

70TH YEAR OF STATISTICS OF INCOME

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Since enactment of the modern income tax in 1913, statistics based on information reported on Federal tax returns filed by U.S. individual taxpayers have been made available to the public. These detailed income and tax statistics have been published since 1916 as annual Statistics of Income (SOI) reports. Although the focus of this paper is on the individual income tax return program, much of the material is relevant to the development of other SOI programs as well.

Organizationally, the paper is divided into eight parts. The first part provides a summary of the beginnings and the history of SOI as seen in the development of one of its principal programs. The next part covers major law changes affecting the scope of the Federal individual income tax and its revenue yield. Sections 3 to 5 highlight statistics which show the tremendous growth in return filings, the change in the amount and composition of income, and the historical pattern of the average tax rate. The two sections which follow examine changes in statistical data sources, methodology and processing. Finally, there is a brief look at the new directions envisioned for the processing of, and the products generated from, the SOI Programs.

1. BACKGROUND AND HISTORY

After an 18-year lapse in Federal income taxation, the Sixteenth Amendment to the Constitution became effective on February 25, 1913. This amendment provided that:

"...Congress shall have the power to lay and collect tax on incomes, from whatever sources derived, without apportionment among the several States, and without regard to any census or enumeration."

Shortly thereafter, on October 3, the Income Tax Act of 1913 was enacted and imposed a tax (retroactive to March 13) on the income of both individuals and corporations.[1] The only data for the period March to December 1913 show that there were fewer than 400,000 tax returns filed which met the \$3,000 minimum income filing requirement. The income tax for 1913 amounted to about \$28 million. In its first full year of operation income tax rose only to \$41 million—a far cry from the 1982 income tax before credits figure of \$284 billion.

On September 8, 1916, Congress enacted the Revenue Act of 1916 which, in addition to various tax measures, provided for:

"... the preparation and publication of statistics reasonably available with respect to the operation of the income tax law and containing classifications of taxpayers and of income ...and any other facts deemed pertinent and valuable ..." [Underlining added to indicate how the program name may have arisen.]

Reports were to be made annually by the Commissioner of Internal Revenue with the approval of the Secretary of the Treasury.

The initial volume of the annual Statistics of Income (SOI) series contained detailed data for Income Year 1916, as well as the few statistics for 1913-1915 shown in Figure A.

Figure A.--Returns, Income and Tax, 1913-1915

Income Year	Number of Returns	Net Income (millions)	Income Tax (millions)
1913	357,598	\$3,900	\$28
1914	357,515	\$4,000	\$41
1915	336,652	\$4,600	\$68

During the early years of the Statistics of Income, the individual income tax tabulations were few in number and relatively uncomplicated. Until the late 1920's the individual income statistics particularly emphasized the tax, the size of income producing the tax, and where the returns were filed. A major portion of each book related to geography. Not only were there State tables showing number of returns, income, and tax, classified by size of income, but the number of returns for each county, city, and town were available for 21 years.

As numerous Congressional, Federal, State and private economic research organizations were created, and as the needs of tax administrators and the estimators of future tax revenue grew, requests were received for new data showing many detailed characteristics of the income of all persons in the United States. Consequently, by the early 1930's the Statistics of Income had developed gradually into a leading source of basic economic data. For example, in response to a need for more detailed income statistics, not only for use in tax research but also as benchmarks for Commerce's National Income and Products Accounts, two voluminous studies were conducted principally for the years 1934 and 1936. These studies were produced under the direction of the Treasury's Division of Tax Research (the predecessor of the Office of Tax Analysis) and financed by the Works Progress Administration (WPA). These manually compiled, handwritten tabulations featured extensive individual and corporate data by income size and geographic area. (The worksheets were recently converted to microfilm for ease of accessibility by researchers.) The design of these tabulations became the prototype of tables which were presented annually or periodically in the reports during the 1950's and 1960's.

By Income Year 1946 the SOI reports had increased to fourteen basic tables, largely through the introduction of cross-tabulations. New data added along the way covered such items as detailed sources of income (including gain

from sales of capital assets), standard and itemized deductions (included types of itemized deductions), number of exemptions and tax payments. New classifiers included size of specific income sources and net income. [2]

The introduction of computers in Statistics of Income processing in 1954 was perhaps the most significant technological change in its 70-year history. The tremendous increase in the volume of returns statistically processed (even with sampling), coupled with the increased complexity of the tabulations, had caused the issuance of the reports to be greatly delayed in the 1940's. (For example, the 1949 Individual report was released in 1954.) While not the sole reason, the use of computers contributed importantly to the reduction in the "publication gap" (the 1959 Individual report was released in 1961).

In more recent years the SOI reports have shown a further increase in the number of basic tables. For instance, added detail is shown for number of returns filed, sources of income, marital status and taxable and nontaxable returns. There is more information for types of dependents, types of tax computation and for several types of tax credits. Examples of items more recently added are statutory adjustments to income and minimum tax. New classifiers include taxpayers age 65 and over, marginal tax rates and alternative income concepts (data for which are specifically required by Congress). Data from tax return schedules are also being tabulated. These data include income averaging, tax preferences, residential energy investments and energy investment credit.

Today, individual income tax return data, as well as other tax return statistics produced as part of Statistics of Income program [3], serve as keystones to economic analysis for both the public and the private sectors. Among the users of SOI are the Treasury Department's Office of Tax Analysis, the Joint Committee on Taxation of the U.S. Congress, the Bureau of the Census and Bureau of Economic Analysis (both in the Department of Commerce), private non-profit research organizations, universities and businesses, as well as many State and local government agencies.

In the future, as more and more researchers have access to computers of their own, many of the SOI statistics will be provided in the form of computer tape output [4], rather than in the form of tabulations in SOI publications.

2. CHANGES IN THE LAW

The growth in the number of returns filed and the amount and types of income reported, as well as the sharp increase in the yield of the individual income tax since 1913 have resulted primarily from: changes in the law, long-term growth in the U.S. population, real growth in the economy and price inflation.

In general, increased demands for additional revenues to finance World War I, World War II, and the Korean conflict caused rapid and numerous changes in the tax law. The most drastic revisions occurred in the early 1940's; however, prior to 1940 many important tax law

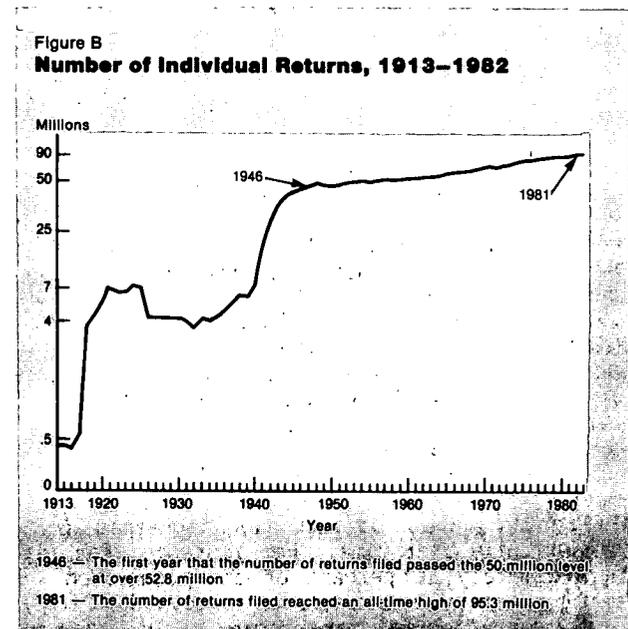
changes also occurred. Some of these changes were elimination of collection of taxes at the source (1916), credit for dependents and deduction for charitable contributions (1917), and adoption of preferential tax rates on long-term capital gains and introduction of the gross income filing requirements (1921). In addition, in 1939, for the first time all revenue laws were incorporated into a single body which came to be known as the Internal Revenue Code.

In the early 1940's revisions to the law occurred when the individual income tax was broadened to cover most of the working population. During the 1960's and throughout the 1970's there were several tax law changes affecting individuals which, in addition to revenue objectives, reflected a concern with social objectives.

The beginning of the decade of the 1980's again shows an emphasis on revenue objectives. For example, there were a series of tax cuts introduced by the Economic Recovery Tax Act of 1981; the thrust of these, however, was to lessen the individual tax burden, rather than to increase it.

3. NUMBER OF RETURNS

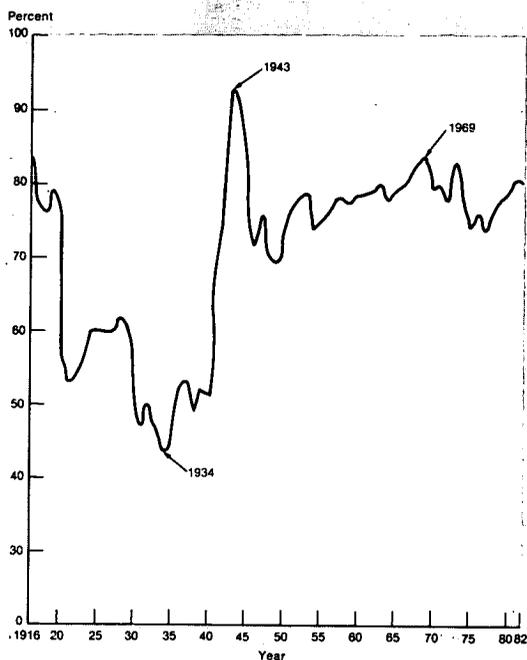
As shown in Figure B, the number of returns filed prior to 1940 ranged from approximately 300 thousand to 7 million. However, with the introduction of lower income filing requirements for 1940, the number of returns filed doubled to more than 14.7 million. By 1946 the number of returns had reached more than 50 million and by 1950 the number was slightly more than 53 million. During each of the decades of the 1950's and 1960's the number increased by an average of approximately 10 million returns. For Tax Year 1973 the number of returns passed 80 million and rose to over 93 million for the first time for 1980.



For Income Year 1982, estimates for the number of returns filed showed only a very slight decline to 95.3 million from the all-time high of 95.4 million reached for 1981.[5] The current level of return filings is more than twice the number of returns filed for 1943 which was the first year of the current system of income tax withholding on wages and salaries.

Over the 70-year history of the modern individual income tax the proportion of returns with income tax before credits has also changed (see Figure C). Prior to the broadening of the individual income tax base in the early 1940's, the percent of taxable returns ranged from a high of approximately 83 percent for 1916 to a low of about 44 percent during the depths of the Great Depression year 1934.

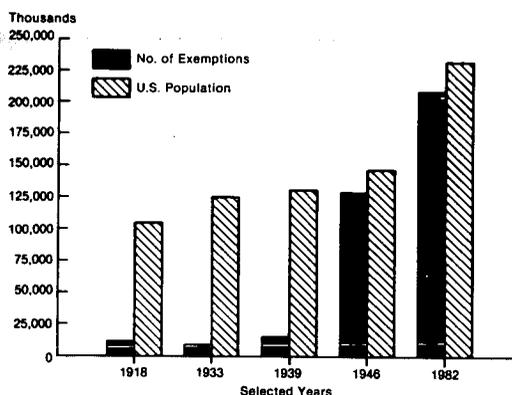
Figure C
Taxable Returns as a Percent of All Returns Filed
1916-1982



During World War II, the highest percentages of taxable returns ever recorded were experienced when, for both 1943 and 1944, more than 90 percent of all individual returns filed were taxable. In more recent years, for 1968 and 1969 the percentages climbed to the second highest levels ever experienced--83 and 84 percent, respectively. Estimates for Income Year 1982 show the percent of taxable returns remaining about the same as for 1981--at approximately 80 percent.

The percent of the total U.S. population represented on tax returns is illustrated in Figure D. This percent has increased quite dramatically over time. For instance, for 1918 approximately 10 percent of the population was represented by a taxpayer or a dependent on an individual income tax return. The percent

Figure D
Number of Exemptions (Other Than Age and Blindness)
Claimed on Individual Tax Returns vs. U.S. Population



1918 — About 10% of the population covered by tax returns
 1933 — Because of the Great Depression the percentage dropped to approximately 7%
 1939 — Population covered by returns grows to slightly more than the 1918 level
 1946 — Broadening of the tax base caused the percentage to increase dramatically to almost 87%
 1982 — Approximately 90% of the population is now covered

remained relatively low until the broadening in the coverage of individuals having to file returns that occurred in the early 1940's. By 1946, more than 87 percent of the population was covered. In the 1950's, the percentage grew still further, then stabilized at where it stands today--at approximately 90 percent of the population. It is because of this widespread representation of the U.S. population on individual tax returns that the idea of using tax records has surfaced as a possible viable alternative to the traditional ways of conducting the decennial population census. [6]

4. TRENDS IN INDIVIDUAL INCOME

Since 1944, the Statistics of Income reports have presented yearly data centered around the concept of adjusted gross income--positive sources of income less negative amounts and statutory adjustments. Prior to then, the statistics centered around the concept of net income--positive sources of income less negative amounts and allowable deductions. [7] Because of this conceptual difference it is difficult, but not impossible, to make any direct and meaningful long-run income comparisons. However, for the entire 70-year period of the individual income tax, a concept of "total income"--positive sources less negative amounts (as provided for under the tax law for the particular year)--can be constructed [8]. Table 1 shows for the period 1913-1982 the estimated total income, as well as the five components which have historically accounted for the majority of the total.

As expected, the total income reported in current dollars on all individual returns has grown dramatically during this century from about \$20 billion for 1919 to almost \$2 trillion for 1982. During the Depression, however, there was a long period when total

income declined. For example, for 1928 the total income reported on returns was approximately \$27.3 billion. During Income Year 1929, the nation experienced the stock market crash and huge losses of \$1.8 billion (associated with the sale of real estate, stocks and bonds) were reported. For that year total income dropped to \$26.6 billion and continued on a downward trend, as the Great Depression progressed, to a low point of \$10.6 billion for 1932. During the rest of the Depression total income reported grew rather slowly and only by 1939 did it again surpass \$25 billion.

Because of the dramatic increase in the number of returns filed during the 1940's, by 1945 the total income had increased to \$120 billion. Over the next fifteen years, total income grew steadily and reached more than \$316 billion for 1960. During the decade of the 1960's, total income doubled again; and, with the rapid inflation of the 1970's and early 1980's, it grew even more to over three times the level of the late 1960's.

Changes in Real Total Income

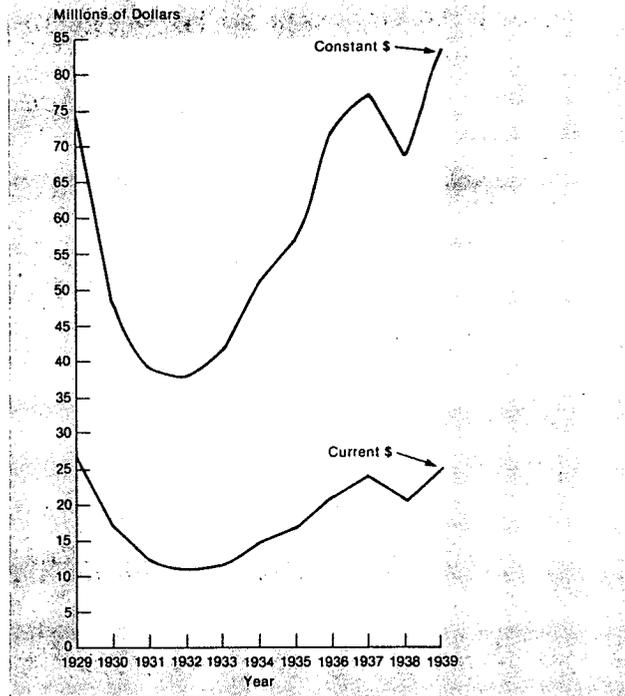
Presented below in Figure E for selected years is the total income in constant dollars adjusted for inflation [9] compared to the current dollar total for the same year.

Figure E.--Total Income for Selected Years, 1929-1982

Selected Income Year	Total Income	
	Current Dollars (millions)	Constant (1972) Dollars (millions)
1929.....	26.7	61.1
1930.....	17.0	38.0
1935.....	12.2	38.6
1940.....	40.2	130.0
1945.....	120.0	272.1
1950.....	179.1	314.9
1955.....	249.0	386.7
1960.....	316.1	439.7
1965.....	432.3	560.0
1970.....	639.4	691.2
1975.....	962.9	769.1
1980.....	1,642.3	916.5
1981.....	1,804.0	927.5
1982.....	1,917.0	930.6

An examination of the data shows that the 15-fold real growth in total income over these 54 years is consistent with, but less staggering than, the 72-fold growth rate in the current dollar total. As seen in Figure F, the constant-dollar total income in the Great Depression of the 1930's declined in the same pattern as current-dollar total income and reached a low point of \$38.2 billion for 1932. However, unlike the current-dollar totals, real growth in total income was more rapid because of falling prices. By Income Year 1937 the constant dollar total had passed the pre-Depression level of \$74.3 billion.

Figure F
Current and Constant Dollar Total Income, 1929-1939
(1972=100)



Furthermore, for the 11-year period of 1929 to 1939, there was a 12 percent real growth in total income in contrast to a very small decline in the current dollar total.

Generally, growth in real total income reported on individual income tax returns has continued at a steady pace over the years since 1940 (see Figure G-1). However, unlike the current dollar total for each year, which over the last 43 years has experienced only one downturn from the previous year (1949), the pattern of change in the constant-dollar total income has generally coincided with the expansion and contraction of the U.S. economy.

For each of the nine time periods highlighted in Figure G-1, the U.S. economy experienced the end of a business cycle expansion, the beginning and ending of a recession and the beginning of a new period of growth. [10] As shown during each of the periods the growth in real total income reported on individual returns was flat or in decline. This pattern of change in real total income was especially prevalent in the 10-year period ending with 1982, during which time the economy experienced three economic downturns, in 1973-1975, 1980 and 1981-1982. (see Figure G-2).

During the recession of 1973-1975, real total income dropped by 0.3 percent for 1974 and by 2.6 percent for 1975; and in the recession of 1980 total income dropped slightly (0.1 percent) from the 1979 total. For the most recent recessionary period of 1981-1982 there was a very slow growth rate of only about 1.2 percent for 1981 and about 0.2 percent for 1982. However, despite this slow growth, real total income reported on individual income tax returns reached an all-time high for Income Year 1982.

Figure G-1
Current and Constant Dollar Total Income, 1940-1982
 (1972 = 100)

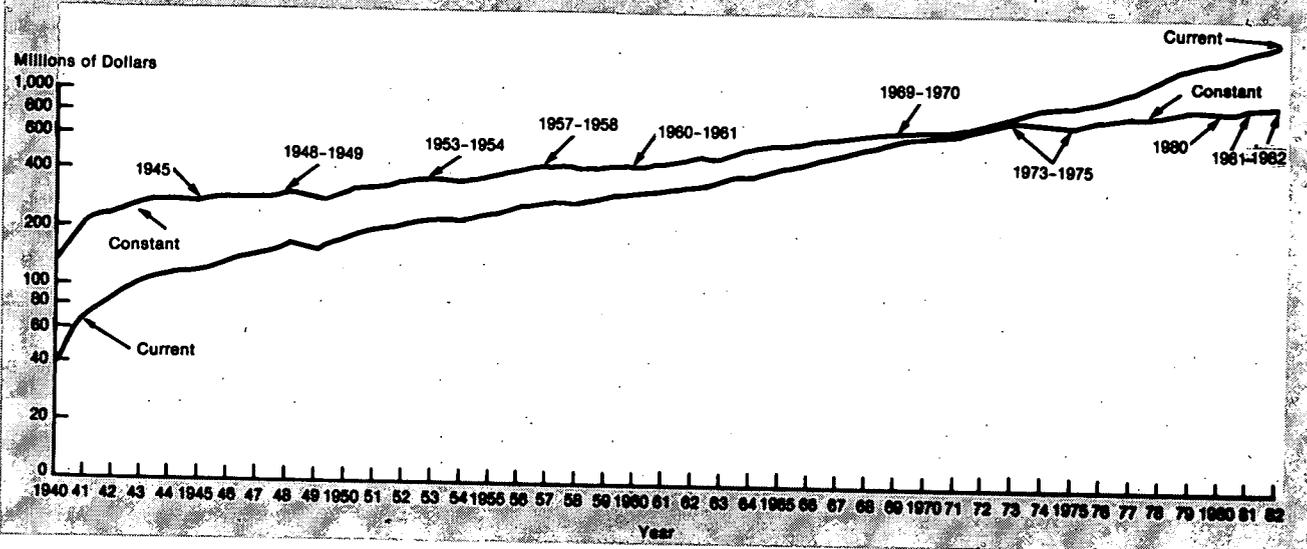


Figure G-2 — Real Total Income, 1973-1975 and 1979-1982

Year	Real Total Income (thousands)	Percent Change from Previous Year
1973.....	792,630	4.9
1974.....	789,881	-0.3
1975.....	769,078	-2.6
1979.....	917,038	3.2
1980.....	916,495	-0.1
1981.....	927,533	1.2
1982.....	930,599	0.2

Major Sources of Individual Income

Historically, the most important sources of income reported on individual returns have been salaries and wages, interest, dividends, business income from sole proprietorships and partnerships, and gains from the sale of capital assets. For most of the 70-year period, these five sources of income have accounted for more than 90 percent of the total individual income reported for tax purposes. However, during this period there was a significant change in the composition of income. Over the years, salaries and wages accounted for the largest single source of income. Since 1918, they represented more than 40 percent of the total. Interest income, which was once the smallest of these five major sources, increased rapidly. Since 1967, it exceeded dividend income as the second largest source. Furthermore, reflecting an overall change in the form of business arrangements from unincorporated to incorporated, business income (mostly from partnerships and sole proprietorships) showed a

sharp, consistent, proportional decline from almost 42 percent of the total for 1916 to less than 3 percent for 1982. This change in the composition of individual income over the years is shown in Figure H.

5. INCOME TAX AND AVERAGE TAX RATE

The Statistics of Income reports have presented yearly statistics dating back to 1913 on income tax before credits (as defined under the tax law for the particular year). [11] As shown in Table 1, in general, during the first 23 years (1913-1940), the total income tax before credits shown on the returns tabulated in SOI fluctuated (because of the effect tax law changes and economic events had on total income) between approximately \$28 million and \$1.3 billion.

However, beginning with the growth of individual income in the 1940's total income tax before credits rose almost steadily, peaking for 1981 at more than \$290 billion. For 1982, total income tax before credits dropped by approximately \$6.3 billion, largely reflecting the tax cutting provisions of the Economic Recovery Tax Act of 1981.

Along with the historical increase in total income tax before credits there was also steady increase over the past 70 years in the "average individual income tax rate" [12] (see Figure I). The many different economic events and tax law changes which affected both the definition of income reported on a tax return and the calculation of tax before credits on this income have, naturally, caused the rate to fluctuate between less than 1.0 percent for 1913 and 16.0 percent, the all-time high, for 1981. However, since the mid-1960's the effect of inflation or "bracket creep" was an important economic event which caused the average rate to increase.

Table 1.--Number of Returns, Major Sources of Income and Income Tax, 1913-1982

(Numbers of returns are in thousands; money amounts are in millions)

Year	Number of returns	Total income	Major sources of income						Income tax before credits ⁶	Total tax liability ⁷
			Salaries and wages ¹	Interest received ²	Dividends ³	Net capital gain less loss ⁴	Business net income less loss ⁵	All other income		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1913.....	358	3,900	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	28	28
1914.....	358	4,000	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	41	41
1915.....	337	4,600	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	68	68
1916.....	437	6,299	1,851	667	2,136	N/A	2,637	-992	173	173
1917.....	3,473	13,652	3,648	936	2,849	N/A	3,640	2,579	795	795
1918.....	4,425	15,925	8,267	1,403	2,469	N/A	4,339	-553	1,128	1,128
1919.....	5,333	19,859	10,756	1,500	2,454	N/A	5,709	-560	1,270	1,270
1920.....	7,260	23,736	15,323	1,709	2,736	N/A	4,922	-954	1,075	1,075
1921.....	6,662	19,577	13,813	1,690	2,477	462	3,707	-2,572	719	719
1922.....	6,787	21,761	13,694	1,738	2,664	742	4,267	-1,344	861	861
1923.....	7,698	25,313	14,193	2,183	3,120	866	6,399	-1,448	662	662
1924.....	7,370	26,189	13,618	2,281	3,251	1,124	6,565	-650	735	704
1925.....	4,171	22,337	9,742	1,814	3,465	940	5,516	860	759	735
1926.....	4,138	22,442	9,994	1,936	4,012	1,287	5,306	-93	757	732
1927.....	4,102	23,854	10,218	2,026	4,255	1,585	5,043	727	856	830
1928.....	4,144	27,338	10,945	2,143	4,440	1,708	5,223	2,879	1,199	1,164
1929.....	4,133	26,692	11,373	2,210	5,081	1,341	5,282	1,405	1,024	1,002
1930.....	3,852	17,047	10,206	1,940	4,632	676	3,101	-3,508	502	477
1931.....	3,411	12,221	8,631	1,337	3,600	990	2,016	-4,353	264	246
1932.....	4,083	10,671	8,356	1,307	2,189	325	1,229	-2,735	330	330
1933.....	3,892	11,473	7,565	1,106	1,711	232	1,746	-887	374	374
1934.....	4,198	14,957	8,681	995	2,041	18	2,125	1,097	511	511
1935.....	4,670	17,193	9,972	980	2,288	363	2,387	1,203	657	657
1936.....	5,486	21,773	11,718	955	3,228	852	3,210	1,810	1,214	1,214
1937.....	6,350	24,120	14,206	856	3,248	158	3,359	2,293	1,142	1,142
1938.....	6,251	21,436	13,307	823	2,212	-176	3,120	2,150	766	766
1939.....	7,652	25,363	16,491	832	2,544	321	3,674	1,501	929	929
1940.....	14,711	40,155	27,707	1,003	2,999	332	5,407	2,707	1,496	1,496
1941.....	25,870	63,433	47,140	1,029	3,299	430	8,455	3,080	3,908	3,908
1942.....	36,619	85,780	65,617	982	2,833	112	12,833	3,403	8,927	8,927
1943.....	43,722	106,555	82,755	886	2,780	595	15,717	3,822	14,590	14,590
1944.....	47,111	116,465	91,125	(⁸)	3,924 ⁸	917	17,250	3,249	16,224	16,216
1945.....	49,932	120,009	91,700	(⁸)	3,925 ⁸	2,114	19,003	3,267	17,061	17,050
1946.....	52,817	134,083	99,174	1,067	3,674	3,068	23,267	3,833	16,091	16,076
1947.....	55,099	149,736	114,804	1,125	4,295	2,154	23,295	4,063	18,092	18,076
1948.....	52,072	163,516	125,881	1,293	4,971	2,201	24,506	4,664	15,442	15,442
1949.....	51,814	160,574	124,883	1,528	5,246	1,604	21,705	5,608	14,538	14,538
1950.....	53,060	179,148	139,073	1,595	6,157	2,927	22,429	5,967	18,375	18,375
1951.....	55,447	202,337	160,482	1,702	6,056	2,997	24,878	6,222	24,439	24,439
1952.....	56,529	215,290	174,339	1,847	5,860	2,470	24,754	6,020	27,822	28,020
1953.....	57,838	228,708	187,734	2,043	5,828	2,075	24,951	6,077	29,450	29,657
1954.....	57,838	228,708	187,734	2,043	5,828	2,075	24,951	6,077	29,450	29,657
1955.....	56,747	229,573	185,953	2,370	7,048	3,352	25,452	5,398	26,873	26,967
1956.....	58,250	248,974	200,712	2,584	7,851	4,751	27,454	5,622	29,982	30,077
1957.....	59,197	268,268	215,618	2,872	8,606	4,553	30,137	6,482	33,134	33,265
1958.....	59,825	280,895	228,077	3,319	9,124	3,485	29,698	7,192	34,816	34,975
1959.....	59,085	281,777	227,551	3,659	9,741	4,330	29,906	6,590	34,755	34,925
1960.....	60,271	305,772	247,370	4,395	9,356	6,275	30,994	12,382	39,092	39,347
1961.....	61,028	316,141	257,918	5,057	9,530	5,300	30,038	8,298	39,909	40,298
1962.....	61,499	330,617	266,902	5,683	9,890	7,621	31,578	8,943	42,714	43,066
1963.....	62,712	349,484	283,373	7,155	10,640	5,771	33,269	9,276	45,691	45,790
1964.....	63,943	369,675	299,443	9,212	11,452	6,449	33,184	9,935	49,117	49,216
1965.....	65,376	399,539	323,266	10,125	11,917	7,939	35,358	10,934	47,896	48,185
1966.....	67,596	432,344	347,150	11,296	12,961	10,180	38,559	12,198	50,144	50,632
1967.....	70,160	472,132	381,067	13,225	13,998	9,941	40,984	12,917	56,773	51,627
1968.....	71,651	509,151	411,646	14,899	14,202	13,682	42,280	12,442	63,655	64,525
1969.....	73,729	559,760	451,505	16,782	15,222	17,990	45,503	12,758	77,440	78,619
1970.....	75,834	603,546	498,865	19,626	15,740	14,583	45,862	8,890	87,336	88,524
1971.....	74,280	639,358	531,884	22,021	15,807	9,907	44,242	16,397	84,156	85,767
1972.....	74,576	682,467	564,967	24,731	15,671	13,155	45,029	18,914	85,942	87,469
1973.....	77,573	735,540	622,599	27,400	16,794	17,076	49,616	22,055	94,442	95,549
1974.....	80,693	837,813	687,179	32,174	18,734	16,672	56,489	26,565	109,394	111,175
1975.....	83,340	918,626	758,628	39,543	20,887	13,470	55,055	31,043	125,079	127,003
1976.....	82,229	962,887	795,399	43,434	21,892	14,072	53,736	34,354	127,432	127,939
1977.....	86,670	1,070,180	880,998	48,588	24,461	18,562	59,637	37,934	144,186	145,749
1978.....	86,635	1,177,821	969,403	54,603	27,020	20,777	63,271	42,747	162,587	164,024
1979.....	89,772	1,324,811	1,090,292	61,223	30,206	23,231	75,156	44,703	193,555	193,185
1980.....	92,694	1,490,173	1,229,251	73,875	33,483	28,448	69,013	56,103	220,099	220,100
1981.....	93,902	1,642,345	1,349,843	102,009	36,761	29,660	64,557	59,515	256,294	256,251
1982.....	95,396	1,804,046	1,486,100	140,559 ⁹	48,161 ⁹	30,819	52,933	45,474	290,207	291,127
1982.....	95,337	1,917,023	1,564,995	157,021	52,142	34,404	49,665	58,796	283,932	284,708

¹Salaries and wages reported on individual returns include "Professions and vocations" for 1916; the taxpayer's earned income from partnerships for 1916-1926; and earned income of the individual, spouse, or dependent minors derived from business conducted as a sole proprietorship prior to 1924. For 1944-1960 they exclude amounts of less than \$100 per return, reported on Form W-2, from which no tax was withheld; such wages and salaries are tabulated as other income.

²Because of tax law changes the amounts shown for interest received may not be comparable for each year. For a specific year see the applicable SOI report for those amounts of interest received which were required to be reported on individual tax returns. The 1981 data are for dividends received before exclusion. See footnote 7 for further information.

³Because of tax law changes the amounts shown for dividend income may not be comparable for each year. For a specific year see the applicable SOI report for those amounts of dividend income which were required to be reported on individual tax returns. Amounts shown for 1954-1982 are for dividends after the exclusion amount. The 1981 data are for dividends before exclusion. See footnote 7 for further information.

⁴Because of tax law changes the amounts shown for net capital gain less loss may not be comparable for each year. For a specific year see the applicable SOI report for those amounts of net capital gain less loss which were required to be reported on individual tax returns.

⁵Business net income less loss includes income from sole proprietorships and partnerships. Because of tax law changes the amounts of business income from sole proprietorships and partnerships may not be comparable for each year. See footnote 1 above for further information on sole proprietorship and partnership income included as salaries and wages for 1916-1926. See the applicable SOI report for those amounts of sole proprietorship and partnership income which were required to be reported on individual tax returns.

⁶The total amount for income tax before credits for a few years differs slightly from the total shown in the appropriate SOI report. This difference is the result of slight adjustments made for certain general tax credits which were added to the tax law to lower tax liability without changing the tax rates.

⁷Total tax liability includes all income taxes reported on individual returns.

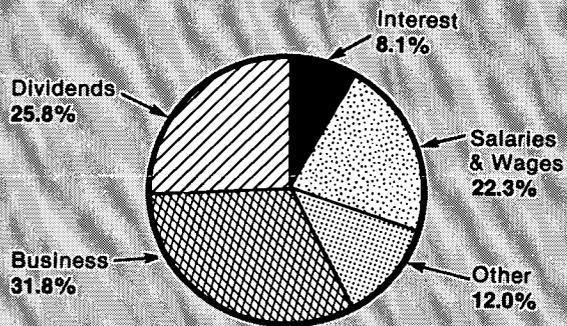
⁸For 1944 and 1945 the total amounts for interest and dividend income were combined in the SOI reports and shown as dividend income.

⁹Because of a one-time combined interest and dividend exclusion in 1981 data for interest and dividends are before exclusion. The combined amount of interest and dividends after the exclusion was \$178,097,705,000, reported on 31,144,410 returns.

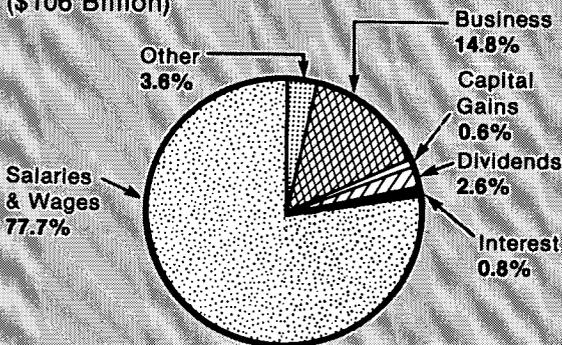
NOTE: Detail may not add to total because of rounding.

Figure H
Major Sources of Individual Income — Percent of Total — 1916, 1943 and 1982

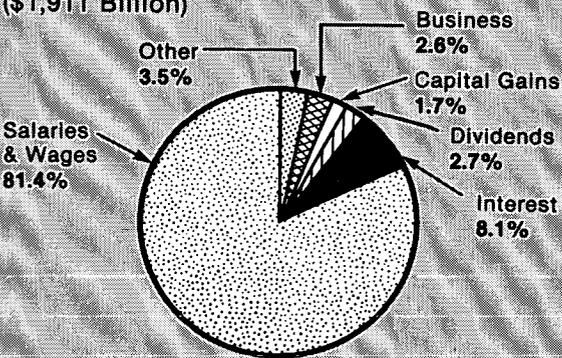
1916
 (\$6.3 Billion)



1943
 (\$106 Billion)

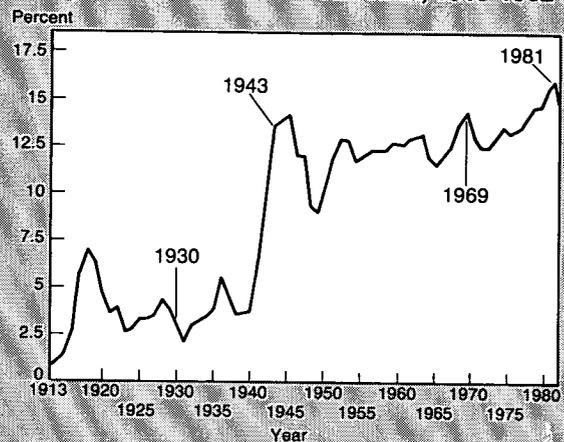


1982
 (\$1,911 Billion)



This phenomenon of bracket creep was caused by the fact that, under the U.S. graduated system of taxation, income increases, intended to compensate workers for rising living costs, pushed taxpayers into higher tax brackets with the result of both larger total and average tax burdens for individuals. This continued increase in the average tax rate occurred despite several tax lowering measures, such as the general tax credit which was given to

Figure I
Average Individual Income Tax Rate, 1913-1982



1930—Beginning of the Great Depression
 1943—First year of tax withholding from wages and salaries
 1969—Vietnam War tax surcharge
 1981—Economic Recovery Tax Act

taxpayers for each of the years 1975 through 1978 and the 1.25 percent rate reduction credit for 1981 (which was the first of several tax cuts introduced by the Economic Recovery Tax Act of 1981). The drop in the rate to 14.9 percent for 1982 reflects the first full year of the tax-cutting provisions of the Act.

6. DATA SOURCES

Throughout the history of the Statistics of Income data series for individuals the data for the most part have been based on stratified probability samples of unaudited individual income tax returns. The use of systematic stratified sampling was introduced as early as the 1925 Statistics of Income report. [13] Its use is indicated in this portion of the text excerpted from the 1925 volume:

"...In addition, a fair average sample of the returns filed by persons having net income of less than \$5,000 approximating 250,000 returns are sent in to the Bureau by the 64 collectors' offices and are analyzed for information bearing on this income class, the data fairly representing the distribution of income of all the returns filed having net income of less than \$5,000".

This was, so far as is known, one of the first uses of stratified sampling in a major Federal statistical program.

The largest number of returns included in the SOI sample for any one year was 1.1 million for 1948. Today, with the mix of sophisticated automatic data processing, better statistical techniques and recent budgetary constraints, the size of the sample has fallen to around 100,000 returns. [14]

The aggregate number of returns and money amounts shown in the early Statistics of Income reports are undoubtedly different from those that were actually reported on all individual income tax returns filed. These reports did not contain data from deficit returns (deductions exceeded gross income) because the emphasis of Statistics of Income was on net income and whether the returns were taxable or nontaxable (exemptions exceeded net income). Data from all individuals returns filed were not included in SOI until 1928.

In addition, prior to 1937 the income of an estate or trust which yielded a tax for which the estate or trust was liable (usually income received while the estate was being settled or income from a trust which was not yet distributed to beneficiaries) was required to be filed on an individual return, Form 1040. The tax rates were the same as for individuals and a separate Form 1041 was not used for this purpose until 1937. Consequently, for 1916-1936, data for individuals and estates and trusts with net income were all combined (though labelled as "individual returns") and they were not separated in the statistics. [15]

7. STATISTICAL PROCESSING OF INDIVIDUAL INCOME TAX RETURNS

The processing of individual income tax returns for statistical purposes has grown from the laborious manual operation of the first five decades to a fully computerized system in the 1980's. In the context of this paper is worth noting some of the years in which these procedural changes were made.

Electronic Accounting Machine (EAM) equipment was used for SOI processing beginning as early as the 1920's; and, in 1954, IRS (working at the Census Bureau) first employed a computer for their statistical work (although basically only for tabulations). [16]

The concept of a "Master File" (transcribing to tape most of the information supplied on the tax return) was first applied to IRS processing in the late 1950's, and became operational nationwide in the 1960's. When the use of automatic data processing became operational in all IRS regional service centers, computer designation of the statistical samples commenced with the 1966 Tax Year individual return SOI program.

It was not until 1974, however, that it was considered practicable to use for statistical purposes data which had been recorded for "Master File" purposes. Now, almost 90 percent of the data elements in the individual tax return SOI program are obtained directly from the "Master File" with only the remaining 10 percent separately edited.

8. NEW DIRECTIONS FOR THE SOI PROGRAMS

The new directions envisioned for the SOI Programs can be broadly categorized into two areas: (1) processing innovations, and (2) product reshaping.

With respect to processing, the SOI Programs are utilizing (as fast as practicable) the improved systems equipment and operations being

introduced for regular IRS processing. One example, which should impact significantly on SOI processing costs and timeliness, is the use of on-line error resolution in a real time environment. This replaces the traditional laborious, after-the-fact checking procedures which were often done without the source documents on hand.

In the area of statistical products, it is expected that the focus of the SOI Programs will move away from the more traditional annual and supplemental reports to a broader concept of "user services," taking advantage of less complicated, more efficient hardware coupled with the ever increasing variety of statistical software.

ACKNOWLEDGMENTS

This paper excerpts material which was gathered for the commemoration of the first 70 years of the Statistics of Income (SOI) Program and which was later used as the basis for a Statistics of Income Bulletin article entitled "70th Year of Individual Income Tax Return Data," by David Paris and Cecelia Hilgert. All of the authors wish to express their appreciation to Clementine Brittain and Cathy Robinson for their efforts in the typing and copy preparation of the material used for this paper.

NOTES AND REFERENCES

- [1] The American Way in Taxation: Internal Revenue, 1862-1963, ed. Lillian Doris (Englewood Cliffs, 1963).
- [2] Blacksin, Jack and Plowden, Ray, "Statistics of Income for Individuals: A Historical Perspective", 1981 American Statistical Association Proceedings, Section on Survey Research Methods, pp. 581-586.
- [3] See for the annual Statistics of Income reports: U.S. Department of the Treasury, Internal Revenue Service, Statistics of Income--Individual Income Tax Returns Publication 79, and Statistics of Income--Corporation Income Tax Returns, Publication 16.
- [4] Public-use tape files available from the Statistics of Income program include: Individual Tax Model for each year 1966 to 1981; Corporation Source Book for each year 1965 to 1981; Estate Tax Returns, 1972 and 1976; Private Foundations, 1974 and 1979; Sole Proprietorships, 1980 and County Migration Data, 1980-1981. Further details, including ordering information, can be obtained by writing to: Director, Statistics of Income Division, D:R:S, Internal Revenue Service, 1111 Constitution Avenue, N.W., Washington, DC 20224.
- [5] Preliminary Income Year 1983 estimates show that the number of returns being filed is up from the 1981 figure to 97.0 million and projections are for continued growth.
- [6] The number of exemptions claimed on tax returns gives a count of the number of individuals actually covered by the tax

- filing system. There are, however, some adjustments that have to be made to the number of exemptions to compensate for over- and undercounting of individuals. These include: subtraction of the extra exemptions for age and blindness, elimination of duplicate counting of dependents with unearned income, and adjustments to compensate for overcounting of certain deceased taxpayers, dependents with earned income and dependents of divorced tax return filers. For more information on comparability of Census Population information with tax record information see, for example, Alvey, Wendy and Scheuren, Fritz, "Background for an Administrative Record Census," 1982 American Statistical Association Proceedings, Social Statistics Section.
- [7] In general, allowable deductions included, but were not limited to, such items as interest paid, taxes paid, contributions, losses from fires and storms and bad debts. See the applicable SOI report for those deductions allowable in a specific year.
- [8] For each Tax Year, the total income figure computed for the year was derived from the data shown in the applicable SOI report. This was accomplished by adding the positive amounts of income less the net loss amounts of income. The total amount of "net income" shown in the SOI reports prior to 1944 differs from the total income amount for the same years shown in this article. In the original SOI reports prior to 1944, allowable deductions were subtracted from the total income in arriving at net income. These deductions are discussed in note 7 above.
- In addition, the total amount of adjusted gross income (AGI) shown in the SOI reports since 1944 also differs from the total income amount shown in this article. In the SOI reports since 1944 statutory adjustments were subtracted from total income in arriving at AGI. Statutory adjustments include, but are not limited to, such items as the moving expense adjustment, employee business expenses and the sick pay exclusion. See the applicable SOI report for those statutory adjustments allowable in a specific year.
- [9] The adjustment used was the implicit price deflator for personal consumption expenditures. See U.S. Department of Commerce, Bureau of Economic Analysis, The National Income and Product Accounts of the United States, 1929-76, September 1981 and Survey of Current Business, July 1982.
- [10] U.S. Department of Commerce, Bureau of Economic Analysis, Business Conditions Digest, November 1983.
- [11] For selected years (1923-1933, 1943, 1975-1978 and 1981), the total amount for income tax before credits shown in this paper differs slightly from the total shown in the appropriate SOI report. This difference is the result of the slight adjustments made for certain general tax credits which were added to the tax law in order to lower tax liability without changing the tax rates.
- [12] The average individual income tax rate is defined as the ratio of total income to income tax before credits. Income tax before credits is the focus in this article rather than income tax after credits, because of the desire to look at the impact of the differing rates over time. The general pattern shown in this article would however be little changed if the calculations had been made with income tax after credits instead. Total tax liability, as shown in Table 1, includes not only income tax after credits but also additional tax for tax preferences, self-employment taxes, etc.
- [13] U.S. Department of the Treasury, Internal Revenue Service, Statistics of Income--1925, page 1.
- [14] For further information on the 1982 sample see U.S. Department of the Treasury, Internal Revenue Service Statistics of Income--1982, Individual Income Tax Returns, 1984.
- [15] It is assumed that the data in this paper are impacted to a negligible degree by the absence of deficit returns prior to 1928 and the presence of fiduciary returns prior to 1937. The number of deficit returns filed for 1928, for example, was only 1.8 percent of the total. Fiduciary returns (with net income) for 1937 represented about 1.2 percent of the combined number of individual and fiduciary returns.
- [16] Duncan, Joseph and Shelton, William, Revolution in United States Government Statistics, 1926-1976, U.S. Department of Commerce, Office of Federal Statistical Policy and Standards, 1978.