarily on the Census Bureau series on the value of new construction put in place for privately owned residential and non-residential structures.

The primary source for estimates of changes in the nonfarm portion of business inventories is reported accounting data on the book value of inventories at the beginning and end of the period for which the estimates are made. Because inventory calculation by individual business firms varies widely in method, numerous adjustments to the reported data are necessary to arrive at an estimate consistent with the basic concept. The principal adjustment is that of removing the price-change element in the reported figures and revaluing inventory change in current dollars.

RELATION TO OTHER SERIES

The relationship between the *Producers' durable equipment* series and the estimated equipment series implied in Expenditures for New Plant and Equipment, to which it is closely related, is discussed in the following section.

The *Change in business inventories* series is most closely related to the estimates of *Business Inventories*, discussed later. A basic difference between these series is that the series on business inventory change, included here, measures changes in inventories over a period of time, whereas the inventory series discussed later measures the level of inventories at a given point in time. The series also differ conceptually in their measurement of inventories: The inventories series is based upon data as reported by the reporting companies, whereas in the national accounts a uniform method of valuation is used.

The producers' durable equipment, structures, and change in business inventories series are seasonally adjusted primarily by use of the Census X-11 method. Modifications in this seasonal adjustment method are made when appropriate, and

EXPENDITURES FOR NEW PLANT AND EQUIPMENT

DESCRIPTION OF SERIES

The Bureau of Economic Analysis of the Department of Commerce provides quarterly measures of business expenditures for new plant and equipment for actual outlays and for planned expenditures for two succeeding quarters and the current calendar year. The series measures the expenditures by all private business (except farming, real estate, the professions, and nonprofit and other institutions) for new plant, machinery, and equipment for which depreciation accounts are maintained. Expenditures charged off as current expenses are excluded. Estimates of the actual and

improvements in the seasonal adjustment factors are instituted when experience suggests that they are desirable.

USES AND LIMITATIONS

Changes in business investment are a major—if not the major—factor determining business conditions.

Unfortunately, there are many shortcomings in the data on which both fixed investment and inventory changes are based, especially for current quarters.

The absence of reliable current data on government purchases of producers' durable equipment constitutes a special problem. The limitations of the data on manufacturers' commodity sales and on new plant and equipment expenditures affect the current estimates of investment in producers' durable equipment. The rate of investment in construction is also subject to many data inadequacies, requiring the use of "phasing patterns" and other synthetic statistical techniques.

The figures on *Change in business inventories* are useful indicators of the physical volume change in inventories during the period under review. A limitation in the series is inherent in the basic method of calculation that must be used. The estimates are calculated as the difference between large and possibly volatile inventory totals at two points in time. Even small errors in the estimates of total inventories can lead to large relative errors in the estimates of inventory change.

REFERENCES

See section on National Income. For a full discussion of the concepts and statistical methods, see *Readings in Concepts and Methods of National Income Statistics, Business Statistics*, and the *Gross National Product Data Improvement Project Report*, and "The Input-Output Structure of the U.S. Economy, 1972" *Survey of Current Business*, February 1979.

projected outlays are based on survey data from business firms.

The last major revision was published in two parts in the January 1970 and February 1970 issues of the *Survey of Current Business*. Another major revision is expected to be published in 1980.

STATISTICAL PROCEDURES

The basic data are derived from reports submitted by a large sample of companies, unincorporated as well as corporate, to the Bureau of Economic Analysis. The estimates presented are universe totals of expenditures for new plant and

equipment in the United States based on the sample data. They are compiled from reports on a company basis. A company's entire capital expenditures are assigned to a single industry in accordance with the industry classification of the company's principal products.

The benchmarks for the estimates are developed from a wide variety of sources. For manufacturing, the principal source is *Enterprise Statistics* prepared by the Bureau of the Census. For other industries, benchmark estimates are based on data from the Bureau of the Census, the Internal Revenue Service, the Interstate Commerce Commission, and other regulatory agencies.

The estimations of year-to-year and quarter-to-quarter movements in these expenditures are made by extrapolating the benchmark estimates on the basis of the annual and quarterly reports received by BEA. Essentially, the estimation procedure is as follows: given a universe estimate for one period, the universe estimate for the next period is derived by multiplying the first given universe estimate by a link relative which is derived from aggregates for the first period and the period following for a matched sample of reporting companies. The group of reporting companies accounts

for at least two-thirds of aggregate investment in plant and equipment, although the sample is not randomly selected. Sample expenditures were 68 percent of estimated universe expenditures in the first quarter of 1978. Coverage varies considerably by industry groups.

The factors used for adjusting plant and equipment expenditures data for seasonal fluctuations are derived from the Census X-11Q method. These seasonal adjustment factors are applied both to estimates of planned expenditures for a given quarter and to the estimates of actual expenditures for that quarter. The seasonally adjusted estimates of planned expenditures are further adjusted for the systematic biases of underestimation or overestimation that have been found in the reported data.

The seasonal adjustment factors and the bias adjustment factors have remained relatively stable for any given quarter during recent years, but they are modified as circumstances warrant. The magnitudes of the seasonal and bias adjustments made in the 1978 quarterly estimates are suggested by the implicit adjustment factors shown in the table below.

Implicit Adjustment Factors, Expenditures for New Plant and Equipment, 1978

Quarter	Seasonal Adjustment Factors	Bias Adjustment Factors	
		For plans reported one quarter ahead	For plans reported two quarters ahead
First.....	0. 90	0. 89	0. 93
Second.....	1. 01	. 93	. 96
Third.....	1. 00	. 92	. 95
Fourth.....	1. 10	. 98	1. 02

RELATION TO OTHER SERIES

The BEA series on actual plant and equipment expenditures utilizes the same definitions of investment as those of the Census of Manufactures, Census of Business, and the annual survey of manufactures of the Bureau of the Census. However, the Census and BEA series differ in timeliness and industry classification, coverage and detail. The BEA series supplies both actual and planned data on a quarterly and annual basis, while the Census data relate only to annual expenditures in past periods. The BEA obtains reports on companywide outlays, while the Census Bureau obtains reports on outlays of establishments. Thus, the Census

Bureau's annual series on manufacturers covers *establishments* whose primary activity is manufacturing, while the BEA quarterly and annual manufacturing series cover all activities, manufacturing as well as nonmanufacturing, of *companies* whose primary activity is manufacturing, and excludes manufacturing activities of companies whose primary activity is nonmanufacturing. The BEA estimates cover all industries except agriculture, the professions and nonprofit and other institutions, and real estate, while the Census estimates cover only manufacturing, mining and the wholesale, retail, and service trades. The Census series provide more industry detail than the BEA data.

TABLE 12.—Expenditures for New Plant and Equipment, 1939 and 1945-79

[Billions of dollars]

Year	Expenditures for plant and equipment										Starts of plant and equipment projects ²	
	Manufacturing				Nonmanufacturing						Manu- fac- turing	Public utilities
	Total	Total	Durable goods	Non- durable goods	Total	Mining	Trans- porta- tion	Public utilities	Com- munica- tion	Com- mer- cial and other ¹		
1939.....	5.51	1.94	0.76	1.19	3.57	0.33	0.64	0.52	0.30	1.78		
1945.....	8.69	3.98	1.59	2.39	4.71	.38	1.12	.50	.32	2.38		
1946.....	14.85	6.79	3.11	3.68	8.06	.43	1.51	.79	.82	4.52		
1947.....	19.33	8.44	3.25	5.19	10.89	.69	2.21	1.54	1.40	5.05		
1948.....	21.30	9.01	3.30	5.71	12.29	.93	2.65	2.54	1.74	4.42		
1949.....	18.98	7.12	2.45	4.68	11.86	.88	2.30	3.10	1.34	4.24		
1950.....	20.21	7.39	2.94	4.45	12.82	.84	2.37	3.24	1.14	5.22		
1951.....	25.46	10.71	4.82	5.89	14.75	1.11	3.04	3.56	1.37	5.67		
1952.....	26.43	11.45	5.21	6.24	14.98	1.21	2.97	3.74	1.61	5.45		
1953.....	28.20	11.86	5.31	6.56	16.34	1.25	2.95	4.34	1.78	6.02		
1954.....	27.19	11.24	4.91	6.33	15.95	1.28	2.40	3.99	1.82	6.45		
1955.....	29.53	11.89	5.41	6.48	17.64	1.31	2.57	4.03	2.11	7.63		
1956.....	35.73	15.40	7.45	7.95	20.34	1.64	3.02	4.52	2.82	8.32		
1957.....	37.94	16.51	7.84	8.68	21.43	1.69	3.29	5.67	3.19	7.60		
1958.....	31.89	12.38	5.61	6.77	19.51	1.43	2.30	5.52	2.79	7.48		
1959.....	33.55	12.77	5.81	6.95	20.78	1.36	3.12	5.14	2.72	8.44		
1960.....	36.75	15.09	7.23	7.85	21.66	1.30	3.13	5.24	3.24	8.75		
1961.....	35.91	14.33	6.31	8.02	21.58	1.29	2.77	5.00	3.39	9.13		
1962.....	38.39	15.06	6.79	8.26	23.33	1.40	3.19	4.90	3.85	9.99		
1963.....	40.77	16.22	7.53	8.70	24.55	1.27	3.24	4.98	4.06	10.99	18.26	5.35
1964.....	46.97	19.34	9.28	10.07	27.62	1.34	4.17	5.49	4.61	12.02	23.05	5.65
1965.....	54.42	23.44	11.50	11.94	30.98	1.46	4.90	6.13	5.30	13.19	28.67	8.28
1966.....	63.51	28.20	14.06	14.14	35.32	1.62	5.76	7.43	6.02	14.48	30.10	9.55
1967.....	65.47	28.51	14.06	14.45	36.96	1.65	5.63	8.74	6.34	14.59	26.50	12.58
1968.....	67.76	28.37	14.12	14.25	39.40	1.63	5.60	10.20	6.83	15.14	29.64	12.86
1969.....	75.56	31.68	15.96	15.72	43.88	1.86	6.06	11.61	8.30	16.05	34.07	15.16
1970.....	79.71	31.95	15.80	16.15	47.76	1.89	6.04	13.14	10.10	16.59	29.18	17.20
1971.....	81.21	29.99	14.15	15.84	51.22	2.16	4.94	15.30	10.77	18.05	28.00	22.22
1972.....	88.44	31.35	15.64	15.72	57.09	2.42	5.71	17.00	11.89	20.07	35.21	28.60
1973.....	99.74	38.01	19.25	18.76	61.73	2.74	6.03	18.71	12.85	21.40	47.57	38.13
1974.....	112.40	46.01	22.62	23.39	66.39	3.18	6.66	20.55	13.96	22.05	52.49	45.74
1975.....	112.78	47.95	21.84	26.11	64.82	3.79	7.56	20.14	12.74	20.60	48.24	34.50
1976.....	120.49	52.48	23.68	28.81	68.01	4.00	7.44	22.28	13.30	20.99	51.05	29.66
1977.....	135.80	60.16	27.77	32.39	75.64	4.50	6.93	25.80	15.45	22.97	66.73	32.54
1978.....	153.82	67.62	31.66	35.96	86.19	4.78	8.06	29.48	18.16	25.71	72.44	34.93
1979.....	177.09	78.92	38.23	40.69	98.17	5.56	10.13	32.56	20.56	29.35	87.30	21.70

¹ Includes trade, service, finance, and construction.² Starts are estimated by adding changes in carryover to expenditures during the given period.

NOTE.—These figures do not agree precisely with the nonresidential fixed investment component of the gross national product estimates of the Department of Commerce. The main difference lies in the inclusion in the gross national product of investment by farmers, professionals, real estate operators, and institutions; transactions in used assets; and certain outlays charged to current expense.

Data on expenditures for new plant and equipment are not available for the years prior to 1939 and for the years 1940-44.

Source: Department of Commerce, Bureau of Economic Analysis.

The BEA survey-based series differs somewhat in concept from the "Producers' durable equipment" and "Nonresidential structures" components of gross private domestic investment in the gross national product estimates. Unlike the latter, the survey-based series is confined to non-agricultural industries, and excludes expenditures of institutions and professional persons; it is based on a survey requesting information on expenditures charged to capital account, for which depreciation or amortization accounts are maintained. The current estimates of investment in producers' durable equipment are for the most part derived indirectly by extrapolating benchmarks on the basis of manufacturers' shipments of capital equipment and also percent-change estimates developed from the equipment expenditures portion of the BEA series; the estimates of new private construction are developed from both direct and indirect sources.

The BEA series on manufacturers' expenditures for new plant and equipment is generally comparable in classification and scope with the Census series on manufacturers' sales, orders, and inventories, except that some reports of sales, orders, and inventories for large multi-industry firms are on a divisional rather than a company basis. The BEA series has a different scope from the Federal Trade Commission financial reports series, mainly in that the FTC estimates of balance sheet and income statement items cover only corporations in selected industries—manufacturing and, in recent years, mining and trade—and a different degree of company consolidation is involved.

USES AND LIMITATIONS

The plant and equipment measures are one of the few economic series in which estimates of planned events as well as historical events are

made. Planned capital outlays, especially for the coming year, are of great importance in the analysis of business conditions. Planned expenditures for a period differ from actual expenditures for the same period for a number of reasons. Nevertheless, for most periods, the planned outlays adjusted for seasonal variations and systematic biases have been a reliable indicator of the overall trend of capital expenditures. The survey has generally reflected the cyclical turning points in the postwar period.

There are two principal deficiencies in the statistical procedures employed in making the estimates of expenditures for new plant and equipment. One of these is the inadequacy of the sample of companies surveyed for some industries. This is so despite the fact that a continuing effort is made to add additional firms to the sample. The second deficiency is that the benchmark data are only available with a substantial lag and in several areas such data are of limited reliability.

REFERENCES

The plant and equipment estimates are published quarterly in Department of Commerce press releases and in the *Survey of Current Business*. Quarterly and annual data for the preceding four years are shown in *Business Statistics*, the biennial statistical supplement to the *Survey of Current Business*. For a more complete description of the methods employed in making the estimates, see the January and February 1970 issues of the *Survey of Current Business*. A qualitative evaluation of the series for the years 1948–1958 is contained in *Statistical Evaluation Reports, Report No. 1*, "An Appraisal of OBE–SEC Estimates of Plant and Equipment Expenditures, 1947–1958," published by the Office of Statistical Standards, Bureau of the Budget.

EMPLOYMENT, UNEMPLOYMENT, AND WAGES

STATUS OF THE LABOR FORCE

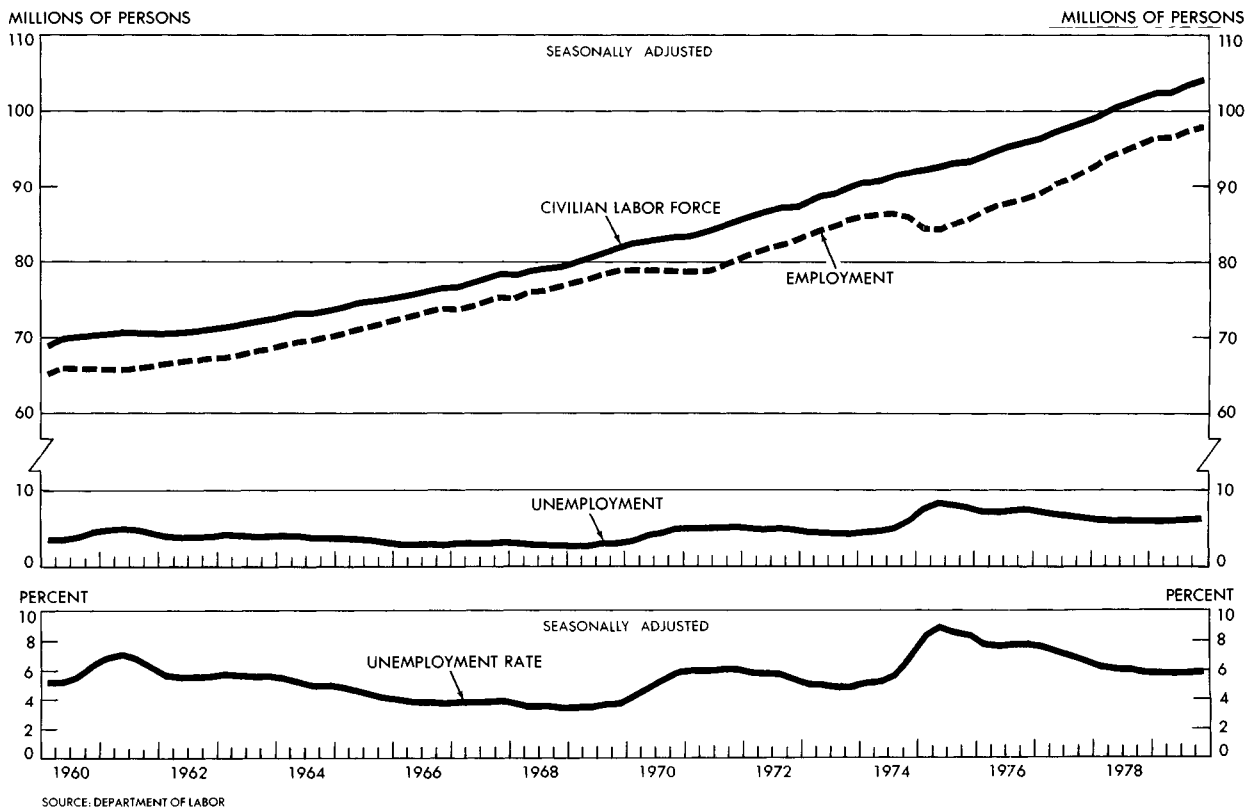
DESCRIPTION OF SERIES

Each month the Bureau of Labor Statistics (BLS) of the Department of Labor publishes and analyzes statistics on the labor force, employment and unemployment, classified by a variety of demographic, social, and economic characteristics. These statistics are derived from the Current Population Survey (CPS), which is a monthly survey of 65,000 households (beginning in 1980) conducted by the Bureau of the Census for BLS. A detailed description of this survey appears in *Concepts and Methods Used in Labor Force Statistics Derived from the Current Population Survey*,

BLS Report 463 and Current Population Reports Series P-23, no. 62.

Respondents are interviewed to obtain information on the employment status of each member of the household 16 years of age and over. The interviewer asks a series of standard questions on activity or status during the calendar week, Sunday through Saturday, which includes the 12th day of the month. This is known as the survey week. Actual field interviewing is conducted during the following week. The primary purpose of these questions is to classify the sample population into three basic groups—the employed, the unemployed, and those not in the labor force.

Chart 3.—STATUS OF THE LABOR FORCE



Inmates of institutions, members of the Armed Forces, and persons under 16 years of age are not covered in the regular monthly enumerations and are excluded from the population and labor force statistics. Data on members of the Armed Forces are obtained from the Department of Defense and are included in the categories "total noninstitutional population" and "total labor force".

The concepts of the labor force, employment, and unemployment, similar to those presently in use, were introduced in the latter stages of the depression of the 1930's chiefly to derive more objective measurements of unemployment and employment than were previously available. These concepts have been modified but not substantially altered since the inception of the survey in 1940.

Present concepts and definitions have been in existence since January 1967, when several improvements in the methodology for measuring employment and unemployment were made in line with the basic recommendations of the President's Committee to Appraise Employment and Unemployment Statistics (Gordon Committee) as set forth in its 1962 report, *Measuring Employment and Unemployment*. A detailed discussion of the changes and their effect on the various series is contained in "New Definitions of Employment and Unemployment," which appeared in the February 1967 issue of *Employment and Earnings* and *Monthly Report on the Labor Force*. A more recent assessment of the labor force data was conducted by the National Commission on Employment and Unemployment Statistics (see Statistical Procedures).

Employed persons are (1) all civilians who, during the survey week, did any work at all as paid employees or in their own business, profession, or on their own farm, or who worked 15 hours or more as unpaid workers in a family-operated enterprise, and (2) all those who did not work but had jobs or businesses from which they were temporarily absent because of illness, bad weather, vacation, labor-management dispute, or various personal reasons, whether or not they were paid for the time off and whether or not they were seeking other employment. Each employed person is counted only once. Those who held more than one job are counted in the job in which they worked the greatest number of hours during the survey week. Included in the total are employed citizens of foreign countries, who are temporarily residing in the United States, but not living on the premises of an Embassy. Excluded are persons whose only activity consisted of work around their own home or volunteer work for religious, charitable, and similar organizations.

Unemployed persons are all civilians who had no employment during the survey week, were available for work, except for temporary illness, and were in one of the following categories: (1)

had made specific efforts to find work within the preceding 4-week period such as by registering at a public or private employment agency, contacting employers directly, writing letters of application etc.; or (2) were waiting to be recalled to a job from which they had been laid off; or (3) were waiting to report to a new job within 30 days.

Duration of unemployment represents the length of time (through the current survey week) during which persons classified as unemployed had been continuously looking for work. For persons on layoff, duration represents the number of full weeks since the termination of their most recent employment. A period of 2 or more weeks during which a person was employed or ceased looking for work breaks the continuity of the present period of seeking work.

Unemployment by reason categorizes the status of persons at the time they began to look for work. These are divided into four major groups: (1) Job losers are persons whose employment ended involuntarily and who immediately began looking for work and persons on either temporary or indefinite layoff; (2) Job leavers are persons who quit or otherwise terminated their employment voluntarily and immediately began looking for work; (3) Reentrants are persons who previously worked at a full-time job lasting 2 weeks or longer but who were out of the labor force prior to beginning to look for work; (4) New entrants are persons who never worked at a full-time job lasting 2 weeks or longer.

Jobseekers are all unemployed persons who made specific efforts to find a job sometime during the 4-week period preceding the survey week. Jobseekers do not include persons unemployed because they (1) were waiting to be recalled to a job from which they had been laid off, or (2) were waiting to report to a new job within 30 days. Jobseekers are grouped by the methods used to seek work, including going to a public or private employment agency or to an employer directly, seeking assistance from friends or relatives, placing or answering ads, or utilizing some other method. Examples of the "other" category include being on a union or professional register, obtaining assistance from a community organization, or waiting at a designated pick-up point.

The *civilian labor force* is composed of persons 16 years of age and over who are classified as employed or unemployed in accordance with the criteria described above. The *total labor force* also includes members of the Armed Forces stationed either in the United States or abroad.

The *full-time labor force* consists of all persons working on full-time schedules (35 hours or more during the survey week), persons involuntarily working part time (1 to 34 hours) for economic reasons such as slack work, material shortages, inability to find full-time work, etc., and unem-

ployed persons seeking full-time jobs. The *part-time labor force* consists of persons working part-time voluntarily and unemployed persons seeking part-time jobs. Persons with a job but not at work during the survey week are classified according to whether they usually work full or part-time.

The *unemployment rate* represents the total number of unemployed as a percent of the civilian labor force. Unemployment rates for various worker groups by sex, age, race, and other characteristics are calculated as the percent of the labor force in each group. The job-loser, job-leaver, reentrant, and new entrant rates are each calculated as a percent of the civilian labor force. The sum of the rates for the four groups equals the overall unemployment rate.

The *labor force participation rate* is the percentage of the noninstitutional population that is in the labor force.

The *not in the labor force* category includes all civilians 16 years and over who are not classified

as employed or unemployed. These individuals are further classified as "engaged in own home housework," "in school," "unable to work" (because of long-term physical or mental illness), "retired," and "other". Included in the "other" category are so-called discouraged workers (persons who are not looking for work because they believe that no jobs are available due to the prevailing job market situation or due to personal factors, such as age, lack of education or training, etc.), the voluntary idle, seasonal workers for whom the survey week falls in an "off" season and who were not reported as looking for work, those reported as too old to work, and those doing only incidental unpaid family work (less than 15 hours during the survey week).

For persons not in the labor force, detailed information is obtained on their previous work history, intentions to seek work, desire for a job at the time of interview, and reasons for not seeking work.

TABLE 13.—*Status of the Labor Force, 1929-79*

[Thousands of persons, except as noted]

Year	Noninstitutional population	Total labor force (including Armed Forces)	Employment				Unemployment		Labor force participation rate (percent) ²	
			Civilian labor force	Total	Agricultural	Nonagricultural		Total		15 weeks and over
						Total	Part-time for economic reasons ¹			
Persons 14 years of age and over										
1929		49,440	49,180	47,630	10,450	37,180	1,550			
1930		50,080	49,820	45,480	10,340	35,140	4,340			
1931		50,680	50,420	42,400	10,290	32,110	8,020			
1932		51,250	51,000	38,940	10,170	28,770	12,060			
1933		51,840	51,590	38,760	10,090	28,670	12,830			
1934		52,490	52,230	40,890	9,900	30,990	11,340			
1935		53,140	52,870	42,260	10,110	32,150	10,610			
1936		53,740	53,440	44,410	10,000	34,410	9,030			
1937		54,320	54,000	46,300	9,820	36,480	7,700			
1938		54,950	54,610	44,220	9,690	34,530	10,390			
1939		55,600	55,230	45,750	9,610	36,140	9,480			
1940	100,380	56,180	55,640	47,520	9,540	37,980	8,120		56.0	
1941	101,520	57,530	55,910	50,350	9,100	41,250	5,560		56.7	
1942	102,610	60,380	56,410	53,750	9,250	44,500	2,660		58.8	
1943	103,660	64,560	55,540	54,470	9,080	45,390	1,070		62.3	
1944	104,630	66,040	54,630	53,960	8,950	45,010	670		63.1	
1945	105,530	65,300	53,860	52,820	8,580	44,240	1,040		61.9	
1946	106,520	60,970	57,520	55,250	8,320	46,930	2,270		57.2	
1947	107,608	61,758	60,168	57,812	8,256	49,557	2,356		57.4	
Persons 16 years of age and over										
1947	103,418	60,941	59,350	57,038	7,890	49,148	2,311		58.9	
1948	104,527	62,080	60,621	58,343	7,629	50,714	2,276	309	59.4	
1949	105,611	62,903	61,286	57,651	7,658	49,993	3,637	684	59.6	
1950	106,645	63,858	62,208	58,918	7,160	51,758	3,288	782	59.9	
1951	107,721	65,117	62,017	59,961	6,726	53,235	2,055	303	60.4	
1952	108,823	65,730	62,138	60,250	6,500	53,749	1,883	232	60.4	
1953 ³	110,601	66,560	63,015	61,179	6,260	54,919	1,834	210	60.2	
1954	111,671	66,993	63,643	60,109	6,205	53,904	3,532	812	60.0	
1955	112,732	68,072	65,023	62,170	6,450	55,722	2,852	702	60.4	
1956	113,811	69,409	66,552	63,799	6,283	57,514	1,967	2,750	533	61.0
1957	115,065	69,729	66,929	64,071	5,947	58,123	2,169	2,859	560	60.6
1958	116,363	70,275	67,639	63,036	5,586	57,450	2,953	4,602	1,452	60.4
1959	117,881	70,921	68,369	64,630	5,565	59,065	2,336	3,740	1,040	60.2
1960 ³	119,759	72,142	69,628	65,778	5,458	60,318	2,560	3,852	957	60.2
1961	121,343	73,031	70,459	65,746	5,200	60,546	2,813	4,714	1,532	60.2
1962 ³	122,981	73,442	70,614	66,702	4,944	61,759	2,337	3,911	1,119	59.7
1963	125,154	74,571	71,833	67,762	4,687	63,076	2,291	4,070	1,088	59.6
1964	127,224	75,830	73,091	69,305	4,523	64,782	2,137	3,786	973	59.6
1965	129,236	77,178	74,455	71,088	4,361	66,726	1,928	3,366	755	59.7
1966	131,180	78,893	75,770	72,895	3,979	68,915	1,664	2,875	526	60.1
1967	133,319	80,793	77,347	74,372	3,844	70,527	1,913	2,975	448	60.6
1968	135,562	82,272	78,737	75,920	3,817	72,103	1,715	2,817	412	60.7
1969	137,841	84,240	80,734	77,902	3,606	74,296	1,810	2,832	375	61.1
1970	140,182	85,903	82,715	78,627	3,462	75,165	2,196	4,088	662	61.3
1971	142,596	86,929	84,113	79,120	3,387	75,732	2,440	4,993	1,182	61.0
1972 ³	145,775	88,991	86,542	81,702	3,472	78,230	2,408	4,840	1,158	61.0
1973 ³	148,263	91,040	88,714	84,409	3,452	80,957	2,311	4,304	812	61.4
1974	150,827	93,240	91,011	85,935	3,492	82,443	2,709	5,076	937	61.8
1975	153,449	94,793	92,613	84,783	3,380	81,403	3,490	7,830	2,483	61.8
1976	156,048	96,917	94,773	87,485	3,297	84,188	3,272	7,288	2,339	62.1
1977	158,559	99,534	97,401	90,546	3,244	87,302	3,297	6,855	1,911	62.8
1978 ³	161,058	102,537	100,420	94,373	3,342	91,031	3,216	6,047	1,379	63.7
1979	163,620	104,996	102,908	96,945	3,297	93,648	3,281	5,963	1,202	64.2

¹ Persons at work. Economic reasons include slack work, material shortages, inability to find full-time work, etc.² Total labor force as percent of total noninstitutional population.³ Not strictly comparable with earlier data due to population adjustments as follows: Beginning 1953, introduction of 1950 census data added about 600,000 to population and about 350,000 to labor force, total employment, and agricultural employment. Beginning 1960, inclusion of Alaska and Hawaii added about 500,000 to population, about 300,000 to labor force, and about 240,000 to nonagricultural employment. Beginning 1962, introduction of 1960 census data reduced population by about 50,000 and labor force and employment by about 200,000. Beginning 1972, introduction of 1970 census data added about 800,000 to civilian noninstitutional population and about 333,000 to labor force and employment. A subsequent adjustment based on 1970 census in March 1973 added 60,000 to labor force and to employment. Beginning 1978, changes in sampling and estimation procedures introduced into the household survey added about 250,000 to labor force and to employment. Unemployment levels and rates were not significantly affected.

Source: Department of Labor, Bureau of Labor Statistics.

Labor force time lost is a measure of aggregate hours lost to the economy through unemployment and involuntary part-time employment and is expressed as a percent of potentially available aggregate hours. It is computed by assuming: (1) that unemployed persons looking for full-time work lost an average of 37.5 hours, (2) that those looking for part-time work lost the average number of hours actually worked by voluntary part-time workers during the survey week, and (3) that persons on part-time for economic reasons lost the difference between 37.5 hours and the actual number of hours they worked.

STATISTICAL PROCEDURES

The concepts and definitions of employment and unemployment and all other aspects of labor force statistics have recently undergone a thorough review by the National Commission on Employment and Unemployment Statistics (Levitan Commission). The Commission's final report, *Counting the Labor Force*, was published in September 1979. It contains a number of recommendations for the household labor force series as well as for other job market statistical series. The Secretary of Labor transmitted to the Congress on March 3, 1980, an interim report on the final report of the Commission. The Secretary is expected to report by September 3, 1981, as to the actions to be taken on the Commission's recommendations.

The Current Population Survey (CPS) is conducted using a scientifically selected sample of 65,000 households designed to represent the civilian noninstitutional population 16 years of age and over in the 50 States and the District of Columbia.

In addition to the minor modifications in the concepts and definitions made over time, there have been various changes made in the design of the CPS sample. Most of these changes were made in order to improve the efficiency of the sample de-

sign and/or to increase the reliability of the sample estimates. One major change made after every decennial census is to update the sample design to make use of the most recently available census data. Also, the sample has been expanded a number of times since 1940 in terms of the number of sample households.

In January 1978 a supplemental sample of housing units, selected in 24 States and the District of Columbia and designed to provide more reliable annual average statistics for all 50 States and the District of Columbia, was added to the national household sample. A coverage improvement sample, composed of approximately 450 sample household units which represent 237,000 occupied mobile homes and 600,000 new construction housing units, was included in computing the estimates beginning in October 1978 in order to provide coverage of mobile homes and new construction housing units that previously had no chance for selection in the CPS sample. A recent change was introduced in January 1980 when another supplemental sample, selected in 32 States and the District of Columbia to provide more reliable quarterly average estimates for States, was added to the existing sample. These changes and their effect on the household survey estimates are described in the Explanatory Notes of *Employment and Earnings*.

The following table provides a description of some aspects of the CPS sample design in use during the referenced data collection periods. A chronology of major changes made in the CPS since its inception, as well as a technical description of the survey methodology, appears in *The Current Population Survey: Design and Methodology*, Technical Paper No. 40, Bureau of the Census, Department of Commerce, January 1978, or *Concepts and Methods Used in Labor Force Statistics Derived From the Current Population Survey*, BLS Report 463 and Current Population Reports Series p. 23, No. 62.

TABLE A.—Changes in the CPS Sample Design

Time Period	Number of sample areas ¹	Households eligible		Housing units visited, not eligible ²
		Interviewed	Not Interviewed	
Aug. 1947 to Jan. 1954.....	68	21, 000	500-1, 000	3, 000-3, 500
Feb. 1954 to Apr. 1956.....	230	21, 000	500-1, 000	3, 000-3, 500
May 1956 to Dec. 1959.....	330	33, 500	1, 500	6, 000
Jan. 1960 to Feb. 1963.....	333	33, 500	1, 500	6, 000
Mar. 1963 to Dec. 1966.....	357	33, 500	1, 500	6, 000
Jan. 1967 to July 1971.....	449	48, 000	2, 000	8, 500
Aug. 1971 to July 1972.....	449	45, 000	2, 000	8, 000
Aug. 1972 to Dec. 1977.....	461	45, 000	2, 000	8, 000
Jan. 1978 to Dec. 1979.....	614	53, 500	2, 500	10, 000
Jan. 1980 to present.....	629	62, 200	2, 800	12, 000

¹ Beginning in May 1956, these areas were chosen to provide coverage in each State and the District of Columbia.

² These are housing units which were visited, but were found to be vacant or otherwise not eligible for interview.

³ Three sample areas were added in 1960 to represent Alaska and Hawaii after Statehood.

SEASONAL ADJUSTMENT

Employment and unemployment data are affected to a large degree by seasonal variations. These include crop seasons, weather conditions, opening and closing of schools, holiday buying periods, and industry production schedules. When a series is adjusted for seasonality, the effects on the data of these factors are eliminated so that the underlying cyclical and nonseasonal movements are easier to discern.

Beginning in 1980 the BLS adopted a new seasonal adjustment procedure which uses the X-11 ARIMA (Auto-Regressive Integrated Moving Average) procedure to adjust labor force statistics. This was developed at Statistics Canada as an extension of the Census Bureau's X-11 procedure. In addition, new seasonal adjustment factors are projected separately for use during the first and second 6 months of the current year rather than for the entire year as was done in the past. The new factors are calculated based on experience up to each 6-month period, i.e. experience through December for the coming January-June periods and through June for the coming July-December period. Revisions of historical data for the most recent 5 years will continue to be made once a year, at the beginning of each calendar year. Revised series for a broad range of labor force series are published in the February issues of *Employment and Earnings*. Historical data are

obtainable from BLS in tabular or machine readable form upon request.

All civilian labor force and unemployment rate statistics, as well as the major employment and unemployment estimates, are computed by aggregating independently seasonally adjusted series. For example, for each of the three major labor force components—agricultural employment, non-agricultural employment, and unemployment—data for four sex-age groups (males and females under and over 20 years of age) are separately adjusted for seasonal variation and are then added to derive seasonally adjusted total figures. In order to provide seasonally adjusted total employment and civilian labor force estimates, the appropriate seasonally adjusted series are aggregated. The official unemployment rate for all civilian workers is derived by dividing the estimate for total unemployment (the sum of 4 seasonally adjusted sex-age components) by the civilian labor force (the sum of 12 seasonally adjusted sex-age components).

RELATION TO OTHER SERIES

Because employment data from the CPS are obtained by household interview, they differ in several basic respects from the employment estimates derived from payroll reports of business establishments such as the BLS Current Employment Survey (CES) program or the Department of Agriculture's estimates of farm employment.

TABLE 14.—Selected Unemployment Rates, 1929-79

Year	Unemployment rate (percent of civilian labor force in group)										Labor force time lost (percent) ¹
	By sex and age				By race		By selected groups				
	Total (all civilian workers)	Men 20 years and over	Women 20 years and over	Both sexes 16-19 years	White	Black and other	Experienced wage and salary workers	Household heads	Full-time workers	Part-time workers	
1929	3.2										
1930	8.7										
1931	15.9										
1932	23.6										
1933	24.9										
1934	21.7										
1935	20.1										
1936	16.9										
1937	14.3										
1938	19.0										
1939	17.2										
1940	14.6										
1941	9.9										
1942	4.7										
1943	1.9										
1944	1.2										
1945	1.9										
1946	3.9										
1947	3.9										
1948	3.8	3.2	3.6	9.2	3.5	5.9	4.3				
1949	5.9	5.4	5.3	13.4	5.6	8.9	6.8		5.4		
1950	5.3	4.7	5.1	12.2	4.9	9.0	6.0		5.0		
1951	3.3	2.5	4.0	8.2	3.1	5.3	3.7		2.6		
1952	3.0	2.4	3.2	8.5	2.8	5.4	3.3		2.5		
1953	2.9	2.5	2.9	7.6	2.7	4.5	3.2				
1954	5.5	4.9	5.5	12.6	5.0	9.9	6.2		5.2		
1955	4.4	3.8	4.4	11.0	3.9	8.7	4.8		3.8		4.8
1956	4.1	3.4	4.2	11.1	3.6	8.3	4.4		3.7		5.1
1957	4.3	3.6	4.1	11.6	3.8	7.9	4.6		4.0		5.3
1958	6.8	6.2	6.1	15.9	6.1	12.6	7.2		7.2		8.1
1959	5.5	4.7	5.2	14.6	4.8	10.7	5.7				6.6
1960	5.5	4.7	5.1	14.7	4.9	10.2	5.7				6.7
1961	6.7	5.7	6.3	16.8	6.0	12.4	6.8		6.7		8.0
1962	5.5	4.6	5.4	14.7	4.9	10.9	5.6				6.7
1963	5.7	4.5	5.4	17.2	5.0	10.8	5.5	3.7	5.5	7.3	6.4
1964	5.2	3.9	5.2	16.2	4.6	9.6	5.0	3.2	4.9	7.2	5.8
1965	4.5	3.2	4.5	14.8	4.1	8.1	4.3	2.8	4.2	6.7	5.0
1966	3.8	2.5	3.8	12.8	3.3	7.3	3.5	2.2	3.5	6.2	4.2
1967	3.8	2.3	4.2	12.9	3.4	7.4	3.6	2.1	3.4	6.9	4.1
1968	3.6	2.2	3.8	12.7	3.2	6.7	3.4	1.9	3.1	6.5	3.9
1969	3.5	2.1	3.7	12.2	3.1	6.4	3.3	1.8	3.1	6.2	3.8
1970	4.9	3.5	4.8	15.2	4.5	8.2	4.8	2.9	4.5	7.6	5.2
1971	5.9	4.4	5.7	16.9	5.4	9.9	5.7	3.7	5.5	8.7	6.2
1972	5.6	4.9	5.4	16.2	5.0	10.0	5.3	3.3	5.1	8.6	5.9
1973	4.9	3.2	4.8	14.5	4.3	8.9	4.5	2.9	4.3	7.9	5.2
1974	5.6	3.8	5.5	16.0	5.0	9.9	5.3	3.3	5.1	8.6	6.1
1975	8.5	6.7	8.0	19.9	7.8	13.9	8.2	5.8	8.1	10.3	9.1
1976	7.7	5.9	7.4	19.0	7.0	13.1	7.3	5.1	7.3	10.1	8.3
1977	7.0	5.2	7.0	17.7	6.2	13.1	6.6	4.5	6.5	9.8	7.6
1978	6.0	4.2	6.0	16.3	5.2	11.9	5.6	3.7	5.5	9.0	6.5
1979	5.8	4.1	5.7	16.1	5.1	11.3	5.4	3.6	5.3	8.7	6.3

¹ Aggregate hours lost by the unemployed and persons on part-time for economic reasons as percent of potentially available labor force hours.

NOTE.—Data relate to persons 14 years of age and over through 1946 and to persons 16 years of age and over beginning 1947.

Source: Department of Labor, Bureau of Labor Statistics.

The household survey provides information on the labor force activity of the entire civilian non-institutional population 16 years of age and over without duplication, since each individual is classified as either employed, unemployed, or not in the labor force. The estimates of employment cover persons in both agriculture and nonagricultural industries and, in addition to wage and salary workers, include a number of groups who would not appear on establishment payrolls: The self-employed, private household workers, unpaid workers who worked 15 hours or more during the survey week in family-operated enterprises, and persons "with a job but not at work" during the survey week (because of illness, bad weather, vacation, labor management disputes, or various personal reasons) who are not paid for the time absent.

The CES estimates cover paid wage and salary employees (regardless of age) on the payrolls of nonagricultural establishments. In this survey, as well as that of the Department of Agriculture on farm employment, persons who worked in more than one establishment or farm during the reporting period are counted each time they appear on a payroll record. In the CPS, dual jobholders are counted only once and are classified according to the job at which they worked the greatest number of hours during the survey week. Aside from these conceptual differences, each series differs with respect to sampling techniques, collection and estimating procedures, and these differences result in inconsistencies from time to time in the magnitude and direction of month-to-month change and in the timing and amplitude of business cycle swings. A comprehensive discussion of the differences between household and establishment survey employment data as well as long-term trends in their movements appear in "Comparing Employment Estimates from Household and Payroll Surveys" and "A 25-year Look at Employment as Measured by Two Surveys" in the December 1969 and the July 1973 issues, respectively, of the *Monthly Labor Review*.

For a number of reasons the unemployment estimates from the CPS are not directly comparable with statistics on unemployment insurance claims. The unemployed total from the household survey includes all persons who did not have a job at all during the survey week and were looking for work or were waiting to be recalled to a job from which they had been laid off, regardless of whether or not they were eligible for unemployment insurance. By contrast, figures on unemployment insurance claims, issued by the Employment and Training Administration of the Department of Labor exclude persons who have exhausted their benefit rights, new or reentrants to the labor force who have not earned rights to unemployment insurance, and persons losing jobs not covered by the un-

employment insurance system (self-employed and unpaid family workers, and some workers in agriculture, domestic services and religious organizations). Beginning in January 1978, coverage was extended to include domestic workers whose employers paid \$1,000 or more in wages in any calendar quarter, agricultural employees whose employers engaged 10 or more workers in 20 weeks or paid a total of \$20,000 or more in wages in any calendar quarter, and almost all State and local government employees. In addition, the qualifications for drawing unemployment compensation differ from the definition of unemployment used in the household survey. For example, persons with a job but not at work and persons working only a few hours during the week are sometimes eligible for unemployment compensation but are classified as employed rather than unemployed in the household survey. An examination of the similarities and differences between State insured unemployment and total unemployment appears in "Measuring Total and State Insured Unemployment" in the June 1971 issue of the *Monthly Labor Review*.

USES AND LIMITATIONS

The monthly labor force data provide basic measures of the performance of the economy in human terms. They are used in analyses of the supply of labor in relation to the population, sensitivity of employment trends to changes in industry output, and the relationship of unemployment to inflation. These analyses in turn are used in the formulation of fiscal, monetary and wage-price policies for the overall management of the economy. In addition to these macroeconomic policies, detail on the demographic and economic characteristics of the labor force facilitates analyses of structural aspects of job markets for assessing and shaping employment, training, and placement programs for target groups of the population.

Because the household survey is based on a sample, the results may differ from the figures that would be obtained if a universe survey using the same questionnaire and procedures were taken. As in any survey, the results are subject to errors of response and reporting. The standard error is primarily a measure of sampling variability, that is, of the variation that occurs by chance because a sample rather than the entire population is surveyed. The chances are about 68 out of 100 that an estimate from the survey differs from a figure that would be obtained through a complete census by less than the standard error. The table below provides current estimated monthly errors for a number of the major labor force series. Approximation of the standard errors for these and many other unemployment and labor force estimates are published monthly in the Explanatory Notes of *Employment and Earnings*.

TABLE B.—*Standard Errors of Major Labor Force Indicators*

Characteristics	Standard error of:	
	Monthly level	Month-to-month change (consecutive months only)
Labor force status (thousands of persons)		
Total, 16 years and over:		
Civilian labor force.....	223	171
Employed.....	236	180
Unemployed.....	107	111
Males, 20 years and over:		
Civilian labor force.....	124	107
Employed.....	135	118
Unemployed.....	68	71
Females, 20 years and over:		
Civilian labor force.....	168	129
Employed.....	167	131
Unemployed.....	64	67
Both sexes, 16-19 years:		
Civilian labor force.....	80	85
Employed.....	84	94
Unemployed.....	56	69
Unemployment rates (percentage points)		
Total, 16 years and over.....	. 11	. 11
Males, 20 years and over.....	. 13	. 13
Females, 20 years and over.....	. 17	. 18
Both sexes, 16-19 years.....	. 55	. 65
White, 16 years and over.....	. 11	. 11
Males, 20 years and over.....	. 13	. 12
Females, 20 years and over.....	. 17	. 18
Both sexes, 16-19 years.....	. 55	. 63
Black, and other, 16 years and over.....	. 45	. 47
Males, 20 years and over.....	. 59	. 58
Females, 20 years and over.....	. 61	. 65
Both sexes, 16-19 years.....	2. 33	2. 49

REFERENCES

Summary employment and unemployment data are released about 3 weeks following the survey week in "The Employment Situation" news release. More detailed household survey data, as well as statistics on nonagricultural payroll employment, hours and earnings, and unemployment data for States and areas are published in the BLS periodical, *Employment and Earnings*, about 5 weeks following the survey week. This publication also includes Explanatory Notes which describe the concepts, collection procedures, and sampling methodology underlying the data, and a summary of the seasonal adjustment techniques.

The regular monthly labor force survey is supplemented annually by a program of additional inquiries designed to provide more detailed statistics on special aspects of labor market activity. The results of these studies are usually published in a series of Special Labor Force Reports after initially appearing as articles in the *Monthly Labor Review*. These studies relate to work experience of the population, multiple jobholders, students, graduates, and dropouts in the labor market, marital and family characteristics of workers, children of working mothers, and educational attainment of workers. Related demographic data (i.e., income), from the CPS are published by the Bureau of the Census in a series of Current Population Reports.

Annual data from the Current Population Survey for 50 States and the District of Columbia, 30 large Standard Metropolitan Statistical Areas, and some of their central cities are published each year in the BLS report, *Geographic Profile of Employment and Unemployment*.

TABLE 15.—Selected Measures of Unemployment and Unemployment Insurance Programs, 1946-79

Year	Unemployment (thousands)	Percent distribution of unemployment by reason ¹				Percent distribution of unemployment by duration ¹				State programs ²		Insured unemployment, all regular programs ³	Special unemployment benefit claims ⁴
		Job losers	Job leavers	Re-entrants	New entrants	Less than 5 weeks	5-14 weeks	15-26 weeks	27 weeks and over	Insured unemployment	Initial claims		
1946	2,270									1,295	189	2,804	
1947	2,311					52.3	30.4	10.2	7.1	997	187	1,793	
1948	2,276					57.1	29.4	8.5	5.1	980	200	1,446	
1949	3,637					48.3	32.9	11.8	7.0	1,973	340	2,474	
1950	3,288					44.1	32.1	12.9	10.9	1,513	236	1,605	
1951	2,055					57.3	27.9	8.1	6.7	969	208	1,000	
1952	1,883					60.3	27.4	7.9	4.5	1,044	215	1,069	
1953	1,834					62.3	26.3	7.2	4.3	990	218	1,067	
1954	3,532					45.4	31.6	14.0	9.0	1,870	304	2,051	
1955	2,852					46.8	28.6	12.8	11.8	1,265	226	1,399	
1956	2,750					51.3	29.3	10.9	8.4	1,215	227	1,323	
1957	2,859					49.2	31.2	11.2	8.4	1,446	270	1,571	
1958	4,602					38.1	30.3	17.1	14.5	2,510	369	2,773	
1959	3,740					42.4	29.8	12.5	15.3	1,684	277	1,860	
1960	3,852					44.6	30.5	13.1	11.8	1,908	331	2,071	
1961	4,714					38.3	29.2	15.4	17.1	2,290	350	2,994	
1962	3,911					42.5	29.0	13.6	14.9	1,783	302	1,946	
1963	4,070					43.0	30.2	13.1	13.6	1,806	298	1,973	
1964	3,786					44.8	29.5	13.0	12.7	1,605	268	1,753	
1965	3,366					48.4	29.2	12.0	10.4	1,328	232	1,450	
1966	2,875					54.7	27.1	10.0	8.3	1,061	203	1,129	
1967	2,975	40.9	14.6	31.4	13.1	55.0	30.0	9.1	5.9	1,205	226	1,270	
1968	2,817	38.0	15.3	32.3	14.4	56.6	28.8	9.1	5.5	1,111	201	1,187	
1969	2,832	35.9	15.4	34.1	14.6	57.5	29.2	8.5	4.7	1,101	200	1,177	
1970	4,088	44.3	13.4	30.0	12.3	52.3	31.5	10.4	5.7	1,805	296	2,070	
1971	4,993	46.3	11.8	29.4	12.6	44.7	31.6	13.3	10.4	2,150	295	2,608	
1972	4,840	43.1	13.1	29.8	13.9	45.9	30.1	12.3	11.6	1,848	261	2,192	
1973	4,304	38.7	15.7	30.7	14.9	51.0	30.1	11.0	7.8	1,632	247	1,793	
1974	5,076	43.5	14.9	28.4	13.2	50.6	31.0	11.1	7.3	2,262	363	2,558	
1975	7,830	55.4	10.4	23.8	10.4	37.0	31.3	16.5	15.2	3,986	478	4,937	1,173
1976	7,288	49.8	12.2	26.0	12.1	38.3	29.6	13.8	18.3	2,991	386	3,846	1,152
1977	6,855	45.2	13.0	28.1	13.7	41.7	30.5	13.1	14.8	2,655	375	3,308	572
1978	6,047	41.5	14.1	30.0	14.3	46.2	31.0	12.3	10.5	2,359	346	2,645	
1979	5,963	42.8	14.3	29.5	13.4	48.1	31.7	11.5	8.7	2,460	388	2,619	

¹ Detail may not add to 100 percent because of rounding.

² Includes Puerto Rico beginning July 1963.

³ Includes State (50 States, District of Columbia, and Puerto Rico beginning July 1963), ex-servicemen (UCX), Federal (UCFE), and railroad (RR) programs. Also includes Federal and State extended benefit programs. Does not include FSB (Federal supplemental benefits) and SUA (special unemployment assistance).

⁴ FSB and SUA. These programs started January 1975 and regular reporting began March 1975.

NOTE.—Unemployment figure for 1946 relates to persons 14 years of age and over. Unemployment and percent distributions beginning 1947 relate to persons 16 years of age and over.

Source: Department of Labor (Bureau of Labor Statistics and Employment and Training Administration).

UNEMPLOYMENT INSURANCE PROGRAMS

DESCRIPTION OF SERIES

Weekly data on claims for benefits under employment security programs are provided by the Employment and Training Administration (ETA) of the Department of Labor. They represent a measure of unemployment among workers covered by the programs. The series are obtained as administrative reports from unemployment programs: (a) State employment security agencies covering State programs, (b) the program of Federal-State extended unemployment compensation, (c) the program for Federal employees, and (d) the ex-servicemen's unemployment compensation program. Figures also include World War II veterans who filed for benefits under the Servicemen's Readjustment Act of 1944, Korean War veterans filing under the Veterans' Readjustment Assistance Act of 1952, and claimants under the following temporary programs: The Temporary Unemployment Compensation Act of 1958, the Temporary Extended Unemployment Compensation Act of 1961, the Emergency Unemployment Compensation Act of 1971, the Emergency Unemployment Compensation Act of 1974, and the Emergency Jobs and Unemployment Assistance Act of 1974.

Insured unemployment for "all regular programs" includes workers receiving payments in the 50 States, the District of Columbia, Puerto Rico and the Virgin Islands under the regular State programs; the programs for former Federal employees and ex-servicemen; the railroad program, and the Federal-State extended benefits program. "State programs" exclude the Federal employee, servicemen, and railroad industry programs.

Insured unemployment represents the number of covered workers totally or partially unemployed during a given week for which they have filed unemployment insurance claims under the State unemployment insurance program. Weekly averages for the month are shown as indicated. Weekly insured unemployment figures are available but not included for each State for the Federal employee (UCFE) and ex-servicemen's (UCX) programs. Weekly averages for the calendar month are also provided.

Initial claims are applications at the beginning of a period of unemployment for a determination of eligibility. These data are also available on a weekly basis for each State. This series provides a measure of the volume of new unemployment emerging under the State program. However, data on initial claims are not added to the insured unemployment count, since such claims do not certify to completed weeks of unemployment.

Special unemployment benefit claims represent benefits paid under two temporary programs, the Federal Supplemental Benefits (FSB) program

and the Special Unemployment Assistance (SUA) program. FSB provided benefits from 1975 to 1978 for those workers who had exhausted their regular and extended benefit entitlements. SUA provided benefits from 1975 to 1978 to claimants who were not covered under existing law or lacked appropriate wage credits necessary to qualify for benefits. Both programs have expired.

STATISTICAL PROCEDURES

The insured unemployment figures are complete counts of completed weeks of unemployment for which benefits are claimed (by the filing of continued claims). The ETA sums the data reported by the State employment security agencies and the Railroad Retirement Board to get National totals weekly. Generally, a continued claim filed in a given week certifies unemployment in the preceding week, i.e., the week in which the unemployment actually occurred.

Insured unemployment is seasonally adjusted by a ratio-to-moving-average method, using the same techniques as are used in the nonagricultural employees series. The seasonal adjustment factors for the insured unemployment, State programs, for 1979 are:

January -----	128.6	July -----	95.1
February -----	129.9	August -----	88.3
March -----	118.4	September -----	81.2
April -----	103.1	October -----	81.2
May -----	92.3	November -----	90.1
June -----	87.1	December -----	107.3

RELATION TO OTHER SERIES

For a comparison with total unemployment, see Status of the Labor Force.

USES AND LIMITATIONS

The weekly insured unemployment figures serve to provide the most up-to-date information on current trends in unemployment.

Varying coverage provisions in Federal and State laws may limit the extent of coverage of the insured unemployment series. In addition, some groups of covered workers may not be included in the data on insured unemployment because they are not eligible for benefits. These groups include the following: Unemployed workers whose previous jobs were in covered industries, but who did not earn sufficient wage credits or were not employed the required length of time; unemployed covered workers who were disqualified for various reasons, such as voluntary quitting without good cause, discharge for misconduct, refusal of suitable work, or temporary illness; persons who were eligible to receive benefits but for one reason or another did not apply; and finally, workers who

have exhausted their benefit rights. In a period when unemployment is substantial and of long duration, the volume of exhaustions may have an important bearing on the magnitude of the insured unemployment level. Unlike total unemployment, the insured unemployment series does not include new entrants into the labor market who are looking for, but have not yet found, work; nor does it include many of the entrants who may lack specific wage credits.

These factors vary over time as well as between States. During the years since 1939, exclusions due to "size-of-firm" provisions have declined. Originally, State unemployment insurance programs excluded workers in firms with fewer than eight employees. In January 1956, amendments to the Social Security Act resulted in coverage of workers in firms employing four or more. The Employment Security Amendments of 1970 (P.L. 91-373) extended coverage, beginning January 1972, to workers in firms employing one or more workers in at least 20 weeks in a year or with quarterly wages of at least \$1,500. Coverage was also extended to certain employees of nonprofit organizations and of State hospitals and institutions of higher education. The Unemployment Compensation Amendment of 1976 (P.L. 94-566) extended coverage beginning January 1978 to nearly all employees of State and local governments and nonprofit schools. In addition, agricultural employees whose employer paid wages of \$20,000 in any calendar quarter or paid wages in 20 weeks during a year and domestic workers whose employer paid at least \$1,000 in any calendar quarter were covered.

Weekly data are subject to some variation from week to week as holidays call for a rescheduling of the claimant's appearance at the local office. The effects of this factor, however, have been reduced considerably since 1959, when nearly all the States adopted procedures for adjusting "weeks claimed" totals affected by holidays. Monthly data are pre-

sented as "average weekly volume of insured unemployment" and are not significantly affected by holiday weeks. The monthly data, however, are influenced to some extent by administrative factors. Forty-nine States, Puerto Rico, the District of Columbia, and the Virgin Islands operate on an "individual benefit year" basis. In such States a worker who previously had insufficient wage credits may become eligible for benefits when the earnings of a new quarter become a part of his base period. This administrative factor exerts an upward influence on both insured unemployment and initial claims during the first month of each quarter in most States. Similarly, New Hampshire which operates on a "uniform benefit year" usually shows an administrative rise in insured unemployment at the beginning of the new benefit year.

REFERENCE

The basic release of the weekly data is the ETA Unemployment Insurance Claims, which contains initial claims as well as insured unemployment for the State, Federal employee and exserviceman programs by State, and nationally for the Railroad Retirement Board program. Insured unemployment for the week including the 12th of the month is included in *Employment and Earnings* and the monthly *Report on the Labor Force* for States. Weekly figures, monthly averages and actual and seasonally adjusted insured unemployment rates are also published in the ETA monthly periodical, *Unemployment Insurance Statistics*. Weekly data back to July 1945 are available on request from the ETA. A comprehensive summary of technical notes, "Insured Unemployment and Wage Statistics: Their Source, Nature and Limitations," appears in the March 1960 issue of *The Labor Market and Employment Security*. Reprints of this summary of technical notes are available on request to the ETA.

NONAGRICULTURAL EMPLOYMENT

DESCRIPTION OF SERIES

Current monthly series on employment in non-agricultural establishments, with related information on hours and earnings (see below), are prepared by the Bureau of Labor Statistics. Employment estimates are published for about 500 separate industry groups and subgroups as well as major industry divisions (manufacturing, mining, trade, etc.). Annual average data for all the major industry divisions are available on a comparable basis back to 1919. For the 20 major groups within manufacturing, all series go back to 1947 and for most groups to 1939. Durable goods manufacturing industries include: Lumber and wood products; furniture and fixtures; stone, clay and glass

products; primary metal industries; fabricated metal products; machinery; electronic and electrical equipment; transportation equipment; instruments, and miscellaneous manufacturing industries. All other manufacturing industries are included in the nondurable manufacturing estimates. Employees of government operated manufacturing establishments, such as shipyards, are included under government. Estimates of women employed in nonagricultural establishments are available quarterly with monthly data available for some series back to 1959.

Employment figures represent the total number of persons employed in nonagricultural establishments in the United States during a specified payroll period which, for all industries except Federal

Government is that including the 12th of the month. For the Federal Government it represents the last day of the month. Employed persons include all those who worked during or received pay for any part of the payroll period, including part time as well as full time, temporary as well as permanent, employees. Workers on an establishment's payroll who are on paid sick leave, paid holiday or paid vacation, or who work a part of a specified pay period and are unemployed or on strike during the other part are considered employed. Persons on the payroll of more than one establishment during the pay period are counted each time reported. On the other hand, persons are not considered employed who are laid off, on leave without pay, or on strike for the entire pay period. Proprietors, the self-employed and unpaid family workers, and domestic workers in households are not included. Government employment statistics refer to civilian employees only, but include employees of State and local governments as well as Federal.

Information on employment, hours and earnings is collected each month from a sample of establishments in the private sector, State government, and a sample of local governments under cooperative arrangements with State agencies (primarily State employment security agencies affiliated with the Employment and Training Administration). The cooperating State agencies mail questionnaires to the reporting establishments and edit them when returned, before passing the information on to the BLS. To eliminate duplicate reporting, the same establishment reports are used for preparing State, area, and national estimates. This is supplemented with monthly data on Federal Government civilian employment obtained from the Office of Personnel Management.

STATISTICAL PROCEDURES

THE SAMPLE

Current estimates depend on monthly reports from a sample of employers. The sampling plan used is an optimum allocation design known as "sampling proportionate to average size of establishment." Under this design, large establishments fall into the sample with certainty, however, the proportion of total employment covered varies considerably from industry to industry. For example, sample coverage is high (60 percent on the average) in manufacturing industries in which a high proportion of total employment is concentrated in relatively few establishments and which have a greater tendency to fluctuate from regular cyclical or seasonal patterns than nonmanufacturing industries. On the other hand, coverage is much lower (20 percent) in wholesale and retail

trade industries which are made up of many small establishments.

The BLS establishment sample consists of about 165,000 reports. The sample design is based primarily on the needs of the national program, however, it also provides the technical framework within which State and area sample needs are determined. Since the estimates for States and areas are generally not prepared in as much industry detail as the national estimates, the national design usually provides sufficient reports for the preparation of State and area estimates. Occasionally, the National design may need to be augmented by additional reports in order to satisfy area sample requirements.

The present sample is designed to meet the major requirements of the employment statistics program. With its use the BLS is able to produce timely estimates within a few weeks after reports have been mailed to respondents, in great industrial detail, and for many geographic levels.

ESTIMATING PROCEDURE

The principal feature of the procedure used to estimate employment for the industry statistics is known as the "benchmark-link relative" technique which is a form of ratio estimation. This technique relies on a reasonably complete employment universe count—the benchmark—which is prepared annually from a number of sources (see section on benchmark data) and the "sample link" which is the ratio of the current month's employment to that of the previous month computed from the sample establishments reporting for both months.

This technique and the relatively large size of the establishment sample assures a high degree of accuracy for most estimates. However, since the previous month's estimate is used as the base in computing the current month's estimate, small sampling and response errors may cumulate over several months. Part of this error is removed on a current basis through the use of small average monthly bias adjustment factors applied before publication. Any remaining accumulated error is removed at the time the estimates are adjusted to new benchmarks annually. In addition to the sampling and response errors, the benchmark revision adjusts the estimates for changes in the industrial classification of individual establishments (resulting from changes in their product). In fact, at the more detailed industry levels, particularly within manufacturing, changes in classification are the major cause of benchmark adjustments. Another cause of differences, generally minor, arises from improvements in the quality of the benchmark data.

One measure of the reliability of the employment estimates for individual industries is the root-mean-square error (RMSE). The measure is

the standard deviation adjusted for the bias in estimates

$$\text{RMSE} = \sqrt{(\text{Standard Deviation})^2 + (\text{Bias})^2}$$

If the bias is small, the chances are about 2 out of 3 that an estimate from the sample would differ from its benchmark by less than the root-mean-square error. The chances are about 19 out of 20 that the difference would be less than twice the root-mean-square error.

Approximation of the root-mean-square errors (based on the experience of the last 6 years) of the differences between final estimates and benchmarks are presented in the table below.

Size of employment estimate	Root-mean-square error of employment estimates ¹
50,000	2,100
100,000	4,400
200,000	7,100
500,000	15,200
1,000,000	17,100
2,000,000	285,500

¹ Assuming 12 month intervals between benchmark revisions.

Since these differences are established at the end of 12 monthly estimates, it follows that the deviation between successive months during the year is much smaller or approximately $\frac{1}{12}$ of the amount indicated.

BENCHMARK DATA

Since 1939, the basic sources of benchmark information for "all employees" have been periodic tabulations of employment data by industry compiled by State employment security agencies from reports of establishments covered under State unemployment insurance laws. Beginning with 1959, these data were also compiled by size of establishments. Beginning in January 1972, coverage was expanded to include employees of small firms and selected nonprofit activities who had not been covered previously. Beginning in January 1978, coverage was extended to include almost all State and local government employees. In recent years, un-

employment insurance coverage data accounted for nine-tenths of the total benchmark.

For industries not covered, or only partially covered by Unemployment Insurance programs, benchmarks are compiled from a number of special sources. The most important of these are the Interstate Commerce Commission (for data on interstate railroads), the U.S. Office of Education and the National Catholic Welfare Association (private schools, colleges, and universities), the Office of Personnel Management (Federal Government), and County Business Patterns (non office salesmen).

SEASONAL ADJUSTMENT

The seasonal adjustment method used for these series is an adaptation of the standard ratio-to-moving average method, with a provision for "moving" adjustment factors to take account of changing seasonal patterns. The seasonal factors, prepared for "two-digit" manufacturing industries and for the nonmanufacturing industry divisions, are available from the Bureau of Labor Statistics upon request. The magnitudes of the adjustments may be judged from the implicit seasonal adjustment factors for total nonagricultural employment for 1978. The adjusted series prepared by summing the aggregates of the seasonally adjusted components will give slightly different results from which might be obtained from an independent seasonal adjustment of the total nonagricultural series.

Implicit Seasonal Adjustment Factors for Total Nonagricultural Employment for 1979, by Months

January	98.5	July	100.0
February	98.5	August	99.9
March	99.1	September	100.4
April	99.8	October	100.7
May	100.4	November	100.8
June	101.1	December	100.8

In 1980, the seasonal adjustment procedure was shifted to the X-11 ARIMA method developed by Statistics Canada.

TABLE 16.—*Nonagricultural Employment, 1929-79*[Thousands of wage and salary workers¹]

Year	Goods-producing						Service-producing						
	Total	Total ²	Con- struction	Manufacturing		Total	Trans- portation and public utilities	Wholesale and retail trade	Finance, insur- ance, and real estate	Services	Government		
				Total	Durable goods						Non- durable goods	Federal	State and local
1929----	31, 324	13, 301	1, 512	10, 702	-----	18, 023	3, 916	6, 123	1, 494	3, 425	533	2, 532	
1930----	29, 409	11, 958	1, 387	9, 562	-----	17, 451	3, 685	5, 797	1, 460	3, 361	526	2, 622	
1931----	26, 635	10, 272	1, 229	8, 170	-----	16, 363	3, 254	5, 284	1, 392	3, 169	560	2, 704	
1932----	23, 615	8, 647	985	6, 931	-----	14, 968	2, 816	4, 683	1, 326	2, 918	559	2, 666	
1933----	23, 699	8, 965	824	7, 397	-----	14, 734	2, 672	4, 755	1, 280	2, 861	565	2, 601	
1934----	25, 940	10, 261	877	8, 501	-----	15, 679	2, 750	5, 281	1, 304	3, 045	652	2, 647	
1935----	27, 039	10, 893	927	9, 069	-----	16, 146	2, 786	5, 431	1, 320	3, 128	753	2, 728	
1936----	29, 068	11, 933	1, 160	9, 827	-----	17, 135	2, 973	5, 809	1, 373	3, 312	826	2, 842	
1937----	31, 011	12, 936	1, 127	10, 794	-----	18, 075	3, 134	6, 265	1, 417	3, 503	833	2, 923	
1938----	29, 194	11, 401	1, 070	9, 440	-----	17, 793	2, 863	6, 179	1, 410	3, 458	829	3, 054	
1939----	30, 603	12, 297	1, 165	10, 278	4, 715	5, 564	18, 306	2, 936	6, 426	3, 502	905	3, 090	
1940----	32, 361	13, 221	1, 311	10, 985	5, 363	5, 622	19, 140	3, 038	6, 750	1, 485	3, 665	996	3, 206
1941----	36, 539	15, 963	1, 814	13, 192	6, 968	6, 225	20, 574	3, 274	7, 210	1, 525	3, 905	1, 340	3, 320
1942----	40, 106	18, 470	2, 198	15, 280	8, 823	6, 458	21, 636	3, 460	7, 118	1, 509	4, 066	2, 213	3, 270
1943----	42, 434	20, 114	1, 587	17, 602	11, 084	6, 518	22, 320	3, 647	6, 982	1, 481	4, 130	2, 905	3, 175
1944----	41, 864	19, 328	1, 108	17, 328	10, 856	6, 472	22, 536	3, 829	7, 058	1, 461	4, 145	2, 928	3, 116
1945----	40, 374	17, 507	1, 147	15, 524	9, 074	6, 450	22, 867	3, 906	7, 314	1, 481	4, 222	2, 808	3, 137
1946----	41, 652	17, 248	1, 683	14, 703	7, 742	6, 962	24, 404	4, 061	8, 376	1, 675	4, 697	2, 254	3, 341
1947----	43, 857	18, 509	2, 009	15, 545	8, 385	7, 159	25, 348	4, 166	8, 955	1, 728	5, 025	1, 892	3, 582
1948----	44, 866	18, 774	2, 198	15, 582	8, 326	7, 256	26, 092	4, 189	9, 272	1, 800	5, 181	1, 863	3, 787
1949----	43, 754	17, 565	2, 194	14, 441	7, 489	6, 953	26, 189	4, 001	9, 264	1, 828	5, 240	1, 908	3, 948
1950----	45, 197	18, 506	2, 364	15, 241	8, 094	7, 147	26, 691	4, 034	9, 386	1, 888	5, 357	1, 928	4, 098
1951----	47, 819	19, 959	2, 637	16, 393	9, 089	7, 304	27, 860	4, 226	9, 742	1, 956	5, 547	2, 302	4, 087
1952----	48, 793	20, 198	2, 668	16, 632	9, 349	7, 284	28, 595	4, 248	10, 004	2, 035	5, 699	2, 420	4, 188
1953----	50, 202	21, 074	2, 659	17, 549	10, 110	7, 438	29, 128	4, 290	10, 247	2, 111	5, 835	2, 305	4, 340
1954----	48, 990	19, 751	2, 646	16, 314	9, 129	7, 185	29, 239	4, 084	10, 235	2, 200	5, 969	2, 188	4, 563
1955----	50, 641	20, 513	2, 839	16, 882	9, 541	7, 341	30, 128	4, 141	10, 535	2, 298	6, 240	2, 187	4, 727
1956----	52, 369	21, 104	3, 039	17, 243	9, 833	7, 411	31, 265	4, 244	10, 858	2, 389	6, 497	2, 209	5, 069
1957----	52, 853	20, 964	2, 962	17, 174	9, 855	7, 321	31, 889	4, 241	10, 886	2, 438	6, 708	2, 217	5, 399
1958----	51, 324	19, 513	2, 817	15, 945	8, 829	7, 116	31, 811	3, 976	10, 750	2, 481	6, 765	2, 191	5, 648
1959----	53, 268	20, 411	3, 004	16, 675	9, 373	7, 303	32, 857	4, 011	11, 127	2, 549	7, 087	2, 233	5, 850
1960----	54, 189	20, 434	2, 926	16, 796	9, 459	7, 337	33, 755	4, 004	11, 391	2, 629	7, 378	2, 270	6, 083
1961----	53, 999	19, 857	2, 859	16, 326	9, 070	7, 256	34, 142	3, 903	11, 337	2, 688	7, 620	2, 279	6, 315
1962----	55, 549	20, 451	2, 948	16, 053	9, 480	7, 373	35, 098	3, 906	11, 566	2, 754	7, 982	2, 340	6, 550
1963----	56, 653	20, 640	3, 010	16, 995	9, 616	7, 380	36, 013	3, 903	11, 778	2, 830	8, 277	2, 358	6, 868
1964----	58, 283	21, 005	3, 097	17, 274	9, 816	7, 458	37, 278	3, 951	12, 160	2, 911	8, 660	2, 348	7, 248
1965----	60, 765	21, 926	3, 232	18, 062	10, 405	7, 656	38, 839	4, 036	12, 716	2, 977	9, 036	2, 378	7, 696
1966----	63, 901	23, 158	3, 317	19, 214	11, 282	7, 930	40, 743	4, 158	13, 245	3, 058	9, 498	2, 564	8, 220
1967----	65, 803	23, 308	3, 248	19, 447	11, 439	8, 007	42, 495	4, 268	13, 606	3, 185	10, 045	2, 719	8, 672
1968----	67, 897	23, 737	3, 350	19, 781	11, 626	8, 155	44, 160	4, 318	14, 099	3, 337	10, 567	2, 737	9, 102
1969----	70, 384	24, 361	3, 575	20, 167	11, 895	8, 272	46, 023	4, 442	14, 705	3, 512	11, 169	2, 758	9, 437
1970----	70, 880	23, 578	3, 588	19, 367	11, 208	8, 158	47, 302	4, 515	15, 040	3, 645	11, 548	2, 731	9, 823
1971----	71, 214	22, 935	3, 704	18, 623	10, 636	7, 987	48, 278	4, 476	15, 352	3, 772	11, 797	2, 696	10, 185
1972----	73, 675	23, 668	3, 889	19, 151	11, 049	8, 102	50, 007	4, 541	15, 949	3, 908	12, 276	2, 684	10, 649
1973----	76, 790	24, 893	4, 097	20, 154	11, 891	8, 262	51, 897	4, 656	16, 607	4, 046	12, 857	2, 663	11, 068
1974----	78, 265	24, 794	4, 020	20, 077	11, 925	8, 152	53, 471	4, 725	16, 987	4, 148	13, 441	2, 724	11, 446
1975----	76, 945	22, 600	3, 525	18, 323	10, 688	7, 635	54, 345	4, 542	17, 060	4, 165	13, 892	2, 748	11, 937
1976----	79, 382	23, 352	3, 576	18, 997	11, 077	7, 920	56, 030	4, 582	17, 755	4, 271	14, 551	2, 733	12, 138
1977----	82, 471	24, 346	3, 851	19, 682	11, 597	8, 086	58, 125	4, 713	18, 516	4, 467	15, 303	2, 727	12, 399
1978----	86, 697	25, 535	4, 229	20, 505	12, 274	8, 231	61, 113	4, 923	19, 542	4, 724	16, 252	2, 753	12, 919
1979----	89, 886	26, 504	4, 483	21, 062	12, 772	8, 290	63, 382	5, 141	20, 269	4, 974	17, 078	2, 773	13, 147

¹ Includes all full- and part-time wage and salary workers in nonagricultural establishments who worked during or received pay for any part of the pay period which includes the 12th of the month. Excludes proprietors, self-employed persons, domestic servants, and personnel of the Armed Forces. Total derived from this table not comparable with estimates of nonagricultural employment of the civilian labor force, shown in Table 13, which include proprietors, self-employed persons, and domestic servants; which count persons as employed when they are not at work because of industrial disputes; and which are based on a sample of the working-age population, whereas the estimates in this table are based on reports from employing establishments.

² Includes mining not shown separately.

Source: Department of Labor, Bureau of Labor Statistics.

FUTURE DEVELOPMENT

In its 1979 report, *Counting the Labor Force*, the National Commission on Employment and Unemployment Statistics made several recommendations for the establishment employment statistics. See above section on Status of the Labor Force for the procedures on following-up on the Commission's recommendations.

RELATION TO OTHER SERIES

A comparison between the series discussed above and the nonagricultural employment estimates compiled as a part of the labor force series can be found in the section on Employment Status of the Labor Force.

In addition to total employment in each industry BLS also prepares estimates of production worker employment for mining and manufacturing industries, for construction workers and for nonsupervisory workers in some or all industry components of the other nonmanufacturing divisions except government. These estimates are comparable with the average hours and earnings series (see below) which are prepared from information reported on the same questionnaires as the employment figures.

Establishments reporting employment information are classified into industries on the basis of their principal product or activity. All series are classified in accordance with the Standard Industrial Classification Manual (Office of Management and Budget, 1972).

In general, BLS employment estimates are comparable with other data collected from establishments, such as employment, production, and similar data obtained by the Census Bureau in the manufacturing censuses and annual surveys. Some differences will be found, however, especially for individual industries, caused chiefly by differences in definitions of the industries covered, in the business units considered parts of an establishment, and in the industrial classification of some establishments.

The BLS establishment-based series are not comparable with those based on reports from companies because the industry totals that result when a single industry classification is assigned to an entire company differ substantially from those in which each establishment of the company has been assigned to the industry of its principal activity.

USES AND LIMITATIONS

Current employment statistics are widely used as a timely indicator of changes in economic activity in various sectors of the economy. Comparable information for a large number of detailed industries is provided within a few weeks. Furthermore, because of the promptness with which basic information is supplied in considerable industry detail, these estimates are frequently incorporated in other Federal statistical series, particularly in making current estimates of production, productivity, and national income.

The publication of comparable State and local area estimates by the cooperating State agencies using the same concepts and methods provides a means whereby business trends can be followed for all States and the District of Columbia and for nearly 260 labor market areas.

Payroll patterns during the reference pay period may not be representative of actual movements for the entire month because of special events that may occur during the month, such as holidays, strikes, floods, retroactive pay, irregular bonuses, etc.

REFERENCES

Monthly summary data first appear in a press release entitled "The Employment Situation". The basic monthly release for the employment, hours, and earnings series is *Employment and Earnings* which contains national, State, and area estimates and explanatory notes. The National employment hours and earnings series for 13 months are also reprinted in the *Monthly Labor Review*. Continuous data for the entire history of the national series prior to January 1977, are available in *Employment and Earnings, United States, 1909-78*, BLS Bulletin 1312-11. This is the twelfth of a series of annual compendium volumes. More detailed technical notes are available in *Handbook of Methods, BLS Bulletin 1910*, Chapter 3, "Employment, Hours, and Earnings."

Historical State and area annual average data from the earliest date of availability for all industry series published by cooperating State agencies are available in *Employment and Earnings, States and Areas, 1939-78* BLS Bulletin 1370-13. This is the fourteenth of a series of annual publications presenting State and area data, and it contains almost 10,000 series on payroll employment by industry and nearly 4,000 series of hours and earnings of production worker by industry.

AVERAGE HOURLY AND WEEKLY EARNINGS

DESCRIPTION OF SERIES

The monthly payroll figures on which these averages are based are collected by BLS from employers on the same form with the employment and hours figures, described above. They are reported before deductions for taxes, social insurance, fringe benefits and etc. They include pay for overtime, holidays, vacations, and sick leave paid directly by the firm but exclude retroactive pay and bonuses, unless earned and paid regularly each pay period.

"Real" earnings or earnings in constant (1967) dollars are computed by dividing the earnings averages by the Consumer Price Index for Urban Wage and Clerical Workers (CPI-W) and then multiplying by 100. Real earnings for months prior to January 1978 are deflated by the unrevised CPI-W, whereas those for January 1978 forward are deflated by the revised CPI-W. The level of earnings is thus adjusted for changes in the purchasing power of the dollar since the 1967 base period.

The series "Hourly Earnings Index" is constructed to show the relation between straight-time hourly earnings in the base period, 1967, and other years on the assumption that the proportion of workers in each industry remains unchanged. The object is to show changes in pay scales unaffected by such factors as variations in the amount of overtime pay or shifts of workers into higher (or lower) paying industries.

STATISTICAL PROCEDURES

Average hourly earnings are derived by dividing total payrolls by total hours reported for each industry. Average weekly earnings are obtained by multiplying average weekly hours and average hourly earnings for each industry. Only the sample data are used, since there are no benchmarks available for hours and earnings. The tendency of the optimum allocation sample design with its heavy sampling of large establishments (see discussion under Nonagricultural Employment) to produce biased estimates of the level of earnings for certain industries is counteracted by a stratified estimating procedure which makes use of establishment size and in some cases regional stratification. Whenever a new employment benchmark becomes available, national estimates of average weekly hours and average hourly earnings, using eight size strata and four regional strata (Northeast, North Central, South and West) are prepared. These esti-

mates are used as a standard against which the published averages are compared. This comparison may indicate that new stratification patterns or modifications in existing patterns are needed. New or revised patterns of stratification are then introduced into the estimating structure at the time of the next benchmark revision.

USES AND LIMITATIONS

Average hourly earnings figures are widely used in collective bargaining, in *escalating* long-term sales contracts (such as labor costs for equipment which takes a number of months or years to build) and in general economic analysis.

The hourly earnings figures reflect not only changes in basic hourly and incentive wage rates, but also such variable factors as premium pay for overtime and late-shift work and changes in output of workers paid on an incentive basis. The changing employment of workers as between relatively high-paid and low-paid work, and relatively high-wage and low-wage industries, also affects the *unadjusted* hourly earnings averages. By contrast, the adjusted hourly earnings data hold these factors constant and thereby focus sharply on changes in pay scales.

Hourly earnings refer to the average actual return to workers, and should not be confused with wage rates, which represent the rates stipulated for a given unit of work or time. Since certain types of payments (see above) as well as payments to workers excluded from the production worker (or nonsupervisory employee) definition are not included, the earnings series should not be taken to represent labor costs to the employer.

Average weekly earnings are affected by changes in the length of the workweek as well as all of the factors which affect average hourly earnings. While they represent what the worker has earned for the week, they do not represent take-home pay, since they are subject to deductions for income and social security taxes, group insurance, occupational supplies, union dues, or other items.

REFERENCES

See above, under Nonagricultural Employment. Estimates of hourly earnings excluding overtime in manufacturing and of net spendable weekly earnings in current and 1967 dollars for selected industries are also published in *Employment and Earnings*.

TABLE 17.—Average Weekly Hours and Hourly Earnings—Private Nonagricultural Industries, 1929-79

[For production or nonsupervisory workers]

Year	Average weekly hours			Average gross hourly earnings		Adjusted hourly earnings index—total private nonagricultural (1967=100) ²	
	Total private nonagricultural ¹	Manufacturing		Total private nonagricultural ¹	Manufacturing	Current dollars	1967 dollars ³
		Total	Overtime				
1929		44.2			\$0.560		
1930		42.1			.546		
1931		40.5			.509		
1932		38.3			.441		
1933		38.1			.437		
1934		34.6			.526		
1935		36.6			.544		
1936		39.2			.550		
1937		38.6			.617		
1938		35.6			.620		
1939		37.7			.627		
1940		38.1			.655		
1941		40.6			.726		
1942		43.1			.851		
1943		45.0			.957		
1944		45.2			1.011		
1945		43.5			1.016		
1946		40.3			1.075		
1947	40.3	40.4		\$1.131	1.216	42.6	63.7
1948	40.0	40.0		1.225	1.327	46.0	63.8
1949	39.4	39.1		1.275	1.376	48.2	67.5
1950	39.8	40.5		1.335	1.439	50.0	69.3
1951	39.9	40.6		1.45	1.56	53.7	69.0
1952	39.9	40.7		1.52	1.64	56.4	70.9
1953	39.6	40.5		1.61	1.74	59.6	74.4
1954	39.1	39.6		1.65	1.78	61.7	76.6
1955	39.6	40.7		1.71	1.85	63.7	79.4
1956	39.3	40.4	2.8	1.80	1.95	67.0	82.3
1957	38.8	39.8	2.3	1.89	2.04	70.3	83.4
1958	38.5	39.2	2.0	1.95	2.10	73.2	84.5
1959	39.0	40.3	2.7	2.02	2.19	75.8	86.8
1960	38.6	39.7	2.5	2.09	2.26	78.4	88.4
1961	38.6	39.8	2.4	2.14	2.32	80.8	90.2
1962	38.7	40.4	2.8	2.22	2.39	83.5	92.2
1963	38.8	40.5	2.8	2.28	2.45	85.9	93.7
1964	38.7	40.7	3.1	2.36	2.53	88.2	95.0
1965	38.8	41.2	3.6	2.46	2.61	91.2	96.6
1966	38.6	41.4	3.9	2.56	2.71	95.3	98.0
1967	38.0	40.6	3.4	2.68	2.82	100.0	100.0
1968	37.8	40.7	3.6	2.85	3.01	106.2	101.9
1969	37.7	40.6	3.6	3.04	3.19	113.2	103.1
1970	37.1	39.8	3.0	3.23	3.35	120.7	103.8
1971	36.9	39.9	2.9	3.45	3.57	129.2	106.5
1972	37.0	40.5	3.5	3.70	3.82	137.5	109.7
1973	36.9	40.7	3.8	3.94	4.09	146.0	109.7
1974	36.5	40.0	3.3	4.24	4.42	157.5	106.7
1975	36.1	39.5	2.6	4.53	4.83	170.6	105.9
1976	36.1	40.1	3.1	4.86	5.22	183.0	107.3
1977	36.0	40.3	3.5	5.25	5.68	196.8	108.4
1978	35.8	40.4	3.6	5.69	6.17	212.9	109.0
1979	35.6	40.2	3.3	6.16	6.69	229.8	105.6

¹ Also includes other private industry groups shown in Table 16.

² Adjusted for interindustry employment shifts and for overtime in manufacturing.

³ Current dollar index divided by the consumer price index. Revised index for urban wage earners and clerical workers used beginning 1978.

Source: Department of Labor, Bureau of Labor Statistics.

TABLE 18.—Average Weekly Earnings—Private Nonagricultural Industries, 1929–79

[For production or nonsupervisory workers]

Year	Average gross weekly earnings				
	Total private nonagricultural ¹		Manufacturing	Construction	Wholesale and retail trade
	Current dollars	1967 dollars ²	Current dollars		
1929			\$24.76		
1930			23.00		
1931			20.64		
1932			16.89		
1933			16.65		
1934			18.20		
1935			19.91		
1936			21.56		
1937			23.82		
1938			22.07		
1939			23.64		
1940			24.96		
1941			29.48		
1942			36.68		
1943			43.07		
1944			45.70		
1945			44.20		
1946			43.32		
1947	\$45.58	\$68.13	49.13	\$58.83	\$38.07
1948	49.00	67.96	53.08	65.23	40.80
1949	50.24	70.36	53.80	67.56	42.93
1950	53.13	73.69	58.28	69.68	44.55
1951	57.86	74.37	63.34	76.96	47.79
1952	60.65	76.29	66.75	82.86	49.20
1953	63.76	79.60	70.47	86.41	51.35
1954	64.52	80.15	70.49	88.54	53.33
1955	67.72	84.44	75.30	90.90	55.16
1956	70.74	86.90	78.78	96.38	57.48
1957	73.33	86.99	81.19	100.27	59.60
1958	75.08	86.70	82.32	103.78	61.76
1959	78.78	90.24	88.26	108.41	64.41
1960	80.67	90.95	89.72	112.67	66.01
1961	82.60	92.19	92.34	118.08	67.41
1962	85.91	94.82	96.56	122.47	69.91
1963	88.46	96.47	99.23	127.19	72.01
1964	91.33	98.31	102.97	132.06	74.66
1965	95.45	101.01	107.53	138.38	76.91
1966	98.82	101.67	112.19	146.26	79.39
1967	101.84	101.84	114.49	154.95	82.35
1968	107.73	103.39	122.51	164.49	87.00
1969	114.61	104.38	129.51	181.54	91.39
1970	119.83	103.04	133.33	195.45	96.02
1971	127.31	104.95	142.44	211.67	101.09
1972	136.90	109.26	154.71	221.19	106.45
1973	145.39	109.23	166.46	235.89	111.76
1974	154.76	104.78	176.80	249.25	119.02
1975	163.53	101.45	190.79	266.08	126.45
1976	175.45	102.90	209.32	283.73	133.79
1977	189.00	104.13	228.90	295.65	142.52
1978	203.70	104.30	249.27	318.69	153.64
1979	219.30	100.73	268.94	342.99	164.96

¹ Also includes other private industry groups shown in Table 16.² Current dollar earnings divided by the consumer price index. Revised index for urban wage earners and clerical workers used beginning 1978.

Source: Department of Labor, Bureau of Labor Statistics.

AVERAGE WEEKLY HOURS

DESCRIPTION OF SERIES

With the employment figures for the specified payroll period, described in the preceding section, BLS collects from the sample establishments total hourly for which pay is received by production or non-supervisory workers, including hours for holidays, vacation, or other employer-paid leave. Data on average weekly hours, weekly earnings and hourly earnings are currently published for all production and nonsupervisory workers in seven of the eight major divisions of industry—mining; construction; manufacturing; transportation and public utilities; trade, finance, insurance and real estate; and services. Data on hours and earnings are not provided for government employment. Detailed statistics are regularly shown for 20 major manufacturing groups and 300 manufacturing industries as well as for 82 nonmanufacturing groups and divisions. For overtime hours (hours in excess of regular hours for which premium payments were made) series are prepared for 323 manufacturing industries. The industries for which hours and earnings estimates are not prepared are characterized by small establishments (such as religious organizations) with special problems relating to data collection or definition.

STATISTICAL PROCEDURES

The average hours figures are obtained by dividing the number of production and related workers (or nonsupervisory workers in industries other than mining and manufacturing) into the total hours reported for each industry. The average hours are normally less than scheduled hours because of such factors as absenteeism, labor turnover, part-time work, and stoppages.

Seasonally adjusted series are prepared in a manner similar to that for nonagricultural employment. The magnitude of the seasonal adjustments is illustrated by the seasonal adjustment factors for average hours of manufacturing production workers, which are:

Average Weekly Hours-Seasonal Adjustment Factors

January -----	98.8	July -----	99.5
February -----	99.0	August -----	99.8
March -----	100.0	September -----	100.5
April -----	99.0	October -----	100.2
May -----	99.8	November -----	100.5
June -----	100.7	December -----	101.7

USES AND LIMITATIONS

Changes in hours-paid-for supplement the information on employment, since frequently hours worked are affected even before employment by changes in economic activity. Hours in manufacturing are an important leading indicator. The hours figures are used in compiling the average earnings figures discussed below. They also serve as a basis for current production estimates for some industries (see description of the Index of Industrial Production).

A limitation of the average hours series is that the figures refer only to production or nonsupervisory workers. Also, hours-paid-for as measured by these series differ from hours worked, and from "plant hours," which do not include hours paid for vacation, sick leave, or holidays. Consequently, measures of productivity based on these data reflect the increasing importance of workers in non-production categories and of fringe benefit payments for time away from work. For some types of productivity analysis, these technological and institutional changes cause problems of comparability, particularly over long time periods.

RELATION TO OTHER SERIES

Average weekly hours as reported by BLS differ somewhat from the series published by the Bureau of the Census in the Annual Survey of Manufacturers (ASM) and the Census of Manufacturers. The BLS data is collected monthly from both manufacturing and nonmanufacturing establishments. The ASM, on the other hand, collects the data annually (they ask for total hours worked for each quarter) from manufacturing establishments only.

PRODUCTIVITY AND RELATED DATA, PRIVATE BUSINESS SECTOR

DESCRIPTION OF SERIES

The Bureau of Labor Statistics (BLS) of the Department of Labor regularly computes measures of productivity and costs for major sectors of the U.S. economy. The *private business sector* is the broadest measure published each quarter, comprising about 79 percent of Gross National Product (GNP) in 1979. Measures are compiled

for the private business sector, which omits those components of GNP for which productivity measurement is impossible. The National Income and Product Accounts—published quarterly by the Bureau of Economic Analysis (BEA) of the Department of Commerce—provide the constant-dollar output measures on which the productivity and cost series are based. Some sector output measures have no identifiable corresponding labor

input (such as the gross housing product of owner-occupied dwellings), and other output series are estimated on the basis of measures of labor compensation (such as the output of private household employees and nonprofit institutions). Beginning with the July 1976 release of productivity and cost measures, sector definitions were adopted which eliminated these problem areas, which then constituted slightly more than 9 percent of GNP. Subtracted from Gross National Product are:

- rest-of-the-world sector
- general government
- private households
- nonprofit institutions
- gross housing product of owner-occupied dwellings
- statistical discrepancy

Data for the resultant *private business sector* are available quarterly, from 1947 forward. The *nonfarm business sector* omits the farm sector as well, and is often cited since the volatile farm sector does not directly affect these measures.

STATISTICAL PROCEDURES

Output: Output for the private business and nonfarm business sectors is measured in constant dollars as part of the National Accounts by BEA every quarter. Based on both published and unpublished measures, BLS adjusts the national accounts to construct an output index for the private business and nonfarm business sector by subtraction of those areas for which productivity cannot be measured in this framework. Output is composed of employee compensation, profits, depreciation, indirect business taxes, and other components of the income side of the national accounts. It excludes intermediate purchases of goods and services, and thus is an unduplicated measure of production originating in the sector.

Hours: The labor input series for productivity and cost measures are hours-paid-for of all persons engaged in the private business and nonfarm business sector. Included are production and non-production workers, supervisors, proprietors, and unpaid family workers. Hours of all persons are computed by multiplying employment by average weekly hours. Nearly all of these data are collected monthly in the BLS survey of establishments (790 Series), which collects data on employment and payroll-hours for the week including the twelfth of each month. In the case of proprietors, unpaid family workers, and farmworkers

(who are not covered by the establishment survey), data from the BLS monthly survey of households (Current Population Survey) are used. Unpaid family workers are particularly important in farms, trade, and services, but together with proprietors, contributed about 14 percent of labor input hours in 1979.

Output per hour of all persons: This is the ratio of the two measures discussed above, i.e. Output/Hours.

Compensation per hour: Hourly compensation measures are computed using data on compensation of employees prepared as part of the national accounts, adjusted by BLS to include an estimate of the value of the wages, salaries, and supplements attributed to proprietors hours. Compensation includes wages and salaries as well as shift differentials, overtime, payments in kind, commissions, supplements, and employer contributions to employee benefit plans and taxes. Average weekly hours include all hours for which an employee was in pay status, including plant hours and all types of paid leave.

Unit labor cost: This is compensation per hour divided by output per hour.

Implicit price deflator: The implicit price deflator reflects changes in unit labor cost and unit nonlabor costs combined. It is computed as the ratio of output in current dollars to output in constant dollars in the sector, and is prepared quarterly as part of the national accounts.

Percent change: Rates of change between quarters are expressed at an annual rate by means of the following formula:

$$Q_t = ((I_t/I_{t-1})^4 - 1) \times 100.$$

where:

Q_t is the quarterly rate of growth at an annual rate

I_t is the variable in period t

I_{t-1} is the variable one quarter earlier

Rates of change between *years* compare the average of 4 quarters for one year with the preceding annual average.

USES AND LIMITATIONS

Measures of output per hour, compensation per hour, and related costs are designed for use in economic analysis and public and private policy planning. The data are used in forecasting and analysis of price, wage, and technological change.

TABLE 19.—*Productivity and Related Data, Private Business Sector, 1947-79*

[Index, 1976=100]

Year	Output ¹		Hours of all persons ²		Output per hour of all persons		Compensation per hour ³		Unit labor costs		Implicit price deflator ⁴	
	Private business sector	Nonfarm business sector	Private business sector	Nonfarm business sector	Private business sector	Nonfarm business sector	Private business sector	Nonfarm business sector	Private business sector	Nonfarm business sector	Private business sector	Nonfarm business sector
1947-----	48.7	47.5	90.5	78.7	53.8	60.4	36.1	38.6	67.2	63.9	65.1	62.3
1948-----	50.9	49.6	91.1	80.0	55.9	62.0	39.2	41.9	70.2	67.6	70.6	67.5
1949-----	50.0	48.7	88.1	77.0	56.7	63.3	39.8	43.1	70.2	68.1	69.8	68.0
1950-----	54.6	53.3	89.1	79.4	61.2	67.2	42.6	45.6	69.6	68.0	70.8	69.1
1951-----	57.8	56.8	91.7	83.1	63.0	68.4	46.8	49.6	74.3	72.6	76.0	73.6
1952-----	59.5	58.5	91.8	83.9	64.8	69.7	49.8	52.3	76.8	75.1	77.1	75.2
1953-----	62.0	60.9	92.8	86.0	66.8	70.7	53.0	55.3	79.4	78.1	77.9	76.8
1954-----	60.9	59.7	89.7	83.1	67.9	71.8	54.7	57.0	80.6	79.4	78.6	77.8
1955-----	65.7	64.6	93.1	86.5	70.6	74.6	56.1	59.0	79.4	79.1	79.8	79.4
1956-----	67.6	66.6	94.5	88.7	71.5	75.0	59.7	62.6	83.5	83.4	82.2	81.9
1957-----	68.5	67.6	93.1	88.3	73.5	76.5	63.6	66.2	86.6	86.5	84.8	84.6
1958-----	67.0	65.9	88.9	84.6	75.4	77.9	66.5	68.7	88.2	88.2	86.4	85.9
1959-----	71.9	71.1	92.4	88.4	77.8	80.5	69.3	71.4	89.1	88.8	88.1	88.0
1960-----	73.2	72.2	92.6	88.9	79.0	81.2	72.2	74.5	91.4	91.7	89.3	89.2
1961-----	74.2	73.3	91.2	88.0	81.4	83.3	74.9	76.9	92.0	92.3	89.8	89.8
1962-----	78.8	78.1	92.7	89.9	85.1	86.9	78.3	80.0	92.1	92.0	90.6	90.5
1963-----	82.3	81.6	93.2	90.9	88.3	89.8	81.2	82.7	92.0	92.1	91.4	91.5
1964-----	86.9	86.5	94.8	93.0	91.7	92.9	85.4	86.5	93.1	93.1	92.7	92.9
1965-----	92.9	92.6	97.8	96.5	95.1	96.0	88.7	89.4	93.3	93.2	94.2	94.1
1966-----	98.1	98.1	100.0	99.7	98.0	98.4	94.9	94.8	96.8	96.4	97.2	96.8
1967-----	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1968-----	105.1	105.3	101.7	102.0	103.3	103.2	107.6	107.4	104.1	104.0	103.9	104.0
1969-----	108.3	108.5	104.5	105.4	103.6	103.0	115.0	114.2	111.0	110.9	108.8	108.7
1970-----	107.3	107.4	102.8	104.0	104.4	103.2	123.3	121.9	118.2	118.1	113.9	114.0
1971-----	110.3	110.2	102.3	103.6	107.8	106.4	131.6	130.1	122.0	122.3	118.9	119.2
1972-----	117.5	117.8	105.4	107.0	111.5	110.1	139.8	138.4	125.4	125.7	123.2	122.9
1973-----	124.4	124.9	109.5	111.5	113.6	112.0	151.3	149.2	133.2	133.2	130.3	127.9
1974-----	121.4	121.8	110.2	112.2	110.2	108.6	165.2	163.0	149.8	150.1	143.1	141.4
1975-----	118.7	118.8	105.4	107.2	112.6	110.7	181.7	179.3	161.3	161.9	157.5	156.4
1976-----	126.4	126.9	108.4	110.8	116.6	114.6	197.6	194.2	169.5	169.5	165.5	164.8
1977-----	133.8	134.3	112.7	115.4	118.7	116.4	213.3	209.6	179.7	180.1	174.8	174.5
1978-----	140.7	141.5	118.0	121.0	119.3	116.9	231.4	227.5	194.0	194.6	187.2	186.1
1979-----	144.1	144.9	121.8	125.3	118.3	115.7	253.1	247.9	214.0	214.4	203.8	202.1

¹ Output refers to gross domestic product originating in the sector in 1972 dollars.² Hours of all persons engaged in the sector, including hours of proprietors and unpaid family workers. Estimates based primarily on establishment data.³ Wages and salaries of employees plus employers' contributions for social insurance and private benefit plans. Also includes an estimate of wages, salaries, and supplemental payments for the self-employed.⁴ Current dollar gross domestic product divided by constant dollar gross domestic product.

Source: Department of Labor, Bureau of Labor Statistics.

The labor productivity and related cost measures are especially useful in understanding and investigating the relationships among productivity, wages, prices, profits, and costs of production. Unit labor costs, or compensation per unit of output, represents a major portion of total unit cost and so reflects the combined effect of changes in output per hour and compensation per hour. Thus, an increase in compensation per hour tends to increase unit labor costs while an increase in output per hour tends to reduce it. Therefore, through its impact on unit labor costs, output per hour is a crucial element in the wage-price relationship, for it indicates the extent to which compensation gains can occur without putting pressure on prices or reducing payments to other input factors.

Certain characteristics of the labor productivity and related cost data should be recognized in order to apply them appropriately to specific situations. The data for aggregate sectors reflect changes in various constituent industries as well as shifts in the relative importance of these industries. A significant portion of labor productivity growth from 1947 to the present is attributable to the relative shift of workers from the farm to the nonfarm sector. Also, the measures are often linked by lead or lag relationships particularly during the business cycle when inventories, overtime hours, and the rate of capita utilization are used to buffer the effects of short-term swings in product demand. Because the output measures are based on production originating in the sector net of intermediate purchases of goods and services, productivity trends in these series may differ from those derived from gross output measures that include intermediate purchases.

REFERENCES

Following is a list of some of the Bureau of Labor Statistics' publications which relate to productivity: (1) "Productivity and Costs in the Private Economy, 1975", *Monthly Labor Review*, May 1976. An annual review article for 1975 which examines relations among growth rates in labor productivity, and the capital/labor ratio. Shift of hours from the farm to the nonfarm sector since 1909 is presented. (2) "Productivity and Costs in the Private Economy, 1974", *Monthly Labor Review*, June 1975 is the annual review article for 1974 which discusses recent rates of capital for-

matation. (3) *Current Developments in Productivity, 1973-74*, BLS Report 436, 1975, summarizes recent developments in productivity in industry and aggregate sectors with attention to possible sources of the productivity slowdown since 1966. (4) "Productivity and Costs in the Private Economy, 1973," *Monthly Labor Review*, June 1974, examines productivity effects of farm-to-nonfarm shift since 1947. (5) *The Role of Capital Formation in the Recent Productivity Slowdown*, BLS Working Paper 87, 1979; examines the role of capital investment in the private business sector in a period of expanding employment and changing relative factor cost. (6) *Meaning and Measurement of Productivity*, Bulletin 1714, a report prepared for the National Commission on Productivity by the Bureau of Labor Statistics, 1971, which is an integrated discussion of methods for measuring labor productivity and the interpretations consistent with the methods. (7) *Productivity Analysis in Manufacturing Plants*, BLS Staff Paper 3, 1970, examines sources of productivity in cross section of plant data for selected industries. (8) "Which Productivity? Perspective on a Current Question," *Monthly Labor Review*, June 1962, discusses alternative measures of productivity. (9) *Productivity: A Selected Annotated Bibliography 1976-78*, Bulletin 2051, 1980, is a collection of nearly 1,000 references concerning productivity and productivity measurement where each reference includes a brief annotation.

Other publications related to productivity include: (1) "U.S. Real Product and Real Factor Input, 1929-1967", *Review of Income and Wealth*, Series 16, March 1970, which outlines the theoretical framework and empirical application of an integrated approach to measuring labor and capital input. (2) *Why Growth Rates Differ; Sources of Economic Growth*, the Brookings Institution (1967), a study of output and productivity growth in 9 Western countries which includes a discussion of factors affecting productivity growth and the effects of these factors in contributing to differential growth rates between countries. (3) "Sector Changes in Unit Labor Costs." *The Industrial Composition of Income and Product*. National Bureau of Economic Research, 1968, and (4) *Post-War Productivity Trends in the United States, 1948-1969*, National Bureau of Economic Research, 1973.

PRODUCTION AND BUSINESS ACTIVITY

INDUSTRIAL PRODUCTION—MAJOR MARKET GROUPS AND SELECTED MANUFACTURES

DESCRIPTION OF SERIES

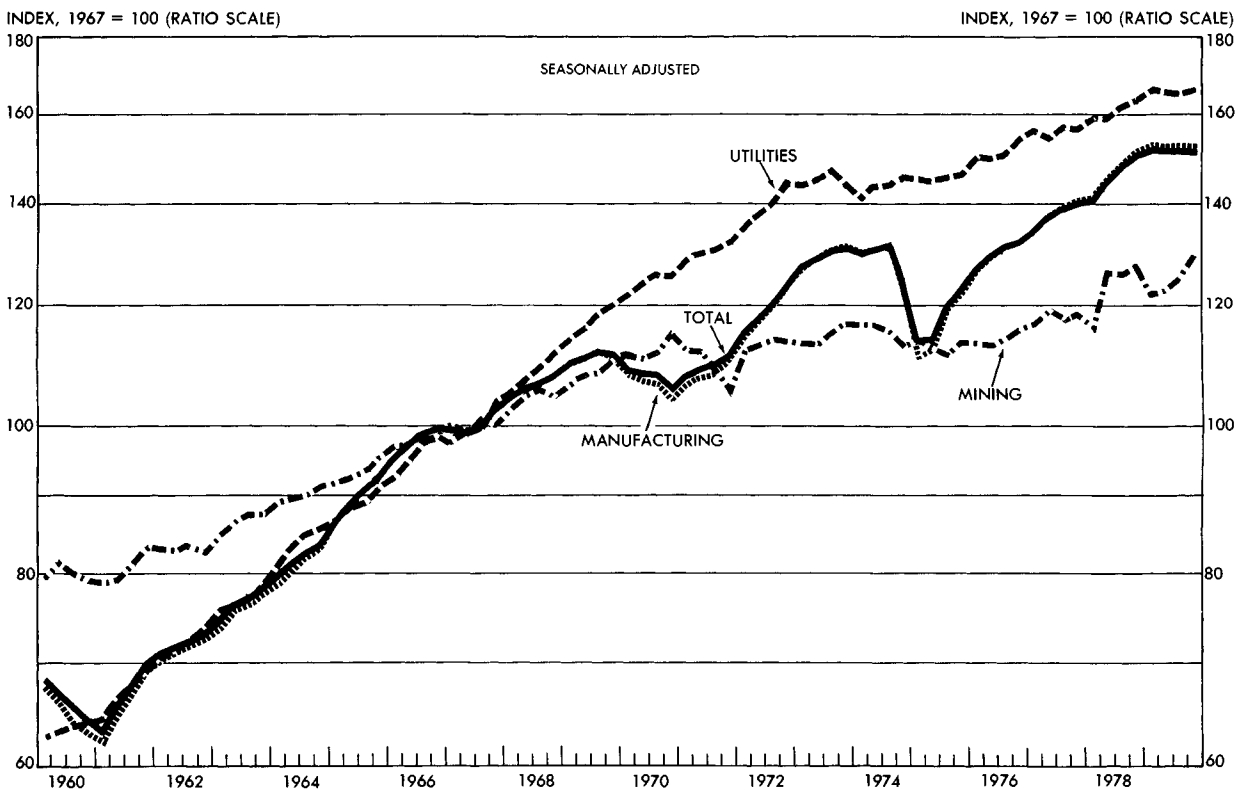
The index of industrial production is prepared monthly by the Federal Reserve Board. It is designed to measure changes in the physical volume or quantity of output of manufacturing and mining establishments and electric and gas utilities. According to the National Income and Product Accounts, the gross product originating in the industries covered by the index contribute about 30 percent of total gross national product.

The 235 monthly series are grouped into two separate classifications. Each of the 235 series is assigned to a market grouping as well as to an industry grouping. For example, the auto production series is a component of consumer goods in the market classification and of transportation equipment in the industry classification.

MARKET GROUPINGS

The classification based on type of end-use has as its major categories consumer goods, equipment, intermediate products, and materials. The consumer goods grouping, which accounted for 28 percent of the total index in the 1967 period, is further subdivided into automotive products, home goods (including appliances, furniture, television sets, and so on), clothing, and consumer staples. The equipment series, which accounted for 20 percent of the total in 1967, are further divided between business equipment and defense and space equipment. Intermediate products, which accounted for 13 percent of the total, represent construction and business supplies that leave the industrial sector at this point.

Chart 4.—INDUSTRIAL PRODUCTION



The materials component consists of three major categories: durable goods materials, nondurable goods materials, and energy materials. Durable goods materials, which accounted for 20 percent of the total index in 1967, include materials or components used primarily in the manufacture of finished durable goods; they range from metal mining and logging to semiconductors and original equipment auto tires. Nondurable materials, which were 10 percent of the total in 1967, include containers, textile materials, chemical materials, paper materials, and other nondurable materials. Energy materials consist of primary and converted fuel materials.

INDUSTRY GROUPINGS

The classification by producing industry is based on the 1967 edition of the Standard Industrial Classification (SIC) and has as its principal categories durable manufactures, nondurable manufactures, mining, and utilities. Durable manufactures include 11 of the SIC major groups—primary metals; fabricated metals; electrical machinery; nonelectrical machinery; transportation equipment; instruments; ordnance; stone, clay, and glass; lumber; furniture; and miscellaneous manufactures. That category also includes measures of the manufacturing activities for the Department of Defense. In the 1967 base period, these durable manufactures accounted for 52 percent of the weight of the total index.

Nondurable manufactures include 10 of the SIC major groups—food and beverages; tobacco; textiles; apparel; paper; chemicals, which includes representation of the manufacturing establishments owned by the Department of Energy; printing and publishing; petroleum; rubber and plastics; and leather. During the 1967 base period, it accounted for 36 percent of the total index. Mining activities, which accounted for 6 percent of the

index in this same period, include coal and metal mining, oil and gas extraction, and production of stone and earth minerals. Utility output of electricity and gas includes both private- and government-owned establishments, and accounted for 6 percent of the total index in the 1967 base period.

The monthly series are adjusted periodically to more comprehensive annual levels based in large part on Bureau of the Census comprehensive censuses of manufactures and annual surveys of manufactures. Extensive use is made of the most recent benchmark indexes, which are based on shipments for about 10,000 individual products covered in the 1963 and 1967 Censuses of Manufactures. The data, adjusted for inventory change, were converted to constant dollars using price relatives. The major sources of the price relatives were the wholesale price indexes from the Bureau of Labor Statistics and unit values from the Bureau of the Census.

The index formula used in combining the individual series involves the use of the weighted average of relatives. This average is computed by (1) reducing each series into relatives with the average of the base period, 1967, as 100; (2) multiplying each relative by a base year weight factor; and (3) adding these products and dividing by the sum of the weights to obtain the index number for the month. The weights used are proportions of the total weight of all series in the base period. Since the total of the percentage weight factors is equal to 100, the sum of the products of all series for any one month (all series times their respective weight factors) gives the index of industrial production for that month. The products of the component series and their weights give the number of points contributed to the index by individual series. This method of computation facilitates analysis of the changes in the index. For example, it makes it possible to observe the points contrib-

uted by each series or group of series that are responsible for the month-to-month changes in the total index or in the index for any group or subgroup of industries.

STATISTICAL PROCEDURES

The monthly indexes utilize data compiled by government agencies and by various trade organizations and publications. By weight a little less than half of the monthly series are based on physical product data, about one-fifth are based on data on production-worker hours, and one-third are based on kilowatt-hour data. The component series include adjustments for undercoverage or other deficiencies in the basic series. For example, series based on shipments data are adjusted, where feasible, for inventory changes; those based on production worker hours are adjusted for estimated changes in output per hours worked; and those based on kilowatt hour data are adjusted for estimated changes in output per kilowatt hour. In all, there are 235 monthly series, combined according to relative value added in 1967. The indexes with 1967 weights are linked to the six earlier indexes with bases and weights for, respectively, 1925, 1939, 1947, 1954, 1958, and 1963. This procedure bases all the indexes on 1967 but reflects the effects of changing weights through time.

The weights used are based on value added—the difference between the value of production and the cost of material or supplies consumed—in individual industries in 1967. The value-added data for mining are based on the 1967 Census of Mineral Industries. The value-added figures for manufacturing were obtained mainly from the Census of Manufactures for 1967. Weights for utility series were derived from data compiled by the Federal Power Commission (now Department of Energy). In many cases, value-added data are available only for groups of two or more in-

dividual series in the index; the assumption usually made in these cases is that value added is proportional to value of product within each group. The 1967 proportions (or the relative importance of the major groupings based on the 1967 weights) shown here for major groupings are given in detail in *Industrial Production: 1976 Revision*, published by the Board of Governors of the Federal Reserve System. The 1971 revision of industrial production introduced several link periods with value-added weights for the initial year for each affected period.

Individual series of the index are adjusted for two kinds of short-run recurring fluctuations: differences in the number of working days for physical product data from month to month and seasonal variations in all series. The first adjustment is accomplished by reducing reported quantity figures to average daily output in the month. For this purpose the workweek generally varies between 5 and 7 days. The adjustment leads to monthly estimates of output on a daily average basis. The effects of holiday shutdowns are taken into account by the Census X-11 seasonal adjustment program. No working day adjustment is needed for either the hours-worked series, which are reported in terms of weekly rates, or the kilowatt hour series, which are reported for cycle-billing periods.

Adjustment for seasonal variation is made to all individual series by the X-11 version of the Method II seasonal adjustment procedure developed by the Census Bureau. In addition, the seasonal factors for the basic aggregate series in both the market and industry groupings, which are primarily the result of X-11 seasonal adjustment, are subject to continuous review and editing. To diminish the effect on the seasonal factors of the sharp recession in 1974 and recovery in 1975, data for those years were excluded from the calculation of seasonal factors for most series.

TABLE 20.—Industrial Production—Major Market Groups, 1939–79

[1967=100]

Year	Total industrial production	Products									Supplementary group: Energy total
		Final products						Intermediate products			
		Consumer goods			Equipment			Construction supplies			
		Total	Durable goods	Non-durable goods	Total	Business	Total	Construction supplies	Materials		
1967 proportion	100.0	47.82	27.68	7.89	19.79	20.14	12.63	12.89	6.42	39.29	12.23
1939	21.7	21.1	25.8			11.4		24.9		21.6	
1940	25.0	23.7	27.4			16.0		27.6		26.1	
1941	31.6	30.5	32.8			25.4		33.1		32.6	
1942	36.3	35.7	30.4			45.5		33.7		37.7	
1943	44.0	45.6	30.9			73.4		35.7		44.4	
1944	47.4	50.1	32.3			83.7		37.5		46.8	
1945	40.7	41.2	33.4			55.6		36.8		41.1	
1946	35.0	34.7	39.9			23.8		37.1		34.9	
1947	39.4	38.6	42.4	40.1	43.4	30.6	38.0	41.9	46.8	39.5	
1948	41.1	40.0	43.7	41.8	44.6	32.2	39.5	44.3	50.1	41.2	
1949	38.8	38.8	43.4	39.6	45.0	28.7	34.5	42.0	45.9	37.6	
1950	44.9	43.7	49.6	53.0	48.8	31.1	37.0	48.8	55.3	45.0	
1951	48.7	47.2	49.1	46.0	50.5	43.3	45.2	51.3	57.6	49.8	
1952	50.6	50.7	50.2	44.5	52.5	51.9	51.2	50.9	57.1	50.5	
1953	54.8	54.1	53.2	52.2	53.9	56.3	53.3	54.5	61.4	56.1	
1954	51.9	51.3	52.9	48.4	54.6	49.3	46.8	54.3	60.4	51.8	52.6
1955	58.5	55.4	59.0	59.5	58.8	50.4	50.8	61.7	69.5	61.3	58.5
1956	61.1	58.6	61.2	57.8	62.6	55.3	58.8	64.4	71.5	62.8	62.7
1957	61.9	60.3	62.6	57.7	64.6	57.5	61.1	64.4	70.5	62.8	64.6
1958	57.9	57.6	62.1	51.3	66.5	51.5	51.5	63.0	68.1	56.5	63.2
1959	64.8	63.2	68.1	60.6	71.1	56.5	57.9	69.5	76.3	65.2	67.6
1960	66.2	65.3	70.7	64.0	73.4	58.1	59.4	70.0	74.5	66.1	70.1
1961	66.7	65.8	72.2	63.1	75.8	57.3	57.7	71.4	75.2	66.2	72.3
1962	72.2	71.4	77.1	71.3	79.3	63.7	62.7	75.7	79.7	72.1	76.0
1963	76.5	75.5	81.3	77.4	82.9	67.5	65.8	79.9	83.4	76.7	80.6
1964	81.7	79.7	85.9	83.2	87.0	71.4	73.7	85.2	88.5	82.9	85.1
1965	89.8	87.6	92.6	97.5	90.7	80.7	84.4	90.6	93.9	92.4	89.1
1966	97.8	95.9	97.3	103.2	95.1	94.0	97.7	96.2	97.9	100.7	95.0
1967	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1968	106.3	106.2	105.9	111.1	103.9	106.5	105.5	106.3	106.6	106.5	105.5
1969	111.1	109.6	109.8	115.0	107.7	109.3	112.5	112.9	112.3	112.5	111.1
1970	107.8	105.3	109.0	106.1	110.1	100.1	107.0	112.9	111.0	109.2	117.0
1971	109.6	106.3	114.7	118.8	113.1	94.7	104.1	116.7	116.8	111.3	119.5
1972	119.7	115.7	124.4	133.8	120.6	103.8	118.0	126.5	128.4	122.3	125.2
1973	129.8	124.4	131.5	146.2	125.6	114.5	134.2	137.2	139.8	133.9	128.3
1974	129.3	125.1	128.9	135.3	126.3	120.0	142.4	135.3	134.5	132.4	125.5
1975	117.8	118.2	124.0	121.4	125.1	110.2	128.2	123.1	116.3	115.5	125.5
1976	130.5	127.6	137.1	141.9	135.2	114.6	135.4	137.2	132.6	131.7	129.1
1977	138.2	135.9	145.3	154.0	141.9	123.0	147.8	145.1	140.6	138.6	132.9
1978	146.1	142.2	149.1	159.2	145.1	132.8	160.3	154.1	151.7	148.3	135.4
1979	152.2	147.0	150.5	155.5	148.5	142.2	171.3	160.0	156.9	156.0	137.8

Source: Board of Governors of the Federal Reserve System.

TABLE 21.—*Industrial Production—Selected Manufactures, 1947-49*

[1967=100]

Year	Durable manufactures								Nondurable manufactures			
	Primary metals			Transportation equipment					Apparel products	Printing and publishing	Chemicals and products	Foods
	Total	Iron and steel	Fabricated metal products	Nonelectrical machinery	Electrical machinery	Motor vehicles and parts	Lumber and products					
<i>1967 proportion</i>	<i>6.57</i>	<i>4.21</i>	<i>5.93</i>	<i>9.15</i>	<i>8.05</i>	<i>9.27</i>	<i>4.50</i>	<i>1.64</i>	<i>3.31</i>	<i>4.72</i>	<i>7.74</i>	<i>8.75</i>
1947.....	63.3	-----	49.9	39.0	22.2	31.8	-----	58.9	57.8	43.3	19.7	55.8
1948.....	65.8	-----	50.8	39.2	23.0	34.8	-----	61.3	60.3	45.4	21.3	55.2
1949.....	55.4	-----	45.8	33.4	21.6	34.9	-----	54.1	59.7	46.6	21.0	55.9
1950.....	69.7	-----	56.1	37.5	29.6	41.8	-----	65.7	64.3	48.9	26.2	57.9
1951.....	75.8	-----	59.9	47.7	29.8	46.6	-----	65.5	63.1	49.7	29.7	59.0
1952.....	69.2	-----	58.5	51.9	34.0	54.2	-----	64.7	66.3	49.7	31.1	60.2
1953.....	78.5	-----	66.0	54.0	39.0	68.0	-----	68.4	67.2	52.0	33.6	61.4
1954.....	63.5	70.1	59.4	46.1	34.7	59.2	60.5	68.0	66.4	54.1	34.1	62.7
1955.....	82.5	93.2	67.8	50.6	39.9	68.0	81.2	75.9	73.3	59.5	39.8	66.3
1956.....	82.0	91.5	68.8	58.0	43.1	66.0	65.8	75.0	75.0	63.2	42.7	70.1
1957.....	78.5	88.2	70.6	57.9	42.8	70.7	69.0	68.8	74.9	65.4	45.2	71.1
1958.....	62.3	66.5	63.3	48.6	39.2	55.8	51.0	69.9	72.8	63.9	46.6	72.9
1959.....	72.7	76.5	71.0	56.7	47.6	63.2	66.2	79.3	80.1	68.2	54.3	76.5
1960.....	72.4	77.7	71.1	56.9	51.6	65.4	74.7	74.7	81.7	71.0	56.4	78.6
1961.....	71.1	74.2	69.4	55.4	54.8	61.5	65.5	78.2	82.2	71.3	59.2	80.9
1962.....	76.3	77.3	75.4	62.1	62.9	71.1	79.8	82.5	85.5	73.9	65.7	83.4
1963.....	82.3	84.3	77.8	66.3	64.7	78.0	88.3	86.3	89.1	77.8	71.8	86.4
1964.....	92.8	95.9	82.6	75.6	68.4	80.0	90.7	92.7	92.2	82.6	78.8	90.4
1965.....	102.1	105.2	90.8	85.0	81.7	95.1	115.9	96.3	97.4	87.9	87.8	92.4
1966.....	108.4	108.4	97.2	98.8	97.9	102.0	113.9	100.0	99.9	94.6	95.7	96.0
1967.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1968.....	104.3	103.2	105.6	101.8	105.5	111.1	120.3	105.5	102.9	103.2	109.5	102.6
1969.....	113.8	112.6	107.9	109.3	111.9	108.4	116.5	107.9	106.7	107.4	118.4	106.1
1970.....	106.6	104.7	102.4	104.4	108.1	89.5	92.3	105.6	101.4	107.0	120.4	108.9
1971.....	100.2	96.1	103.5	100.2	107.7	97.9	118.6	113.8	104.7	107.1	125.9	112.8
1972.....	112.1	107.1	112.1	116.0	122.2	108.2	135.8	120.8	109.4	112.7	143.6	116.8
1973.....	126.7	122.3	124.7	133.7	143.1	118.3	148.8	126.0	117.3	118.2	154.5	120.9
1974.....	123.1	119.8	124.2	140.1	143.8	108.7	128.2	116.2	114.3	118.2	159.4	124.0
1975.....	96.4	95.8	109.9	125.1	116.5	97.4	111.1	107.6	107.6	113.3	147.2	123.4
1976.....	109.7	104.8	123.9	134.5	134.8	111.1	142.0	123.2	125.7	122.5	170.9	133.0
1977.....	111.1	103.8	131.0	143.6	145.4	122.2	161.1	131.2	134.2	127.6	185.7	138.8
1978.....	119.9	113.2	141.6	153.6	159.4	132.5	169.9	136.3	134.2	131.5	197.4	142.7
1979.....	121.2	113.2	148.5	163.6	175.0	135.3	160.0	136.9	130.7	136.9	210.4	147.9

Source: Board of Governors of the Federal Reserve System.

REVISIONS IN THE INDEX

Since it was first published in 1927, the index has undergone several major revisions. A major revision was completed in 1959, with revised indexes and new groupings carried back to January 1947. The principal changes were (1) adjustment of individual monthly series to levels shown by the Census of Manufactures and other data; (2) broadening of coverage to include electric and gas utility output, and introduction of new component series in a number of manufacturing and mining industries; (3) introduction of new market groupings; and (4) adoption of the 1957 version of the Standard Industrial Classification.

The next major revision was introduced in early 1972. Several major statistical changes were made at that time including: (1) adjustment to Census benchmark levels through 1963 and to annual indexes based on *Annual Survey of Manufactures* (ASM) through 1968; (2) introduction of kilowatt hour data adjusted for output per kilowatt-hour to replace many but not all hours worked series; (3) major market groupings extended back through World War II; (4) introduction of alternative (supplementary) value of product dollar weights for the product portion of the market groupings; (5) introduction of initial base-weight years that were then linked to provide 1967=100 indexes; and (6) adoption of the 1967 Standard Industrial Classification.

In 1976 the index was revised, (1) to reflect 1963 to 1967 benchmark indexes and the ASM through 1973; (2) to increase the number of basic series from 227 to 235 by the addition of 26 new series and the deletion of 18 former series; (3) to allow for changes in market groupings to improve the representation of automotive products and energy materials; and (4) to shift the value of product weights to 1972 dollars.

RELATION TO OTHER SERIES

Among the more important monthly series to which the index is closely related are those on manufacturers' shipments. It should be observed, however, that these are value or dollar-volume series, and are therefore influenced by price as well as quantity changes. As a measurement of physical volume, the industrial production index registers quantity changes only. Moreover, differences in movement between the production index and the shipment series for manufacturing arise for other reasons: production differs from shipments because of changes in factory inventories; the production index uses the establishment as the unit for the industry classification whereas, the shipment series use company data; and the production index use value-added data to weight the series whereas, the shipment series implicitly uses value of shipments.

The consumer goods and business equipment market groupings of industrial production refer to many of the same goods as the consumer goods and producers' durable equipment categories of the gross national product. Even after these GNP categories are deflated for price changes, conceptual and statistical differences from the production series remain. The production series include production for inventory, for export, and for government purchase as well as for domestic business and consumers, and are generally weighted on the basis of Census value added by industry in 1967. The deflated consumer goods and equipment expenditure series in the GNP include imported goods but not goods for export, inventory, or governmental use. They are implicitly weighted on the basis of final purchase price in 1972, including value added by transportation and trade. The basic idea used to calculate the expenditure series, furthermore, differ in concept and coverage from the basic production data.

USES AND LIMITATIONS

The total index of industrial production is probably most widely used as a coinciding measure of conditions. It is used with related data on employment, inventories, trade, prices, and other economic variables in analyzing short- and long-run developments in the economy.

The component indexes are used to determine the areas in which important changes accounted for the observed changes in the total index. They may also be used in analysis related to individual industries—for example, studies of a company's output and sales figures in relation to the output movements of the industry.

The scope of the index is limited to manufacturing, mining, and electric and gas utilities. It should not be used as a measure of total production, because agriculture, construction activity, transportation, trade, and various other sectors are not included. It should be noted that changes in the output of manufactures, minerals, and utilities are especially significant, because they account for much of the cyclical variation in total economic activity.

REFERENCES

The index of industrial production is published monthly in the release of Industrial Production G.12.3 (414), available on request from the Division of Support Services, Board of Governors of the Federal Reserve System, Washington, D.C. 20551. Each issue shows all the groupings and individual indexes published on the 1967 base. Indexes on a 1967 base for groupings, but not for individual series, are shown in the monthly *Federal Reserve Bulletin*. A detailed description, including historical tables, appears in a Federal Reserve Board publication, *Industrial Production: 1976 Revision*.

TABLE 22.—Industrial Production and Capacity Utilization, 1929–79

Year	Industrial production (1967=100)						Capacity utilization rate (percent) ¹			
	Manufacturing						Materials (Federal Reserve series)	Manufacturing		
	Total	Total	Durable	Nondur- able	Mining	Utilities		Federal Reserve series	Commerce series ²	Wharton series ³
1929 proportion.....	100.0	87.95	51.98	35.97	6.36	5.69				
1929.....	21.6	22.8	22.5	23.2	43.1	7.4				
1930.....	18.0	18.7	16.7	21.1	37.4	7.6				
1931.....	14.9	15.3	11.5	19.9	32.1	7.3				
1932.....	11.7	11.8	7.0	17.5	26.8	6.8				
1933.....	13.7	14.0	9.1	19.9	30.6	6.7				
1934.....	15.0	15.3	11.1	20.4	32.0	7.1				
1935.....	17.3	18.0	14.2	22.7	34.8	7.7				
1936.....	20.4	21.5	18.4	25.2	40.0	8.7				
1937.....	22.3	23.4	20.8	26.7	45.1	9.6				
1938.....	17.6	18.0	13.3	23.7	39.0	9.7				
1939.....	21.7	21.5	17.7	26.1	42.1	10.7				
1940.....	25.0	25.4	23.5	27.5	46.8	11.8				
1941.....	31.6	32.4	31.4	33.3	49.7	13.3				
1942.....	36.3	37.8	39.9	34.6	51.3	14.9				
1943.....	44.0	47.0	54.2	37.1	52.5	16.5				
1944.....	47.4	50.9	59.9	38.6	56.2	17.5				
1945.....	40.7	42.6	45.2	38.5	55.1	17.8				
1946.....	35.0	35.3	31.6	39.7	54.2	18.6				
1947.....	39.4	39.4	37.7	41.3	61.3	20.1				
1948.....	41.1	40.9	39.3	42.7	64.4	22.4		82.5		
1949.....	38.8	38.7	35.7	42.0	57.1	23.9		74.2		
1950.....	44.9	45.0	43.5	46.7	63.8	27.2		82.8		
1951.....	48.7	48.6	48.9	48.3	70.0	31.0		85.8		
1952.....	50.6	50.6	51.9	49.2	69.4	33.7		85.4		
1953.....	54.8	55.2	58.7	51.2	71.2	36.5		89.2		
1954.....	51.9	51.5	51.8	51.6	69.9	39.3		80.3		88.1
1955.....	58.5	58.2	59.2	57.2	77.9	43.9		87.1		90.5
1956.....	61.1	60.5	61.1	60.1	82.0	48.2		86.4		87.9
1957.....	61.9	61.2	61.6	61.1	82.1	51.5		83.7		84.0
1958.....	57.9	57.0	53.9	61.6	75.3	53.9		75.2		74.2
1959.....	64.8	64.2	61.9	67.7	78.7	59.3		81.9		78.9
1960.....	66.2	65.4	62.9	69.3	80.3	63.4		80.2		76.9
1961.....	66.7	65.6	61.8	71.5	80.8	67.0		77.4		73.7
1962.....	72.2	71.5	68.6	75.8	83.1	72.0		81.6		76.5
1963.....	76.5	75.8	73.1	80.0	86.4	77.0		83.5		77.7
1964.....	81.7	81.0	78.3	85.2	89.9	83.6		85.6		79.5
1965.....	89.8	89.7	89.0	90.9	93.2	88.7		89.6		84.2
1966.....	97.8	97.9	98.9	96.7	98.2	95.5		91.1		86
1967.....	100.0	100.0	100.0	100.0	100.0	100.0	86.0	86.9		84
1968.....	106.3	106.4	106.5	106.2	104.2	108.4	87.4	87.1		85
1969.....	111.1	111.0	110.6	111.5	108.3	117.3	88.3	86.2		85
1970.....	107.8	106.4	102.3	112.3	112.2	124.5	82.5	79.3		81
1971.....	109.6	108.2	102.4	116.6	109.8	130.5	81.5	78.4		80
1972.....	119.7	118.9	113.7	126.5	113.1	139.4	87.0	83.5		83
1973.....	129.8	129.8	127.1	133.8	114.7	145.4	91.8	87.6		86
1974.....	129.3	129.4	125.7	134.6	115.3	143.7	87.1	83.8		83
1975.....	117.8	116.3	109.3	126.4	112.8	146.0	73.4	72.9		77
1976.....	130.5	130.3	122.3	141.8	114.2	151.7	81.1	79.5		81
1977.....	138.2	138.4	130.0	150.5	118.2	156.5	82.7	81.9		83
1978.....	146.1	146.8	139.7	156.9	124.0	161.4	85.6	84.4		84
1979.....	152.2	153.2	146.3	163.3	125.3	166.1	87.2	85.7		83

¹ Output as percent of capacity.² Data are averages of seasonally adjusted indexes for March, June, September, and December.³ Data are averages of seasonally adjusted quarterly indexes.

Sources: Board of Governors of the Federal Reserve System, Department of Commerce (Bureau of Economic Analysis), and Wharton School of Finance.

CAPACITY UTILIZATION: FEDERAL RESERVE

DESCRIPTION OF SERIES

Capacity utilization rates for manufacturing, industrial materials, and some major subgroups of each are published every month by the Federal Reserve Board. These utilization rates are a part of two sets of related output, capacity, and utilization rate estimates. Capacity utilization is the ratio of output to capacity and is expressed as a percent.

The output series are from the Board's index of industrial production. The capacity measures in part reflect the long-term trends in the output series. Because changes to capacity occur gradually, the short-term movements in detrended production largely determine the short-term movements of the utilization rates.

The capacity estimates are derived from a variety of sources, but generally the notion of practical capacity is their underlying concept. Practical capacity has been defined by the Bureau of Census as the "greatest level of output that a plant (or firm) can achieve within the framework of a realistic work pattern" assuming availability of inputs and a normal product mix, considering only machinery in place and ready to operate, and taking account of downtime for maintenance and repair.

The average level of the utilization rates estimated by the Federal Reserve is about 83 percent for total manufacturing from 1955 to 1978. Although individual plants or industries may operate at 100-percent capacity, none of the broad aggregates ever has. In manufacturing as a whole, utilization rates as high as 90 percent have been exceeded only in wartime. The manufacturing series are available for the period since 1948; the materials series since 1967.

STATISTICAL PROCEDURES

For estimating the Federal Reserve capacity utilization rates, capacity indexes consistent with the Board's production indexes must be estimated. For manufacturing, capacity is estimated for most major industry groupings (mainly two-digit SIC

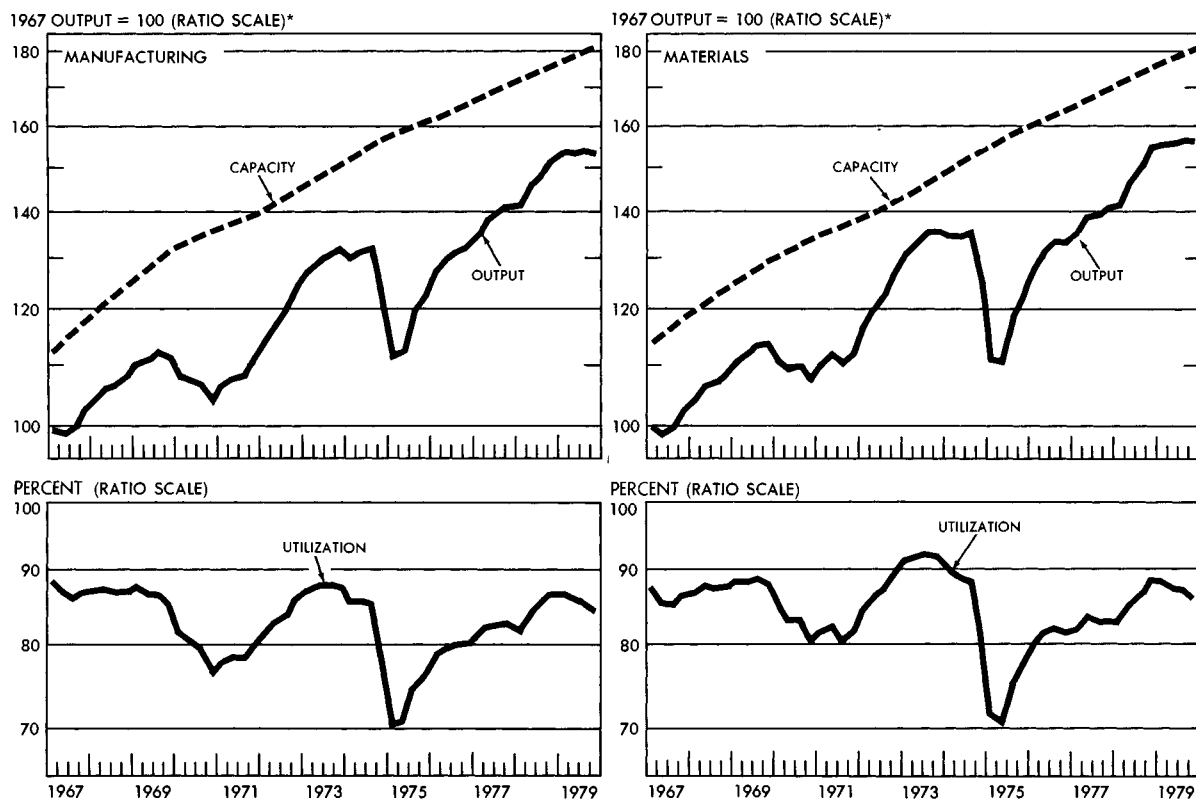
code), while for materials, 96 capacity series are estimated—one for each of the component indexes that makes up the materials groupings in the industrial production index.

In calculating aggregate utilization rates, output and capacity indexes are aggregated separately with the same value-added weights as used in industrial production (IP). For manufacturing, both output and capacity series are chain-linked indexes using weights developed from the *Census of Manufactures* for the years 1947, 1954, 1957, 1963, and 1967. For materials, the utilization rates are published beginning with 1967.

The overall levels and the long-term movements of the Federal Reserve capacity estimates are determined primarily by dividing the production indexes by the utilization rate data as reported in various company surveys. The resulting IP/utilization rate ratios are then combined into capacity time series that are smoothed to eliminate frequent irregularities. The relatively smooth interpolated and extrapolated series are in part based on estimates of deflated capital stocks that are derived from investment expenditure data adjusted for estimated scrappage of old equipment. In other words, the Federal Reserve's capacity estimates reflect long-term production trends, business judgements concerning the degree of utilization of their facilities, and the pattern of real investment over the course of the business cycle.

Preliminary manufacturing capacity estimates are derived primarily by dividing the IP indexes by McGraw-Hill's survey estimates of industrial operating rates expressed as a percent of capacity. For each industry, the preliminary estimates of capacity are used to retrend two smoother estimates of capacity: (1) McGraw-Hill's indexes of industrial capacity (created by chaining together survey estimates of percentage changes in capacity); and (2) estimates of gross capital stocks provided, in part, by the Bureau of Labor Statistics. These smooth retrended estimates are averaged to make the final capacity estimate.

Chart 5.—CAPACITY UTILIZATION



*SEASONALLY ADJUSTED

SOURCE: BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM.

Estimates of materials capacity are also based on IP indexes, but the materials capacity estimates are independent of the manufacturing estimates in that they are not based on McGraw-Hill data. Rather, they are based on capacity and utilization rate figures from the *Survey of Plant Capacity* published by the Bureau of the Census and from other sources such as the American Iron and Steel Institute, Aluminum Association, Textile Economics Bureau, Society of the Plastics Industry, American Petroleum Institute, Department of Energy (formerly Federal Power Commission), Edison Electric Institute, and the Bureau of Mines. Thus, although they are constructed in a somewhat similar way, the estimates of manufacturing and of materials capacity are partially independent of each other because they depend on data obtained from different surveys. Moreover, the estimates differ because of coverage; manufacturing encompasses finished products as well as most industrial materials, but some materials are produced by mines or utilities that are not part of manufacturing.

RELATION TO OTHER SERIES

Several sets of capacity utilization statistics now exist, and they differ as to their arithmetic means, variances, and cyclical variability. The Federal Reserve and the Wharton series are based on production indexes and conform very closely to each other in terms of cyclical patterns and vary more over the cycle than do rates based solely on company survey responses such as those published by the Bureau of Economic Analysis (BEA). Mean utilization rates from the Census "Survey of Plant Capacity" are much lower than BEA, McGraw-Hill, and Federal Reserve rates, while those from Wharton are much higher. These differences reflect coverage and methodological distinctions in the various series. Also see the related discussions of the BEA and Wharton capacity series.

USES AND LIMITATIONS

Capacity utilization rates along with unemployment rates are important indicators of the level of

resource use. High utilization rates in general, are associated with increased levels of investment and high utilization rates in certain industries—particularly those that produce materials—may be indicative of bottlenecks and supply-side inflationary pressures. The estimated capacity indexes appear to be reasonably good measures of production capabilities over time, but they should not be considered to be accurate indicators of short-term changes in capacity. The capacity utilization figures are inherently inexact—combining errors in the measurement of output and capacity. The latter is a potentiality rather than a reality and is thus ambiguous and hard to measure. Generally, it is prudent to interpret utilization rates in regard to their own past peaks, lows, and means and not solely in terms of their current level. A peak rate of 100 percent has never been achieved for total manufacturing because of factors such as: imbalances of materials used in the manufacturing

process that contribute to bottlenecks in the process, lack of skilled labor, and nonsynchronized peak rates.

REFERENCES

The current estimates appear about the middle of each month in a Federal Reserve release, G.3 (402), "Capacity Utilization: Manufacturing and Materials," and Subsequently in the *Federal Reserve Bulletin*. Historical data and a more detailed explanation of the methodologies are in *Federal Reserve Measures of Capacity and Capacity Utilization* (February 1978). A review of the state of capacity utilization measurement is found in *Measurement of Capacity Utilization: Problems and Tasks*, Staff Studies 105 (Board of Governors of the Federal Reserve System, 1979). See also *Industrial Production*, 1976 Revision (Board of Governors of the Federal Reserve System, 1977).

MANUFACTURERS' CAPACITY UTILIZATION: BUREAU OF ECONOMIC ANALYSIS

DESCRIPTION OF SERIES

The capacity utilization series are published quarterly by the Bureau of Economic Analysis of the Department of Commerce. They provide a measure of the percentage of "maximum practical capacity" utilized by manufacturing companies during the final month of each calendar quarter. The series also provides a measure of the ratio of the actual utilization rate to the preferred rate.

STATISTICAL PROCEDURES

The BEA series is based on a quarterly survey in which manufacturing companies are asked to report their actual and preferred operating rates. Capacity is not specifically defined in the survey and companies are instructed to consider their usual operating practices when making their estimates. Companies are classified into industry groupings based on the principal products produced. In constructing aggregated industry estimates sample companies are weighted according to their gross depreciable assets. Industries are combined into broader groupings using "capacity" weights developed from Census Bureau shipments data and BEA utilization rates. All weights are currently based on 1969 data. Sample firms account for approximately 70 percent of total gross depreciable assets in manufacturing. Utilization rates are seasonally adjusted using the Census X-11 program.

RELATION TO OTHER SERIES

The BEA series is based completely on survey data reported by industry, while the Federal Re-

serve System series are derived both from survey data and statistical methods using FRS industry production indexes, and the Wharton series are based wholly on statistical methods using the FRS production indexes. The BEA series is conceptually similar to the Census Bureau annual survey-based series which provides a capacity utilization series for December of each year. However, the Census series is based on reports from establishments rather than companies; this results in differences in coverage for the series and in industry classification of some manufacturing facilities. The BEA series is directly comparable to the manufacturing segment of its series on new plant and equipment expenditures. Also, see the related discussions on the Federal Reserve and Wharton series.

USES AND LIMITATIONS

Measures of capacity utilization have proven useful in many kinds of economic analysis. These include studies of investment patterns, output per man-hour, and costs, prices and profits. One limitation of survey-based measures of utilization rates, such as the BEA series, is the lack of a well-defined concept of capacity. Companies may change their perception of "normal operating conditions" over the course of business cycles, and the treatment of marginal facilities may vary over cyclical periods.

REFERENCES

The BEA estimates are published quarterly in press releases and in the *Survey of Current Business*. For a fuller description of the concepts and methodology of the BEA series, see the July 1974 issue of the *Survey*, p. 47.

THE WHARTON MEASURES OF CAPACITY UTILIZATION

DESCRIPTION OF SERIES

The Wharton Econometric Forecasting Associates provide quarterly measures of capacity utilization for manufacturing, mining, and utilities industries. Capacity or potential output is defined as the maximum sustainable level of output an industry can attain under normal input conditions. Actual output in the Wharton measures is defined by the quarterly averages of the monthly Federal Reserve System indexes of industrial production.

STATISTICAL PROCEDURES

Capacity utilization rates are calculated for about ninety industries at the three-digit level of disaggregation in manufacturing, mining, and utilities. For each of these industries, peak output periods are determined by inspection of the actual output graph of the Federal Reserve System production indexes. It is assumed that relative peaks in the time series—that is, where output in a period exceeds that in the predecessor and successor periods—represent the potential output the industry could produce at the time of the peak. Since the utilization rate is defined as the ratio of actual to potential output, the capacity utilization rate in these periods is 100 percent. In periods between peaks, potential output is measured along the straight line that connects the flanking peaks. Since the actual output is below the linearly generated potential output, utilization rates between peaks are less than 100 percent.

During periods prior to the first and after the last peaks, capacity output is defined as lying on the line that has the same slope as that which connected the closest two peaks; that is, capacity at the end points is extrapolated. The individual utilization rates calculated at the three-digit level are then aggregated into twenty-seven two-digit categories using the Federal Reserve production index weights. Further weighting of the two-digit utilization rates is performed to produce aggregate rates for manufacturing durables and nondurables, total manufacturing, mining, utilities, and a grand total.

RELATION TO OTHER SERIES

During the period since the mid-1960's, the Wharton measures of utilization have grown significantly higher than those calculated by other groups. During the business cycle peak in 1973, for example, the Federal Reserve estimated that the capacity utilization rate in manufacturing was 87.6 percent, indicating a fair amount of spare capacity in the economy. The Wharton rate during this pe-

riod, however was approaching 95 percent, indicating that bottlenecks in interindustry relationships had brought aggregate utilization to its business cycle peak. Also, see the related discussions on the Federal Reserve Board and Bureau of Economic Analysis capacity utilization series.

USES AND LIMITATIONS

Wharton capacity utilization rates are used as sensitive indicators of business cycle activity and as signals of inflationary pressure in the economy. Because the Wharton estimates of capacity utilization are based on an equilibrium concept, their movements toward peak levels indicate the buildup of high demand and attendant inflationary pressures. These signals first began to emerge in the mid-1960's and occurred again in 1973 and 1979. For this reason, the Wharton measures of capacity utilization can be used as explanatory variables for investment and price determination in econometric forecasting models.

There are two difficulties with the linear peak-to-peak measurement of capacity utilization. The first is the identification of a local maximum point as a peak when, instead, it represents only a partial recovery. The so-called "weak-peak" problem was most prevalent in the 1959-60 recovery period. The second difficulty with peak-to-peak measurement occurs as the economy approaches full capacity. As output moves upward, there is a tendency to identify each succeeding period as the output maximum. Final identification of the actual peak cannot be determined until the output measure begins its downward turn. This phenomenon leads to some short run overstatement of utilization rates and subjects the measures to an upward bias and frequent revisions. Experience has shown, however, that while errors in measuring potential output may modestly impair the accuracy of the level, they do not affect the magnitude of the changes from quarter to quarter or year to year.

REFERENCES

More information about measures of capacity utilization can be found in the following: "Capacity Utilization: Concept, Measurement and Recent Estimates," *Brookings Papers on Economic Activity* 3: 1973, "Some New Results in the Measurement of Capacity Utilization," *American Economic Review*, March 1967; *The Wharton Index of Capacity Utilization*, Economics Research Unit, University of Pennsylvania, 1966; and "The Wharton Indexes of Capacity Utilization: a Ten Year Perspective," *Proceedings of the American Statistical Association*, 1973.

NEW CONSTRUCTION

DESCRIPTION OF SERIES

The series on the value of new construction (residential and nonresidential) put in place are compiled monthly and represent estimates of the dollar value of construction work installed or erected on the site during each month. Annual data for recent years and seasonally adjusted annual rates of the data in current and constant (1972) dollars for recent months are published by the Bureau of the Census in monthly issues of *Construction Report C30*. Data are also included currently in *Economic Indicators* and *Construction Review*.

New construction includes:

1. Erection of the new structure.
2. Additions and alterations such as additions of a wing or one or more floors to an existing building or the conversion of space to other uses requiring structural changes.
3. Mechanical installations such as plumbing, heating, electrical work, elevators, escalators, central air conditioning, and other similar building services to new structures, or to additions and alterations to existing structures.
4. Outside construction of fixed structures or facilities such as sidewalks, highways and streets, roadways, parking lots, utility connections, outdoor lighting, landscaping, railroad tracks, air fields, piers, wharves and docks, telephone and telegraph lines, radio and television towers, water supply lines, sewers, water and signal towers, electric light and power distribution and transmission lines, petroleum and gas pipelines and distribution lines, and similar facilities which are built into or fixed to the land.
5. Installation of the following specific items: Boilers, overhead traveling cranes, brick kilns or coke ovens, refrigeration systems, blast furnaces, and open-hearth furnaces.
6. When installed as part of the construction process, items such as refrigerators, ranges, and dishwashers are included.
7. Erection of all fixed, mainly sited fabricated equipment which is not housed in a building, such as petro-chemical plants and similar plant structures.

8. Land development including clearing and grading of undeveloped land; installing facilities such as streets, sidewalks and curbs, sewer, water and gas mains.

9. Also included are structural changes to a building which are necessary for the installation of equipment items that are not considered construction.

The following types of activities are excluded from new construction:

1. Maintenance and repairs to existing structures or service facilities such as repainting, reroofing, street and highway patching.

2. Purchase or installation of machinery and equipment items not specifically covered above, such as heavy industrial machinery, printing presses, stamping machines; special purpose equipment designed to prepare the structure for a specific use, such as steamtables in restaurants, pews in churches, lockers in school buildings, beds or X-ray machines in hospitals and display cases and shelving in stores.

3. Drilling of gas and oil wells, including erection of off-shore drilling platforms; digging and shoring of mines (construction of buildings at mine sites is included); work which is an integral part of farming operations such as plowing, terracing and digging of drainage ditches.

4. The purchase price of the land.

The distinction between private and public (Federal, State and local) construction is made on the basis of ownership *during* the construction period, not source of funds.

Private Residential Buildings

NEW ONE-UNIT HOUSING

Construction cost of new one-unit houses started each month is estimated using data from the Census Bureau's surveys of housing authorized by building permits and of housing units started. The estimated cost of all single units started is then distributed into monthly value put in place by applying fixed patterns of monthly construction

progress. These rates were revised using information collected in a survey of buildings started in 1971 through 1973. They are used for statistics beginning in 1973.

Construction cost is estimated separately for units started in permit-issuing places and nonpermit areas. In both areas the total cost is obtained by multiplying the number of units started by an average construction cost per unit. For single units started in permit-issuing areas, the average cost per unit is the average permit value, based on permits authorized, increased by 17.6 percent. The 17.6 percent is the sum of a 13.9 percent adjustment for undervaluation and 3.7 percent for architectural and engineering fees.

Beginning with 1973 statistics, the average cost per unit in nonpermit areas is derived by taking 95 percent of the average permit value of single unit houses. This procedure replaced the regression equation used in earlier years.

NEW TWO UNIT OR MORE BUILDINGS

Before 1974 value-in-place estimates for 2 unit or more buildings were made by applying fixed patterns of construction progress to the cost of construction. Average construction cost per unit in permit areas for 2 or 4 unit buildings was the average permit value per unit increased by 34 percent. For buildings with 5 units or more the average permit value was increased by 50 percent. In nonpermit areas, the average cost per unit was estimated to be 86.5 percent of the average cost per unit for the same type building in permit-issuing areas.

Beginning in 1974, value in place estimates for buildings with 2 units or more in permit areas are directly measured from monthly progress reports from a sample of new residential building projects started each month. A sample of new projects authorized by building permits is selected from reports of housing units in the Housing Starts Survey. These projects are selected as follows:

- (1) All projects with 200 or more units.
- (2) All projects with less than 200 units with all buildings of 2 to 4 units.

(3) One-half of the projects with less than 200 units with at least one building that has five or more units.

Beginning in 1977, the design for selecting projects authorized by permits was changed to reflect the probability of selecting permit areas as well as the number of units in the projects.

When a project is started the owner is asked to report value of work done each month until the project is completed. About 2,500 projects are in the sample each month.

Estimates based on actual surveys for buildings in nonpermit areas were introduced with January 1977 statistics. Before January 1977, construction estimates for 2 unit or more buildings in nonpermit areas were made under the old procedure; that is, by applying fixed rates of progress to the cost of units started in nonpermit areas.

NONHOUSEKEEPING RESIDENTIAL

Monthly value in place estimates for private nonhousekeeping residential construction (hotels, motels, dormitories) are derived in the same manner as estimates for private nonresidential buildings.

ADDITIONS AND ALTERATIONS

Data for this series are obtained by the Census Bureau in a quarterly survey of homeowners and owners of rental properties measuring expenditures for residential additions, alterations, maintenance, repairs and replacements. Monthly estimates are interpolated from quarterly data.

Until actual data are available, which is approximately 3 months after the end of the quarter, current months' estimates are extrapolations from a linear regression of seasonally adjusted estimates for the most recent years.

Private Nonresidential Buildings

NONFARM

The Bureau of the Census conducts a monthly Construction Progress Survey for estimating the value of private nonresidential building construc-

tion. In this survey owners of a sample of non-residential building projects are asked to report value of work done each month until the project is completed.

The sample of projects is selected from several sources:

1. Building projects in the 37 Eastern States and the District of Columbia reported at the "low bid", "bid results" or "start" stages by the F. W. Dodge Division of the McGraw-Hill Information Systems Company.

2. Building permits authorizing nonresidential construction in permit-issuing places in the 13 Western States.

3. Projects in the Western States in a sample of nonpermit areas.

NONRESIDENTIAL FARM CONSTRUCTION

Estimates of farm nonresidential construction expenditures are provided by the U.S. Department of Agriculture. These expenditures are obtained annually from the Farm Production Expenditures Survey. No monthly or quarterly estimates are available for this series.

To impute monthly value, the annual estimates, including projections for the current and following year, are smoothed over the years and are linked with the seasonal factors computed for residential one-unit buildings. The result is that monthly estimates are developed which reflect seasonal changes and whose sum is equal to the annual estimate.

Public Utilities

Value-in-place estimates for telephone and telegraph construction are based on reports to the Census Bureau of actual monthly construction progress by American Telephone and Telegraph Company and Western Union Telegraph Company. For electric light and power, gas, railroad, and petroleum pipeline categories, construction put in place estimates are based on annual company capital expenditure reports compiled by Federal regulatory agencies and cooperating private organizations.

Pending availability of annual data, monthly estimates for gas and electric utilities are interpolated from the quarterly plant and equipment expenditure survey data of the Bureau of Economic Analysis. Estimates for railroads are interpolated from the Interstate Commerce Commission's quarterly estimates.

All Other Private

Monthly value in place estimates for this series are based on the monthly series of value of con-

tracts awarded for such projects in the 37 Eastern States and the District of Columbia compiled by the F. W. Dodge Division of the McGraw-Hill Information Systems Company. The value reported by Dodge is increased to allow for 1) architectural, engineering and miscellaneous construction costs, 2) projects not covered by the Dodge statistics, and 3) projects located in the 13 Western States.

The assumption is made that the value of contracts after adjustment represents value of work started in the following month.

The value of starts is distributed into monthly value put in place by applying fixed monthly rates of progress.

Public Construction

Public construction is composed of two parts: Federal construction and State and local construction.

FEDERAL

Monthly value in place estimates for Federally owned construction are based on monthly expenditure data which, with few exceptions, are supplied to the Census Bureau by each Federal agency. Information not supplied by agencies is obtained from the fiscal year outlay data shown in the Federal Budget. Most of these agencies have construction programs under \$30 million each year. The budget totals are prorated over the fiscal year to derive monthly estimates.

STATE AND LOCAL

Beginning with January 1975 statistics, the State and local government construction estimates are based on progress reports from a sample of projects owned by State and local governments. The sampling and estimation procedures used to obtain the new series are similar to those for the private nonresidential building survey.

Prior to 1975, construction expenditures are based on reports from a sample of government agencies. Expenditures for the survey month were assumed to represent payments for work done the previous month. The reported expenditures were lagged one month to conform to the concept of value in place. Current month State and local expenditures included in total expenditures were derived through extrapolation of expenditures by type of construction but were not published by type in the report. With the introduction of the new State and local survey, a current month value in place estimate is available from directly measured data.

TABLE 23.—New Construction, 1929-79

Year	Total new construction expenditures	Private						Federal, State, and local	Construction contracts ²	
		Total	Residential		Commercial and Industrial	Other	Total value index (1972 = 100)		Commercial and industrial floor space (millions of square feet)	
			Total ¹	New housing units						
Billions of dollars										
1929	10.8	8.3	3.6	3.0	2.1	2.6	2.5		267	
1930	8.7	5.9	2.1	1.6	1.4	2.4	2.9		145	
1931	6.4	3.8	1.6	1.3	.7	1.5	2.7		70	
1932	3.5	1.7	.6	.5	.3	.7	1.9		33	
1933	2.9	1.2	.5	.3	.3	.5	1.6		42	
1934	3.7	1.5	.6	.4	.4	.5	2.2		46	
1935	4.2	2.0	1.0	.7	.4	.6	2.2		56	
1936	6.5	3.0	1.6	1.2	.6	.9	3.5		97	
1937	7.0	3.9	1.9	1.5	.9	1.1	3.1		123	
1938	7.0	3.6	2.0	1.6	.5	1.1	3.4		67	
1939	8.2	4.4	2.7	2.3	.5	1.2	3.8		93	
1940	8.7	5.1	3.0	2.6	.8	1.3	3.6		162	
1941	12.0	6.2	3.5	3.0	1.2	1.5	5.8		294	
1942	14.1	3.4	1.7	1.4	.5	1.2	10.7		520	
1943	8.3	2.0	.9	.7	.2	.9	6.3		128	
1944	5.3	2.2	.8	.6	.3	1.1	3.1		96	
1945	5.8	3.4	1.3	.7	.8	1.3	2.4		221	
1946	14.3	12.1	6.2	4.8	2.8	3.0	2.2		354	
1947	20.0	16.7	9.9	7.8	2.7	4.2	3.3	13.3	243	
1948	26.1	21.4	13.1	10.5	2.8	5.5	4.7	16.4	211	
1949	26.7	20.5	12.4	10.0	2.2	5.9	6.3	17.6	147	
1950	33.6	26.7	18.1	15.6	2.5	6.1	6.9	24.2	237	
1951	35.4	26.2	15.9	13.2	3.6	6.7	9.3	24.8	225	
1952	36.8	26.0	15.8	12.9	3.5	6.8	10.8	26.7	197	
1953	39.1	27.9	16.6	13.4	4.0	7.3	11.2	27.3	235	
1954	41.4	29.7	18.2	14.9	4.2	7.2	11.7	30.3	238	
1955	46.5	34.8	21.9	18.2	5.6	7.3	11.7	35.8	298	
1956	47.6	34.9	20.2	16.1	6.7	8.0	12.7	36.4	436	
1957	49.1	35.1	19.0	14.7	7.1	9.0	14.1	37.0	421	
1958	50.0	34.6	19.8	15.4	6.0	8.8	15.5	40.6	356	
1959	55.4	39.3	24.3	19.2	6.0	9.0	16.1	41.2	439	
1960	54.7	38.9	23.0	17.3	7.0	8.9	15.9	41.2	461	
1961	56.4	39.3	23.1	17.1	7.5	8.7	17.1	42.4	443	
1962	60.2	42.3	25.2	19.4	8.0	9.2	17.9	47.3	500	
1963	64.8	45.5	27.9	21.7	7.9	9.7	19.4	52.1	534	
1964	67.7	47.3	28.0	21.8	9.0	10.3	20.4	53.9	599	
1965	73.7	51.7	27.9	21.7			22.1	56.4	680	
1966	76.4	52.4	25.7	19.4		23.8	24.0	57.6	754	
1967	78.1	52.5	25.6	19.0		26.7	25.5	60.6	694	
1968	87.1	59.5	30.6	24.0	13.8	15.1	27.6	68.5	780	
1969	93.9	66.0	33.2	25.9	16.2	16.6	28.0	75.2	890	
1970	94.9	66.8	31.9	24.3	16.3	18.6	28.1	75.1	742	
1971	110.0	80.1	43.3	35.1	17.0	19.8	29.9	88.1	727	
1972	124.1	93.9	54.3	44.9	18.1	21.5	30.2	100.0	854	
1973	137.9	105.4	59.7	50.1	21.7	24.0	32.5	109.2	1,010	
1974	138.5	100.2	50.4	40.6	23.8	25.9	38.3	103.0	840	
1975	134.5	93.7	46.5	34.4	20.8	26.4	40.9	101.9	555	
1976	151.1	111.9	60.5	47.3	19.9	31.5	39.1	121.0	592	
1977	174.0	135.8	81.0	65.7	22.5	32.4	38.2	153.6	739	
1978	205.5	159.6	93.4	75.8	29.6	36.6	45.9	174.1	977	
1979	229.0	179.9	99.0	78.6	39.9	41.0	49.0	182.9	1,050	

¹ Includes nonhousekeeping residential construction and additions and alterations, not shown separately.

² F. W. Dodge series. Value index relates to 50 States. Floor space series relates to 37 States through 1955; to 48 States for 1956-1968; and to 50 States beginning 1969.

NOTE.—New construction expenditures data prior to 1973 not comparable with later data.

Sources: Department of Commerce (Bureau of the Census) and McGraw-Hill Information Systems Company, F. W. Dodge Division.

The new estimates are not comparable to those before 1975 because of methodological and definitional changes and the introduction of new seasonal indexes. These changes affect the level of the new series, as well as the month to month movement.

The significant definitional difference between the two surveys affects the classification of different types of construction. In the new survey, classification is determined by the function of the project. In the old survey, expenditures were classified primarily on the basis of the type of agency making the expenditures. For example, an office building owned by a State highway department was previously included in the "highway and street" category. The new survey classifies the same office building in the "other State and local buildings" category. In effect, under the new survey, each project, including all auxiliary construction under the same contract is classified according to its major function.

CONSTRUCTION IN CONSTANT DOLLARS

The monthly value-in-place estimates in current dollars are converted to a constant 1972 dollar series using cost indexes derived for each category of construction. The deflators for the various categories are related indexes or combinations of related indexes from private associations and Federal agencies. The selection of the indexes and procedures used for developing the deflators for each category resulted from recommendations made jointly by the Bureau of Economic Analysis and the Bureau of the Census.

RELATION TO OTHER SERIES

The new construction activity series is used in preparing the fixed investment measures of the gross national product (GNP). However, the series published in the Construction Report Series C30 differ from estimates of fixed investment in nonresidential and residential structures because the GNP estimates of fixed private investment include expenditures for the following items not included in the new construction put in place figures.

1. Value of sales of new mobile homes;
2. Expenditures for petroleum and natural gas well drilling and exploration;
3. Expenditures for construction of mine shafts and exploration;
4. Brokers' commissions and other costs involved in the sale of new and existing structures, and

5. Net value of purchases of used structures from the public sector by the private sector.

Items 1 through 5 are included in accounts for private domestic investment of the GNP. However, 5 is offset by government purchases of structures. Interest charges on public utility plants under construction are included in the value put in place estimates but not in GNP estimates.

USES AND LIMITATIONS

The new construction series indicates the current volume of this segment of economic activity. Construction has an important impact on employment in the contract construction and building materials industries, and on additions to capital stocks of structures in the private and public sectors. It is used in short-term cyclical and long-term growth analyses. Since the series does not include maintenance and repair, it cannot be related directly to the total use of construction labor and materials.

Statistics on the value of new construction put in place result in part from direct measurement in that statistics for value of construction progress or construction expenditures are obtained from a census or a sample survey. The remaining estimates are measured indirectly using related construction statistics; for example, value put in place for new housing units is derived by: 1) multiplying the number of new housing units started each month by an estimated average construction cost, and 2) distributing the resulting value of starts into monthly value put in place by applying to that total, a monthly rate of construction progress based on past experience.

Indirect estimation procedures are less desirable because they may not reflect actual events, particularly over the short run. The example of the procedure for estimating value of new one-family housing illustrates this point. Although indirectly measured series may not respond to actual events, they may reflect sustained trends reasonably well.

For the year 1977, estimates measured directly accounted for about 70 percent of all new construction. These series include multi-unit residential construction, private nonresidential buildings, nonhousekeeping residential buildings, public utilities, residential additions and alterations, and virtually all public construction. The balance was measured indirectly. On a monthly basis, directly measured data are available for about 52 percent of the value in place estimates.

Because of imputations and late reporting, value in place estimates for current months are subject

to revision for at least 18 months. Addition of late data may also cause revision of seasonal factors and, hence, seasonally adjusted data.

Some of the directly measured monthly construction progress estimates are based on samples and may differ from results that would be obtained if progress reports were collected from all projects. In addition, errors may arise from causes such as processing errors, imputations for non-respondents and failure of respondents to answer some questions correctly.

The new construction figures cannot be used as an indicator of the physical volume of construction without extensive adjustment for changes in price and wage rates, technological advances, and other relevant factors.

REFERENCES

Data on construction value put in place are published in detail by type of construction and ownership in Construction Report C30, *Value of New Construction Put in Place*, a monthly publication of the Bureau of the Census. This publication also presents data on a seasonally adjusted annual rate basis, both in current dollars and in constant (1972) dollars. These value in place data are also published in *Construction Review*, a monthly publication of the Bureau of Industrial Economics, U.S. Department of Commerce.

Historical monthly data for the 1939-1978 period are published in the following reports: 1939-1945—*Construction Volume and Cost, 1915-1956* a statistical supplement to *Construction Review*; 1946-1957—Construction Report C30-61 (Supplement); 1958-1969—Construction Report C30-74S: 1970-1977—Construction Report C30-78-05; 1978—Current Issues of Construction Report C30. Although the statistics for the more recent years have been revised, historical annual data back to 1915 appear in *Construction Statistics 1915-1964*, a supplement to *Construction Review*. More detailed descriptions of the sources of data and the methods of compiling the estimates are also published in Construction Report C30-74S.

NEW PRIVATE HOUSING

Units Authorized by Permit Places

DESCRIPTION OF SERIES

The Bureau of the Census provides monthly data on the number of new private housing units authorized by local building permits unadjusted and seasonally adjusted by regions, type of structure and inside, outside Standard Metropolitan Statistical Areas (SMSA's). The present series, updated in 1978, pertains to a national universe of approximately 16,000 places in the United

F. W. Dodge Construction Contract Series

This series, except the part of residential buildings comprising privately owned one- and two-family houses, are based upon daily reports by F. W. Dodge field staff. This field staff contacts owners, architects, engineers, contractors, financial institutions, real estate brokers, and others able to supply reliable information on construction projects. The series include new construction, additions, and major alterations within 60 days of work start. They exclude maintenance and repair work, farm building, ship building, and a part of force-account work done by firms and public agencies.

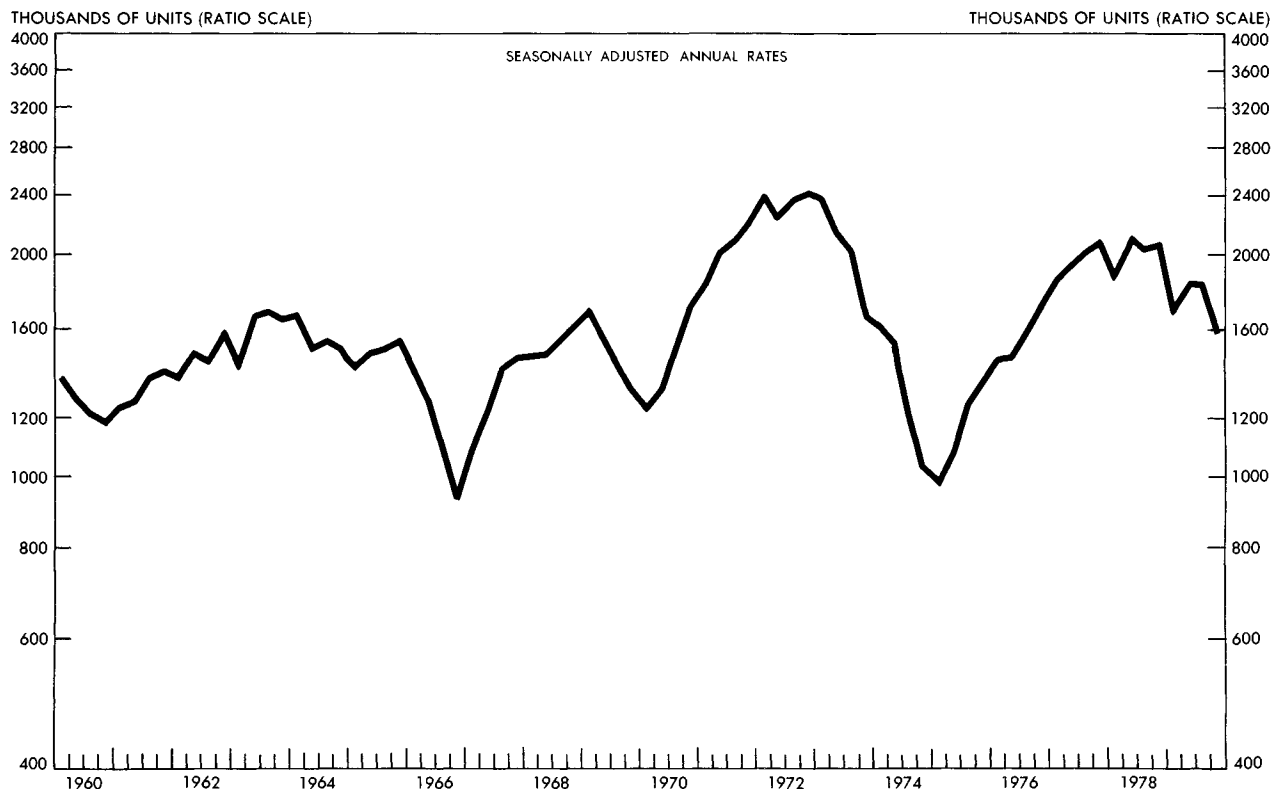
Geographic coverage has been increased in several steps since the series began. The earliest data beginning in 1901 cover total construction in the New England States. Data covering 27 northeastern States and the District of Columbia are available from 1910; the addition of nine southern States between 1920 and 1923 brought the total to 36. Texas was added in 1924. The 37 States covered then excluded Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada, Washington, Oregon, and California. For the remaining 11 western States, information gathered from permit places, publications, and a sample of areas was used. From 1956 to 1969, the 48 conterminous States were covered; beginning 1970, all 50 States.

Valuation represents, as nearly as possible, actual construction costs, including subcontracts for such items as plumbing, heating, electrical work, roofing, and normal connecting utilities, and excluding land and architects' fees. Cost of industrial equipment not an integral part of the structure is excluded, except for special purpose equipment in petroleum refineries; outdoor chemical plants; electrical generating power, and heating plants; and water and sewage treatment plants.

Floor space figures represent footage under roof, exclusive of basement. Where building permit data are the basis of the statistics, floor area is estimated from construction costs, with local building cost differentials applied to nationally established cost-per-square-foot rates.

States requiring construction permits. From 1972 through 1977, the series relates to 14,000 places; from 1967 through 1971, the series relates to 13,000 places; from 1963 through 1966, to 12,000 places, and from 1959 through 1962, to 10,000 places. In 1978, the number of housing units authorized in the 16,000 places was 6.7 percent greater than the number in the 14,000 places. (For 1954-1958, when the survey was conducted by the Bureau of Labor Statistics, Department of Labor, data were available for 7,000 places.)

Chart 6.—HOUSING STARTS



SOURCE: DEPARTMENT OF COMMERCE.

STATISTICAL PROCEDURES

The procedure followed in arriving at the monthly building permit authorization totals involves the cumulating of monthly data from a sample of places selected from the universe of approximately 16,000 permit-issuing places. All places in 101 selected SMSA's were chosen with certainty. The 101 SMSA's were selected on the basis of construction activity size during 1964-1966. The remaining places were stratified, by State, into two stratas based on the sum of the housing units authorized in 1975 and 1976 for the 14,000 place universe, and 1976 and 1977 for the 2,000 additional places added from the 1978 update. In each State, places that authorized housing units during the two years greater than or equal to a predetermined number of units were selected with certainty; the other places were selected at the rate of 1 in 10. This 16,000 place universe accounted for about 88 percent of all private housing constructed in 1979.

These figures relate to new buildings intended for occupancy on a housekeeping basis. They do not include hotels, motels, and other structures for transient accommodations or group residential buildings such as nurse's homes and college dormitories. They also exclude additions, alterations, and repairs to existing buildings, as well as conversions.

The building permit data are adjusted for seasonal variation by the use of moving indexes (derived by the X-11 version of the Census Method II seasonal adjustment program based on data from January 1960-March 1980). It is assumed that the 16,000 permit-issuing place universe has seasonal movements which differ very little from those that apply to the 14,000 place universe, since the additional places added about 7 percent to the units reported by the 14,000 place universe.

Building permit data contain significant trading-day variation and are therefore adjusted for this variation in order to reduce irregular fluctuations in the series. The daily pattern obtained empirically from the data closely approximates a 5 day week in which Monday through Friday are assigned equal weight and Saturday and Sunday receive zero weight, and thus the trading-day adjustment is based on this pattern. There is no holiday adjustment in the assignment of daily weights.

USES AND LIMITATIONS

Units authorized are general indicators of the available inventory of new homes. They can be used as advance indicators of the need for new construction. Building permit data are also presented in considerable geographic detail not available for housing starts, thus making them helpful to a wider range of users.

TABLE 24.—*New Private Housing and Vacancy Rates, 1945-79*

[Thousands of units or homes, except as noted]

Year	New private housing units					New private homes			Vacancy rate for rental housing (percent)
	Units started by type of structure ¹				Units authorized ²	Units completed	Homes sold	Homes for sale at end of period ³	
	Total	1 unit	2-4 units	5 or more units					
1945	325.0								
1946	1,015.0								
1947	1,265.0								
1948	1,344.0								
1949	1,430.0								
1950	1,908.0								
1951	1,420.0								
1952	1,446.0								
1953	1,402.0								
1954	1,532.0								
1955	1,627.0								
1956	1,325.0								6.1
1957	1,175.0								5.6
1958	1,314.0								6.5
1959	1,517.0	1,234.0	283.0		1,208.3				7.0
1960	1,252.2	994.7	257.4		997.6				8.1
1961	1,313.0	974.3	338.7		1,064.2				8.7
1962	1,462.9	991.4	471.5		1,186.6				8.1
1963	1,603.2	1,012.4	590.8		1,334.7		560	264	8.3
1964	1,528.8	970.5	108.4	450.0	1,285.8		565	250	8.3
1965	1,472.8	963.7	86.6	422.5	1,240.6		575	226	8.3
1966	1,164.9	778.6	61.1	325.1	971.9		461	194	7.7
1967	1,291.6	843.9	71.6	376.1	1,141.0		487	187	6.8
1968	1,507.6	899.4	80.9	527.3	1,353.4	1,319.8	490	213	5.9
1969	1,466.8	810.6	85.0	571.2	1,322.3	1,399.0	448	222	5.5
1970	1,433.6	812.9	84.8	535.9	1,351.5	1,418.4	485	220	5.3
1971	2,052.2	1,151.0	120.3	780.9	1,924.6	1,706.1	656	287	5.4
1972	2,356.6	1,309.2	141.3	906.2	2,218.9	2,003.9	718	409	5.6
1973	2,045.3	1,132.0	118.3	795.0	1,819.5	2,100.5	634	418	5.8
1974	1,337.7	888.1	68.1	381.6	1,074.4	1,728.5	519	346	6.2
1975	1,160.4	892.2	64.0	204.3	939.2	1,317.2	549	313	6.0
1976	1,537.5	1,162.4	85.9	289.2	1,296.2	1,377.2	646	353	5.6
1977	1,987.1	1,450.9	121.7	414.4	1,690.0	1,657.1	819	402	5.2
1978	2,020.3	1,433.3	125.0	462.0	1,800.5	1,867.5	817	414	5.0
1979	1,745.1	1,194.1	122.0	429.0	1,551.8	1,870.8	709	398	5.3

¹ Data for 1945-58 are for nonfarm units only; data beginning 1959 are for farm and nonfarm units.² Units authorized by issuance of local building permit in 10,000 permit-issuing places for 1959-62; in 12,000 places for 1963-66; in 13,000 places for 1967-71; in 14,000 places for 1972-77; and in 16,000 places beginning 1978.³ Seasonally adjusted.⁴ New series beginning March 1979.

NOTE.—Units in structures built by private developers for sale upon completion to local housing authorities under the Department of Housing and Urban Development "Turnkey" program are classified as private housing. Military housing starts, including those financed with mortgages insured by FHA under Section 803 of the National Housing Act, are included in publicly owned starts and excluded from data shown here.

Source: Department of Commerce, Bureau of the Census.

The portion of residential construction measurable from building permit records do not reflect construction activity outside of areas subject to local permit requirements. During 1979, about 12 percent of private housing units in the United States were constructed in areas not requiring building permits.

However, this proportion varies from State to State and among the standard metropolitan sta-

tistical areas. The reported statistics are also influenced by: a relatively small number of unrecorded units in building permit jurisdictions; the fact that the last few days of the calendar month are reported in the following month by some jurisdictions; and for local area data, changes in boundaries of localities due to annexations, new incorporations, etc., which affect comparability over time.

REFERENCES

Monthly data on residential building permit authorizations are published by type of structure and cover both the number of units and permit valuation for States and SMSA's in *Construction Reports*, Series C40, "Housing Units Authorized by Building Permits and Public Contracts". Related information on residential housing units is published in *Construction Reports*, Series C20, "Housing Starts".

Units Completed

Privately owned one-unit structures are defined as complete when all finish flooring has been installed (or carpeting, if used in place of finish flooring). If the building is occupied before all construction is finished, it is classified as completed at the time of occupancy. In privately owned buildings with two or more housing units, all the units in the building are counted as completed when 50 percent or more of the units are occupied or available for occupancy. Public housing units in all structures are counted as completed when reported completed by the housing authority or other owning public agency.

New Privately Owned One-Family Homes

HOMES SOLD

A house is considered sold when either a sales contract has been signed or a deposit accepted regardless of the stage of construction of the house. This survey does not follow through to the completion of the sales transaction, so even if the

BUSINESS SALES AND INVENTORIES**Wholesale Trade**

DESCRIPTION OF SERIES

Monthly estimates of wholesale sales and inventories are compiled and published by the Bureau of the Census. The term "sales" includes sale of merchandise, after deducting returns, allowances, and discounts, and receipts from repairs or other services to customers. Inventories represent stocks, at cost, of all merchandise owned by wholesalers and available for sale. They do not include goods held on a consignment basis nor do they include such items as fixtures, equipment and supplies not held for sale.

The series on wholesale sales and inventories is limited to merchant wholesalers as information on

transaction is not finalized, the house is still considered to have been sold.

HOMES FOR SALE

A house is considered "for sale" when (1) a permit to build has been issued in permit-issuing places or work has begun on the footings or foundation in nonpermit areas, (2) a sales contract has not been signed nor a deposit accepted and (3) the sales price includes both the house and the land. If the owner of the land is having a house built for his own use, the house is categorized either as "contractor-built" or "owner-built", depending on whether he hires a general contractor or acts as his own contractor.

Vacancy Rate for Rental Housing

The Bureau of the Census published quarterly measures of rental housing vacancy rates. The vacancy rates represent the percentage that vacant housing units are of the total stock of all rental housing units, occupied and vacant. Additional detail is available on the structural characteristics, duration and geographic distribution of the vacant units. The quarterly measures are averages of data for the three months of the quarter. The data are obtained as part of the monthly household Current Population Survey (see section on Status of the Labor Force for details of the survey). The vacancy rate data are used for analyses of housing markets such as the relationship of the availability of housing with rents and new construction. Similar vacancy rate data are available for homeowner housing. The data are published in the report, *Housing Vacancies: Vacant Housing Units in the United States*.

other types of wholesalers is not available except for years when the Census of Wholesale Trade is taken. The 1972 Census of Wholesale Trade indicated that merchant wholesalers accounted for 57 percent of the sales and 80 percent of the inventories of all wholesale establishments. The areas of wholesale trade not covered in this series include manufacturers sales offices and branches and agents and brokers. The wholesale series shown in issues of this report prior to December 1963 included information for some types of nonmerchant wholesalers but this series has been discontinued. The revised series, beginning with data for 1948 and limited to merchant wholesalers, was issued in December 1963.

STATISTICAL PROCEDURES

Sales and inventories of merchant wholesalers are based on dollar estimates collected monthly in a probability sample of merchant wholesalers representing all kinds of business within the scope of wholesale trade. Data from 1959-1963 are based on samples selected from the 1954 and 1958 Censuses of Business while estimates from 1964-1966 are based on the 1967 Census of Wholesale Trade using the 1967 Standard Industrial Classification definitions. Data from 1967-1979 are based on the 1967 and 1972 Censuses of Wholesale Trade using the 1972 Standard Industrial Classification definitions.

The sales and inventories data are adjusted for seasonal variation and, in the case of sales, also for trading day variation, using the X-11 version of the Census Method II seasonal adjustment program. The magnitude of these adjustments is suggested by the following comparison of unadjusted and adjusted data for 1978 for merchant wholesalers with all wholesale trades combined.

[Dollar figures in billions]

1978	Unadjusted		Seasonally adjusted		Implicit seasonal adjustment factors	
	Sales	Inventories	Sales	Inventories	Sales	Inventories
Jan.....	52.1	69.6	56.3	69.2	93.7	100.8
Feb.....	52.8	71.2	57.7	70.3	91.8	101.2
Mar.....	62.9	73.9	58.8	72.6	107.1	101.7
Apr.....	60.6	74.6	61.8	74.3	97.7	100.7
May.....	66.2	74.6	63.2	74.8	104.3	99.4
June.....	65.8	74.8	62.7	75.1	104.7	99.3
July.....	60.7	74.9	63.4	75.7	95.6	98.6
Aug.....	67.7	74.9	64.9	76.3	104.7	98.1
Sept.....	63.9	76.1	64.5	77.1	98.3	98.7
Oct.....	69.1	78.7	67.3	78.6	102.2	100.1
Nov.....	67.7	80.1	67.6	79.5	100.6	100.9
Dec.....	64.5	80.9	67.8	80.8	96.3	100.1

USES AND LIMITATIONS

The monthly wholesale trade series are important economic indicators which reflect the level of economic activity at an intermediate stage of the distributive process. The wholesale data together with similar data for manufacturing and retail trade provide a consistent aggregate series for total business. The wholesale inventory data are used in developing the inventory change component of the gross national product.

The monthly estimates of sales and inventories are based on a sample and are therefore subject to sampling variability. In addition, they are subject to nonsampling errors, such as the failure of respondents to submit reports in time for tabulation, to submit correct figures, or to respond at all.

The estimates of sales are more accurate than the estimates of inventories. The statistics on inventories are based on estimates by respondents or imputations due to nonresponse to a greater extent than are sales statistics, reflecting the fact that wholesalers do not keep inventory records on a monthly basis to the same extent that they keep monthly sales records.

REFERENCES

Sales and inventory data for merchant wholesalers, both unadjusted and adjusted, are published for numerous detailed kinds of business by the Bureau of the Census in its *Current Business Reports*, Monthly Wholesale Trade, which also includes a detailed description of the sample, estimation procedures and reliability of the data. The data for the summary trade groups are also published by the Bureau of Economic Analysis in the *Survey of Current Business*. Data from 1967 to date are available from the Bureau of the Census; data from 1948 to 1966 are available from the Bureau of Economic Analysis.

Additional information on the seasonal adjustment of these series may be found in the references to the retail trade section.

TABLE 25.—Business Sales and Inventories—Total and Trade, 1939-79

[Millions of dollars, except as noted]

Year	Total business ¹		Wholesale		Retail						Inventory-sales ratio ⁴	
	Sales ²	Inventories ³	Sales ²	Inventories ³	Sales ²			Inventories ³			Total business ¹	Retail
					Total	Durable goods stores	Non-durable goods stores	Total	Durable goods stores	Non-durable goods stores		
1939					3,504	943	2,561	5,530	2,090	3,450		1.53
1940					3,865	1,131	2,733	6,120	2,470	3,650		1.49
1941					4,606	1,434	3,172	7,780	3,180	4,600		1.48
1942					4,768	1,027	3,741	8,020	2,750	5,270		1.76
1943					5,270	1,018	4,251	7,560	2,210	5,350		1.42
1944					5,851	1,162	4,689	7,640	2,240	5,400		1.32
1945					6,503	1,336	5,167	7,950	2,430	5,520		1.21
1946					8,541	2,298	6,243	11,850	3,950	7,900		1.13
1947					10,200	3,128	7,072	14,241	5,346	8,895		1.26
1948	35,260	52,507	6,808	7,957	11,135	3,574	7,561	16,007	6,572	9,435	1.42	1.39
1949	33,788	49,497	6,514	7,706	11,149	3,749	7,400	15,470	6,261	9,209	1.53	1.41
1950	38,596	59,822	7,695	9,284	12,268	4,523	7,745	19,460	8,290	11,170	1.36	1.38
1951	43,356	70,242	8,597	9,886	13,046	4,540	8,506	21,050	9,628	11,422	1.55	1.64
1952	44,840	72,377	8,782	10,210	13,529	4,606	8,924	21,031	9,491	11,540	1.58	1.52
1953	47,987	76,122	9,052	10,686	14,091	5,031	9,060	21,488	9,781	11,707	1.58	1.53
1954	46,443	73,175	8,993	10,637	14,095	4,848	9,247	20,926	9,270	11,656	1.60	1.51
1955	51,694	79,516	9,893	11,678	15,321	5,582	9,739	22,769	10,532	12,237	1.47	1.43
1956	54,063	87,304	10,513	13,260	15,811	5,484	10,327	23,402	10,495	12,907	1.55	1.47
1957	55,879	89,052	10,475	12,730	16,667	5,696	10,971	24,451	11,283	13,168	1.59	1.44
1958	54,201	87,093	10,257	12,739	16,696	5,284	11,412	24,113	10,526	13,587	1.60	1.43
1959	59,729	92,129	11,491	13,879	17,951	5,967	11,984	25,305	11,029	14,276	1.50	1.40
1960	60,827	94,713	11,656	14,120	18,294	5,880	12,414	26,813	11,923	14,890	1.56	1.45
1961	61,159	95,594	11,988	14,488	18,249	5,609	12,641	26,221	11,062	15,159	1.54	1.43
1962	65,662	101,063	12,674	14,936	19,630	6,241	13,389	27,941	11,798	16,143	1.50	1.38
1963	68,995	105,480	13,382	16,048	20,556	6,661	13,895	29,386	12,572	16,814	1.49	1.39
1964	73,682	111,503	14,529	17,000	21,823	7,049	14,773	31,094	13,318	17,776	1.47	1.40
1965	80,283	120,907	15,611	18,317	23,677	7,849	15,829	34,405	15,253	19,152	1.45	1.39
1966	87,187	136,790	16,987	20,765	25,330	8,192	17,138	38,073	17,258	20,815	1.47	1.44
1967	90,348	145,335	19,448	25,377	24,413	7,394	17,019	35,299	14,151	21,148	1.56	1.43
1968	98,143	156,166	20,846	26,604	27,030	8,475	18,555	38,945	16,580	22,365	1.54	1.38
1969	105,042	169,841	22,609	29,114	28,893	9,052	19,841	42,517	18,206	24,311	1.55	1.41
1970	107,475	178,337	23,943	32,803	30,700	9,100	21,601	43,867	17,908	25,959	1.62	1.41
1971	116,035	188,563	26,257	35,823	33,853	10,734	23,119	50,063	21,687	28,376	1.58	1.41
1972	130,049	203,161	29,584	39,786	37,422	12,369	25,054	55,079	24,238	30,841	1.50	1.40
1973	152,237	234,162	36,822	46,254	42,461	14,409	28,052	63,237	28,418	34,819	1.43	1.40
1974	175,741	285,518	45,836	56,537	45,083	14,118	30,965	71,067	32,861	38,206	1.47	1.48
1975	180,263	285,035	44,633	55,113	49,013	15,247	33,766	71,744	33,356	38,388	1.58	1.44
1976	202,001	310,736	48,408	61,307	54,784	18,150	36,633	79,273	37,841	41,432	1.48	1.38
1977	224,786	337,432	53,509	67,998	60,435	20,724	39,711	89,210	42,970	46,240	1.44	1.39
1978	254,297	380,643	62,842	80,771	66,741	23,458	43,283	101,538	50,100	51,438	1.41	1.43
1979	288,449	427,040	73,611	89,920	73,837	25,680	48,158	108,862	53,087	55,775	1.41	1.45

¹ The term "business" also includes manufacturing (see Table 26).² Monthly average.³ Book value, end of period, seasonally adjusted.⁴ Ratio of weighted average seasonally adjusted inventories to average monthly sales.

Source: Department of Commerce (Bureau of Economic Analysis and Bureau of the Census).

Retail Trade

STATISTICAL PROCEDURES

DESCRIPTION OF SERIES

Monthly estimates of retail sales and inventories are compiled and published by the Bureau of the Census. The estimates are developed from samples representing all sizes of firms and kinds of business in retail trade throughout the Nation. The Census Bureau series on sales began with January 1951—the first month for which estimates based on probability sampling for all retail stores were available. Estimates comparable in concept and coverage were prepared by the Office of Business Economics (currently the Bureau of Economic Analysis) back to January 1946. Estimates of retail inventory from December 1946 through December 1978 were made by the Bureau of Economic Analysis based primarily on sample data reported to the Bureau of the Census. These estimates utilize as benchmarks the data in the *Annual Retail Trade Reports* of the Bureau of the Census. The year-end estimates of inventories prior to 1946 were based on the Censuses of Retail Trade for 1939 and 1948, the Internal Revenue Service's *Statistics of Income*, Part 2, and Federal Reserve data on department store inventories.

Retail sales include merchandise sold for cash or credit by establishments primarily engaged in retail trade. Sales are net after deductions for refunds and allowances for merchandise returned by customers. Total sales do not include carrying or other credit charges; sales (or other) taxes collected from customers and forwarded to taxing authorities; commissions from vending machine operators; and nonoperating income from such sources as investments, rental or sale of real estate, etc. Sales include receipts other than from the sale of merchandise to households—e.g., service receipts, sales to industrial users, and sales to other retailers.

Retail trade inventories represent stocks of merchandise, valued at cost, on hand at the end of the month for sale by retail establishments. Methods of valuation may vary according to the accounting practices of the firm.

The separation of estimates into "durable goods" and "nondurable goods" is based on classifications of stores according to the durability of the commodities accounting for the major portion of their sales.

In 1977 an extensive modification was made to the monthly survey of retail trade. The previous major revision of the survey was in 1971. Monthly estimates of retail sales were revised to reflect (1) a new sample design; (2) benchmarking of sales to the results of the 1967 and 1972 censuses of retail trade; (3) redefinition of sales to exclude sales taxes and finance charges. (In the prior series, respondents were requested to include these taxes and credit charges in their reported sales); (4) conversion of classifications based on the 1967 Standard Industrial Classification (SIC) to classifications based on the 1972 SIC; and (5) revision and updating of seasonal adjustment factors. Estimates previously published for the period January 1967 through August 1977 were revised for this historical series, preserving the month-to-month movements in the old series.

Early in 1979 an additional revision made use of "benchmark" data derived from the 1977 Annual Retail Trade Survey. This resulted in the revision of monthly retail sales by kind of business for the United States for the period January 1967 through December 1978. End-of-month estimates of retail inventories by kind of business were revised for the period January 1973 through December 1978 based on inventory data from the 1977 Annual Retail Trade Survey.

Prior to the 1977 sample revision, there were three broad eras for the sales series. For the period 1929–1951, Census of Retail Trade data for the years 1929, 1933, 1935, 1939, and 1948 were used as benchmarks. Sales estimates for the intercensus years between 1935 and 1951 were based in large part on changes in sales-tax collections of 20 States (whose sales accounted for 40 percent of total retail sales) supplemented by data from special Internal Revenue Service tabulations, Federal Reserve System data on department stores, and data on the taxable quantity and average price of gasoline. In developing these estimates, use was also made of monthly estimates of sales derived from data reported to the Bureau of the Census by a constant sample of large independent retailers and chain stores.

The second era began with January 1951 monthly estimates which were prepared by the Census Bureau directly from probability sample data. Estimates comparable in concept and coverage were prepared by the Office of Business Economics back to January 1946. The new estimates

were not linked to a census of business benchmark, a factor that accounted for most of the difference in level between the sales estimates for 1951 indicated by the old and new series. The new estimates from the probability sample of reporting firms were derived essentially by weighting the reported sales of each firm or store in the sample by a value dependent upon its probability of selection.

The third era introduced a major change in the retail sample design beginning with data for January 1968. At this time primary dependence shifted from an area-sample, personal enumeration design to one based largely on a mail canvass of a sample drawn from updated lists of employers from administrative record sources; i.e., Internal Revenue Service and Social Security Administration files. For a description of the current sample see the Monthly Retail Trade Reports for 1979.

The sales and inventories data are adjusted for seasonal variation and, in the case of sales, also for holidays and trading day differences, using the X-11 version of the Census Method II seasonal adjustment program. The magnitude of the seasonal adjustments is indicated by the following comparison of unadjusted and seasonally adjusted data for 1978.

[Dollar figures in billions]

1978	Unadjusted		Adjusted		Implicit seasonal adjustment factors	
	Sales	Inventories	Sales	Inventories	Sales	Inventories
Jan.....	53.2	87.7	62.2	90.3	86.5	97.1
Feb.....	53.7	89.3	63.0	90.8	85.1	97.9
Mar.....	64.9	93.1	64.1	92.3	100.8	100.6
Apr.....	64.0	95.2	65.3	94.1	98.4	101.4
May.....	68.2	95.4	65.9	94.7	103.3	100.8
Jun.....	69.4	95.7	66.4	95.4	104.2	100.4
July.....	66.8	95.7	66.8	96.5	99.5	99.1
Aug.....	69.4	95.8	67.5	97.8	102.6	97.9
Sept.....	66.4	98.2	68.0	98.7	97.6	99.4
Oct.....	68.9	102.9	69.2	99.9	99.6	103.1
Nov.....	71.5	106.0	69.9	101.0	102.2	104.9
Dec.....	84.5	99.3	70.8	101.5	119.7	97.8

RELATION TO OTHER SERIES

Retail sales data reflect a substantial portion of personal consumption expenditures and are, therefore, related to the personal consumption expenditure estimates that appear in the national accounts. They are different from personal consump-

tion expenditures in that they include purchases by others than households and exclude such major expenditures as household expenditures for personal services, rent, medical services, etc. Retail sales and inventories data are closely related to wholesale trade and manufacturers' sales and inventories data, reflecting as they do the activities of the final stage of distribution in the economy.

USE AND LIMITATIONS

The retail sales and inventories series are useful indicators of probable future economic activity at the manufacturing and other earlier stages of production and distribution. The series are also used in developing the consumer expenditure and inventory change components of the gross national product.

Since the monthly retail sales estimates are based on a probability sample, they are subject to sampling variability, as well as such biases as non-response or reporting errors. The monthly sales estimates are compared with Census of Retail Trade data when those statistics become available. Deficiencies in the sample were reflected in an understatement of monthly retail sales for 1972. Sales from the 1972 Census of Retail Trade were 4.8 percent higher than estimates presented earlier in the Census Bureau's monthly series. This difference exceeded the amount expected due to sampling variability in the monthly survey—less than 1 percent. Some of the difference was due to improved 1972 census coverage through more effective use of administrative records, but a larger portion is believed to have resulted from deficiencies in the old series, such as an outdated sampling frame, misclassification of firms, shortcomings of sampling units, and nonsampling errors. The new design introduced in 1977 is believed to have remedied most of these deficiencies. Furthermore, in the new design, procedures were developed for benchmarking to census of retail trade levels quinquennially and to the Annual Retail Trade Survey during intercensal years. The first such benchmark was derived from the 1977 Annual Retail Trade Survey.

The monthly retail inventories statistics are believed to be less accurate than the sales statistics, since fewer retailers maintain monthly records of their inventories than monthly records of sales. Sampling variability in the Retail Inventory Survey, which is a subsample of firms reporting in the monthly sales survey, is estimated to be approximately 2 percent.

REFERENCES

Sales and inventories of retail trade are published in a press release by the Bureau of the Census, and shortly thereafter in the *Survey of Current Business*. Retail sales data are also published by the Bureau of the Census in the *Monthly Retail Trade Report*. Advance estimates are published 10 days after the report month in the *Advance Monthly Retail Sales Report*.

More complete descriptions of these series have been published in the following issues of the *Survey of Current Business*: June 1948, October 1951, September and November 1952, January 1954, June 1957, December 1961, December 1963, May 1964, February, April and November 1966, and in the biennial *Business Statistics*, a supplement to the *Survey*. The *Monthly Retail Trade Report* contains a detailed description of the Census Bureau's month-

ly retail trade series. Descriptions of methodology and complete results of sample revisions introduced in August 1977 are contained in *Monthly Retail Sales: January 1967–August 1977 (Revised)*. The description of methodology using data from the 1978 Annual Retail Trade Survey, are contained in *Revised Monthly Retail Sales and Inventories: January 1967–December 1979*.

Additional information on the seasonal adjustment of sales, including specifications for the X-11 seasonal adjustment program, are available from the Chief, Business Division, Bureau of the Census. Adjustments for trading day differences are similar to that described in "Census Trading-Day Adjustment Method," published in the May 1964 issue of *Business Cycle Developments*. A description of the retail sales series and seasonal adjustment techniques is also provided in the September 1964 issue of *Business Cycle Developments*.

MANUFACTURERS' SHIPMENTS, INVENTORIES, AND ORDERS

DESCRIPTION OF SERIES

Monthly estimates of manufacturers' shipments inventories, new orders, and unfilled orders are compiled and published by the Bureau of the Census.

The term *shipments* represents manufacturers' net selling values, f.o.b. plant, after discounts and allowances and excluding freight charges and excise taxes. Shipments for export as well as domestic use are included. Shipments of foreign subsidiaries are excluded, but shipments to a foreign subsidiary by a domestic firm are included. The shipment figures from the Annual Survey of Manufactures (ASM), to which the series is benchmarked, include inter-plant transfers as well as commercial sales. These figures also contain some duplication at aggregate industry levels, in that products of some industries are used as materials by other industries within the same industry group. This duplication is significant for all manufacturing, durable goods, and nondurable goods categories, the various market groups, and for some industry categories. Shipments, inventories and orders associated with the nonmanufacturing activities of the company are excluded, as they are in the ASM benchmark data.

"Inventory" data are book values of stock on hand at the end of the period and include raw

materials and supplies, work-in-process, and finished goods. Since different methods of inventory valuation are used, it should be emphasized that the value of the aggregate inventories for establishments within an industry group is not precise. For the last several years approximately 25 percent of manufacturers' inventories have been valued on first-in, first out, 30 percent on last-in, first-out, and 40 percent by various other inventory valuation methods.

Orders data are net of cancellations. They also include contract changes which increase or decrease the sales value of the unfilled orders. Generally, only those orders supported by binding legal documents are included, although in some industries this definition may not be strictly applicable.

STATISTICAL PROCEDURES

Current estimates of manufacturers' shipments inventories, and orders are based on information obtained from a sample of approximately 5,000 reporting units consisting of companies or major operating divisions of companies. This sample consists of nearly all manufacturing companies with 1,000 or more employees, as well as selected smaller companies which are included to strengthen the sample coverage.

TABLE 26.—Manufacturers' Shipments, Inventories, and Orders, 1947-79

[Millions of dollars, except as noted]

Year	Manufacturers' shipments ¹			Manufacturers' inventories ²			Manufacturers' new orders ¹					Manufacturers' inventory—shipments ratio ⁴
	Total	Durable goods	Non-durable goods	Total	Durable goods	Non-durable goods	Durable goods			Non-durable goods	Manufacturers' unfilled orders ³	
							Total	Total	Capital goods industries, nondefense			
1947	15,513	6,694	8,819	25,897	13,061	12,836	15,256	6,388	8,868	34,473	1.58	
1948	17,316	7,579	9,738	28,543	14,662	13,881	17,693	8,126	9,566	30,736	1.57	
1949	16,126	7,191	8,935	26,321	13,060	13,261	15,614	6,633	8,981	24,045	1.75	
1950	18,634	8,845	9,789	31,078	15,539	15,539	20,110	10,165	9,945	41,456	1.48	
1951	21,714	10,493	11,221	39,306	20,991	18,315	23,907	12,841	11,066	67,266	1.66	
1952	22,529	11,313	11,216	41,136	23,731	17,405	23,204	12,061	11,143	75,857	1.78	
1953	24,843	13,349	11,494	43,948	25,878	18,070	23,586	12,147	11,439	61,178	1.76	
1954	23,355	11,828	11,527	41,612	23,710	17,902	22,335	10,768	11,566	48,266	1.81	
1955	26,480	14,071	12,409	45,069	26,405	18,664	27,465	14,996	12,469	60,004	1.62	
1956	27,740	14,715	13,025	50,642	30,447	20,195	28,368	15,365	13,003	67,375	1.73	
1957	28,736	15,237	13,499	51,871	31,728	20,143	27,559	14,111	13,448	53,183	1.80	
1958	27,247	13,563	13,684	50,241	30,258	19,983	27,002	13,290	13,712	47,370	1.84	
1959	30,286	15,609	14,677	52,945	32,077	20,868	30,724	16,003	14,720	52,732	1.70	
1960	30,879	15,883	14,996	53,780	32,371	21,409	30,235	15,303	14,932	45,080	1.75	
1961	30,923	15,616	15,307	54,885	32,544	22,341	31,104	15,759	15,345	47,407	1.74	
1962	33,357	17,262	16,095	58,186	34,632	23,554	33,436	17,374	16,061	48,577	1.70	
1963	35,058	18,280	16,778	60,046	35,866	24,180	35,524	18,709	16,815	54,327	1.69	
1964	37,331	19,637	17,694	63,409	38,506	24,903	38,357	20,652	17,705	66,882	1.64	
1965	40,995	22,221	18,774	68,185	42,257	25,928	42,100	23,278	18,823	80,071	1.60	
1966	44,870	24,649	20,220	77,952	49,920	28,032	46,402	26,177	20,225	98,401	1.62	
1967	46,487	25,267	21,220	84,659	54,996	29,662	47,062	25,831	21,231	105,030	1.76	
1968	50,268	27,698	22,570	90,617	58,871	31,746	50,684	28,113	7,070	109,912	1.74	
1969	53,540	29,477	24,064	98,210	64,739	33,471	53,967	29,887	7,746	115,142	1.77	
1970	52,832	28,215	24,617	101,667	66,790	34,877	52,068	27,418	6,800	105,916	1.90	
1971	55,925	29,973	25,952	102,677	66,313	36,364	55,990	30,004	7,517	106,772	1.83	
1972	63,042	34,043	28,999	108,296	70,308	37,987	64,162	35,059	8,803	120,395	1.67	
1973	72,954	39,703	33,251	124,672	81,426	43,245	76,183	42,853	11,089	159,468	1.58	
1974	84,821	44,253	40,568	157,915	101,866	56,048	87,157	46,740	12,737	187,574	1.65	
1975	86,617	43,678	42,939	158,178	101,766	56,412	85,082	41,957	10,772	169,126	1.83	
1976	98,810	50,697	48,113	170,156	109,095	61,061	99,184	51,047	12,501	173,646	1.66	
1977	110,842	58,010	52,832	180,224	115,751	64,472	112,451	59,562	15,084	193,561	1.59	
1978	124,714	66,505	58,210	198,334	129,456	68,878	128,488	70,145	18,308	239,321	1.52	
1979	141,000	73,981	67,019	228,258	151,689	76,569	144,335	77,215	21,643	279,710	1.52	

¹ Monthly average. Shipments are the same as sales.² Book value, end of period, seasonally adjusted.³ End of period, seasonally adjusted.⁴ Ratio of weighted average seasonally adjusted inventories to average monthly shipments.

Source: Department of Commerce, Bureau of the Census.

Monthly estimates are derived for each series by multiplying the previous month's estimate by the percentage change from the previous month to the current month for companies reporting in the current month. Estimates are derived for approximately 80 detailed industry categories for combination into 44 publication levels and market categories plus supplementary series on household durable goods and defense and nondefense capital goods industries.

The currently published shipments and inventory estimates are benchmarked annually to the most recent level of the ASM. Since comparable universes or benchmark levels are not available

for new and unfilled orders, levels for unfilled orders were established for 1962, 1969, and 1973 by relating a modified ratio of unfilled orders to shipments, obtained from a sample of reporting companies, to shipments estimates for each detailed category. Net new orders are derived by adding the change in unfilled orders to the shipments estimates.

All the component series are seasonally adjusted by the Bureau of the Census using the X-11 version of Census Method II. In addition, the series on shipments and new orders are adjusted for number of trading days and length of calendar month prior to seasonal adjustment.

RELATION TO OTHER SERIES

The shipments and inventories series are coordinated with other monthly, quarterly, and annual surveys conducted by the Bureau of the Census. The industry categories follow the definitions set forth in the 1972 Standard Industrial Classification (SIC). The shipments series is, in general, comparable to the manufacturing component of the Federal Reserve Board's index of industrial production. A major difference is that shipments are measured in dollars and thus reflect price movements, while industrial production measures the physical volume of output. Other differences are discussed in the previous section on the industrial production index.

The manufacturers' shipments and inventories series are closely related to the sales and inventories series for merchant wholesalers and retail trade. The shipments and inventories series are not entirely comparable to the sales and inventories series which are compiled on a company-oriented basis, particularly the Federal Trade Commission "Quarterly Financial Report for Manufacturing, Mining, and Trade Corporations" and the Internal Revenue Service "Statistics of Income" volume.

The new orders estimates are most closely related to the Census Bureau unfilled orders series, although they are also akin to other anticipatory series such as new plant and equipment expenditures, construction contracts, etc.

USES AND LIMITATIONS

The manufacturers' shipments, inventories, and orders series reflect present and prospective conditions in this vital sector of the economy. The shipments series reflect the demand for the goods and services of manufacturers; trends in the inventories and changes in inventories series reflect the difference between production and shipments of manufacturers; the new orders series indicates the probable course of manufacturers' activity in some industries in the immediate future. Study of the chart showing seasonally adjusted shipments, inventories, and new orders reveals the tendency of new orders to lead shipments over the business cycle.

The market groupings provide a breakdown between final products and materials and a further division of final products between consumer goods

and equipment for business and government use. Within the consumer goods division, subtotals are shown for home goods and apparel and for consumer staples, while materials, including supplies and intermediate products, are subdivided into construction materials and all other. Such economic time series provide useful measures for isolating the impact of changes in demand in various sectors of the economy and facilitate analysis of cyclical and growth developments.

The manufacturers' inventory data, together with inventory data for retailers and merchant wholesalers, are the basic data used in computing estimates of the "change in business inventories" component of the gross national product. In measuring the change in business inventories, the book value inventory change data are adjusted to remove the effect of changes in replacement costs.

Industry detail is currently shown for 16 2-digit major SIC groups or combinations thereof, plus 28 additional industry group categories, 6 market categories, and 3 supplementary series. The current response rate precludes the publication of sampling errors or additional detail at this time, particularly in industries which are predominantly composed of small firms, such as apparel, lumber, and furniture. In addition, there are a few industry categories for which the inclusion of secondary activities by the company/division reporting unit is considered to be too high and for which additional divisional reporting is necessary. The Bureau of the Census is actively pursuing the improvement of response rates and necessary additional divisional reporting, while minimizing companies' reporting burden. This program should permit a gradual increase in the levels of publishable data.

REFERENCES

Detailed data for manufacturers' shipments, inventories, and orders are published by the Bureau of the Census in its *Current Industrial Report M3-1*, "Manufacturers' Shipments, Inventories, and Orders." Selected series are published by the Bureau of Economic Analysis in the *Survey of Current Business* and *Business Conditions Digest*. A detailed explanation of the survey, as well as revised historical data, are published in the M3-1.8 report, "Manufacturers' Shipments, Inventories, and Orders: 1967-78."

PRICES

PRODUCER PRICES

DESCRIPTION OF SERIES

Producer Price Indexes are compiled monthly by the Bureau of Labor Statistics of the Department of Labor. They measure average changes in prices received in primary markets of the United States by producers of commodities in all stages of processing. Until April 1978, these data were presented as the Wholesale Price Index. The name "Producer Price Indexes" is now being used to reflect more accurately the coverage of the data.

The sample used for calculating these indexes contains approximately 2,800 commodities and about 10,000 quotations selected to represent the movement of prices of all commodities produced in the manufacturing, agriculture, forestry, fishing, mining, gas and electricity, and public utilities sectors. The universe includes all commodities produced or imported for sale in commercial transactions in primary markets in the United States.

Producer Price Indexes can be organized by stage of processing or by commodity. The stage of processing structure organizes products by degree of fabrication (i.e., finished goods, intermediate or semifinished goods, and crude materials). The commodity structure organizes products by similarity of end-use or material composition.

"Finished goods" are commodities that will not undergo further processing and are ready for sale to the ultimate user, either as individual consumer or a business firm. Capital equipment (formerly called producer finished goods) includes commodities such as motor trucks, farm equipment, and machine tools. Finished consumer goods include foods and other types of goods eventually purchased by retailers and used by consumers. Consumer foods include unprocessed foods such as eggs and fresh vegetables, as well as processed foods such as bakery products and meats. Other finished consumer goods include durables such as automobiles, household furniture, and jewelry, and non-durables such as apparel and gasoline.

"Intermediate materials, supplies, and components" are commodities that have been processed but require further processing before they become finished goods. Examples of such semifinished goods include flour, cotton yarns, steel mill products, belts and belting, lumber, liquefied petroleum gas, paper boxes, and motor vehicle parts.

"Crude materials for further processing" include products entering the market for the first time which have not been manufactured or fabricated but will be processed before becoming fin-

ished goods. Scrap materials are also included. Crude foodstuffs and feedstuffs include items such as grains and livestock. Examples of crude non-food materials include raw cotton, crude petroleum, natural gas, hides and skins, and iron and steel scrap.

To the extent possible, prices used in calculating Producer Price Indexes apply to the first significant commercial transaction in the United States, from the production or central marketing point. Price data are generally collected monthly, primarily by mail questionnaire. Respondents are asked to provide net prices or to provide all applicable discounts. BLS attempts to base Producer Price Indexes on actual transaction prices; however, list or book prices are used if transaction prices are not available. Most prices are obtained directly from producing companies on a voluntary and confidential basis, but some prices are taken from trade publications or from other Government agencies. Since January 1967, prices generally have been reported for the Tuesday of the week containing the 13th day of the month; before 1967, prices usually related to the Tuesday of the week containing the 15th.

Insofar as possible, identical qualities of the commodities are priced from period to period so that each index will measure only real price changes, not changes due to differences in qualities or terms of sales. When commodities of identical qualities are not available for pricing in successive periods, it is sometimes possible to obtain information on the costs of the features added to or removed from the original article. This can frequently be done, for example, when new model year automobiles are introduced. In such cases it is possible to estimate the true price change, excluding the effect of changes due to specification modifications. When adequate estimates of real price change cannot be made, the new commodity is substituted for the original in such a way that the level of the index is not affected by the difference in their prices.

Most Producer Price Indexes have been computed on a government-wide standard reference base 1967=100 since January 1971. From January 1962 through December 1970, the index base was 1957-59=100. Earlier base periods were 1947-49, 1926, and 1913. Indexes expressed on one base may be converted to another by multiplying or dividing by the appropriate rebasing factor. (Rebasing factors for converting 1967=100 indexes to 1957-59=

100 indexes are available on request from the Bureau of Labor Statistics).

Producer Price Indexes are designed to measure real price changes, that is, changes which are not due to changes in quality, quantity, terms of sales, etc. They are not designed to measure changes in manufacturers' average realized prices, which are affected by product and customer mix and terms of sale as well as by price movements.

STATISTICAL PROCEDURES

Like the Consumer Price Index, Producer Price Indexes are calculated according to a modified Laspeyres (fixed-weight) formula. Price changes for the various commodities are averaged together with weights representing their importance in the

total net selling value of all commodities. Weights represent the total net selling value of commodities produced, processed, or imported in this country and flowing into primary markets. Weights are revised periodically when data from the most recent industrial census become available from the Bureau of the Census, the Bureau of Mines, the Department of Agriculture, and other sources. Indexes for 1947 through 1954 are based primarily on the 1947 censuses. Weights based on the 1954 census shipment values were introduced in January 1958. From 1961 through 1966, weights were based on 1958 census values, and from 1967 through 1975 they were based on 1963 census values. Since January 1976, weights have been based on 1972 shipment values.

TABLE 27.—*Producer Price Indexes by Stage of Processing, 1947-79*

[1967=100]

Year	Finished goods													
	Total finished goods	Consumer goods	Finished goods excluding consumer goods					Total finished consumer goods	Intermediate materials			Crude materials		
			Total	Consumer goods excluding foods			Total		Foods and feeds	Other	Total	Food-stuffs and feed-stuffs		
				Total	Durable	Non-durable						Capital equipment	Total	Food-stuffs
1947	74.0	82.8	79.0	74.6	80.7	55.4	80.5	72.4	70.0	101.2	111.7			
1948	79.9	90.4	84.0	79.7	85.8	60.4	86.5	78.3	76.1	110.9	120.8			
1949	77.6	83.1	82.2	81.8	82.3	63.4	82.5	75.2	74.2	96.0	100.3			
1950	79.0	84.7	83.5	82.7	83.6	64.9	83.9	78.6	77.7	104.6	107.6			
1951	86.5	95.2	89.5	88.2	90.0	71.2	91.8	88.1	87.0	120.1	124.5			
1952	86.0	94.3	88.3	88.9	87.8	72.4	90.7	85.5	84.3	110.3	117.2			
1953	85.1	89.4	89.1	89.6	88.6	73.6	89.2	86.0	85.3	101.9	104.9			
1954	85.3	88.7	89.4	90.3	88.9	74.5	89.1	86.5	85.7	101.0	104.9			
1955	85.5	86.5	90.1	91.2	89.4	76.7	88.5	88.1	88.3	97.1	95.1			
1956	87.9	86.3	92.3	94.3	91.1	82.4	89.8	92.0	92.6	97.6	93.1			
1957	91.1	89.3	94.6	97.1	93.2	87.5	92.4	94.1	95.0	99.8	97.2			
1958	93.2	94.5	94.7	98.4	92.6	89.8	94.4	94.3	94.8	102.0	103.0			
1959	93.0	90.1	95.9	99.6	94.0	91.5	93.6	95.6	96.4	99.4	96.2			
1960	93.7	92.1	96.3	99.2	94.7	91.7	94.5	95.6	96.8	97.0	95.1			
1961	93.7	91.7	96.2	98.8	94.7	91.8	94.3	95.0	95.5	96.5	93.8			
1962	94.0	92.5	96.0	98.3	94.8	92.2	94.6	94.9	95.3	97.5	95.7			
1963	93.7	91.4	96.0	97.8	95.1	92.4	94.1	95.2	95.0	95.4	92.9			
1964	94.1	91.9	95.9	98.2	94.8	93.3	94.3	95.5	95.6	94.5	90.8			
1965	95.7	95.4	96.6	97.9	95.9	94.4	96.1	96.8	96.9	99.3	97.1			
1966	98.8	101.6	98.1	98.5	97.8	96.8	99.4	99.2	98.9	105.7	105.9			
1967	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
1968	102.8	103.6	102.6	102.1	102.2	103.5	102.7	102.3	99.4	102.5	101.6	101.3	102.2	
1969	106.6	110.0	105.4	104.6	104.0	105.0	106.9	106.6	105.8	102.7	106.1	108.4	109.3	106.8
1970	110.3	113.5	109.1	107.7	106.9	108.3	112.0	109.9	109.9	109.1	109.9	112.3	112.0	112.7
1971	113.7	115.3	113.1	111.4	110.8	111.7	116.6	112.9	114.1	111.7	114.3	115.1	114.2	117.0
1972	117.2	121.7	115.4	113.4	113.3	113.6	119.5	116.6	118.7	118.5	118.9	127.6	127.5	128.0
1973	127.9	146.4	120.1	118.5	115.4	120.5	123.5	129.2	131.6	168.4	128.1	174.0	180.0	162.5
1974	147.5	166.9	139.3	138.6	125.9	146.8	141.0	149.3	162.9	200.2	159.5	196.1	189.4	208.9
1975	163.4	181.0	156.2	153.1	138.2	163.0	162.5	163.6	180.0	195.3	178.6	196.9	191.8	206.9
1976	170.3	180.2	165.5	161.8	144.4	173.3	173.2	169.0	189.3	186.6	189.5	205.1	190.1	233.6
1977	180.6	189.2	176.2	172.1	152.2	185.4	184.5	178.9	201.7	191.0	202.4	214.3	190.9	258.4
1978	194.6	206.7	188.9	183.7	165.8	195.4	199.1	192.6	215.5	201.0	216.4	240.1	215.3	286.7
1979	216.1	226.3	210.8	208.2	181.9	225.9	216.7	215.7	242.8	223.2	244.0	282.2	247.2	348.3

Source: Department of Labor, Bureau of Labor Statistics.

Calculation of an individual commodity price index starts with the average of prices for individual company reporters, with each reporter usually having equal weight regardless of any differences in company size. The short-term relative of price change, which is the ratio of the current month's average price to the previous month's average price, is then applied to the previous month's index to derive the current month's index. To derive indexes for commodity groupings, each commodity price relative is first weighted with its own shipment value plus the shipment values of related commodities not directly priced whose prices are assumed to move similarly. The individual weighted commodity price relatives are summed to produce a commodity grouping aggregate, which is then divided by its corresponding weighted value in the index base period.

Indexes for stag-of-processing (SOP) groupings are derived by allocating the weights of commodity groupings in accordance with the class of customer and the relative proportion of output consumed at each level of processing. SOP allocations are based on data from the Interindustry Sales and Purchases Studies conducted by the Bureau of Economic Analysis, U.S. Department of Commerce.

RELATION TO OTHER SERIES

Producer Price Indexes measure changes in prices received by producers in the first commercial transaction, while Consumer Price Indexes measure changes in prices paid by individual consumers in the last commercial transaction. (Intermediate transactions are currently not covered by either system, but will be a part of the Producer Price Index Revision.)

The major differences in coverage between Producer Price Indexes and Consumer Price Indexes include the following: (1) Consumer Price Index reflect changes in prices for services, housing, and used cars, which are not reflected in the Producer Price Indexes; (2) Producer Price Indexes, unlike Consumer Price Indexes, measure changes in prices for capital equipment and materials purchased by businesses but not by individual consumers.

A comparison of the movements of indexes for similar commodities included in both the Producer Price Indexes and the Consumer Price Indexes should not be used as a measure of the change in retailers' margins, chiefly because the two indexes are based on different weighting patterns.

Unlike Consumer Price Indexes, most Producer Price Indexes do not provide regional data; such data are available only for bituminous coal (contract), electric power, and certain refined petroleum products such as gasoline. There are no Producer Price Indexes for states, cities, or Standard Metropolitan Statistical Areas.

Producer Price Indexes are used for a wide variety of purposes in both the public and the private sectors. The Bureau of Labor Statistics features the Finished Goods Price Index in its monthly news release as one of the best available measures of inflation at the primary market level. This and other stages of processing indexes are currently used as the principal framework for analyzing the sources and transmission of price changes through the American economy. They are thus important for the formulation and evaluation of governmental policies in fiscal and monetary affairs. Analysis of more detailed commodity indexes is also useful for studies of governmental policies targeted for specific industries or products, such as energy or steel.

Producer Price Indexes are frequently used in escalation clauses of long-term sales contracts. A 1976 survey of industrial price data revealed that at least \$100 billion worth of such contracts were escalated with these indexes. Many firms also use these indexes to measure the behavior of the prices they charge for their products and pay for their materials against the behavior of prices for similar commodities on a national scale.

Other uses for industrial price indexes include deflation of time series reported in current dollars; budget making and review; establishing replacement cost estimates; appraising the value of inventories; and business cycle research.

The usefulness of Producer Price Indexes is limited in a number of ways. For example, commodities and reporting companies have been drawn on a judgment sampling basis, rather than a probability sampling basis. In most cases only volume-selling products produced by major companies have been priced directly. The index may not precisely measure price changes because identical qualities are not always available in successive periods. Statistical measures of accuracy are not possible under the current system. The stage of processing groupings, commodity groupings and other structures of Producer Price Indexes do not match the Standard Industrial Classification system, thereby hampering comparisons of price data with data on wages, productivity, and the like. Producer Price Indexes currently cover only about half of the total value of production in the mining and manufacturing sectors; there is no coverage of such crucial sectors as services, transportation, insurance, communications, and distribution. These and other problems will be systematically addressed during the Producer Price Index Revision, which will be phased in during the 1980's.

REFERENCES

Producer Price Indexes are first available in the monthly news release, "Producer Price Indexes—(Month) (Year)," usually issued by the Bureau

of Labor Statistics in the first or second week of the month following the month to which the figures relate. The monthly news release currently includes a text highlighting the most important price changes within the stage of processing structure, tables of data for all stages of processing indexes and selected commodity grouping indexes, and charts. The monthly release is available without charge on request from the Bureau of Labor Statistics.

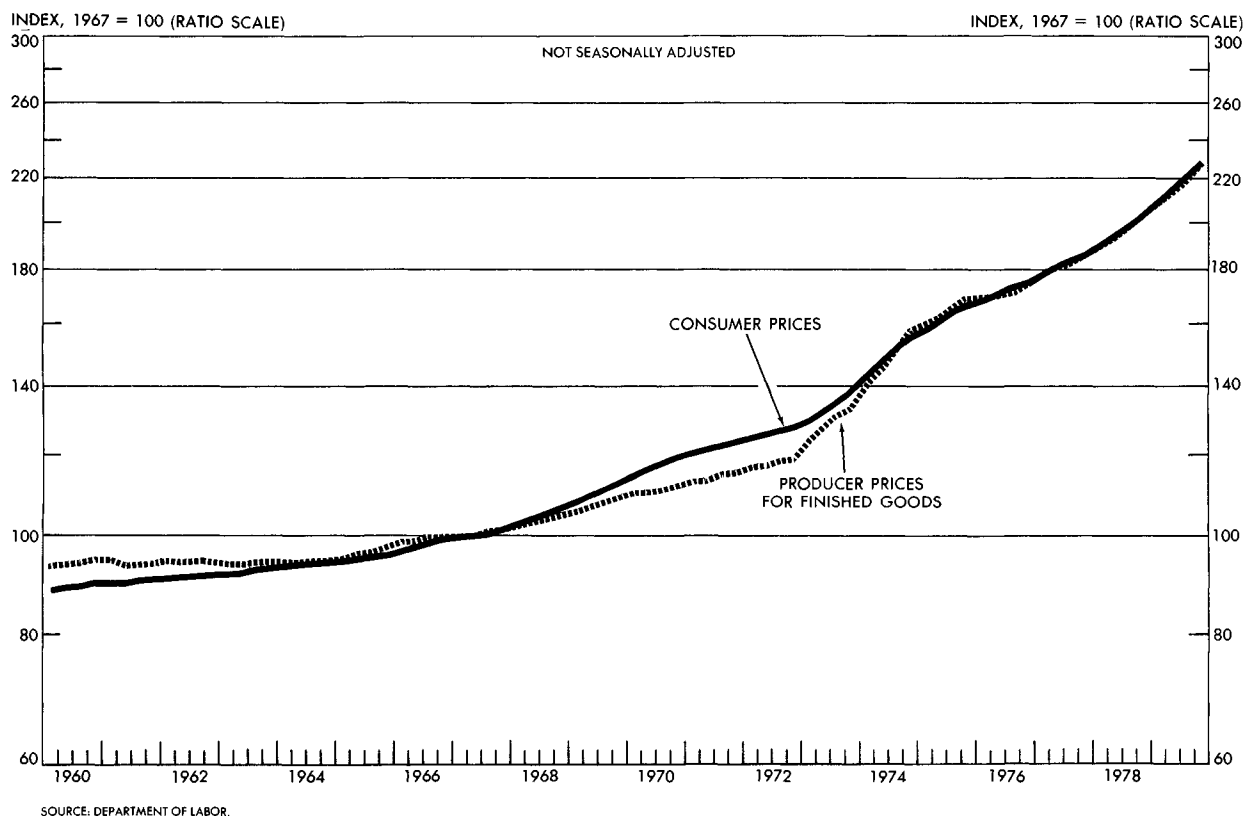
All publishable Producer Price Indexes appear in the monthly detailed report, *Producer Prices and Price Indexes* (formerly titled *Wholesale Prices and Price Indexes*). This report, usually issued approximately one month after the date of the news release, is available on a paid subscription basis from the U.S. Government Printing Office.

The annual *Supplement for Producer Prices and Price Indexes*, usually issued in the fall of the

year, currently includes a listing of all sample changes during the year, tables of relative importance, data for stage of processing and commodity grouping indexes, and annual averages and monthly figures for all publishable Producer Price Indexes. Complete historical data for any Producer Price Index series are available on request from the Bureau of Labor Statistics.

A detailed description of Producer Price Index methodology is presented in the BLS *Handbook of Methods for Surveys and Studies*, Chapter 14 of BLS Bulletin 1910 (1976). An analysis of the shortcomings of current methodology, as well as a description of how the forthcoming Producer Price Index Revision will address these problems, may be found in "Improving the Measurement of Producer Price Change," *Monthly Labor Review*, April 1978, pp. 7-15. Reprints are available on request from the Bureau of Labor Statistics.

Chart 7.—CONSUMER AND PRODUCER PRICES



CONSUMER PRICES

DESCRIPTION OF SERIES

The Consumer Price Indexes (CPI's) are compiled monthly by the Bureau of Labor Statistics (BLS) of the Department of Labor. They provide measures of price change for fixed market baskets

of goods and services purchased by all urban consumers and by urban wage earners and clerical workers. Prior to January 1978, there existed only the Consumer Price Index for Urban Wage Earners and Clerical Workers (unrevised CPI-W). Effective with the release of data for January

1978, the BLS introduced (1) an updated and revised CPI for urban wage earners and clerical workers (CPI-W) and (2) a broader-based CPI for all urban consumers (CPI-U), including salaried workers, the self-employed, the retired, and the unemployed, as well as urban wage earners and clerical workers. Both of these indexes were "linked" to the unrevised CPI-W, i.e., for the month of December 1977, all three indexes had the same value.

The indexes cover prices of everything people buy for living—food, clothing, automobiles, homes, housefurnishings, household supplies, fuel, drugs, and recreational goods; fees to doctors, lawyers, beauty shops, rent, repair costs, transportation fares, public utility rates, etc. They deal with prices actually charged to consumers, including sales and excise taxes. They also include real estate taxes on owned homes, but exclude income and social security taxes.

STATISTICAL PROCEDURES

The weight and composition of the indexes were derived from a Consumer Expenditure Survey for 1972-73 in 216 areas. The survey data were classified into 68 expenditure classes which contain approximately 265 sets of items called item strata. The item strata are further divided into a total of approximately 380 lower level categories (of which about 360 are priced) called entry level items (ELI's). This is a modified Laspeyres (fixed-weight) formula. Base period expenditure weights for the item strata based on the 1972-73 expenditure survey are kept constant, while periodic changes are made in the more detailed ELI's within the item strata.

Most prices are collected by agents from a probability sample of 21,600 retail stores and other outlets in 85 urban areas. These outlets include chain stores, independent stores, department stores, specialty stores, and public utilities which have been selected to represent all outlets from which the index population make their purchases. Prices are also collected on the services of physicians and dentists, hospitals and beauty parlors, repairmen and service contractors. Rental rates are collected from about 18,000 rental units and property tax data are collected from about 18,000 housing units. About 3,000 reporters were selected from auxiliary sources on a non-probability basis.

Data collectors enter outlets with a checklist encompassing a broad category of goods or services, such as "whole fresh milk" and, on the basis of sales information supplied by the respondent, determine whether the specific item priced for the index will be vitamin D homogenized milk in plastic quart containers, unfortified homogenized milk delivered to the home, or any other item sold within the category of whole fresh milk. Thus, the whole range of items sold within a category are

eligible for pricing. However, once an item is selected, it is described in detail and then it, or a very close substitute, is priced in the future so that, insofar as possible, prices are obtained for articles of the same quality in successive periods.

Prices for practically all of the commodities and most of the services are collected by personal interview. A few prices (e.g., public utility rates and fuel prices) are collected by mail.

Prices for grocery store food, fuels and a few other items are collected monthly in all areas. Most other items are priced monthly in the 5 largest urban areas and bimonthly in all other places. To insure pricing throughout the month, each month is divided into 3 pricing cycles of 6 workdays each. All items in an outlet are priced at the same time and all outlets are priced in the same cycle (6 day period) each collection period (monthly or bimonthly). The pricing cycles are balanced so that an approximately equal amount of the index is priced in each of the 3 cycles.

The purpose of the indexes is to measure price change, i.e., to show how much more or less it would cost to purchase the same quantities and qualities of goods and services in one period than in an earlier period. The first step in the index computation is to calculate for each area, a price relative for each item by comparing the prices reported for that particular item by the same retail outlet as in the preceding period. This relative change for the item is next multiplied by the estimated cost in the preceding period for a fixed quantity of the item. (The fixed quantity, or weight, for each item is determined by the average annual quantity of that item purchased by the respective index population in the years 1972-1973.) These calculations are then totaled for all items in a group—all food items, for example, are combined into a total showing the food cost for the fixed quantities in the current period. This total is compared with the food total for the preceding period to give a measure of the average price change for all foods, from which the index number of food for each city is computed. Similar calculations are made for apparel, rent, and all other groups of items priced.

The National index is calculated by combining the area totals with weights based on estimated 1970 population of all urban consumers or of urban wage earners and clerical workers. Almost half the weight is carried by the 23 largest areas (about a quarter of the weight is carried by the 5 largest areas); only a little over 10 percent of the weight is carried by the 16 areas selected to represent the smallest areas with urban population from 2,500 to 75,000 and the 2 intermediate size classes—those composed of areas having urban populations between 75,000 and 385,000 and 385,000 to 1,500,000—each carry out about one-fifth of the weight.

TABLE 28.—Consumer Prices, 1929-79

[1967=100]

Year	Commodities								
	All items	All commodities	Food			Commodities less food			
			All	Food at home	Food away from home	All	Durable	Non-durable	Services
1929	51.3		48.3						
1930	50.0		45.9						
1931	45.6		37.8						
1932	40.9		31.5						
1933	38.8		30.6						
1934	40.1		34.1						
1935	41.1	40.5	36.5			46.0	45.2	43.1	40.9
1936	41.5	41.1	36.9			46.5	45.8	43.5	41.3
1937	43.0	42.6	38.4			48.5	48.7	45.3	42.6
1938	42.2	41.0	35.6			48.5	49.6	45.0	43.4
1939	41.6	40.2	34.6			47.7	48.5	44.3	43.5
1940	42.0	40.6	35.2			48.0	48.1	44.7	43.6
1941	44.1	43.3	38.4			50.4	51.4	46.7	44.2
1942	48.8	49.6	45.1			56.0	58.4	51.6	45.6
1943	51.8	54.0	50.3			58.4	60.3	53.8	46.4
1944	52.7	54.7	49.6			61.6	65.9	56.6	47.5
1945	53.9	56.3	50.7			64.1	70.9	58.6	48.2
1946	58.5	62.4	58.1			68.1	74.1	62.9	49.1
1947	66.9	75.0	70.6	73.5		76.8	80.3	72.2	51.1
1948	72.1	80.4	76.6	79.8		82.7	86.2	77.8	54.3
1949	71.4	78.3	73.5	76.7		81.5	87.4	76.3	56.9
1950	72.1	78.8	74.5	77.6		81.4	88.4	76.2	58.7
1951	77.8	85.9	82.8	86.3		87.5	95.1	82.0	61.8
1952	79.5	87.0	84.3	87.8		88.3	96.4	82.4	64.5
1953	80.1	86.7	83.0	86.2	68.9	88.5	95.7	83.1	67.3
1954	80.5	85.9	82.8	85.8	70.1	87.5	93.3	83.5	69.5
1955	80.2	85.1	81.6	84.1	70.8	86.9	91.5	83.5	70.9
1956	81.4	85.9	82.2	84.4	72.2	87.8	91.5	85.3	72.7
1957	84.3	88.6	84.9	87.2	74.9	90.5	94.4	87.6	75.6
1958	86.6	90.6	88.5	91.0	77.2	91.0	95.9	88.2	78.5
1959	87.3	90.7	87.1	88.8	79.3	92.7	97.3	89.3	80.8
1960	88.7	91.5	88.0	89.6	81.4	93.1	96.7	90.7	83.5
1961	89.6	92.0	89.1	90.4	83.2	93.4	96.6	91.2	85.2
1962	90.6	92.8	89.9	91.0	85.4	94.1	97.6	91.8	86.8
1963	91.7	93.6	91.2	92.2	87.3	94.8	97.9	92.7	88.5
1964	92.9	94.6	92.4	93.2	88.9	95.6	98.8	93.5	90.2
1965	94.5	95.7	94.4	95.5	90.9	96.2	98.4	94.8	92.2
1966	97.2	98.2	99.1	100.3	95.1	97.5	98.5	97.0	95.8
1967	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1968	104.2	103.7	103.6	103.2	105.2	103.7	103.1	104.1	105.2
1969	109.8	108.4	108.9	108.2	111.6	108.1	107.0	108.8	112.5
1970	116.3	113.5	114.9	113.7	119.9	112.5	111.8	113.1	121.6
1971	121.3	117.4	118.4	116.4	126.1	116.8	116.5	117.0	128.4
1972	125.3	120.9	123.5	121.6	131.1	119.4	118.9	119.8	133.3
1973	133.1	129.9	141.4	141.4	141.4	123.5	121.9	124.8	139.1
1974	147.7	145.5	161.7	162.4	159.4	136.6	130.6	140.9	152.1
1975	161.2	158.4	175.4	175.8	174.3	149.1	145.5	151.7	166.6
1976	170.5	165.2	180.8	179.5	186.1	156.6	154.3	158.3	180.4
1977	181.5	174.7	192.2	190.2	200.3	165.1	163.2	166.5	194.3
1978	195.4	187.1	211.4	210.2	218.4	174.7	173.9	174.3	210.9
1979	217.4	208.4	234.5	232.9	242.9	195.1	191.1	198.7	234.2

NOTE.—Data beginning January 1978 relate to all urban consumers. Earlier data relate to urban wage earners and clerical workers.

Source: Department of Labor, Bureau of Labor Statistics.

In addition to the national indexes, separate indexes are computed for 28 of the 85 areas—monthly for the 5 largest and bimonthly for the other 23.

HISTORICAL SERIES

Beginning with the January 1971 index, the Consumer Price Index was converted to the standard reference base period of 1967=100 from the former base 1957-59=100. No other aspects of the index, such as weight structure, and area and item samples were changed in connection with the rebasing. Historical tables of monthly and annual price indexes on the 1967 base are available upon request to the BLS. As a convenience to users of the index, the all items indexes will continue to be published on the 1957-59=100 base indefinitely.

Over this period, major revisions incorporating expenditure patterns for 1934-36, 1950, and 1960-61, and other changes, were introduced by linking—in 1940, 1953, and 1964, respectively; other minor revisions were introduced at other points in the series. A fourth major revision was completed with the release of the January 1978 index. This incorporated a new weight structure and updated area, commodity, and outlet sample; certain improvements in statistical procedures, such as greater use of probability sampling; and quarterly pricing has been, by and large, replaced by bimonthly pricing.

RELATION TO OTHER SERIES

Other measures of consumer price change are available from the gross national product (GNP) estimates prepared by the Bureau of Economic Analysis of the Department of Commerce. These are the three price measures associated with the personal consumption expenditure component of the GNP: implicit price deflator, chain price index, and fixed-weighted price index. They differ from the CPI in measurement objective, item coverage, and expenditure weights. A reconciliation of the CPI with the implicit price deflator and chain price index is provided four times a year in the *Survey of Current Business*. The reconciliation with the fixed weighted price index is being developed.

The relationship of the CPI to the producer price index is described in the section on producer prices.

USES AND LIMITATIONS

The indexes are often called “cost-of-living” indexes and they are frequently used as approximate measures of change in the cost of living. The CPI is used by the public and private sectors in wage and salary negotiation, administration, and escalation, and for analyses of the functioning of the economy and the interrelationship of its components. They are also used in commercial negotiations, and in formulating business strategy.

The indexes are designed to measure only the changes in prices, not expenditures resulting from changes in purchasing habits or standard of living and do not measure how much consumers actually spend to live. Also, they measure price changes for only their specific population groups. Other qualities of commodities and expenditure weights would have to be used to measure price changes for specific subgroups of the population such as the poor, the retired, etc., or for other groups, such as farm families, etc. The fixed market baskets represent the average quantities bought by all members of the index population and are not necessarily representative of the purchases made by any single family or individual consumer.

The metropolitan area and regional indexes indicate the difference in the rate of price movement in the various areas, but should not be used to compare price levels in one area with those in another. For instance, if the index for area A is 213 and that for area B is 215, it does not necessarily follow that prices are higher in area B than in area A, since the base-period prices may have been higher in area A. These indexes do show that prices have increased more rapidly since the base period in area B than in area A. Although efforts are made to minimize the effects of quality changes in the “fixed market baskets,” it has not been possible thus far to adjust completely for these effects.

REFERENCES

The indexes are initially issued in the form of a press release about four weeks following the month to which the data pertain. The CPI Detailed Report is issued about a month after the press release and contains additional detailed data. Detailed data and quarterly articles analyzing price developments in the nation's economy are presented in the *Monthly Labor Review* (MLR). The periodic indexes—semiannually, quarterly, bimonthly, or monthly—for periods earlier than those shown in current issues of *Economic Indicators* are available from the BLS upon request. Average monthly prices are available for fuel items; monthly prices for some food items had been available until June 1978, and will again be provided in 1980. Descriptions of the history, procedures, uses, and limitations of the indexes are presented in varying degrees of technical detail in the *Consumer Price Index: Concepts and Content Over the Years (Revised May 1978)*, BLS Report 517, several pamphlets describing the program to revise the CPI, and various publications which describe the CPI prior to the 1978 revision, the most comprehensive being the *Consumer Price Index: History and Techniques* (BLS Bulletin 1517). From time to time, articles are published in the MLR describing various aspects of the CPI in more detail, (e.g., “Medical Care Services in the Consumer Price Index,” in the August 1978 MLR).

PRICES RECEIVED BY FARMERS

DESCRIPTION OF SERIES

The Index of Prices Received by Farmers is computed by the Economics Statistics and Cooperatives Service (ESCS) of the U.S. Department of Agriculture as a measure of the change from month to month in average prices of farm products. For most commodities, it is based on estimates of the average prices received for all grades and qualities at the point of first sale—generally the local market—about the middle of the month. For apples, peaches, pears, citrus, potatoes, tobacco, wholesale milk and broilers, monthly average prices rather than mid-month prices are used in computing the index. In the following month, when the index is revised, a number of crop commodity prices are then based on price data for the entire month. These commodities are feed grains, food grains, oil-bearing crops and cotton.

The index is based on prices for 44 commodities which accounted for over 91 percent of the total value from marketings of all farm commodities in the years 1971-73. The price data are obtained by personal interview, mail and non-response telephone follow-up on a voluntary basis from buyers of farm products (e.g., mills and elevators, cooperative marketing organizations, livestock auctions, milk processing and manufacturing plants and local dealers) and farmers and ranchers that sell products directly to consumers.

In addition to the index for "All Farm Products", indexes are prepared for "all crops", with 8 sub-groups, and for "livestock and products", with 3 sub-groups. Five of these sub-group indexes (fresh market fruit; fresh market vegetables; potatoes, sweetpotatoes and dry edible beans; dairy products; and poultry and eggs) are also published on a seasonally adjusted basis.

STATISTICAL PROCEDURES

Weights based on average quantities sold during 1971-73 are used to combine the United States average prices for individual commodities into sub-group indexes. In combining the sub-group indexes into group and All-Commodity indexes, the index numbers are weighted by the percentages that cash receipts from marketings for the particular commodity sub-groups bear to total cash receipts for the same period—1971-73. In the official index, the sub-group and group indexes are published on a 1910-14=100 base as prescribed by law and on the 1967=100 base to facilitate comparison with other government index series.

Revisions have been made in the index series from time to time, mainly involving commodity coverage or revision of weights. A major revision was made in January 1959 at which time the weight base period was shifted from 1937-41 to 1953-57, and improvements were made in the weighting and pricing for vegetables and non-citrus fruits. The index series were revised and linked in September 1952. The latest major index revision was made in May 1976. The weight based period was shifted from 1953-57 to 1971-73. The revision retained the same index structure and generally followed the methodology used in the 1959 revision. Principle changes were (1) updating of weights (2) dropping of commodities which declined in importance from the index, and (3) linking the new index series to the old as of January 1965.

The following table shows the percentage weights for index components for the four weight base periods 1924-29, 1937-41, 1953-57, and 1971-73.

Relative Weights for Index of Prices Received by Farmers

Commodity group	1924-29	1937-41	1953-57	1971-73
All farm products.....	100.0	100.0	100.0	100.0
Crops.....	48.0	42.2	45.2	44.2
Food grains.....	8.9	7.0	7.9	7.2
Feed grains and hay.....	7.5	6.7	9.1	12.1
Cotton.....	13.9	8.3	8.4	2.9
Tobacco.....	2.6	3.7	4.1	2.4
Oil-bearing crops.....	2.3	3.1	4.9	9.2
Fruit.....	6.0	5.8	4.7	4.5
Commercial vegetables.....	3.5	4.8	4.2	4.1
Potatoes, sweetpotatoes, and dry edible beans.....	3.3	2.8	1.9	1.8
Livestock and products.....	52.0	57.8	54.8	55.8
Meat animals.....	26.1	28.6	29.1	37.2
Dairy products.....	15.1	17.7	14.6	11.1
Poultry and eggs.....	9.9	10.2	10.7	7.5
Wool.....	.9	1.3	.4

RELATION TO OTHER SERIES

This index should not be confused with the farm product component of Producer Price Index. There are significant differences. The Index of Prices Received by Farmers measures changes in prices at the point of first sale, and is based on average prices for all grades of a given commodity. The Producer Price Index generally measures prices in selected central markets and is based on prices of specific grades or qualities. Finally, there are differences in the weights and base weight periods used in the two indexes.

USES AND LIMITATIONS

The index is widely used as a measure of changes in average prices received for farm commodities. It is an approximation of the price component of receipts by farmers from the sale of farm products. It is required for the computation of adjusted base period prices, which are necessary for cal-

culatation of commodity parity prices under the formula prescribed by the Agricultural Adjustment Act of 1938, as amended.

The Index of Prices Received by Farmers is designed to measure the change in average prices for all grades and qualities of the products sold by farmers. Hence, changes do not result wholly from price changes for specific grades, but may also reflect changes in the relative proportion of the various grades or qualities of commodities sold.

As noted earlier, the index is based on 44 commodities which account for about 91 percent of the total value of farmers' sales. Livestock commodities not covered in the index account for about 2 percent of the total cash receipts and the uncovered crops account for 7 percent. The major crop items not covered are forest, nursery and greenhouse products.

REFERENCES

See Prices Paid by Farmers.

TABLE 29.—*Prices Received and Paid by Farmers, 1935-79*

[1967 = 100]

Year	Prices received by farmers			Prices paid by farmers			Parity ratio ¹
	All farm products	Crops	Livestock and products	All items, interest, taxes, and wage rates	Production items, interest, taxes, and wage rates	Production items	
1935.....	44	46	42	36	35	43	122
1936.....	46	48	43	36	35	43	128
1937.....	49	52	46	38	37	46	129
1938.....	39	36	41	36	35	43	108
1939.....	38	36	39	36	35	42	106
1940.....	40	40	40	36	35	43	111
1941.....	49	48	50	39	38	45	126
1942.....	64	64	62	44	43	52	145
1943.....	² 77	83	² 72	50	49	57	154
1944.....	² 79	88	² 71	53	53	60	149
1945.....	² 83	90	² 77	56	55	61	148
1946.....	² 94	102	² 88	61	60	67	154
1947.....	110	117	105	70	68	78	157
1948.....	115	113	115	76	75	87	151
1949.....	100	100	99	73	72	83	137
1950.....	103	103	102	75	74	86	136
1951.....	121	118	122	82	82	95	145
1952.....	115	119	111	84	84	95	135
1953.....	102	107	97	81	79	89	123
1954.....	98	108	90	81	79	89	120
1955.....	93	103	85	81	79	87	112
1956.....	92	104	82	81	79	87	112
1957.....	94	100	89	84	82	90	110
1958.....	100	99	99	86	84	92	114
1959.....	96	98	93	87	86	93	109
1960.....	95	99	92	88	86	92	107
1961.....	96	101	91	88	87	93	107
1962.....	98	103	93	90	89	94	107
1963.....	97	107	89	91	90	95	105
1964.....	95	106	86	92	90	94	102
1965.....	98	103	94	94	94	96	104
1966.....	106	106	106	99	99	100	107
1967.....	100	100	100	100	100	100	100
1968.....	102	100	104	103	102	100	99
1969.....	107	97	117	108	107	104	100
1970.....	110	100	118	112	112	108	98
1971.....	113	108	118	118	117	113	96
1972.....	125	114	136	125	125	121	101
1973.....	179	175	183	144	149	146	124
1974.....	192	224	165	164	169	166	117
1975.....	185	201	172	180	186	182	103
1976.....	186	197	177	192	198	193	97
1977.....	183	192	175	202	208	200	91
1978.....	210	203	217	219	227	217	96
1979.....	241	223	257	250	261	248	97

¹ Percentage ratio of index of prices received by farmers to index of prices paid, interest, taxes, and wage rates.² Includes wartime subsidies paid on beef cattle, sheep, lambs, milk, and butterfat between October 1943 and June 1946.

NOTE.—The official indexes are published on a 1910-14 base as required by law. The indexes have been converted to a 1967=100 base to facilitate comparison with other indexes.

Source: Department of Agriculture.

PRICES PAID BY FARMERS

DESCRIPTION OF SERIES

The Index of Prices Paid by Farmers for Commodities and Services, Interest, Taxes, and Farm Wage Rates (Parity Index, 1910-14=100) is computed by the Economics, Statistics and Cooperatives Service of the Department of Agriculture. It measures the change in prices paid by farmers and ranchers for farm production inputs and family living items. As in the case of the Index of Prices Received by Farmers, the Index of Prices Paid by Farmers is computed on a 1967 base to facilitate comparison with other indexes.

The Index or Prices Paid is composed of five major groups: (1) prices paid for items used in family living, (2) prices paid for items used in farm production, (3) interest on indebtedness secured by farm real estate mortgages, (4) taxes on farm real estate, and (5) wage rates paid to hired farm labor. The percentage weights that each of the groups represent of the total for the different weight base periods are given in the above table. Current weights for the index series are shown in the last column of the table.

The most recent revision of the index was in 1976. Principal changes were: (1) restructuring and adding of new subgroup indexes, (2) use of a three-year base weight period based on farmers expenditures in the 1971-73 period, (3) a general reduction in the number of items in subgroup indexes, (4) incorporation of the Bureau of Labor Statistics Consumer Price Index data into the family living component, and (5) linking the new series in January 1965.

In January 1977 the Bureau of Labor Statistics (BLS) Consumer Price Index (CPI) was substituted for the Family Living Index in the Prices Paid and Parity Indexes. The unadjusted CPI-U has been used for the index computations starting in 1978. Similarities in price and index movement prompted the change. The use of the CPI permitted ESCS to discontinue three major price surveys, reducing data collection costs and reporting burden on the public. As of June 1979, 178 items were included in the farm production component of the index.

STATISTICAL PROCEDURES

Most of the price data used in computation of the Index of Prices Paid by Farmers for commodities and services, interest, taxes and wage rates are based on reports by firms and organizations providing production inputs to agricultural producers. However, farmers are the data source for certain services such as custom rates and cost of electric or telephone service. Prices paid by farmers for feeder livestock are based on data supplied through surveys and the Department of Agricul-

ture Market News Service. Trade publications are used as the source of used auto and truck prices and magazine subscription rates. Wage rates are taken from quarterly agricultural labor surveys while interest on farm real estate loans and taxes paid are from annual surveys. Frequency of pricing for other items depends on seasonal usage and price volatility.

Price reports from dealers are received in the ESCS State Offices, where average prices for the State are calculated for each item. State averages are combined into national averages using State weights. State weights are based on farm production expenditures and other available data on quantities of goods and services purchased by farmers.

From the National average for each item, subgroup indexes are computed for 12 types of farm production expenditures (feed, feeder livestock, seed, fertilizer, agricultural chemicals, fuels and energy, farm and motor supplies, autos and trucks, tractors and self-propelled machinery, other machinery, building and fencing, and farm services and cash rent). These subgroup indexes are combined into the index of prices paid for items used in farm production. The production index is then combined with the family living component (CPI-U) to obtain the index of commodities and services.

The indexes for the subgroups indicate the changes that occur in the price of commodities similar to those included in the index. The items included in the index carry only general specifications which allows the merchants to specify the items most frequently sold. This allows changes in consumer purchasing practices to be reflected in the index. The items in the product subgroups are kept as consistent as possible over a period of time to prevent fluctuations not related to price from influencing the index. The items in the index represent about 90 percent of the total farm expenditures.

The commodities and services index combined with the indexes of interest, taxes and wage rates form the Index of Prices Paid by Farmers for Commodities and Services, Interest, taxes and Farm Wage Rates. When the Index of Prices Paid by Farmers is expressed on a 1910-14 base, it is referred to as the Parity Index.

RELATION TO OTHER SERIES

The indexes of prices paid by farmers complements the indexes of prices received by farmers. Prices paid indexes representing prices for farm-inputs and prices received representing farm outputs (See Parity Ratio). Several of the component indexes are similar to component indexes in the Consumer Price Index (CPI) and Producer Price

Indexes (PPI) (e.g., Fuels and Energy, Feed and Farm Machinery). Pricing points of the prices paid series are generally not the same as those used for the CPI and PPI. Prices Paid indexes represent sales to farmers or sales to rural areas. They are not seasonally adjusted or adjusted for quality changes.

USES AND LIMITATIONS

The Index of Prices Paid by Farmers is a measure of the price component of aggregated expenditures by farmers for living and production costs. The index series are used by analysts to determine whether inputs originating in farming have changed more in price than those of non-farm origin, and in market planning and negotiating marketing contracts. The Parity Index (1910-14=100) is used to establish commodity parity prices for agricultural price support programs.

One limitation in the Index of Prices Paid by Farmers relates to coverage. The index does not contain price data for approximately 10 percent of total expenditures for services used in farm production. The larger excluded items are machinery repair, veterinarian services and construction of farm buildings. Another problem is that no adjustments are made for quality changes of products priced.

Parity Ratio

The Parity Ratio measures the purchasing power of products sold by farmers in terms of goods and services they buy compared to the purchasing power in a base period. The base period used is 1910-14=100. The parity ratio tells how

much more or less farmers have to pay for goods and services than they received for the products they market. When the Index of Prices Received by Farmers is divided by the Index of Prices Paid by Farmers and expressed as a percentage, the result is called the Parity Ratio.

A Parity Ratio different from 100 implies that the price of goods and services farmers buy has changed at a different rate from the price of products they sell. When a Parity Ratio is less than (more than) 100, it implies prices paid have increased at a faster rate (slower rate) than the price the farmers receive for the goods they market since the 1910-14 base period.

Nonprice income supplements such as Government payments are not represented in the Index of Prices Received. Because of this an Adjusted Parity Ratio is published which adjusts the Parity Ratio for the nonprice income.

REFERENCES

The Index of Prices Paid by Farmers and the Index of Prices Received by Farmers are published monthly by the Economics, Statistics and Cooperatives Service in *Agricultural Prices*. Revisions are published annually in June in *Agricultural Prices Annual Summary*. A detailed description of the price series is presented in (1) *Scope and Methods of the Statistical Reporting Service*, Miscellaneous Publication No. 1308 of the Department of Agriculture, July 1975 and (2) *Agriculture Handbook No. 365, Major Statistical Series of the U.S. Department of Agriculture, How They are Constructed and Used*, Volume 1, *Agriculture Prices and Parity*, (U.S. Department of Agriculture, October 1970).

MONEY, CREDIT, AND SECURITY MARKETS

MONEY STOCK MEASURES AND LIQUID ASSETS

DESCRIPTION OF SERIES

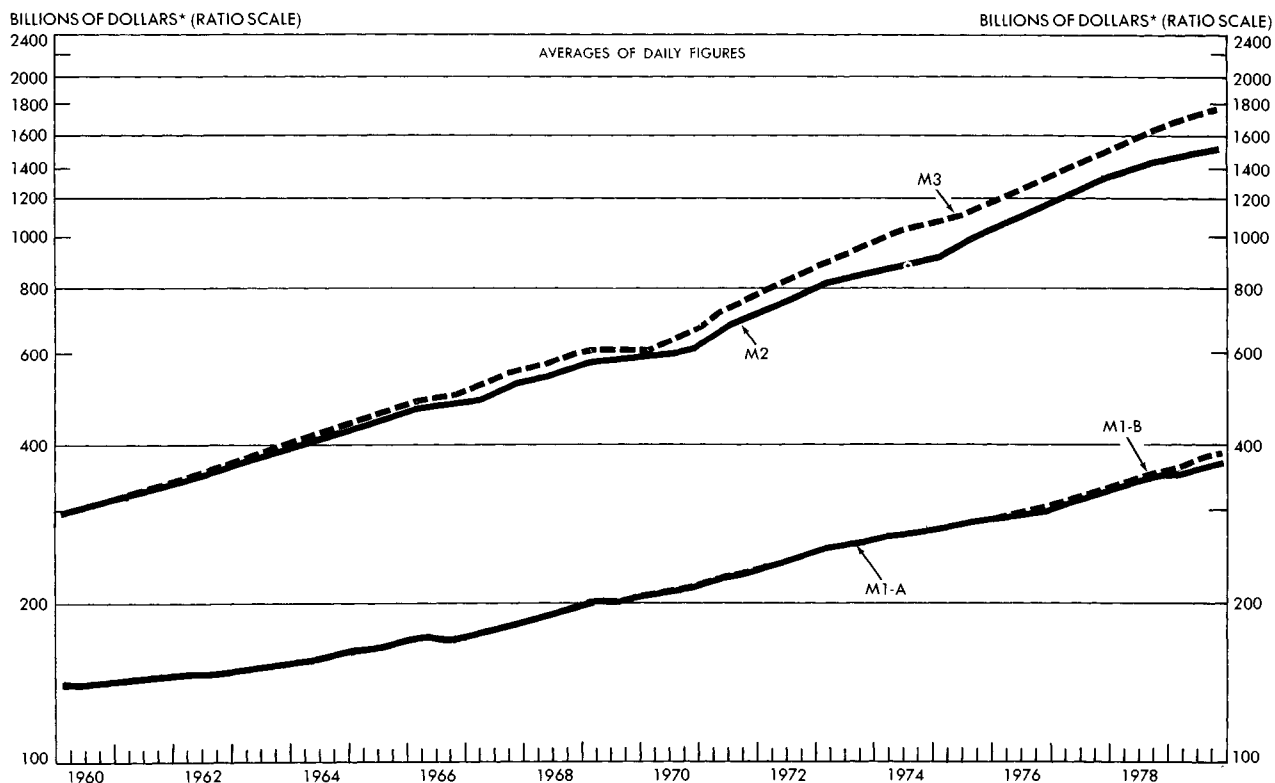
The Federal Reserve Board provides four measures of the money stock and a series on liquid assets held by the public on a monthly basis. These series on the monetary aggregates are the most comprehensive measures of the supply of money. The definitions of the series are progressively expanded to encompass increasingly broadened concepts of the money supply.

"M-1A," which is the narrowest of the money stock measures, is composed of demand deposits at commercial banks and currency. Demand deposits are defined to include deposits in all commercial banks other than those due to domestic banks, the

U.S. Government and foreign banks and official institutions, less cash items in the process of collection and Federal Reserve float. Currency is defined as the total of paper currency (primarily Federal Reserve notes) and coin outside the Treasury, Federal Reserve banks, and the vaults of commercial banks.

"M-1B" is M-1A plus interest-earning checkable deposits at all depository institutions—negotiable order of withdrawal (NOW) and automatic transfer from savings (ATS) accounts at banks and thrift institutions, credit union share draft accounts, and demand deposits at mutual savings banks.

Chart 8.—MONEY STOCK MEASURES



*SEASONALLY ADJUSTED.
SOURCE: BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM.

"M-2" is M-1B plus savings and small denomination time deposits (denominations of less than \$100,000) at all depository institutions, money market mutual fund shares, overnight repurchase agreements (RPs) at commercial banks, and overnight Eurodollars held by U.S. residents other than banks at Caribbean branches of member banks.

"M-3" is M-2 plus large-denomination time deposits at all depository institutions and term RPs at banks and savings and loan associations.

"L" is a broad measure of liquid assets held by households, nonfinancial business, and state and local governments. It is composed of M-3 plus term Eurodollars held by U.S. residents other than banks, bankers acceptances, commercial paper, savings bonds, and liquid Treasury obligations (Treasury securities with less than 18 months remaining to maturity).

The M-1A and M-1B measures are provided weekly and monthly, and M-2, M-3, and L are available only on a monthly basis.

TABLE 30.—*Money Stock Measures and Liquid Assets, 1959-79*

[Averages of daily figures; billions of dollars, seasonally adjusted]

December	M1-A Currency plus demand deposits	M1-B M1-A plus other checkable deposits at banks and thrift institutions	M2 M1-B plus overnight RPs and Eurodollars, MMMF shares, and savings and small time de- posits at commercial banks and thrift in- stitutions ¹	M3 M2 plus large time deposits and term RPs at commercial banks and thrift in- stitutions	L M3 plus other liquid assets
1959.....	140.7	140.7	296.7	297.9	387.5
1960.....	141.6	141.6	311.2	313.3	402.5
1961.....	146.1	146.1	333.9	337.9	429.1
1962.....	148.8	148.8	361.1	368.2	464.5
1963.....	154.2	154.2	391.4	402.3	501.8
1964.....	161.2	161.3	422.8	438.0	538.3
1965.....	168.7	168.8	457.2	478.5	582.3
1966.....	172.8	172.9	478.5	502.2	613.9
1967.....	184.2	184.2	523.6	555.7	667.2
1968.....	198.4	198.5	566.2	605.3	730.9
1969.....	204.6	204.7	587.6	610.4	761.2
1970.....	215.3	215.4	625.2	671.7	812.5
1971.....	229.2	229.4	709.6	769.7	898.7
1972.....	250.5	250.6	801.6	877.8	1,017.7
1973.....	264.1	264.4	858.1	976.1	1,137.2
1974.....	275.3	275.7	906.2	1,058.6	1,242.8
1975.....	287.9	289.0	1,022.4	1,161.0	1,369.6
1976.....	305.0	307.7	1,166.7	1,299.7	1,523.5
1977.....	328.4	332.5	1,294.1	1,460.3	1,715.5
1978.....	351.6	359.9	1,401.5	1,623.6	1,927.7
1979.....	369.7	386.4	1,525.5	1,775.5	2,141.1

¹ Total M2 excludes demand deposits held by thrift institutions at commercial banks, not shown separately in components.

NOTE.—See Table 31 for components.

Source: Board of Governors of the Federal Reserve System.

These definitions were adopted in 1980. They followed reviews by an outside advisory committee in 1976 and the Federal Reserve staff in 1979 of the need to redefine the monetary aggregates to more adequately reflect financial developments in recent years, such as the emergence of NOW accounts and money market mutual fund shares, the increasing similarity between deposits of thrift institutions and commercial banks, and the increasing public participation in broader types of money market instruments. The general principle that was followed in developing the measures was to combine similar kinds of monetary assets in each measure with respect to their transaction and liquid investment characteristics. A comparison of the old and new definitions is given in the February 1980 *Federal Reserve Bulletin*.

STATISTICAL PROCEDURES

Money stock data are derived from a variety of sources. The currency component is derived from daily Treasury figures for money "in circulation" (i.e., outside the Treasury and the Federal Reserve Banks) from which is deducted vault cash holdings of commercial banks. The vault cash of commercial banks is based on reported Federal Reserve member bank data and an estimate for nonmember banks derived from quarterly call reports.

Demand deposits are based on daily deposit data reported by member banks and weekly data from a Federal Deposit Insurance Corporation/Federal Reserve survey of nonmember banks. The demand deposit component is derived from the total of reported demand deposits (excluding interbank deposits of domestic banks and deposits due to foreign banks and official institutions) less cash items in the process of collection (float) and U.S. government deposits.

Time and savings deposits are also based on daily deposit data for member banks and weekly data for nonmember banks, and for thrift insti-

tutions mainly on data collected three times a month from savings and loan associations by the Federal Home Loan Bank Board. U.S. Government deposits, domestic interbank deposits, and deposits due to foreign banks and official institutions are deducted from the total of time and savings deposits, as in the case of demand deposits.

Data on money market mutual fund shares are obtained weekly from the Investment Company Institute and data on Eurodollars, and repurchase borrowings are collected daily from samples of large banks.

U.S. savings bonds and other Treasury securities data are based on monthly ownership statistics published in the *Treasury Bulletin*. Data on commercial paper, bankers acceptances, and term Eurodollars are based on information from the Federal Reserve Bank of New York and other financial reports.

To avoid double counting, adjustments are made to consolidate the public's monetary assets in each of the measures. The major adjustments are the netting of deposits held by depository institutions with other depository institutions and the removal of assets held by money market mutual funds from several components of the M-2 and M-3 measures.

Components of the various money stock series are seasonally adjusted separately and aggregated to construct the seasonally adjusted total. Certain items are not presently seasonally adjusted because of the lack of sufficient historical data. The basic seasonal adjustment entails a multiplicative moving seasonal option of the Census Bureau's X-11 seasonal adjustment method. The results of this operation are reviewed, and in some instances, in order to take account of known factors that may be distorting the seasonals, the seasonal factors are modified judgmentally. The published series is usually close to the X-11 results. A broad review of the seasonal adjustment of the monetary aggregates is being conducted by an outside panel of experts that is expected to submit its report to the Federal Reserve Board in 1980.

TABLE 31.—Components of Money Stock Measures and Liquid Assets, 1959-79

[Averages of daily figures; billions of dollars, seasonally adjusted, except as noted]

December	Currency	Demand deposits	Other checkable deposits NSA	Overnight repurchase agreements (RPs) (net) NSA	Overnight Eurodollars NSA	Money market mutual fund shares NSA	Savings deposits	Small-denomination time deposits ¹	Large-denomination time deposits ¹	Term repurchase agreements (RPs) NSA	Term Eurodollars (net) NSA	Savings bonds	Short-term Treasury securities	Bankers' acceptances	Commercial paper
1959.....	28.9	111.8	0.0	0.0	0.0	0.0	145.2	11.5	1.2	0.0	0.7	46.1	38.7	0.5	3.6
1960.....	29.0	112.7	.0	.0	.0	.0	157.8	12.6	2.0	.0	.8	45.7	36.8	.8	5.1
1961.....	29.6	116.6	.0	.0	.0	.0	173.9	14.8	4.0	.0	1.4	46.5	37.1	1.0	5.2
1962.....	30.6	118.2	.0	.0	.0	.0	193.1	20.2	7.1	.0	1.6	46.9	39.9	1.0	6.8
1963.....	32.5	121.7	.0	.0	.0	.0	212.6	25.7	10.9	.0	1.9	48.1	40.7	1.1	7.7
1964.....	34.2	127.0	.1	.0	.0	.0	233.3	29.3	15.3	.0	2.4	49.0	38.5	1.2	9.1
1965.....	36.3	132.4	.1	.0	.0	.0	255.0	34.5	21.3	.0	1.7	49.7	40.7	1.5	10.2
1966.....	38.3	134.5	.1	.5	.0	.0	251.1	55.1	23.2	.5	2.1	50.2	43.2	1.6	14.4
1967.....	40.4	143.7	.1	1.1	.0	.0	261.4	78.1	31.1	1.0	2.1	51.2	38.7	1.7	17.8
1968.....	43.5	154.9	.1	1.6	.0	.0	266.3	101.1	37.6	1.5	2.9	51.8	46.1	2.2	22.5
1969.....	46.1	158.6	.1	2.5	.0	.0	261.0	120.7	20.4	2.4	2.3	51.7	59.5	3.2	34.0
1970.....	49.1	166.2	.1	1.4	.0	.0	256.7	153.0	45.1	1.4	1.8	52.0	49.2	3.3	34.5
1971.....	52.6	176.7	.1	2.5	.0	.0	287.5	191.8	57.6	2.5	2.3	54.3	36.2	3.5	32.7
1972.....	56.9	193.6	.1	3.1	.0	.0	317.0	232.6	73.0	3.3	2.8	57.5	40.9	3.3	35.2
1973.....	61.6	202.5	.3	6.8	.0	.1	322.2	266.4	110.9	7.1	4.4	60.4	49.8	4.7	41.9
1974.....	67.8	207.4	.4	7.2	.0	2.3	333.9	288.9	144.0	8.4	6.7	63.2	53.4	10.7	50.1
1975.....	73.8	214.1	1.1	7.5	.0	3.6	383.9	340.4	129.6	9.0	7.9	67.3	76.8	8.5	48.1
1976.....	80.7	224.4	2.7	13.6	.0	3.4	447.7	396.6	118.0	15.0	10.3	71.8	80.7	9.0	51.8
1977.....	88.7	239.7	4.1	17.6	1.0	3.8	486.5	454.9	145.2	21.0	13.7	76.6	89.5	12.3	63.1
1978.....	97.6	253.9	8.4	21.9	2.0	10.3	476.1	533.8	194.7	27.3	22.8	80.6	98.7	22.6	79.4
1979.....	106.3	263.4	16.7	21.7	3.6	43.6	416.7	656.5	219.4	30.5	31.9	80.0	127.5	28.9	97.3

¹ Small-denomination and large-denomination deposits are those issued in amounts of less than \$100,000 and more than \$100,000, respectively.Note.—NSA indicates data are not seasonally adjusted.
See also Table 30.

Source: Board of Governors of the Federal Reserve System.

USES AND LIMITATIONS

Changes in the total of deposits and currency, whether regarded as causative or systematic, are important factors in the analysis of economic change and of monetary policy. Aggregate money stock measures are affected by financial innovations, regulatory changes, and other factors. No single measure provides complete information regarding the public's money holdings and the relationship of money to ultimate economic variables, the price level, employment, and output. Money stock M-1A is primarily a transaction balances measure, although this function has been diminished over time as other financial assets have taken on the form of transaction balances. M-1B includes additional transaction balances as well as savings deposits which can serve as close substitutes for demand deposits. The savings deposits component of this series and M-2 is sensitive to market interest rates, particularly when interest rates rise above ceiling rates that banks and thrift institutions can pay on such deposits.

M-2 and M-3, in addition to their transaction component, take on the broader aspects of liquid investment measures and are important components of total liquid assets of the public. The liquid asset series (L) is the broadest gauge of the volume of money and marketable credit in the economy.

In general, the series are reasonably accurate, but lack of complete reporting by banks and other institutions, changes in accounting practices, and other measurement problems impact on the accuracy and reliability of the series.

REFERENCES

Money stock data are published weekly by the Board of Governors of the Federal Reserve System, in the H.6 statistical release, "Money Stock Measures," and monthly in the *Federal Reserve Bulletin*. The new money stock measures adopted in 1980 are discussed in "The Redefined Monetary Aggregates," *Federal Reserve Bulletin*, February 1980. For additional background on the new series.

see "A Proposal for Redefining the Monetary Aggregates," *Federal Reserve Bulletin*, January 1979, and *Improving the Monetary Aggregates: Report of the Advisory Committee on Monetary Statistics* (Board of Governors of the Federal Reserve System, June 1976). There have been numerous articles in the *Bulletin*, beginning in August 1962, concerning construction and revisions of the series, and a summary description was presented in *Banking and Monetary Statistics 1941-1970* (Board of Governors of the Federal Reserve System, September 1976). A staff paper, "Sources of Data and Methods of Construction of the Monetary Ag-

gregates," in *Improving the Monetary Aggregates: Staff Papers* (Board of Governors of the Federal Reserve System, November 1978) presents a detailed technical discussion of the construction of the aggregates. Data for the period 1959 to 1978 are available from the Board of Governors. Earlier data (1941-1958) on bank deposits and currency are available in *Banking and Monetary Statistics 1941-1970*; data from 1892 to 1941 are available in *Banking and Monetary Statistics—1914-1941* (Board of Governors of the Federal Reserve System) and from 1867 in *Historical Statistics of the United States*.

CONSUMER INSTALLMENT CREDIT

DESCRIPTION OF SERIES

The Federal Reserve Board provides monthly estimates of consumer installment credit for new extensions, liquidations (repayments) outstanding, and changes in outstandings. The series covers most short- and intermediate-term credit extended to individuals through regular business channels, usually to finance the purchase of consumer goods and services or to refinance debts incurred for such purposes. Such credit is scheduled to be repaid or with the option of repayment in two or more installments.

The series excludes certain types of arrangements by which household expenditures are financed. It generally excludes mortgage financing, although some credit secured by junior liens on real estate may be reported in the data for certain holders such as finance companies. Also excluded are (a) credit card or other receivables held by a holding company rather than by its subsidiary financial institution; (b) extensions of funds against the cash value of life insurance policies or generally against savings accounts; (c) loans to farmers; and (d) noninstallment credit extended to individuals. Some components of the series include unearned (precomputed) finance charges.

Four major consumer installment credit categories are included in the series: automobile and revolving credit are shown separately, while mobile home and "other" credit are included in the totals published here.

Auto loans.—This category includes loans to individuals—both direct loans and indirect loans (purchased paper)—arising from the retail sale of new or used private passenger automobiles, whether or not the automobile is used as collateral. Excluded are "floor plan"* or fleet loans or other wholesale financing; loans secured by commercial vehicles; loans for business or professional purposes; loans to farmers; and loans for motorcycles,

travel trailers, campers, and similar recreational vehicles. Also generally excluded are pickup trucks, vans, and similar vehicles purchased for personal use.

Revolving credit.—This category includes credit arising from purchases on retail stores and bank credit card plans, commercial bank cash advances and check credit plans, and revolving credit arising from overdraft credit arrangements with American Express, Diners Club, Carte Blanche, or similar plans. Also included are estimates of open-end credit held by the large petroleum marketing companies through gasoline credit cards used by individuals. Excluded are all overdrafts on checking accounts not associated with revolving credit operations, and the credit card plans operated directly by American Express and others that generally do not provide an installment payment option.

Mobile home loans.—This category includes both direct and indirect (purchased paper) loans arising from the sale to individuals of new or used mobile homes for residential use, whether or not the mobile home is used as collateral. (Mobile homes are defined as complete dwelling units built on a chassis and capable at time of initial purchase of being towed over the highway by a truck but not by a car). Excluded are loans to purchase travel trailers, campers, and similar recreational vehicles. Also omitted are "floor plan" loans or other wholesale financing, loans to farmers, and loans secured primarily by real estate, whether evidenced by first or junior liens. In cases in which the mobile home land site is financed along with the mobile home, and State law requires categorization as a real estate transaction, the financing is excluded from the installment credit series.

"Other" installment loans.—(For home improvement, other consumer goods, and personal expenditures.) These loans include direct cash loans to individuals for personal use, as well as credit arising from the sale of consumer goods not classified separately (including motorcycles; travel trailers, campers, and similar recreational vehi-

*Floor plan loans are bulk loans advanced for the total value of inventory on hand, such as would be extended to a car dealer when the new model year is introduced.

cles; and pickup trucks, vans, and similar vehicles purchased for personal use). Included also are installment loans to individuals, both direct loans and indirect loans (purchased paper), made to finance alterations and improvements to existing properties, unless such credit is secured primarily by real estate. Included here are so-called Class 1 loans insured under Title 1 of the National Housing Act.

The "other" category covers any installment loans to individuals, both direct loans and indirect loans (purchased paper), made to finance household, family, and other personal expenditures, repayable in installments, whether (1) secured by life insurance policies, chattel mortgages, or other collateral; or (2) unsecured personal installment loans. Student loans currently being repaid on an installment basis are included, while such loans not yet being repaid are excluded.

Also excluded are "floor plan" loans or other wholesale financing, loans for business or professional purposes, and loans to farmers, as well as so-called Class 2, Title I loans (or any other loans for financing new construction), or loans secured primarily by real estate insured under Titles II, VI, and VII of the National Housing Act. In addition, loans identifiable for the purpose of purchasing or carrying securities or for other investment purposes, and loans secured primarily by real estate, whether evidenced by first or junior liens, are also excluded.

STATISTICAL PROCEDURES

The consumer installment credit series are aggregates of separate estimates of credit held by various types of creditors—financial institutions, retailers, and others. Although the procedures vary, they generally involve estimates based on periodic benchmark information which is brought forward by current monthly sample data. For the more important credit-granting lines, there are monthly and annual sample data on receivables. Monthly data on receivables are available from reporting samples of financial institutions engaged in consumer lending.

Benchmarks for credit outstanding are provided for certain holders by annual reports with complete coverage, and for others by occasional special surveys. For example, a benchmark survey of finance companies is conducted every five years. The latest such survey was dated June 30, 1975.

Estimates of consumer installment credit extended and repaid are derived from current reporting samples of lending and installment-selling groups covering either loan collections or credit extended. The imputed factors for seasonally and trading-day adjusted total installment credit for the 12 months of 1979 are as follows:

Month	Credit extended	Credit repaid
January	89	102
February	83	93
March	100	105
April	100	100
May	107	102
June	107	100
July	103	100
August	111	102
September	94	95
October	101	105
November	99	99
December	106	97

RELATION TO OTHER SERIES

The series shown here are aggregated from a more comprehensive body of consumer installment credit estimates prepared by the Federal Reserve, as discussed above in the Description of Series. These estimates show consumer credit outstanding by type of holder, and supplementary tabulations of installment credit at commercial banks, finance companies, retailers (including auto dealers, gasoline companies, credit unions, mutual savings banks, and savings and loan associations).

USES AND LIMITATIONS

The widespread interest in consumer installment credit is due in part to its importance as a source of consumer purchasing power and especially its significance in the market for consumer goods frequently bought on the installment plan. Also, consumer debt reflects an important aspect of the general financial position of consumers. In addition, it is an important element in the demand for funds in the financial community. A relatively small sample size, for some holders of credit, does somewhat impair the accuracy of the data.

REFERENCES

General discussion of concepts, sources and estimating techniques appear in a Federal Reserve publication, *Banking and Monetary Statistics, 1941-70*. Historical data and additional information are available from the Mortgage and Consumer Finance Section, Division of Research Statistics, Board of Governors of the Federal Reserve System, Washington, D.C. 20551. Detailed data on installment credit extended and repaid for major types and holders, with changes in outstanding credit, are shown in the *Federal Reserve Bulletin* and Federal Reserve statistical release G. 19 (421), "Consumer Installment Credit," on a seasonally adjusted and/or an unadjusted basis.

TABLE 32.—Consumer Installment Credit, 1943-79

[Millions of dollars]

Year	Installment credit extended			Installment credit liquidated			Net change in amount outstanding		
	Total ¹	Auto- mobile	Re- volving ²	Total ¹	Auto- mobile	Re- volving ²	Total ¹	Auto- mobile	Re- volving ²
1943.....	4,892	747	-----	5,935	1,097	-----	-1,043	-350	-----
1944.....	5,106	869	-----	5,085	828	-----	21	41	-----
1945.....	5,687	978	-----	5,372	914	-----	315	64	-----
1946.....	8,944	1,929	-----	7,116	1,405	-----	1,828	524	-----
1947.....	13,368	3,641	-----	10,716	2,714	-----	2,652	927	-----
1948.....	16,181	5,122	-----	13,761	4,054	-----	2,420	1,068	-----
1949.....	18,694	6,844	-----	15,981	5,336	-----	2,713	1,508	-----
1950.....	22,130	8,445	-----	18,861	6,906	-----	3,269	1,539	-----
1951.....	24,583	8,951	-----	23,867	9,008	-----	716	-57	-----
1952.....	30,616	11,610	-----	26,355	9,932	-----	4,261	1,678	-----
1953.....	32,579	12,740	-----	28,794	10,689	-----	3,785	2,051	-----
1954.....	32,265	11,741	-----	31,625	11,679	-----	640	62	-----
1955.....	40,263	16,732	-----	34,882	13,008	-----	5,381	3,724	-----
1956.....	40,886	15,572	-----	37,899	14,559	-----	2,987	1,013	-----
1957.....	43,101	16,554	-----	40,759	15,567	-----	2,342	987	-----
1958.....	40,956	14,287	-----	41,290	15,501	-----	-334	-1,214	-----
1959.....	49,134	18,008	-----	43,395	15,638	-----	5,739	2,370	-----
1960.....	50,827	18,112	-----	47,022	16,661	-----	3,805	1,451	-----
1961.....	50,598	16,477	-----	49,735	16,960	-----	863	-483	-----
1962.....	57,562	20,164	-----	52,601	17,840	-----	4,961	2,324	-----
1963.....	64,660	22,617	-----	57,822	19,699	-----	6,838	2,918	-----
1964.....	72,445	24,792	-----	64,616	21,815	-----	7,829	2,977	-----
1965.....	79,918	27,913	-----	71,616	24,386	-----	8,302	3,527	-----
1966.....	83,821	27,844	-----	78,365	26,206	-----	5,456	1,638	-----
1967.....	89,058	27,623	-----	85,194	27,482	-----	3,864	141	-----
1968.....	101,426	32,228	3,481	92,075	29,013	2,726	9,351	3,215	755
1969.....	109,422	33,686	6,182	99,945	31,090	4,567	9,477	2,596	1,615
1970.....	115,001	30,857	8,713	110,352	31,414	7,302	4,649	-557	1,411
1971.....	138,046	36,706	21,874	127,789	32,512	20,830	10,257	4,194	1,044
1972.....	152,275	43,702	24,671	136,787	38,081	23,497	15,488	5,621	1,174
1973.....	173,035	49,606	28,714	152,817	43,696	26,711	20,218	5,910	2,003
1974.....	172,765	46,514	33,225	163,276	46,019	31,255	9,489	495	1,970
1975.....	180,441	52,420	36,968	172,676	49,444	35,628	7,765	2,976	1,340
1976.....	211,046	63,743	43,946	189,384	53,278	41,776	21,662	10,465	2,170
1977.....	254,057	75,641	86,756	218,794	60,437	80,508	35,263	15,204	6,248
1978.....	298,351	88,987	104,587	253,541	69,430	96,811	44,810	19,557	7,776
1979.....	322,558	91,847	120,728	287,067	79,293	112,449	35,491	12,554	8,279

¹ Includes "mobile home" and "other," not shown separately.² Consists of credit cards at retailers, gasoline companies, and commercial banks, and check credit at commercial banks. Prior to 1968, included in "other," except gasoline companies, included in noninstallment credit prior to 1971. Beginning 1977, includes open-end credit at retailers, previously included in "other." Also beginning 1977, some retail credit was reclassified from commercial into consumer credit. Credit secured by real estate is generally excluded.

NOTE.—Installment credit covers most short- and intermediate-term credit extended to individuals through regular business channels, usually to finance the purchase of consumer goods and services or to refinance debts incurred for such purposes, and scheduled to be repaid (or with the option of repayment) in two or more installments.

Liquidated credit includes repayments, chargeoffs, and other credits.

Source: Board of Governors of the Federal Reserve System.

BANK LOANS, INVESTMENTS, AND RESERVES

DESCRIPTION OF SERIES

RESERVES AND BORROWING

LOANS AND INVESTMENTS

The Federal Reserve Board provides monthly data on all commercial banks in the United States. Commercial banks include all State and nationally chartered banks and branches of foreign banks located in the United States for the 1948-71 period. Beginning in 1972, data include all domestically chartered banks plus U.S. branches, agencies, and New York investment company subsidiaries of foreign banks and Edge Act corporations engaged in banking. Beginning in 1969, banks were required to submit consolidated reports including figures for all bank premises subsidiaries. This expanded reporting had only a nominal effect on the level of bank loans and investments. Commercial banks are in general distinguished from other lending institutions by the fact that they accept deposits subject to check or withdrawal on demand. Mutual savings banks and savings and loan associations are not included, nor are other "banking" institutions that do not accept demand deposits.

Commercial and industrial loans include all business loans except those secured by real estate, those made for the purpose of purchasing or carrying securities, and those extended to financial institutions. The latter are included in total loans. Investments are composed of holdings of U.S. Treasury securities, and holdings of other securities, which consist mainly of State and municipal issues and obligations of U.S. Government agencies.

For the period 1948-58, all loans to other domestic and foreign commercial banks and Federal funds sold to commercial banks were excluded from total loans. These interbank loans fluctuate widely but have little net effect on the volume of credit available to the public. Starting with 1959, the series include loans to foreign commercial banks. This treatment is consistent with that accorded other banking and monetary series. Beginning June 30, 1969, loans and investments were reported gross—that is, without deduction of valuation reserves—rather than net of valuation reserves as had been done previously. Data beginning January 1959 were revised to include valuation reserves. Beginning March 1976, reporting was again changed to the net basis but the loans and investments series was adjusted to continue gross.

Monthly figures shown are as of the last Wednesday of the month except for June 30 and December 31 call report data. On rare occasions in earlier years when June 30 and December 31 were not call report dates, data were either estimated or last-Wednesday data were used. Beginning in 1948, seasonally adjusted monthly data for loans and investments at all commercial banks are available.

Monthly and weekly data on aggregate reserves and borrowings are reported for all member banks of the Federal Reserve System. Currently there are about 5,600 member banks—4,600 nationally chartered banks required to be members and 1,000 state chartered banks that have chosen to join the Federal Reserve System. These banks account for approximately 70 percent of all commercial bank deposits.

Prior to December 1959, the only permissible legal reserves were member bank balances with Federal Reserve Banks, i.e., reserve balances at Federal Reserve Banks equalled total reserves. Beginning in December 1959, member banks have been allowed to count vault cash as part of their allowable reserves. At first only limited amounts of vault cash could be included, but since November 24, 1960, all member bank vault cash has been allowed as reserves. Beginning in September 1968, in conjunction with lagged reserve requirements, lagged vault cash—that is vault cash held two weeks earlier—has been included as part of total reserves. In addition, since November 1972, total reserves have included a minor amount of waivers of penalties for reserve deficiencies in accordance with policies of the Board of Governors of the Federal Reserve System.

Required reserves are minimum balances required to be maintained by member banks pursuant to Federal Reserve regulations, measured as a percent of deposit liabilities and varying with the type, maturity, and size of the deposit liability. These reserve requirements are varied from time to time by the Board. Since September 1968, required reserves in the current statement period (calendar week ending Wednesday) have been based on average deposits held two weeks earlier.

Total borrowings include all member bank borrowings—seasonal and other. Historically, Federal Reserve credit has generally been extended on a short-term basis to a member bank in order to enable it to adjust its asset position. In 1973 the Federal Reserve introduced a seasonal credit facility for member banks. Under seasonal borrowing Federal Reserve credit is available for longer periods to assist a member bank that lacks reasonably reliable access to national money markets in meeting its seasonal need for funds. Seasonal and regular borrowings data are available daily from each Federal Reserve bank.

Total reserves are the sum of reserve balances of member banks held at Federal Reserve Banks in the current week and the average of member bank vault cash held two weeks earlier. Excess reserves can be derived by subtracting required reserves from total reserves. Nonborrowed reserves are defined as total reserves less borrowing.

TABLE 33.—*Bank Loans, Investments, and Reserves, 1948-79*

[Billions of dollars, seasonally adjusted, except as noted]

December	All commercial banks ¹					All member banks ²				
	Total loans and investments	Loans and leases		Investments		Reserves			Borrowings (millions of dollars, unadjusted)	
		Total	Commercial and industrial loans	U.S. Treasury securities	Other securities	Total	Non-borrowed	Required	Total	Seasonal
1948	113.0	41.5		62.3	9.2				134	
1949	118.7	42.0		66.4	10.3				118	
1950	124.7	51.1		61.1	12.4				142	
1951	130.2	56.5		60.4	13.4				657	
1952	139.1	62.8		62.2	14.2				1,593	
1953	143.1	66.2		62.2	14.7				441	
1954	153.1	69.1		67.6	16.4				246	
1955	157.6	80.6		60.3	16.8				839	
1956	161.6	88.1		57.2	16.3				688	
1957	166.4	91.5		56.9	17.9				710	
1958	181.2	95.6		65.1	20.5				557	
1959	188.7	110.5	39.4	57.7	20.5	18.61	17.67	18.10	906	
1960	197.4	116.7	42.1	59.9	20.8	18.91	18.84	18.17	87	
1961	212.8	123.6	43.9	65.3	23.9	19.76	19.63	19.18	149	
1962	231.2	137.3	47.6	64.7	29.2	19.72	19.46	19.14	304	
1963	250.2	153.7	52.1	61.5	35.0	20.39	20.06	19.90	327	
1964	272.3	172.9	58.4	60.7	38.7	21.27	21.01	20.87	243	
1965	300.1	198.2	69.5	57.1	44.8	22.34	21.90	21.92	454	
1966	316.1	213.9	78.6	53.5	48.7	23.39	22.86	23.05	557	
1967	352.0	231.3	86.2	59.4	61.3	24.91	24.69	24.54	238	
1968	390.2	258.2	95.9	60.7	71.3	27.18	26.43	26.75	765	
1969	401.7	279.4	105.7	51.2	71.1	28.07	26.95	26.78	1,086	
1970	435.5	292.0	110.0	57.8	85.7	29.22	28.89	28.97	321	
1971	485.7	320.9	116.2	60.6	104.2	31.28	31.15	31.09	107	
1972	566.1	386.2	136.3	64.1	115.8	31.40	30.35	31.11	1,049	
1973	647.8	460.3	165.6	58.7	128.8	34.98	33.68	34.68	1,298	41
1974	713.6	519.9	197.3	53.7	140.0	36.66	35.94	36.41	703	32
1975	744.6	516.9	189.8	82.1	145.7	34.67	34.54	34.40	127	13
1976	804.3	554.8	191.2	100.6	149.0	34.90	34.85	34.63	62	12
1977	891.1	632.1	211.2	99.5	159.6	36.00	35.43	35.81	558	54
1978	1,014.3	747.8	246.5	93.4	173.1	41.16	40.29	40.93	874	134
1979	1,132.5	847.2	290.5	93.8	191.5	43.57	42.10	43.13	1,473	82

¹ Data for 1948-1971 are for December 31 call dates. Data beginning 1972 are prorated averages of Wednesday figures for domestically chartered banks and averages of current and previous month-end data for foreign-related institutions; lease financing receivables are included in total loans and investments and in total loans.

² Data are averages of daily figures. Member bank reserves series reflects actual reserve requirement percentages with no adjustment to eliminate the effect of changes in Regulations D and M.

Source: Board of Governors of the Federal Reserve System.

STATISTICAL PROCEDURES

LOANS AND INVESTMENTS

Prior to January 1979, monthly estimates for total loans and investments were prepared by the Federal Reserve on the basis of three things: (1) detailed weekly reports for a group of large commercial banks; (2) modified weekly reports from all other member banks not in the large size group; and (3) related member bank deposit and reserve reports. Estimates for all non-member banks (including branches of foreign banks located in the United States) were based on relationships between outstanding loans and investments at nonmember banks and at small member banks for June and December dates when complete reports for the banking system are available. These call report data were substituted for estimated June and December data, and ratios for intervening months were interpolated to bring them in line with call report benchmarks.

Beginning January 1979, new procedures were designed to reduce the size of the benchmark revisions in the bank credit estimates. Blowups of reported member bank data for several size strata were introduced to obtain nonmember data exclusive of foreign branches. Reports from a sample of small banks were also utilized to provide detailed loan information. These blowups provide estimates for domestic chartered banks only. Data for U.S. branches, agencies, and New York investment company subsidiaries of foreign banks and Edge Act corporations were obtained from their monthly condition reports through May 1980 and added to the domestic segment to produce the all-commercial bank series. Currently, these data are estimated using selected weekly banking reports and quarterly call report information. It had been apparent in recent calls that the simple linking of data on small member banks and all nonmember banks was not adequate for estimating credit at foreign related institutions, whose growth patterns may differ substantially from those at domestic banks. Data on the new coverage basis were estimated for the period December 1972-78.

RESERVES AND BORROWINGS

Seasonally adjusted aggregate reserve series are derived by seasonally adjusting the weekly level of required reserves as reported by all member banks, and adding to them excess reserves not

seasonally adjusted. Seasonally adjusted non-borrowed reserves are calculated by subtracting total member bank borrowings, not seasonally adjusted, from seasonally adjusted total reserves. Monthly average seasonally adjusted reserve aggregate data are derived as prorations of the weekly data.

RELATION TO OTHER SERIES

Basic data for the loans and investments series are taken from the call reports of all commercial banks. For each June and December call report beginning June 1969, the Federal Deposit Insurance Corporation, in conjunction with the Board of Governors of the Federal Reserve System and the Office of the Comptroller of the Currency, has issued a report, *Assets and Liabilities, Commercial and Mutual Saving Banks*, showing detailed call report data. A weekly series for large commercial banks compiled by the Federal Reserve is also available showing loans, U.S. Treasury and other securities, and business loans. This series covers a substantial segment of total commercial bank credit and is available with a one-week lag. However, it is representative only of changes at large banks; patterns of change may be significantly different at small banks. Also, it is not published on a seasonally adjusted basis.

USES AND LIMITATIONS

LOANS AND INVESTMENTS

The series on loans and investments of all commercial banks is a useful indicator for current banking and monetary analysis. In view of the substantial seasonal and cyclical movements in bank credit, a seasonally adjusted series facilitates historical analysis. It also makes it easier to view the current trend in bank credit and its components and to evaluate the banking system's responses to change in monetary policy. Data are available about two weeks after the last Wednesday of the month and are subject to revisions in the following month, as revised data become available. There also may be substantial revisions associated with call report benchmarks several months later.

RESERVES AND BORROWINGS

An increase in total reserves supports a multiple expansion of bank deposits and bank credit. Contraction of reserves has the opposite impact. Thus,

the rates of growth of the reserve aggregates are used by some analysts as indicators of monetary policy. Actual reserve aggregate measures are not very useful for analytical purposes because of frequent breaks in the series due to changes in required reserve regulations. The Federal Reserve Board also publishes aggregate reserve measures adjusted for breaks due to changes in Regulation D and M.

Breaks in the series due to regulatory changes and the complex reserve requirements currently in effect require that the reserve aggregate data be used with care. Interpretation of the movement of reserves must, at times, take into account a complex set of reserve requirement ratios as they relate to various types of deposits, graduated reserve requirements, supplemental reserve requirements, and marginal reserves. It is also necessary to remember that required reserves are based on deposits held two weeks earlier. Not all deposits are subject to reserve requirements. Consequently, in assessing the movement of deposits and reserves, it is important to identify those deposits which are subject to reserve requirements.

REFERENCES

LOANS AND INVESTMENTS

The monthly estimates for all commercial banks appear initially about two weeks after the last Wednesday of the month in the Federal Reserve

statistical release, G.7(407), "Loans and Investments at All Commercial Banks." The *Federal Reserve Bulletin* also carries the estimates for recent months with the call report data for selected back years. Historical data beginning 1914 and explanatory footnotes are shown in *Banking and Monetary Statistics, 1914-1941*. Seasonally adjusted data beginning in 1948 are shown in *Banking and Monetary Statistics, 1941-1970* and subsequent data, with revised past data, are shown in the *Annual Statistical Digest* published each year.

RESERVES AND BORROWINGS

Aggregate data seasonally adjusted and not seasonally adjusted are published weekly by the Board of Governors of the Federal Reserve System in the H.3(502) statistical release, "Aggregate Reserves and Member Bank Deposits" and monthly in the *Federal Reserve Bulletin*. In addition, weekly data are published not seasonally adjusted in the Board's H.4.1(503) statistical release, "Factors Affecting Bank Reserves and Condition Statement of F. R. Banks"; and seasonally adjusted in the H.9(511) statistical release, "Weekly Summary of Banking and Credit Measures." Background information on reserves and historical data not seasonally adjusted are presented in *Banking and Monetary Statistics 1949-1970* and *Banking and Monetary Statistics 1914-1941* (Board of Governors of the Federal Reserve System).

SOURCES AND USES OF FUNDS, NONFARM NONFINANCIAL CORPORATE BUSINESS

DESCRIPTION OF SERIES

The sources and uses data are based on the flow of funds accounts that are published quarterly by the Federal Reserve Board. They give a comprehensive picture of the financial lending and borrowing transactions of the U.S. economy. These measures integrate the statistical series both on the sources and uses of funds in financial markets and the linkages between these financial activities and the nonfinancial income and expenditures in the national economic accounts.

STATISTICAL PROCEDURES

Data for "Internal Sources" and "Purchase of Physical Assets" are from the national income and

products accounts (NIPA) of the Department of Commerce. Data on external sources and financial assets are compiled from numerous sources, including the tabulation of current assets and liabilities shown on the accompanying table; the "Quarterly report for Manufacturing, Mining, and Trade Corporations," published by the Federal Trade Commission; "U.S. International Transactions," a regular quarterly article in the *Survey of Current Business*; data from the table on New Security Issues of Corporations, in the monthly *Federal Reserve Bulletin*, whose original source is the Securities and Exchange Commission; and, for banking and mortgage data, the Federal Reserve.

TABLE 34.—Sources and Uses of Funds, Nonfarm Nonfinancial Corporate Business, 1946-79

[Billions of dollars]

Year	Sources							Uses			
	Total	In- ternal ¹	External				Total	Purchase of physical assets ³	Increase in financial assets	Discrep- ancy (sources less uses)	
			Total	Credit market funds ²		Other					
				Total	Long- term						Short- term
1946.....	18.4	7.8	10.6	6.9	4.6	2.3	3.7	17.1	18.5	-1.4	1.3
1947.....	26.7	12.6	14.1	8.3	6.4	2.0	5.8	25.3	17.0	8.4	1.4
1948.....	28.5	18.8	9.8	6.5	6.4	.1	3.3	24.9	19.9	5.0	3.6
1949.....	19.7	19.3	.4	3.1	4.2	-1.1	-2.7	17.9	14.4	3.5	1.9
1950.....	41.8	17.8	24.0	8.1	5.3	2.8	15.9	39.9	23.6	16.4	1.9
1951.....	35.9	19.7	16.2	10.5	8.0	2.5	5.7	37.2	29.8	7.4	-1.3
1952.....	29.2	21.2	8.0	9.5	8.2	1.3	-1.5	29.1	24.5	4.6	.1
1953.....	27.3	21.1	6.1	5.6	5.8	-.2	.5	27.7	25.4	2.3	-.5
1954.....	29.1	23.5	5.6	6.5	6.1	.3	-.8	27.7	22.8	4.9	1.4
1955.....	52.0	28.8	23.2	10.2	7.8	2.4	13.1	49.2	32.7	16.5	2.8
1956.....	44.0	28.7	15.3	12.8	9.8	3.1	2.5	41.1	37.1	4.0	2.9
1957.....	42.2	30.4	11.8	12.2	11.0	1.3	-.4	39.4	35.2	4.2	2.9
1958.....	41.3	29.6	11.7	10.5	10.2	.3	1.2	38.7	27.9	10.8	2.5
1959.....	55.2	35.0	20.1	12.2	9.4	2.8	7.9	51.7	37.5	14.2	3.5
1960.....	47.6	34.7	12.9	11.9	8.6	3.3	1.0	40.6	38.0	2.7	7.0
1961.....	54.5	35.3	19.2	12.5	11.0	1.5	6.7	50.4	37.2	13.2	4.1
1962.....	58.8	41.6	17.2	12.8	10.7	2.1	4.3	54.9	43.8	11.1	3.9
1963.....	66.0	44.5	21.5	12.2	9.7	2.6	9.3	59.1	44.9	14.2	6.9
1964.....	72.6	50.1	22.5	14.8	10.9	3.9	7.7	64.1	50.7	13.4	8.5
1965.....	91.1	56.1	35.1	20.6	13.5	7.2	14.4	82.2	62.0	20.2	9.0
1966.....	96.8	60.5	36.3	25.4	19.6	5.8	10.9	90.5	75.7	14.8	6.3
1967.....	93.9	61.3	32.7	29.8	23.8	5.9	2.9	87.5	73.0	14.5	6.4
1968.....	114.6	62.3	52.2	31.8	22.6	9.2	20.4	105.3	77.2	28.2	9.2
1969.....	118.6	61.7	57.0	38.6	25.7	12.9	18.4	113.1	84.3	28.8	5.6
1970.....	104.4	58.9	45.5	40.7	34.2	6.5	4.9	95.9	80.3	15.6	8.5
1971.....	127.8	68.6	59.3	45.2	41.9	3.3	14.1	119.6	86.0	33.5	8.2
1972.....	161.6	80.8	80.8	58.2	45.3	12.9	22.6	145.8	100.3	45.6	15.8
1973.....	200.0	83.8	116.2	73.0	49.2	23.8	43.1	185.6	123.3	62.3	14.4
1974.....	191.3	75.7	115.6	82.1	51.6	30.6	33.4	179.0	134.7	44.4	12.2
1975.....	150.0	106.8	43.2	37.9	44.1	-6.3	5.3	133.0	99.9	33.2	16.9
1976.....	209.7	125.3	84.4	60.7	49.1	11.6	23.8	183.3	139.0	44.3	26.4
1977.....	242.3	139.9	102.3	79.9	53.0	26.9	22.4	216.8	169.9	46.9	25.5
1978.....	295.7	148.8	146.9	94.7	61.5	33.2	52.2	274.3	195.9	78.3	21.4
1979.....	341.3	158.3	183.0	114.3	70.5	43.8	68.7	319.5	221.3	98.2	21.9

¹ Undistributed profits (after inventory valuation and capital consumption adjustments), capital consumption allowances, and foreign branch profits.² Maturity split is approximate: Long-term consists of stocks, bonds, multi-family and commercial mortgages, and 40 percent of bank loans. Short-term consists of home mortgages, 60 percent of bank loans, commercial paper, finance company loans, bankers' acceptances, and U.S. Government loans.³ Plant and equipment, residential structures, inventory investment, and mineral rights from U.S. Government.

Source: Board of Governors of the Federal Reserve System.

RELATION TO OTHER SERIES

The sources and uses data are integrated with the saving and investment components of the NIPA. This interface provides measures of the different types of credit and equity financing used for expenditures by households, business, governments and the rest of the world. Thus, for each of these nonfinancial sectors, estimates are prepared for the external sources of funds that are used to supplement internally generated income derived from current production to support outlays for goods, services, and investments, and changes in cash balances.

USES AND LIMITATIONS

The flow of funds data provide the framework for developing projections of capital financing that are both realistic and consistent with projections of gross national product. This type of analysis is one of several factors used by the Federal

Reserve in establishing targets for monetary policy associated with overall employment and anti-inflation goals. It is also used by financial industries for projecting the probable trend of interest rates.

In the integration of the data with the economic accounts, measured uses of funds (within the household capital account) are typically larger than measured sources of funds. However, for business the relation is the opposite, with sources larger than uses. These discrepancies reflect inadequacies in the underlying financial and nonfinancial data.

REFERENCES

For a more detailed description of the series, see *Introduction to Flow of Funds*, Board of Governors of the Federal Reserve System, February 1975. Tables are also published in the *Federal Reserve Bulletin* (annually and semi-annually), and in the *Flow of Funds Accounts* (quarterly).

CURRENT ASSETS AND LIABILITIES OF NONFINANCIAL CORPORATIONS

DESCRIPTION OF SERIES

The Federal Trade Commission and Federal Reserve Board jointly provide quarterly measures of current assets and liabilities for nonfinancial corporations. This series on corporate liquidity gives the major components of working capital for a significant segment of U.S. business.

The data were previously compiled by the Securities and Exchange Commission. The FTC-FRB series, whose methodology is a somewhat different methodology from the SEC series, begins with the end of 1974. This is the first period for which all of the data required for the new compilation were available. The fourth quarter of 1974 marks the linkage point between the old and the new tabulations.

TABLE 35.—*Current Assets and Liabilities of Nonfinancial Corporations, 1961-79*

[Billions of dollars, except as noted]

End of year	Current assets						Current liabilities				Current ratio ³
	Total	Cash ¹	U.S. Government securities ²	Notes and accounts receivable	Inventories	Other current assets	Total	Notes and accounts payable	Other current liabilities	Net working capital	
SEC series: ⁴											
1961.....	254.7	34.8	16.5	97.9	95.0	10.5	123.7	84.4	39.3	131.0	2.059
1962.....	269.7	37.1	16.8	103.2	100.5	12.1	132.4	88.7	43.7	137.3	2.037
1963.....	288.2	39.8	16.7	110.5	106.8	14.4	145.5	97.0	48.5	142.7	1.981
1964.....	305.6	40.5	15.8	119.9	113.1	16.3	156.6	104.9	51.7	149.0	1.951
1965.....	336.0	42.8	14.4	134.1	126.6	18.1	178.8	121.5	57.3	157.2	1.879
1966.....	364.0	41.9	13.0	146.6	142.8	19.7	199.4	137.5	61.9	164.6	1.825
1967.....	386.2	45.5	10.3	155.3	153.1	22.0	211.3	147.1	64.2	174.9	1.828
1968.....	426.5	48.2	11.5	173.9	166.0	26.9	244.1	168.8	75.3	182.4	1.747
1969.....	473.6	47.9	10.6	197.0	186.4	31.6	287.8	199.2	88.6	185.7	1.646
1970.....	492.3	50.2	7.7	206.1	193.3	35.0	304.9	211.3	93.6	187.4	1.615
1971.....	529.6	53.3	11.0	221.1	200.4	43.8	326.0	220.5	105.5	203.6	1.625
1972.....	599.3	59.0	10.6	248.2	225.7	55.8	375.6	282.9	92.7	223.7	1.595
1973.....	697.8	66.3	12.8	288.5	263.9	66.4	450.9	340.3	110.7	246.9	1.548
1974.....	790.7	71.1	12.3	322.1	313.6	71.7	530.4	402.3	128.1	260.3	1.491
FTC-FRB series: ⁵											
1974.....	735.4	73.2	11.1	265.8	319.5	65.9	453.4	269.8	183.6	282.0	1.622
1975.....	759.0	82.1	19.0	272.1	315.9	69.9	451.6	264.2	187.4	307.4	1.681
1976.....	826.3	87.3	23.6	293.3	342.9	79.2	492.7	282.0	210.6	333.6	1.677
1977.....	900.9	94.3	18.7	325.0	375.6	87.3	546.8	313.7	233.1	354.1	1.648
1978.....	1,028.0	103.7	17.8	381.9	428.3	96.3	661.9	375.1	286.8	366.1	1.553
1979.....	1,197.7	115.8	17.6	451.8	503.0	109.5	801.7	460.5	341.2	396.0	1.494

¹ Includes time certificates of deposit.² Includes Federal agency issues.³ Total current assets divided by total current liabilities.⁴ Based on data from "Statistics of Income," Department of the Treasury. Series not available after 1974.⁵ Based on data from "Quarterly Financial Report for Manufacturing, Mining, and Trade Corporations," Federal Trade Commission.

NOTE—Series exclude banks, savings and loan associations, insurance companies, investment companies, finance companies (personal and commercial), real estate companies, and security and commodity brokers, dealers, and exchanges. See "Federal Reserve Bulletin," July 1978, for details regarding the series.

Sources: Board of Governors of the Federal Reserve System, Federal Trade Commission, and Securities and Exchange Commission.

STATISTICAL PROCEDURES

The most important data source in the FTC's *Quarterly Financial Report for Manufacturing, Mining, and Trade Corporations (QFR)*. The QFR is based on a probability sampling procedure in which corporations are stratified by asset size and sampled at various rates. The basis of company consolidation excludes foreign branches, finance subsidiaries, and, to a large degree, subsidiaries in publicly regulated industries. The data are thus consistent with national totals of business operations such as profit and capital expenditures that omit foreign operations, and the coverage is consistent with use of other data sources for financial and regulated industries. These data are periodically benchmarked to the Internal Revenue Service *Statistics of Income*.

For industries subject to Federal regulation, quarterly information is derived from FTC mail surveys of working capital positions of major companies in electric, gas, and telephone indus-

tries, and from regulatory reports for railroads and airlines. The series is benchmarked directly to annual tabulations of electric and gas utilities, telephone companies, railroads, and airlines that are prepared by the regulatory agencies.

For the remainder of the nonfinancial corporate universe, current totals are derived indirectly. The benchmark for this group is the *Statistics of Income*, for which 1975 is the latest year available. For succeeding years, the estimates are extrapolated forward on the basis of historical relationships to the industries in the above groups for which current data are available.

USES AND LIMITATIONS

These data are used in preparing the national economic and flow of funds accounts and in their own right for investment analyses. Since the indirect estimating techniques for the construction and service industries have been in use only for a short time, their reliability has not yet been assessed.

REFERENCES

Current estimates are published monthly in the *Federal Reserve Bulletin*. For a more complete de-

scription, see the *Federal Reserve Bulletin*, July 1978, pages 533-37. Industry detail is available upon request.

INTEREST RATES AND BOND YIELDS

Three-Month Treasury Bills

Three-month Treasury bills are auctioned and issued weekly. An average interest rate, expressed on a bank discount basis, is computed for each weekly issuance, on the basis of varying prices at which portions of the issue are awarded to the highest bidders. The monthly series presented in *Economic Indicators* is a simple average of the auction average rates for the 4 or 5 issues sold during the month.

The series is useful as a measure of a short-term rate on default free borrowing. Issuance or "auction" rates are related to but not typically identical with average "market" rates, also published by the Federal Reserve, which are averages based on daily trading quotations for the issue closest in maturity to 3 months.

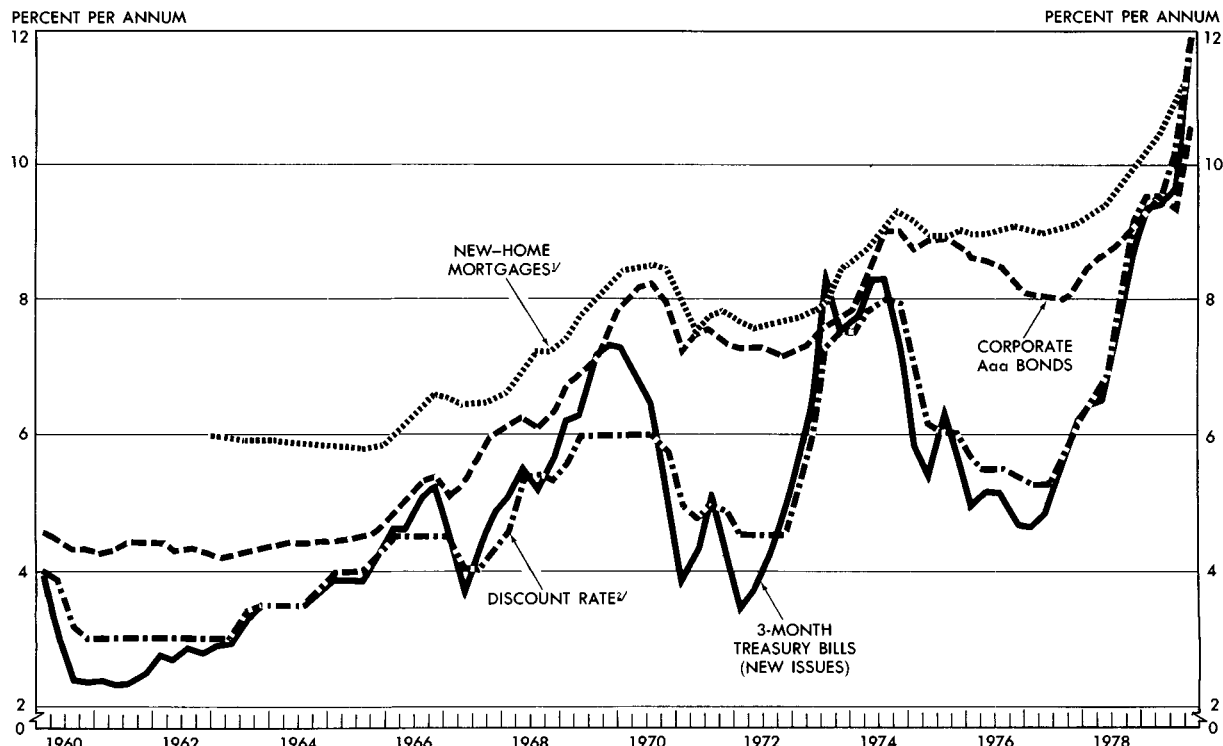
The monthly averages are issued in a Federal Reserve statistical release G.13 (415), "Selected Interest Rates," and are published in the *Federal Reserve Bulletin*. Fuller information on the indi-

vidual issues appears in the *Treasury Bulletin*. Textual discussion appears in *Banking and Monetary Statistics*, with yield data back to 1929.

Constant Maturities Treasury Securities

To obtain yields on Treasury securities at constant maturity, a yield curve is constructed based on bid yields quoted in the secondary market on the most recent, actively traded marketable Treasury securities. To construct a yield curve for any given day, closing yields of selected outstanding Treasury securities are plotted on a graph, with the maturity date of each security measured on the horizontal axis and the yield of the security on the vertical axis. A single, continuous yield curve is then drawn through the midst of the plotted points. Yield values are then read from the curve at fixed maturities—including three years and ten years. By this technique, a yield may be estimated for, say, the three year maturity even if no outstanding Treasury security has exactly three years remaining to maturity.

Chart 9.—INTEREST RATES AND BOND YIELDS



^{1/}Effective rate on conventional mortgages in the primary market.

^{2/}Federal Reserve Bank of New York; average effective rate.

SOURCES: DEPARTMENT OF THE TREASURY, BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM, FEDERAL HOME LOAN BANK BOARD, AND MOODY'S INVESTORS SERVICE.

These yield series—together with yields for additional maturities—are published monthly in the *Federal Reserve Bulletin* and in the Federal Reserve statistical release G.13 (415) “Selected Interest Rates,” and weekly in the Federal Reserve statistical release H.15 (519), “Selected Interest Rates.”

High-Grade Municipal Bonds

This series, compiled by Standard & Poor's Corporation, is an arithmetic average of the yield to maturity of 15 high-grade tax-exempt, general obligation domestic municipal bonds, each with approximately 20 years to maturity. The issues are selected on the basis of quality, trading activity, and geographic representation. The yields are based on Wednesday's closing bid quotation, and the monthly figures are averages of the four or five weekly figures for the month. Prior to 1929 the monthly figures were based on an average of the high and low prices for the month. The series is available from 1929 on a weekly, and from 1900 on a monthly basis.

The series is published weekly in Standard & Poor's *Outlook* and *Bond Outlook*. Monthly and annual average figures back to 1900 and description of the series and list of the issues used appear in the 1980 edition of Standard & Poor's *Security Price Index Record*.

Corporate Aaa Bonds

This series measures the currently prevailing maturity yield on seasoned long-term corporate bonds of the highest quality, as reflected in the yields of selected bonds rated Aaa by Moody's Investors service. The formula for this series was established in 1928 to include 10 industrial, 10 railroad, and 10 public utility bonds. Since 1935 however, there have not always been 10 suitable bonds for each classification. The Aaa series currently includes 10 industrials and 10 public utilities.

The series was calculated on a monthly basis from 1919 through 1931, and has been calculated daily beginning in 1932. Weekly and monthly figures are averages of daily figures; annual figures are averages of 12 monthly figures.

The daily yield for each selected bond is computed on the basis of closing price, as reported in the dealers' asked quotation, adjusted occasionally for abnormally wide spreads between the bid and asked quotation or for other temporarily distorting factors.

Issues included in each average are selected to represent typical long-term Aaa bonds. Occasional substitutions in the bond list have been made when a bond has been called or sells too high above its call price, or when approaching maturity. Suitable adjustments (usually small) are gradually introduced to prevent such substitutions from impairing the comparability of the series.

This series is a useful general indicator of the level and movement of average yields of selected seasoned bonds with sufficiently long maturities and other features to afford adequate measures of long-term interest rates. They are not a measure of all Aaa bonds available to the investor, particularly those on new offerings; nor do they reflect changes in qualitative terms of borrowing such as call provisions.

The daily corporate bond yield averages are published weekly in *Moody's Bond Survey*, which includes from time to time the list of bonds. Historical monthly data and annual averages for these two series are available back to 1919, and are published in *Moody's Industrial Manual*.

Prime Commercial Paper

This series measures the prevailing rate on prime 4- to 6-months commercial paper. It is useful as a measure of the cost of open-market short-term credit available to large business borrowers of the highest credit standing.

The prevailing daily selling quotation is determined by the Federal Reserve Bank of New York on the basis of information obtained through continuing contacts with New York City dealers handling the bulk of the volume of commercial paper of the inventory type, and less frequent reports concerning rates outside New York. Monthly and weekly figures are averages of daily offering rates.

TABLE 36.—Interest Rates and Bond Yields, 1929-79

[Percent per annum]

Year	U.S. Treasury security yields		High-grade municipal bonds (Standard & Poor's)	Corporate rate Aaa bonds (Moody's)	Prime commercial paper, 4-6 months ³	Discount rate (N. Y. F.R. Bank) ⁴	Prime rate charged by banks ⁴	New-home mortgage yields (FHLBB) ⁵
	3-month bills ¹	Constant maturities ² 3-year 10-year						
1929			4.27	4.73	5.85	5.16	5½-6	
1930			4.07	4.55	3.59	3.04	3½-6	
1931	1.402		4.01	4.58	2.64	2.11	2¾-5	
1932	.879		4.65	5.01	2.73	2.82	3¼-4	
1933	.515		4.71	4.49	1.73	2.56	1½-4	
1934	.256		4.03	4.00	1.02	1.54	1.50	
1935	.137		3.40	3.60	.76	1.50	1.50	
1936	.143		3.07	3.24	.75	1.50	1.50	
1937	.447		3.10	3.26	.94	1.33	1.50	
1938	.053		2.91	3.19	.81	1.00	1.50	
1939	.023		2.76	3.01	.59	1.00	1.50	
1940	.014		2.50	2.84	.56	1.00	1.50	
1941	.103		2.10	2.77	.53	1.00	1.50	
1942	.326		2.36	2.83	.66	1.00	1.50	
1943	.373		2.06	2.73	.69	1.00	1.50	
1944	.375		1.86	2.72	.73	1.00	1.50	
1945	.375		1.67	2.62	.75	1.00	1.50	
1946	.375		1.64	2.53	.81	1.00	1.50	
1947	.594		2.01	2.61	1.03	1.00	1½-1¾	
1948	1.040		2.40	2.82	1.44	1.34	1¾-2	
1949	1.102		2.21	2.66	1.49	1.50	2.00	
1950	1.218		1.98	2.62	1.45	1.59	2.07	
1951	1.552		2.00	2.86	2.16	1.75	2.56	
1952	1.766		2.19	2.96	2.33	1.75	3.00	
1953	1.931	2.47	2.85	2.72	3.20	2.52	1.99	3.17
1954	.953	1.63	2.40	2.37	2.90	1.58	1.60	3.05
1955	1.753	2.47	2.82	2.53	3.06	2.18	1.89	3.16
1956	2.658	3.19	3.18	2.93	3.36	3.31	2.77	3.77
1957	3.267	3.98	3.65	3.60	3.89	3.81	3.12	4.20
1958	1.839	2.84	3.32	3.56	3.79	2.46	2.15	3.83
1959	3.405	4.46	4.33	3.95	4.38	3.97	3.36	4.48
1960	2.928	3.98	4.12	3.73	4.41	3.85	3.53	4.82
1961	2.378	3.54	3.88	3.46	4.35	2.97	3.00	4.50
1962	2.778	3.47	3.95	3.18	4.33	3.26	3.00	4.50
1963	3.157	3.67	4.00	3.23	4.26	3.55	3.23	4.50
1964	3.549	4.03	4.19	3.22	4.40	3.97	3.55	4.50
1965	3.954	4.22	4.28	3.27	4.49	4.38	4.04	4.54
1966	4.881	5.23	4.92	3.82	5.13	5.55	4.50	5.63
1967	4.321	5.03	5.07	3.98	5.51	5.10	4.19	5.61
1968	5.339	5.68	5.65	4.51	6.18	5.90	5.17	6.30
1969	6.677	7.02	6.67	5.81	7.03	7.83	5.87	7.96
1970	6.458	7.29	7.35	6.51	8.04	7.72	5.95	7.91
1971	4.348	5.65	6.16	5.70	7.39	5.11	4.88	5.72
1972	4.071	5.72	6.21	5.27	7.21	4.69	4.50	5.25
1973	7.041	6.95	6.84	5.18	7.44	8.15	6.45	8.03
1974	7.886	7.82	7.56	6.09	8.57	9.87	7.83	10.81
1975	5.838	7.49	7.99	6.89	8.83	6.33	6.25	7.86
1976	4.989	6.77	7.61	6.49	8.43	5.35	5.50	6.84
1977	5.265	6.69	7.42	5.56	8.02	5.60	5.46	6.83
1978	7.221	8.29	8.41	5.90	8.73	7.99	7.46	9.06
1979	10.041	9.71	9.44	6.39	9.63	10.91	10.28	12.67

¹ Rate on new issues within period.² Yields on the more actively traded issues adjusted to constant maturities by the Treasury Department.³ Beginning November 1979, data are for 6-months paper.⁴ Average effective rate, except for prime rate for 1929-33 and 1947-48, which are ranges of the rate in effect during the period.⁵ Effective rate (in the primary market) on conventional mortgages, reflecting fees and charges as well as contract rate and assuming, on the average, repayment at end of 10 years. Rates beginning January 1973 not strictly comparable with prior rates.⁶ From October 30, 1942, to April 24, 1946, a preferential rate of 0.50 percent was in effect for advances secured by Government securities maturing in 1 year or less.

Sources: Department of the Treasury, Board of Governors of the Federal Reserve System, Federal Home Loan Bank Board (FHLBB), Moody's Investors Service, and Standard & Poor's Corporation.

Annual and monthly data for the period 1890–1941 and weekly data for the period 1919–1941 are available in *Banking and Monetary Statistics, 1914–1941*, August 1976. Annual, monthly, and weekly data for the period 1941–70 are available in *Banking and Monetary Statistics, 1941–1970*, September 1976. Annual, monthly, and weekly data for the period 1971–1978; are available in the *Annual Statistical Digest: 1971–1975; 1972–1976; 1973–1977; and 1974–1978*. Current data are available in the *Federal Reserve Bulletin* and the weekly H.15 (519) and monthly G.13 (415) releases “Selected Interest Rates.”

New Home Mortgage Yield (FHLBB)

This series measures average effective yields on fully amortized conventional first mortgage loans that are both secured by and for the purchase of newly built single-family nonfarm residential properties. Data are compiled by the Federal Home Loan Bank Board, in cooperation with the Federal Deposit Insurance Corporation, from information received by a sample of major mortgage lenders.

The effective interest rate includes the contract interest rate plus fees and charges amortized over a ten-year period, the latter being a rough estimate of the actual average life of conventional mortgages. Fees and charges are defined to include all fees, commissions, discounts, and “points” paid by the borrower, or seller, in order to obtain a loan, including any general charge for making the loan and specific charges made to offset specific lending expenses. Charges for mortgage, credit-life, or property insurance, property transfer costs, and title search and insurance costs are excluded, but other fees are reported without deducting payments made by the lender to others for services rendered.

The major mortgage lenders surveyed consist of savings and loan associations, mortgage bankers, commercial banks, and mutual savings banks. Such lenders have accounted for some 90 percent of all conventional home mortgage loan originations since 1972. Substantially all of the largest lenders of the covered types are included in the survey sample, which also includes smaller institutions randomly selected from a number of geographic area/lender size strata with the sampling fraction being reduced as size declines. Information reported by individual lenders is weighted on the basis of the relationship of the single-family conventional mortgage holdings (or other measure of size) of the lenders in the sample in each of a

number of strata (defined in terms of lender type, lender size, and geographic location) to the holdings of all lenders in the stratum.

Federal Reserve Discount Rate

The discount rate is the charge on loans made to member commercial banks by Federal Reserve Banks. Each Reserve Bank establishes its own discount rate, subject to review by the Board of Governors of the Federal Reserve System. In practice, the discount rates are generally uniform among the 12 Reserve Banks. The current discount rate is published every day in the *Wall Street Journal* under money rates.

Federal Reserve loans to member banks are for short-term adjustments in their reserves, and are not generally available for extended periods. For further information, see The Federal Reserve Act, section 10(b), 11(b), 13, and 14(d); Regulation A of the Board of Governors of the Federal Reserve System (12 CFR 201); and *Lending Functions of the Federal Reserve Banks: A History* (Board of Governors of the Federal Reserve System, Washington, D.C., 1973).

Average Prime Rate Charged by Banks

This series indicates the interest rate that banks charge their most credit-worthy business customers on short-time loans. The prime rate is the base from which rates charged on loans to other business customers are scaled upward. The prime rate is not as sensitive as rates on money market instruments which fluctuate daily in response to short-term changes in supply and demand. Rather its movements tend to be infrequent, changing only at intervals of at least one quarter of a percentage point. Major banks currently tend to change their prime rates in response to increasing differentials with selected open market money rates.

The data for this series are monthly averages computed by multiplying the “predominant” prime rate (the rate charged by the majority of 30 large money market banks) in effect each day during a month by the number of days it was in effect, summing these products, and dividing by the total number of days. Data begun in 1945 are measured in percentage points and are not seasonally adjusted.

Reference materials for this series include: *Banking and Monetary Statistics, 1941–1970; Annual Statistical Digest, 1971–1975, 1972–1976, 1973–1977, and 1974–1978; the Federal Reserve Bulletin* and “Selected Interest Rates” (H15 (519)-weekly and G13 (415)-monthly).

COMMON STOCK PRICES AND YIELDS

Stock Price Measures

The stock price measures are computed regularly throughout the day, reported by their respective proprietor, displayed on stock broker tickers, and sent over the wires of news services. Table entries are annual averages of daily closing figures.

New York Stock Exchange Composite Index

In 1966, the New York Stock Exchange (NYSE) began publishing daily stock price indexes, consisting of a composite index for all common stocks listed on the NYSE and four subgroup indexes (industrial, transportation, utility, and financial). The indexes are basically a measure of the change in aggregate market value of NYSE-listed common shares, adjusted to eliminate the nonprice effects of changes in firm capitalization and exchange listings or delistings.

The market value for each stock is obtained by multiplying its price per share by the number of shares listed. The aggregate market value, which is the sum of the individual market values, is then divided by the market value on the base date, and this quotient is in turn multiplied by the base value of the index. The base value of 50.00 was selected because it was reasonably close to the actual average per share price of all NYSE-listed common stocks on the base date as of December 31, 1965.

In order to have the index reflect only stock market activity and eliminate the influence of some corporate actions, frequent adjustments are required. For example, new listings and delistings require an increase or decrease in the base-date market value in direct proportion to the change in total market value account for by the new listings or delistings. Stock splits and stock dividends do not require an adjustment to the base-date market value because the corporation's capitalization is not changed. In contrast, for rights offerings, an adjustment in the base is made to compensate for the value of the new shares being added to the current value of the issue.

The NYSE reports hourly computations of the composite and the four subgroup indexes and provides daily opening, high, low, and closing levels. Data for the composite are available back to 1964 (daily) and 1939 (weekly).

Dow Jones Industrial Average

The Dow Jones Industrial Average (DJIA) is the most well-known barometer of stock market

developments. The 30 NYSE-listed common stocks in the DJIA account for a disproportionate amount of the aggregate value of NYSE shares. As of the end of 1978, the 30 Dow Jones Industrials made up 20 percent of the total market value of all common shares of the 1,542 corporations listed on the NYSE.

The DJIA measures stock prices by summing per share prices of all 30 companies and then dividing by a factor to adjust for stock splits, mergers, or replacements. Adjustments for rights offerings that increase firm capitalization are not made since the DJIA is not directly affected by changes in the number of shares outstanding.

Dow Jones, Inc., also compiles averages for utilities, transportation firms, and the 65 stocks (30 industrial, 15 utility, and 20 transportation stocks). Each of these is calculated semi-hourly with closing and high and low values reported for each day. Historically consistent data series are available back to 1885.

Standard and Poor's Composite Index

The Standard and Poor's composite index measures the change in aggregate market value of 500 common stocks and is commonly referred to as the S&P 500. The sample includes a few over-the-counter issues but is primarily composed of NYSE-listed stocks. At the end of 1978, the 500 stocks had an aggregate market value of nearly \$600 billion (75 percent of the total NYSE market value at year-end 1978).

The S&P index measures fluctuations in current market values of the 500 component stocks in essentially the same manner as that described for the NYSE composite. Similarly, appropriate adjustments are made for stock dividends, splits, consolidations, or other related events to ensure that the index will reflect only price movements. The base of the index is the aggregate value of the shares of these securities in the period 1941-1943 and is set equal to 10.

The Standard and Poor's Corporation currently provides hourly readings for the composite and the four main subgroups (400 industrial, 40 financial, 40 utility, and 20 transportation stocks). For each of these, daily high, low, and closing values are computed and reported. Historically consistent data series are available back to 1928 (daily) and to 1926 (weekly).

It should be noted that, although the S&P 500 consists of some over-the-counter issues, the movement of the index is not expected to reflect average price movements of over-the-counter stocks.

TABLE 37.—Common Stock Prices and Yields, 1929-79

Year	New York Stock Exchange indexes (Dec. 31, 1965=50) ²					Dow-Jones industrial average ³	Standard & Poor's composite index (1941-43=10) ⁴	Common stock yields (percent) ⁵	
	Com- posite	Indus- tri-als	Transpor- tation	Utility	Finance			Dividend- price ratio ⁶	Earnings- price ratio ⁷
1929						311.24	26.02	3.47	7.51
1930						236.34	21.03	4.51	6.32
1931						138.58	13.66	6.15	7.51
1932						64.57	6.93	7.43	5.95
1933						83.73	8.96	4.21	4.36
1934						98.28	9.84	3.72	5.16
1935						120.00	10.60	3.82	5.66
1936						162.25	15.47	3.44	5.76
1937						166.36	15.41	4.86	8.34
1938						132.44	11.49	5.18	7.00
1939	7.08					142.66	12.06	4.05	6.73
1940	6.68					134.74	11.02	5.59	9.64
1941	6.06					121.82	9.82	6.82	11.68
1942	5.30					107.20	8.67	7.24	11.49
1943	7.01					134.81	11.50	4.93	8.79
1944	7.64					143.32	12.47	4.86	7.22
1945	9.27					169.82	15.16	4.17	6.35
1946	10.56					191.65	17.08	3.85	5.61
1947	9.26					177.58	15.17	4.93	9.66
1948	9.37					179.95	15.53	5.54	12.72
1949	9.02					179.48	15.23	6.59	15.48
1950	10.87					216.31	18.40	6.57	13.99
1951	13.08					257.64	22.34	6.13	11.82
1952	13.81					270.76	24.50	5.80	9.47
1953	13.67					275.97	24.73	5.80	10.26
1954	16.19					333.94	29.69	4.95	8.57
1955	21.54					442.72	40.49	4.08	7.95
1956	24.40					493.01	46.62	4.09	7.55
1957	23.67					475.71	44.38	4.35	7.89
1958	24.56					491.66	46.24	3.97	6.23
1959	30.73					632.12	57.38	3.23	5.78
1960	30.01					618.04	55.85	3.47	5.90
1961	35.37					691.55	66.27	2.98	4.62
1962	33.49					639.76	62.38	3.37	5.82
1963	37.51					714.81	69.87	3.17	5.50
1964	43.76					834.05	81.37	3.01	5.32
1965	47.39					910.88	88.17	3.00	5.59
1966	46.15	46.18	50.26	45.41	44.45	873.60	85.26	3.40	6.63
1967	50.77	51.97	53.51	45.43	49.82	879.12	91.93	3.20	5.73
1968	55.37	58.00	50.58	44.19	65.85	906.00	98.70	3.07	5.67
1969	54.67	57.44	46.96	42.80	70.49	876.72	97.84	3.24	6.08
1970	45.72	48.03	32.14	37.24	60.00	753.19	83.22	3.83	6.45
1971	54.22	57.92	44.35	39.53	70.38	884.76	98.29	3.14	5.41
1972	60.29	65.73	50.17	38.48	78.35	950.71	109.20	2.84	5.50
1973	57.42	63.08	37.74	37.69	70.12	923.88	107.43	3.06	7.12
1974	43.84	48.08	31.89	29.79	49.67	759.37	82.85	4.47	11.59
1975	45.73	50.52	31.10	31.50	47.14	802.49	86.16	4.31	9.15
1976	54.46	60.44	39.57	36.97	52.94	974.92	102.01	3.77	8.90
1977	53.69	57.86	41.09	40.92	55.25	894.63	98.20	4.62	10.79
1978	53.70	58.23	43.50	39.22	56.65	820.23	96.02	5.28	12.03
1979	58.32	64.76	47.34	38.21	61.42	844.40	103.01	5.45	13.46

¹ Averages of daily closing prices, except New York Stock Exchange data through May 1964 are averages of weekly closing prices.

² Includes all the stocks (more than 1,500 in 1979) listed on the New York Stock Exchange.

³ Includes 30 stocks.

⁴ Includes 500 stocks.

⁵ Standard & Poor's series, based on 500 stocks in the composite index.

⁶ Aggregate cash dividends (based on latest known annual rate) divided by aggregate market value based on Wednesday closing prices. Monthly data are averages of weekly figures; annual data are averages of monthly figures.

⁷ Ratio of quarterly earnings after taxes (seasonally adjusted annual rate) to price index for last day of quarter. Annual ratios are averages of quarterly ratios.

NOTE.—All data relate to stocks listed on the New York Stock Exchange.

Sources: New York Stock Exchange, Dow-Jones & Co., Inc., and Standard & Poor's Corporation.

Common Stock Yields

Dividend-Price Ratio

The dividend-price ratio compares the aggregate quarterly cash dividends, converted to an annual rate, paid by the 500 common stocks in the S&P composite index with their aggregate market value at the end of the quarter. Annual data are averages of the four quarterly ratios.

Earnings-Price Ratio

The earnings-price ratio compares the aggregate quarterly earnings, adjusted for seasonal patterns and converted to an annual basis, of the 500 companies in the S&P composite index with the end-of-quarter aggregate market value of their common stocks. Since 1935, annual data have been averages of the four quarterly ratios. Prior to that time, annual data were based on annual earnings and year-end prices.

FEDERAL FINANCE

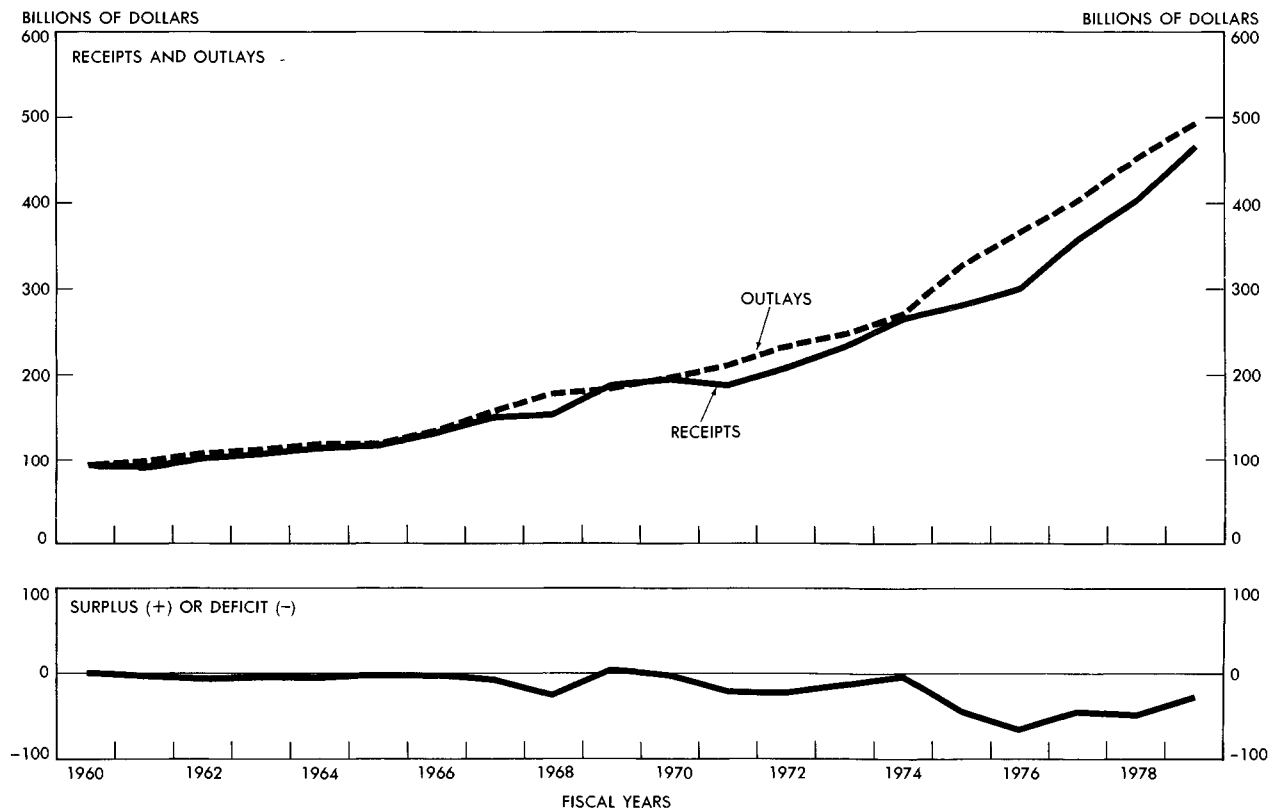
FEDERAL BUDGET RECEIPTS, OUTLAYS, AND DEBT

DESCRIPTION OF SERIES

Monthly data on receipts, outlays, surplus or deficit, and debt are shown cumulatively for the current fiscal year and for the corresponding months of the previous fiscal year. The Federal budget (sometimes called the "unified budget") is the conventional measure of financial transactions of the Federal Government. It includes all tax collections and other receipts and—with a few exceptions, generally specified by law—all spending by the Federal Government. Included in the budget are both Federal funds (mainly composed of the general fund) and trust funds (such as social security).

Budget receipts are recorded net of refunds; they are recorded on a cash basis (i.e., collections are recorded upon receipt of the cash, and refunds are recorded when the refund checks are issued). Budget receipts generally reflect the amount of money, net of refunds, collected by the Government from the public through the exercise of governmental or sovereign power. They include taxes and compulsory social insurance contributions and also include noncompulsory collections of money that are similar and closely related to compulsory payments (e.g., supplementary medical insurance premiums), as well as receipts from a number of other sources such as fees and fines and deposits of earnings by the Federal Reserve System.

Chart 10.—FEDERAL BUDGET RECEIPTS AND OUTLAYS AND DEBT



SOURCES: DEPARTMENT OF THE TREASURY AND OFFICE OF MANAGEMENT AND BUDGET

All *budget outlays* (expenditures) except interest on the public debt are also recorded on a cash basis (i.e., when the payment checks are issued or offsetting collections are received). Interest to the public on the public debt is recorded on an accrual basis (i.e., interest incurred but not yet paid is counted as budget outlays and as an increase in Federal debt). Budget outlays include all payments (disbursements) for programs included in the budget and also include all offsetting collections. An offsetting collection may arise from either of two broad causes: (1) when receipts arise as payments from one Government account to another they are reflected as offsets to outlays rather than being included as budget receipts, and (2) receipts from market transactions (sale of goods or services, etc.) rather than from the exercise of sovereign power are recorded as offsets to budget outlays rather than as receipts.

A *budget surplus* exists whenever budget receipts exceed outlays; conversely, a *budget deficit* is when budget outlays exceed receipts.

Gross Federal debt (or "total" debt) is composed of all public debt issued by the Treasury. It also includes all borrowing by Federal agencies other than Treasury (such as the Tennessee Valley Authority).

Debt held by the public.—All Federal receipts and spending are accounted for by fund—the general fund, the Postal Service fund, the hospital insurance trust fund, etc. When funds other than the general fund own accumulated cash balances beyond current needs, the excess is normally invested in interest-earning Federal debt securities. This situation commonly occurs with regard to major trust funds (such as social security) and occasionally occurs for other funds. Hence, some significant portion of the gross (or "total") Federal debt is composed of debt owed by the Government to itself. When this internally held debt is excluded from the debt total, the result is debt held by the public. The primary factor affecting changes in the size of the debt held by the public is the total budget surplus or deficit. Because the trust fund surpluses that are included in the total budget surplus are generally invested in Federal funds debt securities, the Federal funds surplus or deficit is the primary cause of changes in gross Federal debt.

STATISTICAL PROCEDURES

Over time, numerous changes have been made in the budget coverage and in the accounting practices underlying the Federal budget.

The most significant change in the past several decades was adoption of the unified budget (first issued in January 1968). Data for all

fiscal years starting with 1940 have been revised to provide a historical time series as comparable as feasible with the current budget concepts, coverage, and practices. Such data are available in an annual Office of Management and Budget release entitled *Federal Government Finances*, which is issued shortly after the transmittal of each Federal budget. This publication is available without charge upon release from the Office of Management and Budget, Washington, D.C. 20503.

A description of the budget coverage and concepts is published annually in the Federal budget; budget definitions are also contained in various other documents such as the glossary published in the *Budget in Brief* and in the General Accounting Office publication *Terms Used in the Budgetary Process* (most recently issued in July 1977).

RELATION TO OTHER SERIES

With the adoption of the unified budget (January 1968), two preceding budget concepts—the administrative budget and the consolidated cash statement—became outmoded and were discontinued. The Federal funds portion of the unified budget (data for which are routinely published in the Office of Management and Budget and Treasury documents) is roughly analogous to the old administrative budget. The total (or unified) budget is roughly analogous to the old consolidated cash statement. The two alternative data series currently produced and widely used are (1) Federal receipts and expenditures in the national income and product accounts (see the section on Federal Budget, National Income Accounts Basis), and (2) Federal revenue and expenditures as reported by the Bureau of the Census.

The principal differences between the budget and the national accounts and Census series are as follows:

1. *Netting and grossing.*—The budget shows a somewhat larger portion of collections as offsetting collections (instead of receipts) than does the national accounts series and a significantly larger share than the Census series. In the national accounts certain offsetting collections from the public are recorded as business or personal nontax receipts, and Federal agency contributions to retirement and health insurance programs for Federal employees are treated as social insurance receipts; all of these are offsetting collections in the budget. In addition to the above, the Census generally includes all other offsetting collections from the public (such as interest income, sale of postal services, sale of electric power) as receipts rather than as offsets to expenditures.

TABLE 38.—Federal Budget Receipts and Outlays and Debt, 1940-79

[Billions of dollars]

Fiscal year	Receipts	Outlays	Surplus or deficit (-)	Federal debt (end of period)	
				Gross	Held by the public
1940.....	6.4	9.5	-3.1	50.7	42.8
1941.....	8.6	13.6	-5.0	57.5	48.2
1942.....	14.4	35.1	-20.8	79.2	67.8
1943.....	23.6	78.5	-54.9	142.6	127.8
1944.....	44.3	91.3	-47.0	204.1	184.8
1945.....	45.2	92.7	-47.5	260.1	235.2
1946.....	39.3	55.2	-15.9	271.0	241.9
1947.....	38.4	34.5	3.9	257.1	224.3
1948.....	41.8	29.8	12.0	252.0	216.3
1949.....	39.4	38.8	.6	252.6	214.3
1950.....	39.5	42.6	-3.1	256.9	219.0
1951.....	51.6	45.5	6.1	255.3	214.3
1952.....	66.2	67.7	-1.5	259.1	214.8
1953.....	69.6	76.1	-6.5	266.0	218.4
1954.....	69.7	70.9	-1.2	270.8	224.5
1955.....	65.5	68.5	-3.0	274.4	226.6
1956.....	74.5	70.5	4.1	272.8	222.2
1957.....	80.0	76.7	3.2	272.4	219.4
1958.....	79.6	82.6	-2.9	279.7	226.4
1959.....	79.2	92.1	-12.9	287.8	235.0
1960.....	92.5	92.2	.3	290.9	237.2
1961.....	94.4	97.8	-3.4	292.9	238.6
1962.....	99.7	106.8	-7.1	303.3	248.4
1963.....	106.6	111.3	-4.8	310.8	254.5
1964.....	112.7	118.6	-5.9	316.8	257.6
1965.....	116.8	118.4	-1.6	323.2	261.6
1966.....	130.9	134.7	-3.8	329.5	264.7
1967.....	149.6	158.3	-8.7	341.3	267.5
1968.....	153.7	178.8	-25.2	369.8	290.6
1969.....	187.8	184.5	3.2	367.1	279.5
1970.....	193.7	196.6	-2.8	382.6	284.9
1971.....	188.4	211.4	-23.0	409.5	304.3
1972.....	208.6	232.0	-23.4	437.3	323.8
1973.....	232.2	247.1	-14.8	468.4	343.0
1974.....	264.9	269.6	-4.7	486.2	346.1
1975.....	281.0	326.2	-45.2	544.1	396.9
1976.....	300.0	366.4	-66.4	631.9	480.3
TQ.....	81.8	94.7	-13.0	646.4	498.3
1977.....	357.8	402.7	-45.0	709.1	551.8
1978.....	402.0	450.8	-48.8	780.4	610.9
1979.....	465.9	493.7	-27.7	833.8	644.6

NOTE.—For 1976 and prior fiscal years, the year began on July 1 and ended on June 30. For example, fiscal year 1976 began July 1, 1975 and ended June 30, 1976. Under terms of the Congressional Budget Act of 1974 (P.L. 93-344), July 1 through September 30 of 1976 is a separate fiscal accounting period (commonly referred to as the transition quarter or TQ), and all subsequent fiscal years are to run from October 1 through the subsequent September 30.

Sources: Department of the Treasury and Office of Management and Budget.

2. *Timing.*—The timing of expenditures for interest on the public debt differs in the Census series from that recorded in the budget and the national accounts. Both the budget and national accounts record the interest as it accrues; the Census records the cash payment instead. There are no other

timing differences between the budget and Census series. In the national accounts most taxes on business are recorded at the time the economic activity takes place, which records the tax when it becomes a liability rather than when the taxes are actually collected; personal income taxes and

social insurance taxes in the national accounts are recorded at the time of payment by the taxpayer rather than when the money is received by the Government. The principal timing difference between the budget outlays and national accounts expenditures occurs for major procurement items purchased under fixed-price contracts; the national accounts record the cost when the item is delivered to the Government rather than when the item is paid for.

3. Coverage.—

(a) *Geographic.*—Neither the Census nor the national accounts include Puerto Rico, the Virgin Islands, or the U.S. territories or possessions as part of the State and local grouping. In the case of the Census data, this creates no difference in the national *total* with respect to budget figures. Federal grants to such entities are counted simply as direct Federal expenditures rather than as grants-in-aid. In the national accounts, a different situation prevails. Tax collections from and the budget payments to both the private sector and local governments in these areas are not recorded in the national accounts.

(b) *Lending.*—Lending is counted as budget outlays and loan repayments or loan asset sales as offsetting collections in the budget. Both the Census and national accounts series exclude lending, loan repayments, and loan asset sales.

(c) *Other.*—There is one additional major coverage difference between the budget and the Census figures. The budget includes deposits by States for unemployment insurance as budget receipts and payments for benefits under the unemployment program as budget outlays. The Census figures show the unemployment program as State revenue and expenditures rather than as Federal revenue and expenditures. The national accounts treat the unemployment program as a Federal program, as does the budget, but it includes another major coverage difference from the budget. Purchase and sale of land and Outer Continental Shelf land leases are not included in the national accounts, while they are included in both the budget and Census series.

USES AND LIMITATIONS

The main use for budget receipts and outlays is as a guide to executive and legislative budget and fiscal policy. Budget receipt and outlay figures for the current year and the budget year include estimates both under existing law and under changes in laws and programs as proposed by the President. The budget is the vehicle for congressional review and enactment of annual appropriation bills, and also is an important factor in the consideration of changes in tax legislation. Moreover,

the relationship between the total of budget receipts and budget outlays usually serves as the major determinant of increases or decreases in the debt held by the public. Finally, since this series is prepared in detail based on the Government's financial accounts, it is a basic source of data for various other series on Federal financial transactions that are important for economic analysis.

There are two basic areas of limitations on the use of Federal budgetary data: (1) since there is no State and local government finance series that is compiled on a basis completely compatible with the Federal budget, either the Census or the national accounts series is frequently used along with their respective State and local government finance figures to show total Government finances for the United States or to compare State and local finances with Federal finances, and (2) the Federal sector national accounts figures are an integral part of the total national income and product accounts, which constitute the primary system of measuring the size, composition, and changes in the economy. Consequently, the national accounts data are generally preferred by economists to budget data when examining the economic impact of the budget.

REFERENCES

The basic release of monthly budget receipts and expenditures data is made in the *Monthly Statement of Receipts and Expenditures of the United States Government* issued by the Department of the Treasury. Annual data are available in the *Budget of the United States Government* issued by the Office of Management and Budget, and are also reported in the *Combined Statement of Receipts, Expenditures, and Balances of the United States Government* issued by the Treasury Department. Data beginning with 1789 are published in the statistical appendix to the *Annual Report of the Secretary of the Treasury on the State of the Finances*. However, the data in that source are for the administrative budget rather than unified budget through fiscal year 1953. Unified budget data for the years 1940–53 are published in the budget document.

For further details on the relation of Federal Government receipts and expenditures in the national accounts to the budget, see the section on Federal Budget, National Income Accounts Basis, the "Government Receipts and Expenditures" tables in the July issues of the *Survey of Current Business* (a Department of Commerce publication), and Special Analysis B "Federal Transactions in the National Income Accounts", in the *Special Analyses, Budget of the United States Government*.

FEDERAL BUDGET RECEIPTS BY SOURCE AND OUTLAYS BY FUNCTION

DESCRIPTION OF SERIES

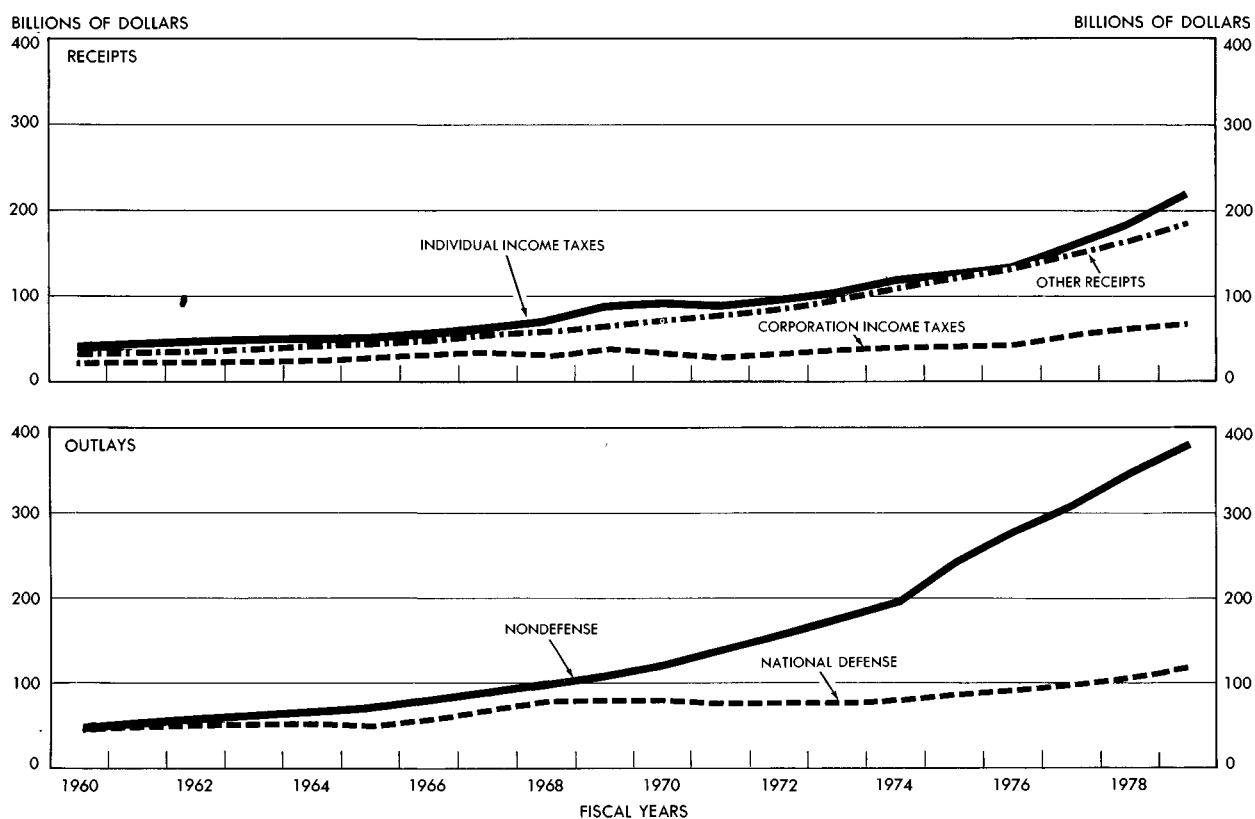
Monthly data on the components of Federal budget receipts and outlays are shown cumulatively for the current fiscal year and for the corresponding months of the previous fiscal year. All Federal budget receipts are classified by major source and in some cases by sub-source. The major classification of budget receipts by source in the Office of Management and Budget and Treasury documents is as follows:

- Individual income taxes
- Corporation income taxes

- Social insurance taxes and contributions
- Excise taxes
- Estate and gift taxes
- Miscellaneous receipts (including deposit of earnings by the Federal Reserve System)

These are summarized in *Economic Indicators* in a three-way split of the receipts data. They show individual and corporation income taxes separately and then combine the remaining receipts into an "other" category.

Chart 11—FEDERAL BUDGET RECEIPTS BY SOURCE AND OUTLAYS BY FUNCTION



SOURCES: DEPARTMENT OF THE TREASURY AND OFFICE OF MANAGEMENT AND BUDGET.

The functional structure is one of the principal methods used to classify budget outlays and related data. This classification has been used for over three decades in the budget document. The historical data tables for outlays in the budget are presented almost exclusively in functional terms, thereby providing a consistent basis for comparing changes in spending over time. The Congressional Budget and Impoundment Control Act of 1974 (P.L. 93-344) has increased the importance of the functional clas-

sification in two major ways. First, one of the ways in which the Congress exercises control over the budget totals is through establishment of total budget authority and total outlay targets. While only the totals are binding legally, these targets are derived by function and, on occasion, the functional targets are binding. Second, the functional classification has been restructured to meet the Act's requirement for a budget presentation based on national needs and agency mission structure.

Currently there are 17 major functions and two major special categories (allowances and undistributed offsetting collections) in the basic functional structure. Each major function is further subdivided into from two to six subfunctions. These are summarized in three major functions (national defense, international affairs, and interest) separately. It shows one subfunction (Department of Defense, Military) of the national defense function separately, and it combines two functions (health and income security) into one entry. All other functions and adjustments are combined in the "other" entry.

STATISTICAL PROCEDURES

When the budget concepts were changed (as is discussed in the previous section on Federal Budget Receipts, Outlays and Debt), these changes affected presentation of budgetary detail. In addition, because of changing areas of concern and different points of focus, some classification categories had to be changed significantly over time. As a result, it is impractical for the user to reconstruct earlier data on a basis comparable to the current categories. However, annual figures for major data series—such as receipts by source and outlays by function and subfunction—have been reconstructed. One point of basic guidance governing presentation of budget historical data is that the data series should be as comparable as feasible over the entire time span shown. Thus, if changes are made in the functional structure, the historical data are revised to reflect the new structure so that users can compare program changes over time.

The basic building block for aggregated budget receipts by source is the receipt account. For budget outlays by function the basic building blocks are appropriation accounts and offsetting receipt accounts. Because of some data difficulties, the Treasury Department is presently not able to produce monthly data on budget outlays by function with a high degree of accuracy. Consequently, the composition of the reported outlays by function is subject to some significant level of error.

RELATION TO OTHER SERIES

No direct effort is underway to link the budget receipts by source and outlays by function cate-

gories to the categories used by the Census Bureau or in the national income and product accounts (see the following discussion of Federal Finance).

While some of the categories in each of the three series are similar to categories in the other series, the timing, coverage, and other differences are sufficient among the three series that it is impractical to trace close linkages from a category in one of the series to similar categories in the other series.

USES AND LIMITATIONS

Budget receipts by major source are available from the Office of Management and Budget for all years from 1940 to the present. Since these data are on a unified budget basis, this supplies a more useful series than the Treasury data for the years 1940-53, which are on the old (administrative budget) basis.

Budget outlays by major function are available on a comparable basis for each year starting with 1948. In addition, for many categories the data are available back to 1940. Subfunctional data are available for each year starting with 1962.

As already noted, the distribution of available data on monthly receipts by source are reliable but the data on monthly outlays by function are less so.

REFERENCES

Part 9 (Summary Tables) of the annual *Budget of the United States Government* shows historical data on receipts by source and outlays by function for the most recent ten completed fiscal periods (including the transition quarter), plus estimates for the year in progress and the forthcoming fiscal year. Data on receipts by source for each year since 1940, outlays by function for each year since 1948, and outlays by subfunction for each year since 1962 are available upon request from the Office of Management and Budget. The updated data are published in a document entitled *Federal Government Finances*, which is issued each year shortly after the release of the President's budget.

Data on budget receipts by source and outlays by function appear in Table VII of the *Monthly Treasury Statement of Receipts and Outlays of the United States Government*.

TABLE 39.—Federal Budget Receipts by Source and Outlays by Function, 1940-79

[Billions of dollars]

Fiscal year	Receipts				Outlays						
	Total	Individual income taxes	Corporation income taxes	Other	Total	National defense		Inter-national affairs	Health and income security	Interest	Other
						Total	DOD, military				
1940	6.4	1.1	1.0	4.3	9.5	1.5	1.5	0.1	1.5	1.0	5.4
1941	8.6	1.6	1.8	5.2	13.6	6.0	6.0	.1	1.9	1.1	4.4
1942	14.4	3.2	4.7	6.4	35.1	24.9	21.2	1.0	1.9	1.3	6.0
1943	23.6	6.5	9.6	7.6	78.5	65.7	58.6	1.3	1.9	1.8	7.9
1944	44.3	20.2	15.3	8.8	91.3	78.1	71.8	1.4	1.8	2.5	7.4
1945	45.2	18.4	16.4	10.5	92.7	81.9	76.5	1.9	1.5	3.5	3.9
1946	39.3	16.1	12.2	11.0	55.2	41.6	40.2	1.9	2.8	4.7	4.2
1947	38.4	17.9	8.6	11.9	34.5	11.6	13.2	5.8	3.4	4.9	8.9
1948	41.8	19.3	9.7	12.8	29.8	7.8	10.2	4.6	3.1	5.1	9.2
1949	39.4	15.5	11.2	12.7	38.8	11.8	11.2	6.1	3.8	5.4	11.8
1950	39.5	15.7	10.4	13.3	42.6	12.4	11.7	4.7	5.0	5.7	14.8
1951	51.6	21.6	14.1	15.9	45.5	21.9	19.6	3.6	4.9	5.6	9.5
1952	66.2	27.9	21.2	17.1	67.7	43.4	38.7	2.7	5.8	5.7	10.2
1953	69.6	29.8	21.2	18.6	76.1	49.9	43.4	2.1	6.5	6.3	11.3
1954	69.7	29.5	21.1	19.1	70.9	46.3	40.1	1.6	7.7	6.0	9.2
1955	65.5	28.7	17.9	18.9	68.5	39.8	35.2	2.2	9.4	6.0	11.0
1956	74.5	32.2	20.9	21.5	70.5	39.7	35.4	2.4	10.3	6.3	11.8
1957	80.0	35.6	21.2	23.2	76.7	42.4	38.1	3.1	12.1	6.7	12.4
1958	79.6	34.7	20.1	24.8	82.6	43.7	39.2	3.4	15.8	6.9	12.8
1959	79.2	36.8	17.3	25.2	92.1	46.0	41.5	3.1	18.0	7.1	17.9
1960	92.5	40.7	21.5	30.3	92.2	45.2	41.5	3.0	19.1	8.3	16.7
1961	94.4	41.3	21.0	32.1	97.8	46.6	43.3	3.2	22.3	8.1	17.5
1962	99.7	45.6	20.5	33.6	106.8	49.0	46.8	5.6	23.9	8.3	20.0
1963	106.6	47.6	21.6	37.4	111.3	50.1	47.9	5.3	25.5	9.2	21.2
1964	112.7	48.7	23.5	40.5	118.6	51.5	49.5	4.9	26.9	9.8	25.4
1965	116.8	48.8	25.5	42.6	118.4	47.5	45.9	5.2	27.5	10.4	27.8
1966	130.9	55.4	30.1	45.3	134.7	54.9	54.1	5.6	31.5	11.3	31.4
1967	149.6	61.5	34.0	54.1	158.3	68.2	67.4	5.6	37.6	12.5	34.3
1968	153.7	68.7	28.7	56.3	178.8	78.8	77.3	5.3	43.4	13.8	37.7
1969	187.8	87.2	36.7	63.9	184.5	79.4	77.8	4.6	49.0	15.8	35.7
1970	193.7	90.4	32.8	70.5	196.6	78.6	77.1	4.3	56.1	18.3	39.3
1971	188.4	86.2	26.8	75.4	211.4	75.8	74.5	4.1	70.1	19.6	41.8
1972	208.6	94.7	32.2	81.7	232.0	76.6	75.1	4.7	81.4	20.6	48.8
1973	232.2	103.2	36.2	92.8	247.1	74.5	73.2	4.1	91.8	22.8	53.9
1974	264.9	119.0	38.6	107.4	269.6	77.8	77.6	5.7	106.5	28.0	51.6
1975	281.0	122.4	40.6	118.0	326.2	85.6	84.9	6.9	136.3	30.9	66.5
1976	300.0	131.6	41.4	127.0	366.4	89.4	87.9	5.6	160.9	34.5	76.1
TQ	81.8	38.8	8.5	34.5	94.7	22.3	21.9	2.2	41.5	7.2	21.5
1977	357.8	157.6	54.9	145.2	402.7	97.5	95.6	4.8	176.7	38.0	85.7
1978	402.0	181.0	60.0	161.1	450.8	105.2	103.0	5.9	189.9	44.0	105.9
1979	465.9	217.8	65.7	182.4	493.7	117.7	115.0	6.1	209.8	52.6	107.5

Note.—For 1976 and prior fiscal years, the year began on July 1 and ended on June 30. For example, fiscal year 1976 began July 1, 1975 and ended June 30, 1976. Under terms of the Congressional Budget Act of 1974 (PL 93-344), July 1 through September 30 of 1976 is a separate fiscal accounting period (commonly referred to as the transition quarter or TQ), and all subsequent fiscal years are to run from October 1 through the subsequent September 30.

Sources: Department of the Treasury and Office of Management and Budget.

FEDERAL SECTOR, NATIONAL INCOME ACCOUNTS BASIS

DESCRIPTION OF SERIES

The Bureau of Economic Analysis of the Department of Commerce provides quarterly measures of national income and product accounts. The Federal sector data are designed to measure the purchases of current output by the Federal Government and the relationship of Federal receipts and other Federal expenditures to national, personal, and disposable personal income. (See descriptions of these concepts in other sections of this *Supplement*.) The Federal sector is recorded in a manner consistent with the conceptual treatment of the personal, business, State and local government, and foreign sectors in the national income and product accounts.

Federal purchases of goods and services are measured, insofar as is possible, on a delivery basis rather than on an obligation, checks-issued, or payments basis. Many receipts are on an accrual basis. For example, corporate profits taxes are included on an accrual basis, rather than when collected. There may be a substantial lag between the accrual of a liability and its collection.

As shown in the table, expenditures in the Federal sector account are presented in a 5-way classification:

Federal purchases of goods and services is the only category of Federal spending which is included in the gross national product (GNP). These purchases represent the value of the Nation's output bought directly by the Federal Government. They include the pay of military and civilian employees of the Federal Government, outlays on equipment and supplies for defense and other programs, new construction, and the capital formation of Government enterprises.

Transfer payments and net interest paid by the Federal Government are outlays in return for which no current service is deemed to be obtained; the most important transfer payments include such items as old-age and survivors' insurance benefits, medicare benefits, unemployment compensation, and military and veterans pensions. Although such payments are not included in GNP, they do enter into the income stream and have an impact on national output; they are reflected in the GNP in another sector of the accounts when spent by the recipients.

Federal grants-in-aid to State and local governments, like transfer payments and net interest paid, have their impact on GNP when resented by the recipient. Examples of grants are those for highways, public assistance, and education.

Private incomes are also affected by Federal subsidies and by the net surplus of Government enterprises in their operations with the public. *These subsidies less current surplus of Government enterprises* reflect mainly Government payments to farmers, housing subsidies, and the current operating deficit of the Postal Service and other Government enterprises.

The receipts of the Federal sector account are shown in a 4-way classification: (1) *Personal tax and nontax receipts* consist of individual income taxes, estate and gift taxes, and certain payments such as fines, and penalties; (2) *corporate profits tax accruals* represent the Federal tax liability incurred by corporations on their corporate earnings during the specific year or period; (3) *indirect business tax and nontax accruals* include liquor, tobacco, and other excise taxes, and customs duties; (4) *contributions for social insurance* are composed chiefly of employment taxes, and contributions to the retirement funds for Government employees.

STATISTICAL PROCEDURES

Data for the Federal sector account are based on the *Budget of the United States Government*, and reports of various agencies (particularly the Treasury Department). The results are to be regarded as statistical estimates, rather than as accounting totals in the ordinary sense.

Data are available quarterly and annually for both the fiscal and calendar year. The quarterly figures are published in seasonally adjusted as well as in unadjusted form. Both expenditures and receipts are seasonally adjusted by applying the adjustments individually to their many components having marked seasonal variation. The seasonally adjusted total is the sum of the several separately adjusted components. Many statistical adjustment techniques are used including the X-11 seasonal adjustment program of the Bureau of the Census. The deficit or surplus is not seasonally adjusted separately. The seasonally adjusted deficit or surplus is the difference between seasonally adjusted receipts and expenditures.

RELATION TO OTHER SERIES

The Federal sector account differs from the unified budget receipts and expenditures in several major respects: (1) coverage, (2) netting and grossing, (3) timing, and (4) the exclusion of financial transactions.

With respect to *coverage*, the Federal sector account includes agencies not included in the unified budget, such as the Postal Service.

TABLE 40.—Federal Sector, National Income Accounts Basis, 1953-79

[Billions of dollars]

Year	Federal Government receipts					Federal Government expenditures							Surplus or deficit (-), national income and product accounts
	Total	Personal tax and nontax receipts	Corporate profits tax accruals	Indirect business tax and nontax accruals	Contributions for social insurance	Total	Purchases of goods and services	Transfer payments	Grants-in-aid to State and local governments	Net interest paid	Subsidies less current surplus of government enterprises	Less: Wage accruals less disbursements	
Fiscal year:													
1953	69.4	31.4	19.7	10.7	7.6	75.9	56.4	11.3	2.8	4.5	0.9	0.0	-6.5
1954	65.8	30.3	17.3	10.4	7.8	74.3	53.9	12.2	2.9	4.6	.8	.0	-8.5
1955	67.4	29.7	18.9	10.0	8.7	67.2	44.3	14.2	3.0	4.6	1.2	.1	.2
1956	76.3	33.6	21.5	10.8	10.3	70.0	45.5	14.7	3.2	4.8	1.7	-.1	6.3
1957	81.0	36.7	20.8	11.7	11.7	76.0	48.1	16.3	3.7	5.3	2.6	.0	5.0
1958	78.1	36.3	17.9	11.6	12.3	82.8	51.1	19.6	4.7	5.4	2.4	.3	-4.7
1959	85.4	38.2	21.4	12.0	13.9	91.2	54.8	21.7	6.2	5.6	2.5	-.3	-5.8
1960	94.8	42.5	22.3	13.2	16.7	91.3	52.9	22.5	6.9	6.8	2.4	.0	3.4
1961	95.0	43.6	20.0	13.3	18.1	98.1	55.8	25.7	6.9	6.4	3.3	.0	-3.1
1962	104.0	47.3	22.7	14.2	19.9	106.2	61.0	27.3	7.6	6.4	4.1	.0	-2.2
1963	110.0	49.6	23.3	15.0	22.1	111.7	63.7	28.6	8.3	7.1	4.0	.0	-1.7
1964	115.6	50.7	25.7	15.6	23.6	117.2	65.9	29.7	9.8	7.7	4.1	.0	-1.5
1965	120.0	51.4	27.1	16.9	24.5	118.5	64.6	30.6	10.9	8.2	4.3	.0	1.4
1966	132.7	57.5	30.8	15.5	28.9	132.7	72.4	34.1	12.7	8.7	4.8	.0	.0
1967	146.0	64.4	30.3	15.8	35.5	154.9	86.0	39.3	14.8	9.6	5.2	.0	-8.9
1968	160.0	71.4	33.2	17.1	38.4	172.2	95.0	44.8	17.8	10.5	4.1	.0	-12.2
1969	190.1	90.0	37.0	18.6	44.5	184.7	98.0	50.9	19.2	12.1	4.6	.0	5.4
1970	194.9	93.6	33.0	19.2	49.2	195.6	97.0	57.0	22.6	13.6	5.4	.1	-.6
1971	192.5	87.5	32.0	20.0	52.9	212.7	94.8	70.1	26.8	14.2	6.8	-.1	-20.2
1972	213.5	100.3	34.2	19.9	59.1	232.9	100.9	78.9	32.6	14.1	6.4	.0	-19.5
1973	240.5	107.3	41.0	20.7	71.5	256.2	101.7	89.7	40.4	15.9	9.1	.5	-15.7
1974	271.8	122.6	43.7	21.4	84.2	278.8	104.6	104.7	41.6	19.8	8.0	-.2	-7.0
1975	283.5	127.1	42.1	22.2	92.1	328.7	118.0	134.3	48.4	21.9	5.7	-.4	-45.3
1976	313.9	137.0	51.7	24.3	100.9	371.1	125.7	156.5	57.6	25.2	6.2	.0	-57.3
1977	366.0	166.0	59.1	24.5	116.4	411.4	140.3	169.6	66.3	28.4	6.9	.0	-45.5
1978	414.7	186.3	67.7	27.2	133.5	450.1	150.7	182.0	74.7	33.1	9.6	.0	-35.4
1979	483.7	223.5	78.4	29.4	152.4	493.6	162.4	201.7	79.3	40.4	9.8	.0	-9.9
Calendar year:													
1953	70.0	32.2	19.5	10.9	7.4	77.1	57.5	11.4	2.8	4.6	.7	-.1	-7.1
1954	63.7	29.0	16.9	9.7	8.2	69.8	47.9	13.3	2.9	4.6	1.0	.0	-6.0
1955	72.6	31.4	21.1	10.7	9.4	68.1	44.5	14.5	3.1	4.6	1.5	.0	4.4
1956	78.0	35.2	20.9	11.2	10.6	71.9	45.9	15.2	3.3	5.1	2.4	.0	6.1
1957	81.9	37.4	20.4	11.8	12.3	79.6	50.0	17.5	4.2	5.5	2.4	.0	2.3
1958	78.7	36.8	18.0	11.5	12.4	88.9	53.9	21.3	5.6	5.2	2.8	.0	-10.3
1959	89.8	39.9	22.5	12.5	14.9	91.0	53.9	22.0	6.8	6.2	2.1	.0	-1.1
1960	96.1	43.6	21.4	13.4	17.6	93.1	53.7	23.4	6.5	6.8	2.6	.0	3.0
1961	98.1	44.7	21.5	13.6	18.3	101.9	57.4	27.1	7.2	6.2	4.0	.0	-3.9
1962	106.2	48.6	22.5	14.6	20.5	110.4	63.7	27.7	8.0	6.8	4.2	.0	-4.2
1963	114.4	51.5	24.6	15.3	23.1	114.2	64.6	29.2	9.1	7.3	3.9	.0	.3
1964	114.9	48.6	26.1	16.2	24.0	118.2	65.2	30.0	10.4	8.0	4.5	.0	-3.3
1965	124.3	53.9	28.9	16.5	25.0	123.8	67.3	32.5	11.1	8.4	4.6	.0	.5
1966	141.8	61.7	31.4	15.6	33.1	143.6	78.8	35.8	14.4	9.2	5.5	.0	-1.8
1967	150.5	67.5	30.0	16.3	36.7	163.7	90.9	42.3	15.9	9.8	4.7	.0	-13.2
1968	174.7	79.6	36.3	18.0	40.8	180.6	98.0	48.1	18.6	11.4	4.5	.0	-5.8
1969	197.0	94.8	36.2	19.0	47.0	188.4	97.5	52.6	20.3	12.9	5.2	.0	8.5
1970	192.1	92.2	30.8	19.3	49.7	204.2	95.6	63.5	24.4	14.3	6.3	.0	-12.1
1971	198.6	89.9	33.5	20.4	54.9	220.6	96.2	75.2	29.0	14.0	6.2	.0	-22.0
1972	227.5	108.2	36.6	20.0	62.8	244.7	102.1	83.2	37.5	14.6	7.8	.5	-17.3
1973	258.3	114.6	43.0	21.2	79.4	265.0	102.2	95.8	40.6	18.2	8.2	.0	-6.7
1974	288.6	131.1	45.9	21.7	89.9	299.3	111.1	117.6	43.9	20.9	5.3	-.5	-10.7
1975	286.2	125.4	42.8	23.9	94.2	356.8	123.1	149.1	54.6	23.2	6.8	.0	-70.6
1976	331.4	147.2	54.6	23.4	106.3	385.0	129.7	161.7	61.1	26.8	5.8	.0	-53.6
1977	375.4	169.6	61.8	25.1	118.9	421.7	144.4	172.7	67.5	29.0	8.1	.0	-46.3
1978	432.1	194.9	72.0	28.1	137.0	459.8	152.6	185.4	77.3	34.8	9.7	.0	-27.7
1979	497.6	230.0	78.2	30.0	159.3	509.0	166.6	209.8	80.4	43.1	9.1	.0	-11.4

Sources: Department of Commerce (Bureau of Economic Analysis), Department of the Treasury, and Office of Management and Budget.

In the case of the *netting and grossing* adjustments, these result from differences in treatment of certain receipts and certain intragovernmental cash flows in the Federal sector. Since receipts and expenditures are increased by identical amounts, this treatment has no effect on the surplus or deficit. There are two major categories of such adjustments. The first and largest consists of the Government's contribution for employee retirement. Such contributions to the retirement trust funds are not included in the budget totals, since the outlays recorded in each agency's budget are offset by an intragovernmental deduction. However, the national accounts Federal sector counts Government payments for employee retirement as part of the compensation paid to Government employees and, therefore, as a Government expenditure; this treatment maintains comparability with the treatment of employee retirement contributions in the rest of the economy. The receipt of these retirement contributions is treated in the national accounts Federal sector as a contribution for social insurance. Other netting and grossing adjustments occur because the budget normally counts as receipts only income from taxation or similar sources that arises from the exercise of governmental power to compel payment; money received in the course of business-type transactions, therefore, is normally shown as an offset against outlays. For example, receipts from social insurance programs operated by the Veterans Administration (such as the National Service Life Insurance and U.S. Government Life Insurance) are netted against outlays in the budget since these programs are voluntary, commercial-type activities. However, in the national accounts Federal sector these insurance premiums are treated as social insurance receipts just as are receipts from compulsory Government programs.

With respect to *timing*, business taxes are recorded in the national accounts as they are accrued by the private sector, rather than when they are collected by the Government. The accrued liability is more likely to coincide with the effects of corporate taxes on corporate spending decisions than are the collections. The principal timing adjustment for expenditures is the Federal sector account records Federal purchases in terms of the delivery of goods and services to the Government, while cash payments for these deliveries may precede or follow.

Financial transactions which are included in budget receipts and expenditures are excluded

from the Federal sector. These are primarily net lending and capital gains and losses.

The Federal sector account differs from the unified budget in several other respects. For example, it excludes purchases and sales of land, as not representing current production. For a further discussion of these differences, see the previous section on Federal Budget Receipts, Outlays, and Debt.

The Federal sector account is especially suited for an analysis of fiscal policy. It was specifically designed to complement the data on private expenditures and incomes contained in the national income and product accounts. The accounts, however, exclude a substantial volume of financial transactions through which the Federal Government significantly affects the capital and credit markets. As a result, for purposes of analysis of the Federal impact on such markets, the unified budget data are more useful than the national accounts estimates.

For certain types of problems, no overall measure of receipts and expenditures will serve adequately. Since the various receipt and expenditure transactions have different economic effects, a given aggregate will have an economic impact which depends substantially on the composition of the total. In addition, many Government activities besides receipts and expenditures affect the economy. For example, a rapid expansion in new appropriations and in Government orders could stimulate a rise in business activity well before either the delivery of goods, the performance of services, or the payment for them. The management of the public debt is a further factor which has a significant impact on the money and credit markets of the economy. Consequently, in evaluating the economic impact of Federal Government activities, there is no substitute for complete and detailed analysis of the Government program in all its aspects.

REFERENCES

Current estimates by quarters on both seasonally unadjusted and adjusted bases are published regularly by the Department of Commerce in the *Survey of Current Business*. Revised estimates for previous years are generally published in the July issue. For the latest historical time series see *The National Income and Product Accounts of the United States, 1929-1974*, published as a supplement to the *Survey of Current Business* in 1976, and the Subsequent July issues of the *Survey of Current Business*.

INTERNATIONAL STATISTICS

MAJOR INDUSTRIAL COUNTRIES

Industrial Production

DESCRIPTION OF SERIES

The Canadian industrial production index covers mining, manufacturing, and utilities. Construction and work done in the home are excluded. The industries surveyed accounted for about 30 percent of the gross domestic product at factory cost in 1971. Monthly data are based on quantities of individual commodities produced or shipped, quantities of materials consumed, deflated values of shipments, and, occasionally, production worker man-hours. In calculating the index, indicators for 101 classes of industrial activity are used, not counting intermediate levels of aggregation. The annual indexes are based on deflated value-added factors for each class of activity obtained from annual Census of Manufactures data. Monthly indicators are adjusted to the levels of the annual indexes for individual categories. The base year is 1971.

The Japanese index measures changes in the physical volume or quantity of output of mining and manufacturing establishments and electric and gas utilities. Construction is excluded. The index is based on data for 524 items, of which data for 486 items are obtained from the Current Production Statistics Survey of the Ministry of International Trade and Industry. Statistics for the remaining 38 items come from other ministries and from business associations. The data cover about 60 percent of the value added in industry in 1975, which is the base year.

The French index relates to mining, manufacturing, and electricity and gas. Construction is excluded. The annual series covers almost the entire value added in industry in 1970 except for clothing. The monthly series, however, excludes the food, clothing, wood, furniture, plastics, non-electric machinery, and aircraft industries. It therefore accounts for only 54 percent of the value added in industry in 1970. The majority of the data collected relates to the actual quantities produced, supplemented where necessary by deflated values of production, data on consumption of materials, and hours worked. The base year is 1970.

The German industrial production index covers

mining, manufacturing, electricity and gas, and excludes construction. The coverage accounts for 85 percent of the value added in industry in 1970. Data used in calculating the indexes include quantity of output, deflated value of output, deflated value of sales, quantity of raw materials used, and man-hours adjusted for productivity.

The Italian index covers mining, manufacturing, electricity and gas, and excludes construction. About 82 percent of the value added in industry in 1970 is represented in the index, which is based on data for over 600 commodities. The indexes are mainly calculated from information on the quantities produced of the individual commodities.

The British index provides a general measure of changes in the volume of industrial production. Mining and quarrying, manufacturing, gas, electricity, and water are included. The series selected for this publication also excludes construction. The index covers the production of both capital goods and consumer goods for the home market, export, and the armed forces and accounts for practically 100 percent of the value added in industry in 1975, the base year. Many of the series used in compiling the index are physical quantities produced or deflated values of production. Other series are based on quarterly sales data for quantities sold or the value of sales adjusted for price changes.

STATISTICAL PROCEDURES

The Canadian industrial production index is calculated according to a base-weighted arithmetic average (Laspeyres) formula, starting from a series of relatives of indicators of output within each industry. Individual industry relatives are combined into major group and industry division indexes and then into an index of total production. The 1971 indexes were linked to earlier indexes based on 1961 and those to indexes based on 1949.

The Japanese index is a base-weighted arithmetic average type index. The weights are proportionate to the value added at factor cost in 1975, and are derived mainly from the results of the 1975 Census of Manufactures, the Census of Mining Trend of Japan, and the Current Production Statistics Survey.

The French index is a Laspeyres type index. The weights used in combining the indexes for industry branches into division indexes and into the index for total industrial activity are proportionate to the value added at factor cost in 1970. Since 1950 the index has been rebased and revised four times: 1952, 1959, 1962, and 1970. Each index was linked to the preceding one, but over the years the series differ considerably.

The German index is a base-weighted arithmetic average (Laspeyres), with 1970 as the base year. It was linked to earlier indexes based in turn on 1962, 1958, and 1950. The weights used to combine products into industry and broader group indexes are based on value added market prices in 1970. The indicators selected and their relative importance in the total index are: physical output, 54 percent; deflated values of output, 30 percent; deflated turnover, 12 percent; quantities of materials used, 3 percent; and man-hours adjusted for productivity, 1 percent.

The Italian index is also calculated as a base-weighted arithmetic average (Laspeyres) with 1970 as the base year. The current index was linked to the 1966 base index and that to a 1953 based index. Considerable differences in coverage exist between these three indexes. The weights used in combining the indicators into the present indexes for each subgroup are based on the 1970 gross value of production after eliminating duplications of values which occur in combining products. The weights used for combining subgroups into major group indexes, major divisions, and total industrial activity are based on value added at factor cost in 1970.

The British index is a base-weighted arithmetic average (Laspeyres). Weights are proportionate to the value added at factor cost in 1975 derived from the Census of Production for that year. The indexes are compiled by combining over 180 component series representing the output of individual industries.

USES AND LIMITATIONS

The industrial production indexes of the major foreign industrial countries are designed to show changes in the physical volume or quantity of out-

put of the manufacturing and mining industries and public utilities. As industrial production accounts for a major portion of the gross domestic product of these economies, the indexes serve as useful and timely measures of overall economic activity. The monthly national indexes for the six countries are released from 4 to 7 weeks after the reported month.

Changes in industrial output from country to country as measured by these indexes reflect the differing patterns of production, but are also influenced by variations among the national series in coverage, weighting, and calculation methods. The coverage and weighting patterns for two countries are relatively current, while the others refer to production relationships in 1970 and 1971.

The monthly indexes are typically based on a more limited coverage of national output than those used for the annual indexes. Estimates are usually relied upon to improve the monthly indexes' compatibility to the annual index.

REFERENCES

The foreign country industrial production indexes are published in the official sources listed below. These series are converted from the national base years varying from 1970 to 1975 to the U.S. base year, 1967, by the Office of Planning and Research, International Trade Administration, Department of Commerce, and are published in its quarterly *International Economic Indicators*.

Canada—*Canadian Statistical Review and Indexes of Real Domestic Product by Industry*

Japan—*Industrial Statistics Monthly* and *Economic Statistics Monthly*

France—*Bulletin Mensuel de Statistique* and *Annuaire Statistique de la France*

Germany, F.R.—*Wirtschaft und Statistik, Indizes der Produktion und der Arbeitsproduktivität, Fachserie 4 Reihe 2.1*, and *Statistische Beihefte zu den Monatsberichten der Deutschen Bundesbank, Reihe 4*

Italy—*Bollettino Mensile di Statistica* and *Congiuntura Italiana*

United Kingdom—*Monthly Digest of Statistics* and *National Income and Expenditure*

TABLE 41.—*Industrial Production and Consumer Prices—Major Industrial Countries, 1950-79*

[1967=100]

Year	Industrial production							Consumer prices						
	United States	Canada	Japan	France	Germany	Italy	United Kingdom	United States ¹	Canada	Japan	France ²	Germany	Italy	United Kingdom
1950	44.9	37.5	9.8	34.0	31.2			72.1	69.0	46.1	44.3	68.9	55.0	53.0
1951	48.7	41.1	13.4	38.0	37.0		64.2	77.8	76.3	53.7	51.5	74.2	60.3	57.8
1952	50.6	42.8	14.4	39.0	39.3		62.3	79.5	78.2	56.4	57.6	75.7	62.8	63.2
1953	54.8	45.9	17.2	39.0	43.1		65.8	80.1	77.5	60.1	56.6	74.3	64.2	65.2
1954	51.9	45.9	18.8	43.0	48.2	35.9	69.9	80.5	77.9	64.0	56.9	74.5	66.0	66.2
1955	58.5	50.9	20.3	47.0	55.6	39.5	74.0	80.2	78.0	63.4	57.4	75.7	67.6	69.3
1956	61.1	56.3	25.1	52.0	59.9	42.2	73.9	81.4	79.2	63.4	59.8	77.6	69.9	72.7
1957	61.9	57.2	29.3	61.0	63.2	45.2	75.4	84.3	81.7	65.4	61.6	79.2	70.8	75.3
1958	57.9	56.9	28.8	63.0	64.9	46.0	74.4	86.6	83.9	65.2	70.9	80.9	72.8	77.7
1959	64.8	61.7	34.5	64.0	69.9	51.2	78.9	87.3	84.9	65.8	75.3	81.8	72.5	78.1
1960	66.2	63.1	43.0	70.0	78.4	59.2	84.4	88.7	85.9	68.3	78.0	82.9	74.1	79.0
1961	66.7	65.6	51.2	73.0	82.8	65.5	84.3	89.6	86.7	71.8	80.6	84.8	75.7	81.6
1962	72.2	71.2	55.4	78.0	86.1	71.9	85.1	90.6	87.7	76.7	85.4	87.4	79.2	85.1
1963	76.5	75.7	61.7	86.0	88.9	78.4	88.4	91.7	89.2	82.5	89.5	89.9	85.1	86.8
1964	81.7	82.6	71.4	90.0	96.6	79.2	95.0	92.9	90.9	85.8	92.5	92.0	90.1	89.6
1965	89.8	89.7	74.2	93.0	102.1	82.8	97.7	94.5	93.1	91.6	94.8	95.0	94.2	93.9
1966	97.8	96.2	83.8	98.0	103.0	93.3	99.2	97.2	96.5	96.3	97.4	98.4	96.4	97.6
1967	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1968	106.3	106.4	115.2	104.0	109.2	106.4	106.7	104.2	104.0	105.3	104.5	101.6	101.4	104.8
1969	111.1	113.7	133.4	114.0	123.2	110.5	110.3	109.8	108.8	110.9	111.3	103.5	104.1	110.3
1970	107.8	115.3	151.8	120.0	131.1	117.6	110.9	116.3	112.4	119.3	117.1	107.1	109.2	117.4
1971	109.6	121.5	155.7	128.0	133.6	117.5	110.6	121.3	115.6	126.5	123.5	112.7	114.4	128.5
1972	119.7	130.7	167.0	135.0	138.7	122.7	113.2	125.3	121.2	132.3	131.1	119.0	121.0	137.7
1973	129.8	143.0	190.5	145.0	147.7	134.6	123.0	133.1	130.3	147.9	140.7	127.2	134.0	150.2
1974	129.3	147.5	183.1	148.0	145.1	140.6	120.0	147.7	144.5	184.0	160.0	136.1	159.7	174.3
1975	117.8	139.6	163.9	139.0	137.1	127.6	114.3	161.2	160.1	205.8	178.9	144.2	186.8	216.5
1976	130.5	147.3	182.0	149.0	149.1	143.5	117.6	170.5	172.1	224.9	196.1	150.4	218.1	252.4
1977	138.2	150.5	189.7	152.0	152.7	145.1	123.0	181.5	185.9	243.0	214.5	155.9	255.2	292.4
1978	146.1	156.7	201.1	155.0	155.3	147.9	126.8	195.4	202.5	252.3	233.9	160.2	286.2	316.6
1979	152.2	164.0	217.5	160.0	163.4	157.4	131.4	217.4	221.0	261.3	258.5	166.6	328.5	359.1

¹ Beginning January 1978 data relate to all urban consumers.² Paris only prior to 1962.Source: National sources as reported by Department of Commerce, International Trade Administration, Office of Planning and Research, in *International Economic Indicators*.

Consumer Prices

DESCRIPTION OF SERIES

The Canadian consumer price index measures the monthly percentage change in the cost of purchasing a constant basket of goods and services representing the purchases of a particular population group. The basket is an unchanging, or equivalent, quantity and quality of goods and services made up of about 425 items for which there are

continually measurable market prices over time. The index relates to a sample urban group comprised of families living in cities with over 30,000 population, ranging in size from two to six persons based on a 1974 survey of 7,633 households. The base year is 1971, except for certain items.

The Japanese index measures the monthly change in prices of 485 items derived from a retail price survey. Prices are obtained from about 31,000 retail stores and service establishments in 168 localities during the week containing the 12th of

each month. Prices for seasonal items such as fresh fruits, vegetables, and fish are collected three times a month. Rent quotations are collected from about 22,000 households in the survey cities, towns, villages. The Japanese base year is 1975.

The French index indicates the weighted monthly changes in the prices of 295 items. Prices are collected by agents from 30,000 retail outlets and service establishments in 108 urban centers of more than 2,000 inhabitants. These are obtained on a monthly and quarterly basis for most goods and services and twice a month for fresh products. Rent levels are obtained from a survey of 3,500 dwellings conducted twice a year. The index includes urban households of all sizes. The base year is 1970.

The German cost of living index is a measure of the monthly weighted price changes of 778 selected items. The prices are collected near the middle of each month in 118 municipalities. Rent levels for apartments with two or three rooms and kitchens are obtained quarterly. In compiling the index, the prices of items which are subject to seasonal fluctuations are taken into account in the period between May and October. Prices for potatoes, fresh fruit, and vegetables are collected twice each month. The base year is 1976.

The Italian index shows the monthly changes in the prices of 512 items. Prices are collected in the capital towns of 93 provinces from 20,300 outlets, of which 9,500 sell food and 10,800 merchandise other items, and from 6,000 service establishments. Prices of fresh fruits and vegetables are collected every 10 days and those for other food items, clothing, and personal services are verified around the 15th of each month. Prices for household durable goods and public services are collected quarterly. Rent quotations for 13,500 apartments are usually obtained on the 5th of January, April, July, and October. Seasonal fluctuations in the prices of fresh fruits and vegetables are accounted for by varying the monthly basket of these items and using moving averages of the last 13 months to compile the index. The Italian index is based on 1976.

The United Kingdom's index measures the monthly changes in the retail prices of commodities and services purchased by practically all wage earners. Since 1968 the index has been divided into eleven main groups: Foods; alcoholic beverages; tobacco; housing including rent, mortgage interest, and repairs; fuel and light; durable household goods; clothing and footwear; transport and vehicles; miscellaneous goods; services; and meals bought and consumed outside the home. The base period is January 15, 1974.

The Canadian consumer price index is calculated as a weighted arithmetic average with a fixed base (Laspeyres) of the price movements of the covered items. The weights used are periodically revised in order to reflect changes in consumer expenditures. In October 1978, the CPI weights were revised using 1974 family expenditures patterns with the exception of the food component, which was based partly on detailed spending patterns in 1969.

The Japanese index is a Laspeyres type index, with weights based on the 1975 family expenditure survey of 8,000 urban and rural households of at least two persons, with the exception of farmers and fishermen. Food has a 41 percent weight in the index; clothing, 13 percent; housing, including furniture, 10 percent; and other goods and services 36 percent.

The French index is divided into six main groups. It is a Laspeyres chain index with weights which are revised at the beginning of each calendar year. These revisions are based on results from continuing family expenditure surveys and from household account data obtained from the system of national accounts. The weights used in compiling the indexes for a given year are based on surveys made two years earlier and updated to December of the preceding year.

The German index is calculated as a weighted arithmetic average with fixed base, the weights conforming to the base period. The groups included in the index are: Food and tobacco; clothing; rent; fuel and light; household operation; transport and communications; health and personal care; education and entertainment; and other goods and services. The weights and 778 selected items were derived from a family expenditure survey made in 1973 among private households of all types of consumers. These households had an average of 2.6 members and a monthly expenditure in 1976 of approximately 2,326 D-marks.

The Italian index is compiled as a weighted arithmetic average with fixed base, the weights corresponding to the base period. The groups included in the index are food and tobacco; rent; fuel and light; clothing; furnishings, household equipment, and domestic services; personal and medical care; transport and communications; education and recreation; and other goods and services. The weights for all items excluding rent are derived from 1975 consumption patterns and national accounts data. The weights for rent are calculated from the results of a housing survey taken in October 1971.

The British index is a Laspeyres chain index with yearly links and weights that are changed each February. From February 1975, the weights have been based on information from the Family Expenditure survey for one year only ending the previous June. The index is calculated monthly, based on data collected on a Tuesday near the middle of the month.

USES AND LIMITATIONS

The consumer price indexes of the major foreign industrial countries are designed to show changes in the cost of goods and services representative of consumption. The indexes are presented in terms of the U.S. base year, 1967, converted from national series with base years varying from 1970 to 1976.

The price movements indicated by these indexes vary considerably from country to country, not only because of real differences in consumer prices but also because the calculations of the national series differ, particularly as to weighting and coverage. In some of the countries, the weights used are revised annually on the basis of family expenditure surveys using large samples. In

others, the weights are somewhat out of date and do not necessarily reflect current patterns of consumption. The variety and number of commodities checked also differ substantially, as does the size of the sample of families covered. Generally, the rural population is not covered.

REFERENCES

The consumer price indexes for the individual foreign countries are published in the following national sources. These series are converted to the 1967 base year by the Office of Planning and Research, International Trade Administration, Department of Commerce, and are published in its quarterly *International Economic Indicators*.

Canada—*Canadian Statistical Review and Consumer Prices and Price Indexes*

Japan—*Economic Statistics Monthly*

France—*Bulletin Mensuel de Statistique*

Germany, Fed. Rep.—*Wirtschaft und Statistik und Preise und Preisindizes für die Lebenshaltung, Fachserie 17, Reihe 7*

Italy—*Bollettino Mensile di Statistica*

United Kingdom—*Monthly Digest of Statistics and Department of Employment Gazette*

U.S. MERCHANDISE EXPORTS AND IMPORTS

DESCRIPTION OF SERIES

Monthly statistics on merchandise exports and imports between the United States and other nations are compiled and published by the Bureau of the Census.

The "export" series cover exports of merchandise (except in-transit merchandise) from the United States to foreign countries. The larger aggregate, total exports (including re-exports), includes exports of domestic merchandise and re-exports of foreign merchandise, defined to cover commodities of foreign origin which have entered the United States as imports and which at the time of exportation are in the same condition as when imported. Imported foreign merchandise which has undergone some change in form in the United States is included under exports of domestic merchandise. The smaller aggregate, for total exports of domestic merchandise, is exclusive of re-exports. Both series as presented here include commercial shipments and shipments made under U.S. Government economic aid programs. Data on Department of Defense shipments of grant-aid military equipment and supplies under the Military Assistance Program (referred to as D.O.D. military shipments) are excluded from the aggregate but included in the commodity data. Shipments to United States armed forces and diplomatic missions abroad for their own use are excluded from all export data shown.

Export series covers all exports from within the customs area of the United States, which includes all of the States, the District of Columbia, and Puerto Rico (and included the Territories of Alaska and Hawaii prior to their admission to statehood). Other possessions are not included in the customs area, nor are shipments between the United States and these possessions included in the export series.

Excluded are certain types of shipments, as follows: bunker fuel and other supplies and equipment for vessels and planes engaged in foreign trade; issued monetary coins of all component metals; some types of shipments of relatively small significance such as low-valued or noncommercial shipments by mail; temporary shipments, and household and personal effects of travelers. Silver, previously excluded, is included effective January 1969, while nonmonetary gold (in such forms as ore, scrap, and base bullion, nonmonetary refined bullion, etc.) is included effective January 1978.

Export shipments are valued at the time and place of export—that is at actual selling price, or at cost if not sold, including inland freight, insurance, and other charges to the place of export. The value, as defined, does not include costs, if any, of loading the merchandise aboard the exporting carrier. Transportation and other costs beyond the United States port of exportation are also excluded.

The "import" data shown are general imports which represent total arrivals of merchandise, except for in-transit shipments. Goods which enter customs bonded warehouses are included, as well as goods released from customs custody immediately upon arrival. Government imports are included. Import coverage is in terms of the customs area (as explained above); as in the case of exports, in-transit shipments, issued monetary coins, and items of small importance are excluded. Silver and gold are treated as stated above for exports.

For 1975 and later years, the value shown is the f.a.s. (free alongside ship) value which represents the transaction value at the foreign port of exportation and generally includes all charges incurred in placing the merchandise alongside the carrier at the port of exportation.

The value shown for periods prior to 1975 is the value as appraised by customs in accordance with the legal requirements of the Tariff Act of 1930, as amended. This generally represents a value in the foreign country and therefore excludes U.S. import duties, freight, insurance, and other charges incurred in bringing the merchandise to the United States.

Prior to January 1962, in actual practice only the values reported for imports subject to an ad valorem rate of duty tended to conform precisely to the valuation definition.

For merchandise not subject to an ad valorem rate of duty, the reported values prior to 1962 may not be in accordance with the market value in the foreign country. For example, ocean freight may be included inadvertently in the values. data for shipments between allied firms may reflect arbitrary values, etc. Beginning January 1962, procedures were inaugurated for the verification by customs examiners of statistical factors on import entries, and close conformity with the Tariff Act value definition is expected regardless of whether the time is dutiable at an ad valorem rate.

In addition to the f.a.s. and Customs values described above, the Bureau of the Census also compiles data in terms of the c.i.f. (cost, insurance, and freight) value which represents the value of imports at the first port of entry in the United States. If the merchandise was acquired in a transaction between related parties, the purchase price used in deriving the c.i.f. value is based on an arm's-length equivalent transaction price, i.e., a price which would exist between unrelated buyers and sellers. All of the values (f.a.s., Customs, and c.i.f.), along with other statistical factors reported on import entries, are verified by Customs officials, as previously indicated.

Export statistics (except Department of Defense military aid shipments, as explained) are obtained from the Shipper's Export Declaration which exporters are required to file with Customs officials. The reported information includes a description of the merchandise, its classification under the prescribed commodity classification for exports, quantity, value, and country of destination. The declarations are transmitted by Customs to the Bureau of the Census, where they undergo various processing procedures.

Since July 1953, data for low-valued shipments, accounting for a considerable proportion of the volume of documents but a relatively small proportion of total value, have been estimated based in general on a 10-percent sample for Canada and a 50-percent sample for other countries. The sampling procedures have been applied to the following value ranges during the periods indicated: from July 1953-September 1969, shipments valued \$100-\$499 except that for shipment to Canada the upper limit was raised to \$1,999 effective January 1963; from October 1969-December 1974, shipments to Canada valued \$251-\$1,999, shipments to other countries valued \$251-\$499; effective January 1975, shipments to countries other than Canada valued \$251-\$999, with shipments to Canada remaining at the previous levels; and effective March 1979, the lower limit was raised from \$251 to \$501 for all countries. Shipments valued less than the above mentioned value limits have been estimated from factors based on established percentages of individual country totals.

For exports made by the Department of Defense of grant-aid military equipment and supplies under the Military Assistance Program (excluded from the aggregates but included in the detailed commodity data) information is compiled by the Bureau of the Census from the records of the Department of Defense. In most instances, these records show values f.o.b. point of origin. These are adjusted to show value at the United States port of exportation.

Import information is derived from the import entry form of the U.S. Customs Service to be filed by the importer for each shipment arriving in the United States. The reported information includes the type of commodity, classified in accordance with the prescribed import commodity classification, quantity, value, and country of origin. After a review by Customs, the statistical copy of the entry form is transmitted to the Bureau of the Census. Statistics covering low valued import shipments are estimated on the basis of a sample. The sampling procedures have varied.

TABLE 42.—U.S. Merchandise Exports and Imports, 1958–79

[Millions of dollars]

Year	Merchandise exports ¹					Merchandise imports					Merchandise trade balance			
	Total domestic and foreign exports ²	Domestic exports				Total ³	General imports ⁴				Total (c.i.f. value) ⁷	Exports (f.a.s.) less imports (customs value)	Exports (f.a.s.) less imports (f.a.s.)	Exports (f.a.s.) less imports (c.i.f.)
		Total ^{2,3}	Food, beverages, and tobacco	Crude materials and fuels ⁴	Manufactured goods ⁵		Food, beverages, and tobacco	Crude materials and fuels ⁴	Manufactured goods ⁵					
		F.a.s. value ⁸				Customs value								
Monthly average:														
1958.....	1,365	1,351	224	254	962	1,116	296	347	443		249			
1959.....	1,369	1,354	238	250	932	1,308	298	385	593		61			
1960.....	1,638	1,622	264	329	1,049	1,256	283	368	572		382			
1961.....	1,686	1,665	289	322	1,065	1,230	288	361	545		455			
1962.....	1,749	1,726	312	280	1,139	1,372	306	391	637		377			
1963.....	1,872	1,849	349	315	1,191	1,434	322	396	673		438			
1964.....	2,153	2,123	386	361	1,377	1,562	335	419	759		590			
1965.....	2,229	2,200	377	356	1,453	1,786	334	453	937		443			
1966.....	2,458	2,421	432	367	1,602	2,135	383	477	1,204		323			
1967.....	2,586	2,554	393	394	1,737	2,241	392	447	1,313	2,395	345		190	
1968.....	2,839	2,802	383	405	1,985	2,769	447	503	1,719	2,943	70		-105	
1969.....	3,111	3,066	371	417	2,232	3,004	442	533	1,918	3,187	107		-76	
1970.....	3,555	3,502	422	558	2,445	3,329	519	545	2,159	3,536	226		19	
1971.....	3,629	3,576	423	537	2,537	3,797	534	606	2,535	4,029	-168		-399	
1972.....	4,100	4,033	547	591	2,812	4,632	615	737	3,147	4,905	-532		-805	
1973.....	5,902	5,811	1,078	895	3,728	5,790	770	1,120	3,750	6,131	112		-229	
1974.....	8,167	8,053	1,269	1,317	5,294	8,450	892	2,653	4,684	9,033	-283	-221	-866	
		F.a.s. value ⁸				Customs value								
1974.....	8,167	8,053	1,269	1,317	5,294	8,387	892	2,672	4,602	9,033	-283	-221	-866	
1975.....	8,966	8,842	1,399	1,266	5,913	8,048	827	2,716	4,257	8,654	853	918	312	
1976.....	9,596	9,456	1,436	1,341	6,437	10,084	991	3,457	5,398	10,825	-581	-488	-1,229	
1977.....	10,096	9,912	1,330	1,548	6,679	12,307	1,186	4,463	6,379	13,130	-2,297	-2,211	-3,034	
1978.....	11,965	11,753	1,717	1,746	7,873	14,332	1,312	4,325	8,360	15,258	-2,473	-2,367	-3,293	
1979.....	15,136	14,868	2,049	2,351	9,715	17,194	1,478	5,954	9,353	18,244	-2,125	-2,057	-3,108	

¹ Beginning 1960, data have been adjusted for comparability with the revised commodity classifications effective in 1965.² Total excludes Department of Defense shipments of grant-aid military supplies and equipment under the Military Assistance Program.³ Total includes commodities and transactions not classified according to kind.⁴ Includes fats and oils.⁵ Includes machinery, transportation equipment, chemicals, metals, and other manufactures. Export data for these items include military grant-aid shipments through 1977. They are excluded in 1978–79.⁶ Total arrivals of imported goods other than intransit shipments.⁷ C.i.f. (cost, insurance, and freight) import value at first port of entry into United States. Data for 1967–73 are estimates.⁸ F.a.s. (free alongside ship) value basis at U.S. port of exportation for exports and at foreign port of exportation for imports.

NOTE.—Data are as reported by the Bureau of the Census adjusted to include silver ore and bullion reported separately prior to 1969. Trade in gold is included beginning 1974. Export statistics cover all merchandise shipped from the U.S. customs area, except supplies for the U.S. Armed Forces. Exports include shipments under Agency for International Development and Food for Peace programs as well as other private relief shipments.

Source: Department of Commerce (Bureau of the Census and International Trade Administration).

From January 1958 through June 1965, data on imports valued at less than \$100 reported on formal entries and imports reported on informal entries (which generally contain items valued at not more than \$250) were estimated from a 1-percent sample. Since July 1965, the 1-percent sample has been applied to all imports valued at \$250 and under reported on both formal and informal entries. Sampled shipments (generally amounting to less than 1 or 2 percent of total imports per month), along with U.S. goods returned and other commodities and transactions not classified accord-

ing to kind, are included in the total import figures but not in the detailed commodity data.

With respect to both exports and imports, as a result of late receipt of some documents and the necessity to verify information reported on some documents, there is a carryover of some shipments from their proper month to a following month, usually the succeeding month.

The seasonally adjusted series have been adjusted for working days as well as seasonal variation. The seasonal adjustment factors are derived by a ratio-to-moving-average method.

Effective January 1979, the seasonally adjusted totals represent the sum of commodity components adjusted for seasonal and working-day variation where appropriate. Previously, the monthly totals were adjusted independently of the components. For comparison purposes, monthly data for 1978 were also revised to reflect this new method of adjustment.

RELATION TO OTHER SERIES

Statistics of exports and imports are available in Census and other government publications on bases varying with respect to the treatment of re-exports, military aid shipments, goods entering into or withdrawn from Customs bonded warehouses and other matters, depending on the purpose of the presentation. The series shown here are among those presented in monthly Census releases.

Series for merchandise exports and imports appear as major components of the balance of international payments. They are combined with series covering various other current transactions to form the larger aggregates for exports and imports of "goods and services." The merchandise component is based on the series shown here for total exports (including re-exports) net of military aid shipments and for general imports. The series are further adjusted by exclusion of other military shipments and by other adjustments with respect to coverage, valuation, and timing for consistency with balance of payments concepts. The seasonally adjusted quarterly figures for merchandise exports and imports differ from corresponding quarterly totals compiled from the seasonally adjusted monthly series in the balance of payments because of these adjustments. (See the following section on U.S. International Transactions.)

Indexes of unit value, quantity, and value of foreign trade, prepared by the Bureau of the Census, are available for exports of domestic merchandise on the basis of the series shown in table 43 (i.e., net of military aid shipments) and for imports for consumption through 1964 and general imports thereafter. Indexes are available in broad end-use and economic class categories and for more detailed product groupings.

USES AND LIMITATIONS

These series provide timely indicators of the movement of merchandise exports and imports. As a measure of cyclical or long-term movement, monthly foreign trade data even after seasonal adjustment are erratic. While these data will necessarily be followed by users from month to month, judgments as to trend are

more properly based on derived series for longer periods such as quarterly or four-month moving totals.

Although merchandise trade bulks large among the sources of international payments, the balance of payments can be comprehended only in terms of the full range of merchandise, service, capital, unilateral and other transactions. Undue importance should not be attached to the trade figures alone or to the surplus or deficit in merchandise trade.

Because of the variety of bases on which foreign trade data are presented, the user must be attentive to the precise specifications of particular series, especially when they are to be used with other series. Similarly, when U.S. trade statistics are compared with those of other countries, special attention should be given to the extent to which the series differ as to valuation and coverage.

REFERENCES

Totals for exports of domestic and foreign merchandise, general imports and exports for consumption are published monthly in the Census Bureau's United States Foreign Trade summary reports FT 900 (FT 900-E and FT-900-I prior to April 1965) and, effective January 1967, in FT-990. (Former Summary Reports FT 930E and I, and 950 E and I, and 970 E and I were discontinued with the December 1966 issues.) Report FT 900 and FT 990 give monthly data for the current and preceding years. Separate data on Department of Defense shipments of grant-aid military equipment and supplies are provided in both reports. Information concerning the new seasonal and working-day adjustment procedure, including current adjustment factors, is available in the "Supplement" to the January 1979 issue of Report FT-900.

Detailed commodity country data and indexes of foreign trade (unit value, quantity and value) are also published by the Census Bureau. Supplementary information is available on such items as unusual transactions appearing in the statistics, changes in types of shipments included in the statistics, and special problems of valuation, commodity classification, etc. This information, formerly published in a monthly pamphlet, *Foreign Trade Statistics Notes*, has been carried since January 1961 in the statistical reports themselves.

Summary explanations of the export and import series appear in the introductory notes of Census monthly bulletins FT 135 for imports and FT-410 for exports. The last comprehensive discussion of the series appeared in the 1946-1963 and 1965 editions of *Foreign Commerce and Navigation of the United States*.

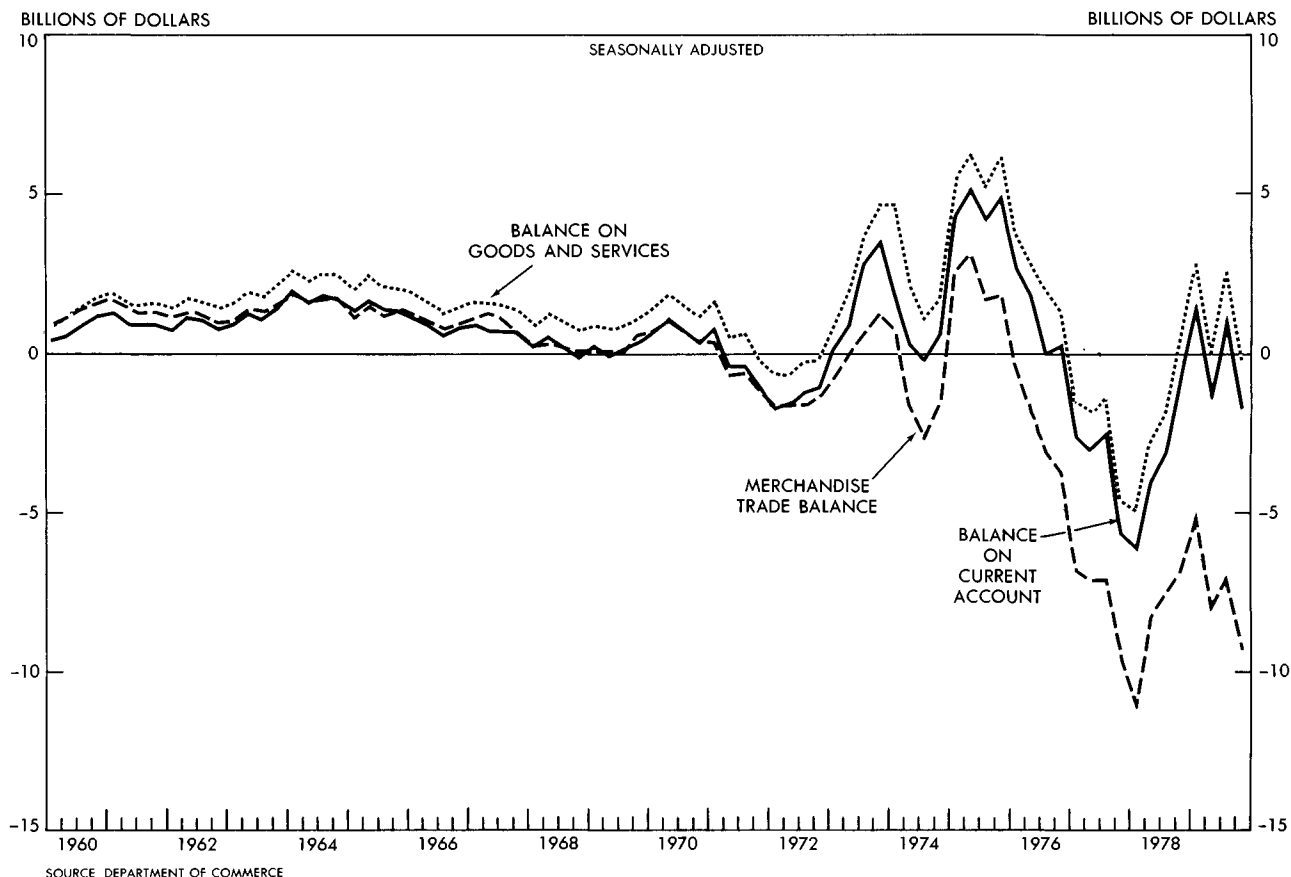
U.S. INTERNATIONAL TRANSACTIONS

DESCRIPTION OF SERIES

The balance of payments of the United States are published quarterly by the Bureau of Economic Analysis (BEA) of the Department of Commerce. They provide a summary of economic transactions between residents of the United States and residents of the rest of the world.

All reported or recorded foreign transactions or those which can be estimated on the basis of sample data are summarized under the general categories shown in the international accounts. Since not all transactions can be accurately measured or estimated, a statistical discrepancy arises between total payments and total receipts.

Chart 12 — U.S. INTERNATIONAL TRANSACTIONS



The international accounts are composed of transactions on current and capital accounts. The current account transactions include merchandise exports and imports, investment receipts and payments, net military, transportation, travel, and other services. It also includes partial measures of the balance in the accounts. The balance on merchandise trade measures net transactions in goods. The balance on goods and services measures net exports of goods and services from the United States. The balance is the basis of, and closely related conceptually to, the next export sector in the national income and product accounts; it also

represents the net transfer of real resources to and from foreigners. The balance on current account measures net exports of goods and services and unilateral transfers (transfers, remittances, and Government grants). This balance is widely used in international comparisons of countries' relative strengths and weaknesses in international transactions.

International capital transactions are divided into the broad categories of U.S. assets abroad and foreign assets in the United States. U.S. assets abroad are subdivided into official reserve and

other Government assets and private assets. Foreign assets in the United States are subdivided into assets of foreign official agencies and other foreign assets. The international accounts also in-

clude data on allocations of special drawing rights, the statistical discrepancy, and the value of the stock of U.S. official reserve assets at the end of the period.

TABLE 43.—U.S. International Transactions, 1946-79

[Millions of dollars]

Year	Merchandise ^{1,2}			Investment income ³			Net military transactions	Net travel and transportation receipts	Other services, net ³	Balance on goods and services ⁴	Remittances, pensions, and other unilateral transfers ¹	Balance on current account ^{1,4}
	Exports	Imports	Net balance	Receipts	Payments	Net						
1946.....	11,764	-5,067	6,697	772	-212	560	-493	733	310	7,807	-2,922	4,885
1947.....	16,097	-5,973	10,124	1,102	-245	857	-455	946	145	11,617	-2,625	8,992
1948.....	13,265	-7,557	5,708	1,921	-437	1,484	-799	374	175	6,942	-4,525	2,417
1949.....	12,213	-6,874	5,339	1,831	-476	1,355	-621	230	208	6,511	-5,638	873
1950.....	10,203	-9,081	1,122	2,068	-559	1,509	-576	-120	242	2,177	-4,017	-1,840
1951.....	14,243	-11,176	3,067	2,633	-583	2,050	-1,270	298	254	4,399	-3,515	884
1952.....	13,449	-10,838	2,611	2,751	-555	2,196	-2,054	83	309	3,145	-2,531	614
1953.....	12,412	-10,975	1,437	2,736	-624	2,112	-2,423	-238	307	1,195	-2,481	-1,286
1954.....	12,929	-10,353	2,576	2,929	-582	2,347	-2,460	-269	305	2,499	-2,280	219
1955.....	14,424	-11,527	2,897	3,406	-676	2,730	-2,701	-297	299	2,928	-2,498	430
1956.....	17,556	-12,803	4,753	3,837	-735	3,102	-2,788	-361	447	5,153	-2,423	2,730
1957.....	19,562	-13,291	6,271	4,180	-796	3,384	-2,841	-189	482	7,107	-2,345	4,762
1958.....	16,414	-12,952	3,462	3,790	-825	2,965	-3,135	-633	486	3,145	-2,361	784
1959.....	16,458	-15,310	1,148	4,132	-1,061	3,071	-2,805	-821	573	1,166	-2,448	-1,282
1960.....	19,650	-14,758	4,892	4,616	-1,237	3,379	-2,752	-964	579	5,132	-2,308	2,824
1961.....	20,108	-14,537	5,571	4,998	-1,245	3,753	-2,596	-978	594	6,345	-2,524	3,821
1962.....	20,781	-16,260	4,521	5,619	-1,324	4,295	-2,449	-1,152	809	6,026	-2,638	3,388
1963.....	22,272	-17,048	5,224	6,157	-1,561	4,596	-2,304	-1,309	960	7,167	-2,754	4,414
1964.....	25,501	-18,700	6,801	6,823	-1,784	5,039	-2,133	-1,146	1,041	9,603	-2,781	6,822
1965.....	26,461	-21,510	4,951	7,436	-2,088	5,348	-2,122	-1,280	1,387	8,284	-2,854	5,431
1966.....	29,310	-25,493	3,817	7,526	-2,481	5,045	-2,935	-1,331	1,365	5,961	-2,932	3,029
1967.....	30,666	-26,866	3,800	8,021	-2,747	5,274	-3,226	-1,750	1,612	5,709	-3,125	2,584
1968.....	33,626	-32,991	635	9,368	-3,378	5,990	-3,143	-1,548	1,630	3,563	-2,952	611
1969.....	36,414	-35,807	607	10,912	-4,869	6,043	-3,328	-1,763	1,833	3,393	-2,994	399
1970.....	42,469	-39,866	2,603	11,746	-5,516	6,230	-3,354	-2,038	2,180	5,624	-3,294	2,330
1971.....	43,319	-45,579	-2,260	12,706	-5,436	7,270	-2,893	-2,345	2,495	2,268	-3,701	-1,434
1972.....	49,381	-55,797	-6,416	14,764	-6,572	8,192	-3,420	-3,063	2,766	-1,941	-3,854	-5,795
1973.....	71,410	-70,499	911	21,808	-9,655	12,153	-2,070	-3,153	3,184	11,021	-3,881	7,140
1974.....	98,306	-103,649	-5,343	27,587	-12,084	15,503	-1,653	-3,184	3,986	9,309	-7,186	2,124
1975.....	107,088	-98,041	9,047	25,351	-12,564	12,787	-746	-2,792	4,598	22,893	-4,613	18,280
1976.....	114,745	-124,051	-9,306	29,286	-13,311	15,975	559	-2,558	4,711	9,382	-4,998	4,384
1977.....	120,816	-151,689	-30,873	32,587	-14,598	17,989	1,628	-3,293	5,086	-9,464	-4,605	-14,068
1978.....	142,054	-175,813	-33,759	42,972	-22,073	20,899	886	-3,188	5,959	-9,204	-5,055	-14,259
1979.....	182,055	-211,524	-29,469	65,970	-33,460	32,510	-1,275	-2,695	5,806	4,878	-5,666	-788

¹ Excludes military grants.² Adjusted from Census data for differences in valuation, coverage, and timing.³ Fees and royalties from U.S. direct investments abroad or from foreign direct investments in the United States are excluded from investment income and included in other services, net.⁴ In concept, the sum of balance on current account and allocations of special drawing rights is equal to net foreign investment in the national income and product accounts, although the two may differ because of revisions, special handling of certain items, etc.⁵ Includes extraordinary U.S. Government transactions with India.

(See next page for continuation of table.)

TABLE 43.—U.S. International Transaction, 1946-79—Continued

[Millions of dollars]

Year	U.S. assets abroad, net [increase/capital outflow (-)]				Foreign assets in the U.S., net [increase/capital inflow (+)]			Allocations of special drawing rights (SDRs)	Statistical discrepancy (sum of the items with sign re- versed)	U.S. official reserve assets, net (end of period) ⁶
	Total	U.S. official reserve assets ⁶	Other U.S. Government assets	U.S. private assets	Total	Foreign official assets	Other foreign assets			
1946		-623							20,706	
1947		-3,315							24,021	
1948		-1,736							25,758	
1949		-266							26,024	
1950		1,758							24,265	
1951		-33							24,299	
1952		-415							24,714	
1953		1,256							23,458	
1954		480							22,978	
1955		182							22,797	
1956		-869							23,666	
1957		-1,165							24,832	
1958		2,292							22,540	
1959		1,035							21,504	
1960	-4,099	2,145	-1,100	-5,144	2,294	1,473	821	-1,019	19,359	
1961	-5,537	607	-910	-5,234	2,705	765	1,939	-989	18,753	
1962	-4,175	1,535	-1,085	-4,624	1,911	1,270	641	-1,124	17,220	
1963	-7,270	378	-1,662	-5,986	3,217	1,986	1,231	-360	16,843	
1964	-9,559	171	-1,680	-8,049	3,643	1,660	1,983	-907	16,672	
1965	-5,715	1,225	-1,605	-5,335	742	134	607	-458	15,450	
1966	-7,319	570	-1,543	-6,345	3,661	-672	4,333	629	14,882	
1967	-9,758	53	-2,423	-7,387	7,379	3,451	3,928	-205	14,830	
1968	-10,977	-870	-2,274	-7,833	9,928	-774	10,703	438	15,710	
1969	-11,585	-1,179	-2,200	-8,206	12,702	-1,301	14,002	-1,516	16,964	
1970	-9,336	2,481	-1,589	-10,228	6,359	6,908	-550	867	14,487	
1971	-12,474	2,349	-1,884	-12,939	22,970	26,879	-3,909	717	12,167	
1972	-14,497	-4	-1,568	-12,925	21,461	10,475	10,986	710	13,151	
1973	-22,874	158	-2,644	-20,388	18,388	6,026	12,362	-2,654	14,378	
1974	-34,745	-1,467	366	-33,643	34,241	10,546	23,696	-1,620	15,883	
1975	-39,703	-849	-3,474	-35,380	15,670	7,027	8,643	-5,753	16,226	
1976	-51,269	-2,558	-4,214	-44,498	36,518	17,693	18,826	10,367	18,747	
1977	-35,793	-375	-3,693	-31,725	50,741	36,575	14,167	-880	19,312	
1978	-61,191	732	-4,644	-57,279	64,096	33,293	30,804	11,354	18,650	
1979	-61,748	-1,107	-3,783	-56,858	37,575	-14,271	51,845	1,136	18,928	

⁶ Consists of gold, special drawing rights (SDRs), convertible currencies, and the U.S. reserve position in the IMF.

Sources: Department of Commerce (Bureau of Economic Analysis) and Department of the Treasury.

STATISTICAL PROCEDURES

The preparation of the balance of payments involves the bringing together, and the adjustment to balance of payments concepts, of data from a variety of sources, including direct reports to the Bureau of Economic Analysis. Data for merchandise imports and exports are those of the Bureau of the Census, subject to adjustments for coverage, valuation, and timing. Other sources include quarterly reports by U.S. companies with branches

or subsidiaries abroad and by branches and subsidiaries of foreign companies in the United States; benchmark surveys of U.S. investments abroad and of foreign investments in the United States; reports from U.S. Government agencies on their foreign transactions including grants, loans, purchases, and sales; reports from U.S. and foreign shipping lines and financial data from the Maritime Administration; reports from U.S. travelers on their expenditures abroad and from foreign travelers on their expenditures in the

United States, together with travel statistics of the Immigration and Naturalization Service; reports to the Treasury Department on international claims and liabilities; and a variety of sources, including Government administrative data, and questionnaire surveys of the Bureau of Economic Analysis.

Quarterly series on international transactions are seasonally adjusted if they manifest discernible seasonal variation. Data series on most capital transactions are not seasonally adjusted.

RELATION TO OTHER SERIES

Since the statistics on U.S. international transactions represents a synthesis of data from a variety of sources, a close relationship exists between various components of the balance of payments and certain other bodies of published data. Because of technical adjustments to balance of payments concepts, the components will ordinarily differ somewhat from the related sources. Among the important bodies of related data are: data on merchandise exports and imports published by the Bureau of the Census; data on U.S. Government foreign assistance, prepared by the Bureau of Economic Analysis and published in the National Advisory Council's *Annual Reports*; annual estimates of the international investment position of the United States as published in the *Survey of Current Business*; and data on most international capital transactions of the United States as published by the Treasury Department in the *Treasury Bulletin*. As noted previously, the balance of exports and imports of goods and services in the international accounts is the basis for the net export component of the national income and products accounts.

The regular quarterly presentation of international transactions in the *Survey of Current Business* shows transactions with major areas of the world, and gives a detailed classification of transactions by type.

USES AND LIMITATIONS

The balance of payments statistics present an integrated summary of international transactions and their relation to the international financial position of the United States. The individual components are presented in an analytically neutral framework, recognizing that no single number can adequately portray the underlying international payments position of the United States.

The double-entry bookkeeping principle is used in constructing the international transactions accounts. Briefly, this means that there are two offsetting entries for each transaction so that, in theory, the net of all transactions is zero. The actual collection of data, however, is from a wide

variety of sources, with the result that a statistical discrepancy arises. The statistical discrepancy is a residual item, equal to the algebraic sum of all the other lines in the international accounts with the sign reversed. It includes errors and omissions that may have occurred in any of the other accounts due to such factors as statistical errors, reporting deficiencies, and differences in timing in recording both sides (credit and debit) of a single transaction. Its entry secures the equality of credits and debits.

REFERENCES

The latest complete discussion of balance of payments concepts used and of statistical sources and techniques is contained in the 1952 Supplement to the *Survey of Current Business*, entitled *Balance of Payments of the United States: 1949-51*, although subsequent developments in sources and technique and major changes in the international economic environment limit its applicability to prevailing practices. Briefer statements of sources may be found in the biennial editions of the *Business Statistics*, and in the Census publication, *Historical Statistics of the United States: Colonial Times to 1957. A Balance of Payments Statistical Supplement* (to the *Survey of Current Business*), Revised Edition, 1963, gives detailed global figures by quarters for the period 1919-1961 and by areas for 1946-1961. *Historical Statistics* gives available, but fragmentary, data back to 1970. The *Survey of Current Business* carries international transactions data regularly, with quarterly and annual detailed tables and explanatory text, as well as regular articles detailing developments in major components of the international accounts.

The Report of the Review Committee for Balance of Payments Statistics, entitled the *Balance of Payments Statistics of the U.S.*, issued in 1965, contains discussions of the concepts and methodology of some of the accounts. The format of presentation of U.S. international transactions was revised in 1971 to include several new summary measures for use in balance of payments analysis. An article, published in the June 1971 *Survey of Current Business*, contains a discussion of the analytically oriented presentation.

Later, extensive revisions in the format of statistical presentation were introduced in 1976, based on the recommendations of the Advisory Committee on the Presentation of Balance of Payments Statistics. The Committee's Report, published in the June 1976 *Survey of Current Business*, contains a discussion of the limitations of previous summary measures in the light of changes in the international economic environment. Explanatory notes for each international account in the revised presentation were published in the June 1978 *Survey of Current Business*.

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Bureau of the Census
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Department of Commerce
International Trade Administration
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