Further Examination of the Distribution of Individual Income and Taxes Using a Consistent and Comprehensive Measure of Income

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Different approaches have been used to measure the distribution of individual income over time. Survey data, such as those from the U.S. Census Bureau's Current Population Survey (CPS) and Survey of Income and Program Participation (SIPP), have been compiled with detailed enumeration, but underreporting of incomes, inadequate coverage at the highest income levels, and omission of a key income type jeopardize the validity of results. Administrative records, such as individual income tax returns, may be less susceptible to underreporting of income but exclude certain nontaxable income types. In addition, estimates of change can be unreliable in periods when the tax law has been substantially altered. Record linkage studies have capitalized on the advantages of both approaches, but are costly and severely restricted by the laws governing interagency data sharing.

This paper is the third in a series examining trends in the distribution of individual incomes and tax burdens based on a consistent and comprehensive measure of income derived from individual income tax returns [1,2]. In the two previous papers, we demonstrated that the shares of income accounted for by the highest income-size classes have clearly increased over time, although some of this increase was tempered by corresponding increases in the shares of taxes paid by these groups. We also demonstrated the superiority of our comprehensive and consistent income measure, the 1979 Retrospective Income Concept, particularly in periods of tax reform.

In this paper, we continue this analysis of individual income and tax distributions. The paper has four sections. In the first section, we briefly summarize this measure of individual income derived as a "retrospective concept" from individual income tax returns. In the second section, we present the results of our analysis of time series data on individual incomes and taxes. Next, we estimate Lorenz curves and compute Gini coefficients from these data and summarize our findings. Finally, data limitations, results, and conclusions are presented.

■ Derivation of the 1979 Retrospective Income Concept

The tax laws of the 1980's and 1990's made significant changes to both the tax rates and definitions of taxable income. The tax reforms of 1981 and 1986 significantly lowered individual income tax rates, and the latter also substantially broadened the income tax base. The tax law changes effective for 1991 and 1993 initiated rising individual income tax rates and further modifications to the definition of taxable income [1,2]. Law changes effective for 1997 lowered the maximum tax rate on capital gains. With all of these changes, the questions that arise are what has happened to the distribution of individual income and the shares of taxes paid by the various income-size classes?

In order to analyze changes in income and taxes over time, consistent definitions of income and taxes must be used. However, the Internal Revenue Code has been substantially changed in the last 19 years—both the concept of taxable income and the tax rate schedules have been significantly altered. The most commonly used income concept available from Federal income tax returns, Adjusted Gross Income (AGI), was designed to facilitate tax administration, and its definition has changed over time to reflect modifications to the Internal Revenue Code. These changes made it difficult to use AGI for inter-temporal comparisons of income.

For this reason, an income definition that would be both comprehensive and consistent over time was developed [3,4,5]. The 1979 Retrospective Income Concept was designed to include the same income and deduction items from items available on Federal individual income tax returns. Tax Years 1979 through 1986 were used as base years to identify the income and deduction items, and the concept was subsequently applied to later years by including the same income components common to all years.

As shown in Figure A, the calculation of the 1979

Retrospective Income Concept includes several items partially excluded from AGI for the base years, the largest of which was capital gains [1,2]. The full amounts of all capital gains, as well as all dividends and unemployment compensation, were included in the income calculation. Total pensions, annuities, IRA distributions, and rollovers were added, including nontaxable portions that were excluded from AGI. Social Security benefits were omitted because they were not reported on tax returns until 1984. Also, any depreciation in excess of straight-line depreciation, which was subtracted in computing AGI, was added back [1,2].

Figure A.—Components of the 1979 Retrospective Income Concept for 1997

Retrospective Income =
Salaries and wages[1]

Plus (+):
Interest[1]
Dividends[1]
Taxable refunds[1]
Alimony received[1]
Capital gains minus allowable losses reported on Schedule D[1]
Capital gains and losses not reported on Schedule D[1]
Other gains and losses (Form 4797)[1]
Business net income or loss[1]
Farm net income or loss[1]
Rent net income or loss[1]
Royalty net income or loss[1]
Partnership net income or loss[1]
S Corporation net income or loss[1]
Farm rental net income or loss[1]
Estate or trust net income or loss[1]
Unemployment compensation[1]
Depreciation in excess of straight-line depreciation[2]
Total pension income[3]
Other net income or loss[1]
Net operating loss[1]

Minus (-):
Disallowed passive losses (Form 8582)[4]
Moving expenses[1]
Alimony paid[1]
Unreimbursed business expenses[4]

[1] Included in adjusted gross income (AGI) for Tax Year 1997.
[2] Adjustment to add back excess depreciation (accelerated over straight-line depreciation) deducted in the course of a trade or business and included in net income (loss) amounts.
[3] Includes taxable and tax-exempt pension and retirement distributions, including IRA distributions.
[4] Not included in AGI for Tax Year 1997.

For this study, retrospective income was computed for all individual income tax returns in the annual Statistics of Income (SOI) sample files for the period 1979 through 1997. Loss returns were excluded and the tax returns were tabulated into income-size classes based on the size of retrospective income and ranked from highest to lowest. Percentile thresholds were interpolated within the income-size classes for the following groups: the top 1 percent; 1-to-5 percent; 5-to-10 percent; 10-to-20 percent; 20-to-40 percent; 40-to-60 percent; 60-to-80 percent; and the bottom 20 percent [6,7,8]. For each size class, the number of returns and the amounts of retrospective income and taxes paid were compiled. From these data, income and tax shares and the average taxes were computed for each size class for all years.

Table 1 presents the interpolated income thresholds for all of the years. Table 2 shows the number of returns for each size class, and Tables 3 and 4 present the amounts of aggregate retrospective income and taxes for each size class, respectively.

■ The Distribution of Income and Taxes

With this database, we sought to answer the following questions—have the distribution of individual incomes (i.e., income shares), the distribution of taxes (i.e., tax shares), and the average effective tax rates (i.e., tax burdens) changed over time? As a first look at the data, we examined the income thresholds of the bottom (or entry level) of each income-size class and a clear pattern emerged. While all of the income thresholds have increased over time, the largest increases in absolute terms, and on a percentage basis, were with the highest income-size classes.

For example, while $79,679 of retrospective income were needed to enter the top 1-percent size class for 1979,

$269,414 were needed for entry into this size class for 1997, an increase of 238 percent. But for the top 20 percent, the threshold increased by 123 percent, and, for the bottom 20 percent, the increase was only 92 percent. Since much of these increases are attributable to inflation, we computed constant dollar thresholds, using the Consumer Price Index, which are plotted in Figure B and shown in Table 5 [9].

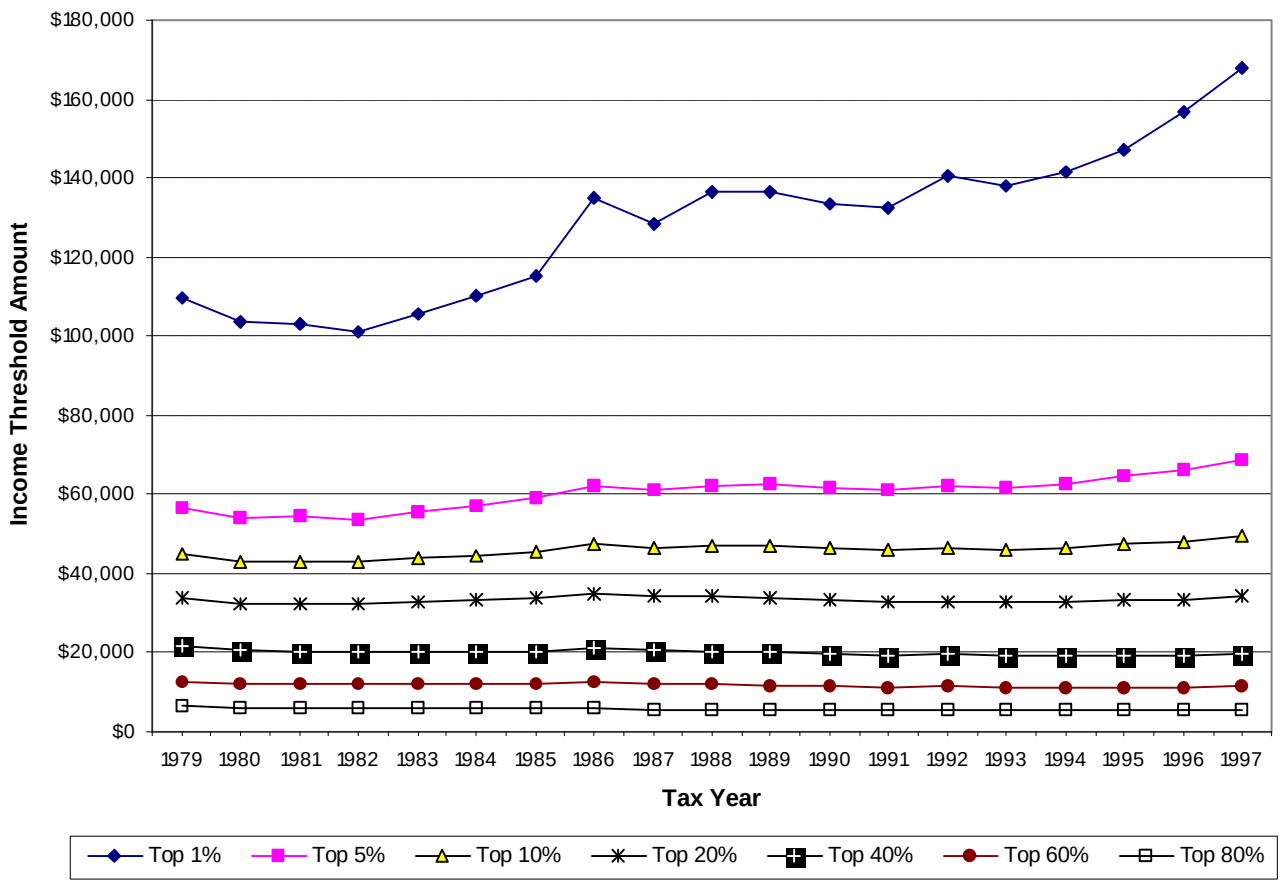
What is most striking about these data are the changes between 1979 and 1997 for the various income-size percentile thresholds. For example, the threshold for the top 1 percent rose from $109,751 for 1979 to $167,859 for 1997, an increase of nearly 53 percent. However, the thresholds for each lower percentile class show smaller increases in the 19-year period; the top 20-percentile threshold increased only 1 percent, and the 40-percent and all lower thresholds declined in inflation-adjusted dollars, with larger percentage reductions for the smaller income-size classes.

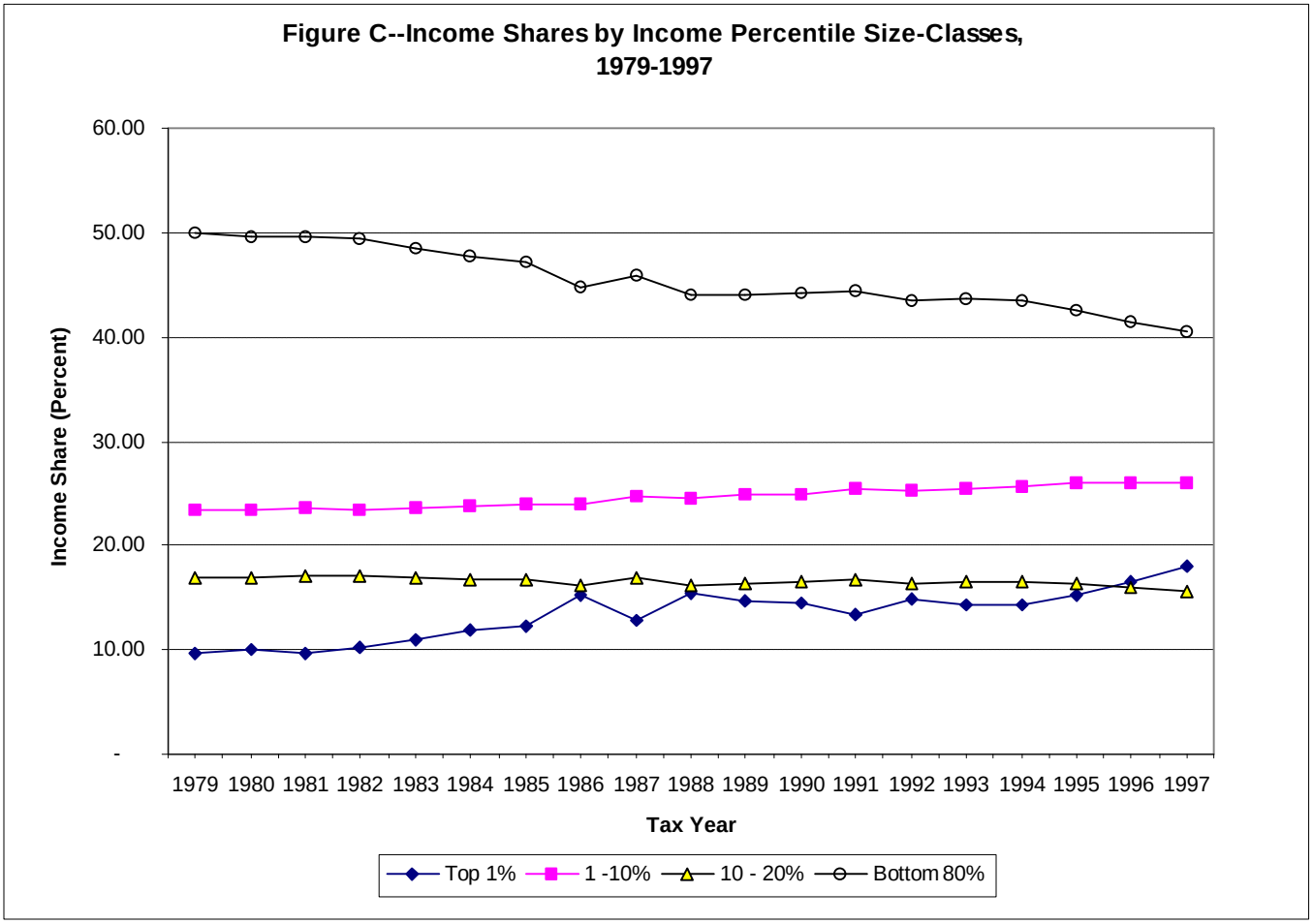
Income shares

The data on income shares by percentile-size classes are provided in Table 6 and summarized in Figure C for 1979 through 1997. The share of income accounted for by the top 1 percent of the income distribution has climbed steadily from a low of 9.58 percent for 1979 to a high of 17.94 percent for 1997. While this increase is quite steady, there were some significantly large jumps, particularly for 1986, due to a surge in capital gains realizations after the passage, but before implementation, of the Tax Reform Act of 1986 (TRA). The top 1-percent share also increased for 1995 through 1997. Notable declines in the top 1-percent share occurred in the recession years of 1981 and 1990-1991.

This pattern of an increasing share of total income

Figure B--Constant Dollar Income Thresholds, 1979-1997





is mirrored in the 1-to-5 percent class and the 5-to-10 percent class, but to a considerably lesser degree. For the former group, the income share increased from 12.60 percent to 14.91 percent, while for the latter, the share barely increased from 10.89 percent to 11.00 percent in this period. All of the other lower percentile-size classes, from the 10-to-20 percent class to the four lowest quintiles, show declines in shares of total income over the 19-year period. Overall, the top quintile increased its share of total income from 50 percent for 1979 to nearly 60 percent for 1997.

Tax shares

Data on tax shares by the percentile-size classes are shown in Table 7 and summarized in Figure D [10]. The share of taxes accounted for by the top 1-percent group also climbed steadily in this period, from initially at 19.75 percent for 1979, then declining to a low of 17.42 percent for 1981, before rising to 32.58 percent for 1997. As with incomes, there were some unusually large increases, particularly for 1986, but also for 1982, 1983, 1988, 1992, 1993 (the first year of the 39.6-percent top marginal tax rate), 1995 and 1996. One common feature for all these years was that net capital gains reported in AGI showed double-digit growth from the previous year [3,5].

The 1-to-5 percent size class exhibited relatively modest change in its share of taxes, increasing from 17.53 percent to 18.79 percent in the period. The 5-to-10 percent class, and all lower income-size classes, had declining shares of total tax [11]. The top quintile increased its share of taxes from 66.82 percent to 76.40 percent of the total in the 1979 to 1997 period.

Average tax rates

Figure D--Tax Shares by Income Percentile Size-Classes, 1979 - 1997

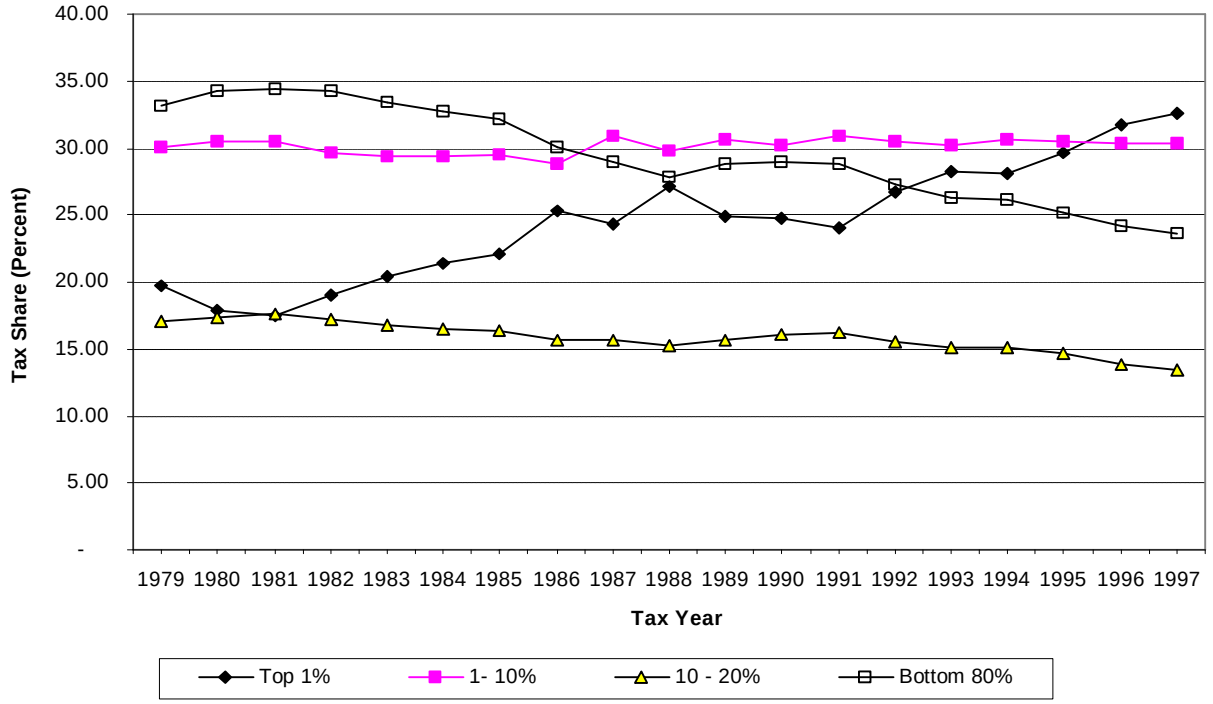
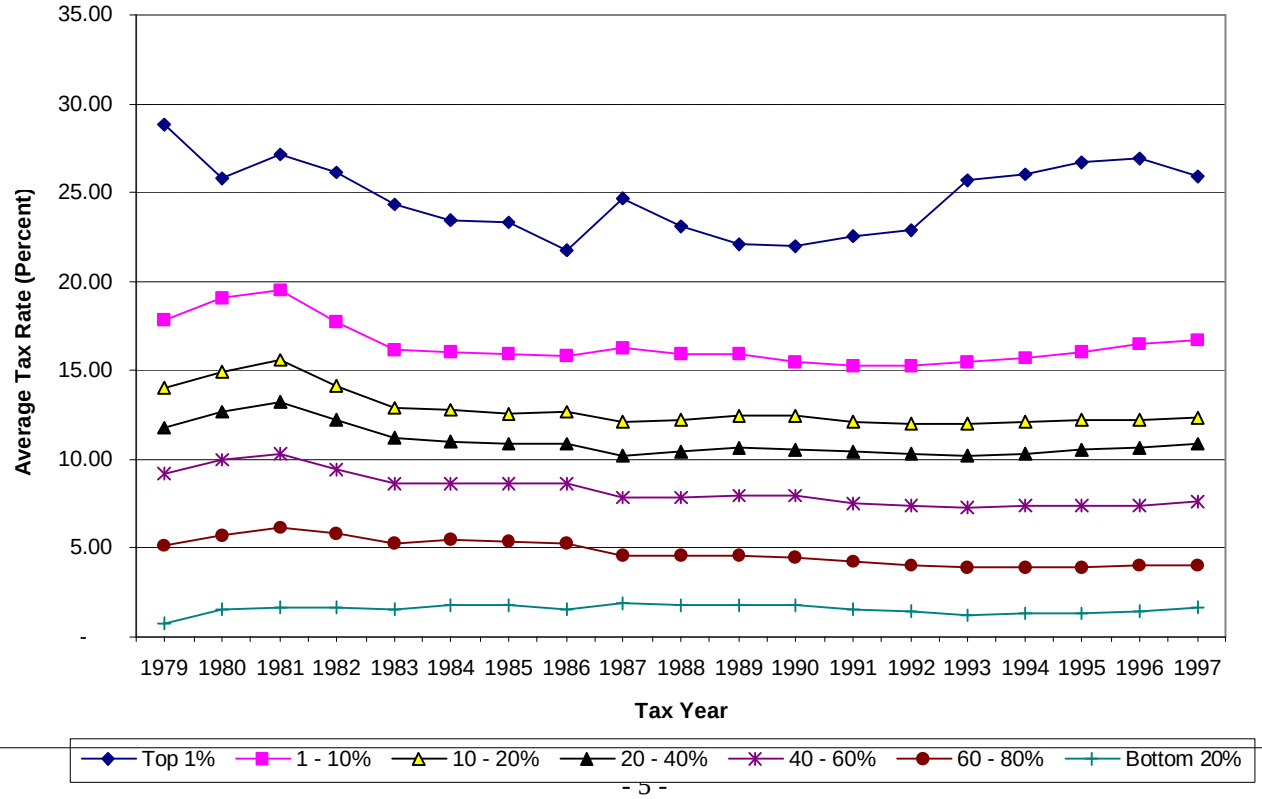


Figure E--Average Tax Rates for Income Percentile Size Classes, 1979 - 1997



Average tax rates by income-size class are presented in Figure E and Table 8. What is most striking about these data is that the levels of the average tax burdens increase with income size in all years. The progressivity of the individual income tax system is clearly demonstrated.

Despite the fact that the overall average tax rate increased slightly between 1979 and 1997 (i.e., rising from 13.96 percent to 14.30 percent), the average rate for all but the very lowest size class actually declined [11]. While this at first appears to be inconsistent, it is clear how this did in fact occur – over time, the proportion of income has shifted to the upper levels of the income distribution, where it is taxed at higher rates.

In examining the average tax data by income size, three distinct periods emerge. First, the average tax rates were generally climbing up to the implementation of the Economic Recovery Tax Act (ERTA) effective for 1982. This was an inflationary period, and prior to indexing of personal exemptions, the standard deduction, and tax brackets, which caused many taxpayers to face higher tax rates. (Indexing became a permanent part of the tax law for Tax Year 1985 [3].) Also, this period marked the recovery from the recession in the early 1980's.

Similarly, average taxes also climbed in the period after 1992, the period affected by the Omnibus Budget and Reconciliation Act (OBRA). This was not surprising for the highest income-size classes, ones affected by the OBRA-initiated 39.6-percent top marginal tax rate, but the average tax rate increases are also evident in the smaller income-size classes for most years in the 1993 to 1997 period as well.

For the majority of intervening years (i.e., 1982 through 1992), average tax rates generally declined by small amounts for most income-size classes, although the period surrounding the implementation of the 1986 Tax Reform Act (TRA) gave rise to small increases in some classes. Despite the substantial base broadening and rate lowering initiated by TRA, for most income-size classes, the changes to average rates were fairly small. However, it should be kept in mind that individuals can and do move between income-size classes.

The rates for the top 1 percent clearly show the effects of the 1986 capital gains realizations, in anticipation of the ending of the 60-percent long-term gains exclusion, which began in 1987. The average tax rate for this income-size class dropped for 1986, but rose sharply for 1987, before dropping again for each of the next three years.

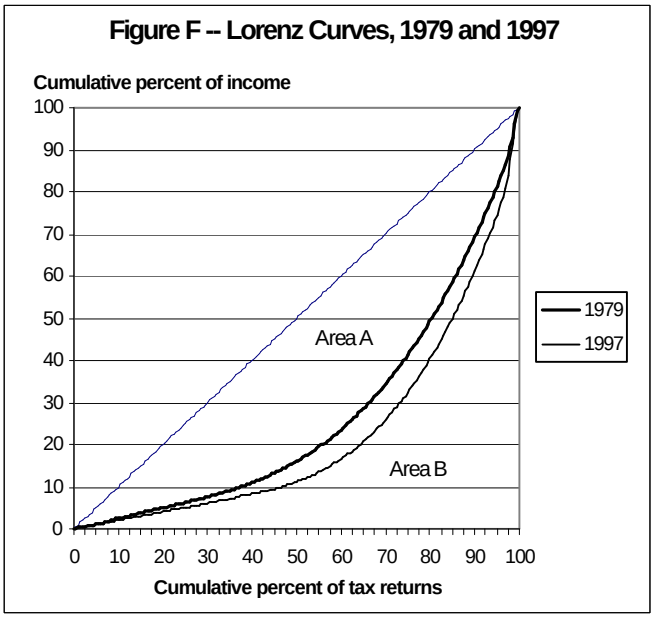
To assess what happened, it is important to look at the underlying data. The substantial increase in capital gains realizations for 1986 swelled the aggregate income and tax amounts for upper income classes and also raised the income thresholds of these top classes. However, since much of the increase in income for these size classes was from net long-term capital gains, which had a maximum effective tax rate of 20 percent (i.e., a 50-percent maximum marginal tax rate combined with the 60-percent exclusion), it is not surprising that the average tax rate for these top size classes declined.

Interestingly, the average tax increases which predominate in the 1993-1997 period have one very noticeable exception — the average rate for the top 1-percent size class declined from 26.98 to 25.96 between 1996 and 1997. We believe that effect is the direct result of the reduction in the top capital gains tax rate, from 28.0 to 20.0 percent, which began in May 1997.

■ Lorenz and Gini Analysis of the Distributions

To further analyze the data, we estimated Lorenz curves and computed Gini coefficients for all years. The Lorenz curve is a cumulative aggregation of income from lowest to highest, expressed on a percentage basis. To construct the Lorenz curves, we re-ordered the percentile classes from lowest to highest and used the income thresholds as "plotting points" to fit a series of third-order regression equations for each of the 19 years, both before- and after-taxes.

Lorenz curves for 1979 and 1997 are plotted in Figure F. The 45-degree diagonal or "identity function" in the figure represents the unlikely situation of everyone having equal amounts of income. In this scenario, 10 percent of the tax return filers would account for 10 percent of the income, as would 50 percent, 90 percent, etc. Clearly, although such a situation is a virtual impossibility, it is a



useful yardstick by which to measure the degree of income inequality.

The Lorenz curve for 1979 is above and to the left of that for 1997 — this is because for each cumulative percent of tax returns (as measured on the horizontal axis), the cumulative percent of income for 1979 (measured on the vertical axis) exceeds that for 1997. Clearly this is a situation of less income inequality for 1979, which is also evident from the income share data in Figure C and Table 6.

Once the Lorenz curves were estimated for all years, Gini coefficients were calculated. Intuitively, the Gini coefficient is a measure of the degree of inequality—that is, a higher Gini value represents more inequality. From Figure F, the Gini coefficient is measured as follows:

Gini coefficient = Area A / (Area A + Area B) * 100

that is, the Gini coefficient is the estimated area beneath the 45-degree diagonal but above the Lorenz curve (an amount of "inequality") expressed as a percentage of the entire area below the 45-degree diagonal. Thus, if the Lorenz curve were bowed down and to the right, Area A would increase thereby increasing the Gini coefficient.

As shown in Figure G, Gini coefficients for all 19 years were estimated for both before- and after-tax income distributions. The Gini coefficients increased throughout the 19-year period signifying rising levels of inequality for both the pre- and post-tax distributions. This result was not unexpected since it parallels the rising shares of income accruing to the highest income-size classes. Over this period, the before-tax Gini coefficient value increased from 0.473 to 0.564 (19.2 percent), while the after-tax Gini value increased from 0.442 to 0.534 for a slightly higher percentage increase (20.8 percent).

Figure G—Gini Coefficients for Retrospective Income, Before and After Taxes, 1979 — 1997

	—Gini Coefficients —			Percent
Year	Before tax	After tax	Difference	difference
1979	0.473	0.442	0.031	6.6
1980	0.477	0.447	0.030	6.3
1981	0.476	0.445	0.031	6.5
1982	0.478	0.450	0.028	5.9
1983	0.487	0.461	0.026	5.3
1984	0.495	0.470	0.025	5.1
1985	0.500	0.475	0.025	5.0
1986	0.525	0.500	0.025	4.8
1987	0.517	0.490	0.027	5.2
1988	0.535	0.509	0.026	4.9
1989	0.533	0.508	0.025	4.7
1990	0.532	0.508	0.024	4.5
1991	0.529	0.504	0.025	4.7
1992	0.538	0.512	0.026	4.8
1993	0.536	0.508	0.028	5.2
1994	0.537	0.508	0.029	5.4
1995	0.545	0.515	0.030	5.5
1996	0.557	0.526	0.031	5.6
1997	0.564	0.534	0.030	5.3

So what has been the effect of the Federal tax system on the size and change over time of the Gini coefficient values? One way of looking at this question is to compare the before- and after-tax Gini values. Although this is not a perfect measure, since the tax law can also

affect the pre-tax income distribution, it is still a useful comparison [12].

From this comparison, two conclusions are clear. First, Federal income taxation decreases the Gini coefficients for all years. This is not surprising in that the tax rate structure is progressive, with average rates rising with higher incomes, so after-tax income is more evenly distributed than before-tax income. A second question is whether the relationship between the before-tax and after-tax Gini coefficient values has changed over time. From Figure F, the after-tax series closely parallels the before-tax series, with reductions in the value of the Gini coefficient ranging from 0.024 to 0.031. The largest differences, which denote the largest redistributive effect of the Federal tax system, are for 1979-1981 and 1994-1997, periods of relatively high marginal tax rates [13].

But to investigate further, the percentage reduction to the before-tax Gini values were computed and are shown as the fourth column in the figure. These percentage changes in the Gini coefficient values, a "redistributive effect," show a decline ranging from 4.5 to 6.6 percent. As for the differences, the largest percentage changes are for the earliest and latest years, periods when the marginal tax rates were high [13]. The largest percentage reduction was for 1979, but the size of the reduction generally declined until 1986, fluctuated at relatively low levels between 1986 and 1992, then increased from 1993 to 1996. However, coinciding with the capital gains tax reduction for 1997, the percentage change again declined for 1997.

So what does this all mean? First, the high marginal tax rates prior to 1982 appear to have had a significant redistributive effect. But, beginning with the tax rate reductions for 1982, this redistributive effect began to decline up to the period immediately prior to the 1986 Tax Reform Act (TRA). Although TRA became effective for 1987, a surge in late 1986 capital gains realizations (to take advantage of the 60-percent long-term capital gains exclusion) effectively lowered the average tax rate for the highest income groups thereby lessening the redistributive effect.

For the post-TRA period, the redistributive effect was relatively low, and it didn't begin to increase until the initiation of the 39.6-percent tax bracket for 1993. But for 1997, with continuation of the 39.6- percent rate but with a lowering of the maximum tax rate on capital gains, the redistributive effect again declined. Overall, it appears that the redistributive effect was higher in years that had relatively high marginal tax rates for both ordinary and capital gain income.

To further examine the Gini coefficients over time, we surveyed the literature for other estimates of Gini values. While this work is clearly in its infancy, one finding was that our estimates generally exceeded those of other researchers, particularly those based primarily on Census income concepts [14]. If each of these is a valid measure of its respective population, the questions that arise are "What are the reason or reasons for the differences?" and "Which Gini coefficient series is most valid?"

As stated earlier, distributional studies based on Census CPS and SIPP data clearly have more complete coverage of transfer income, which is primarily received at the lower end of the income distribution. So from this standpoint, the Census-based data have a clear advantage. However, the tax data are based on substantially more complete sampling at the highest income levels and, as our data show, much of the increased inequality is attributable to changes to the income shares of these groups. Further, the tax data have one other important difference that primarily affects the incomes of the upper income groups — the inclusion of realized capital gains.

Economists generally agree that an ideal measure of income would consist of consumption plus any change in net worth [15]. Implementing such a concept on a current study of income distribution would be very difficult, since changes in asset values are neither widely compiled nor easily measured. So, while the Census-based studies generally exclude all capital gains, our study and most others based on tax return data generally include "realized" capital gains, a less-than-ideal proxy for all capital gains. However, despite its shortcomings, some estimate of capital income is essential in measuring the income of high income-size groups. And, since capital gains are so highly concentrated at the up-

per end of the income distribution, it is not surprising that our income distribution measures more concentration at higher income values, which result in higher estimated Gini coefficient values.

Another issue in Gini estimation concerns the unit of measurement—that is, whether the unit is an individual, family, or household, for example. The tax data are not really any of the above, *per se*. They are a combination of individual and family, based on the filing status elected by the taxpayer. Beginning with 1987, a primary taxpayer was required to list the name and Social Security Number of any dependents claimed as personal exemptions, even if those dependents had to file their own tax returns. So, even though it would be possible to link such tax returns and aggregate their "family income," the retrospective income concept does not currently include this, treating such dependents as separate taxpayers. As a result, such dependent taxpayers would appear to be low-income, unrelated individuals, thereby giving rise to more inequality and higher Gini coefficient values, *ceteris paribus*.

To attempt to ascertain some measure of this effect, we excluded the returns of dependents claimed on a tax return who also filed their own tax returns. And while this comparison was only for 1 year, we believe it gives a reasonable first look at the degree to which this phenomenon affects estimated Gini coefficient values. For 1997, by excluding these dependents, we calculated a decrease in the Gini coefficient value of 0.03, a 5-percent decrease in inequality. So clearly, the inclusion of the tax returns of these dependents does raise the Gini values, but our initial examination of this effect seems to indicate that it is quite small.

■ Data Sources, Limitations, and Conclusions

The Statistics of Income (SOI) Division of IRS produces annual studies of individual income and taxes by sampling and compiling data from Forms 1040, *Individual Income Tax Return* [3]. Returns were selected as part of random, stratified cross-sectional samples. For this study, returns from these samples were then tabulated into size classes of retrospective income, and the percentile thresholds are estimated by interpolation [6,7].

Although the retrospective income concept is a consistent measure for inter-year income comparisons, it has shortcomings. First, persons with incomes below the filing thresholds are not required to file tax returns and are excluded from the database. To the extent that the size of the nonfiling population changes from year-to-year, such comparisons can be a cause for concern. However, for the period of this study, we feel that this is not a major shortcoming, but one that still needs further investigation. Since the focus of this study has been on the upper tail of the income distribution, minor changes in the lowest end of the filing population would not be expected to influence the top income-size classes by much.

Our data are based on successive cross-sectional samples and are not a panel. In the underlying microdata, individuals can move in and out of annual studies, as well as across the thresholds of income-size classes. Also, as previously noted, the database is derived from individual tax return filings and is not a family income concept. No attempt was made to link the income of co-dependents. Cash and in-kind public assistance, as well as earned income tax credit refunds, are also excluded from retrospective income. Further, while Federal individual income taxes are included, Social Security (FICA) taxes, corporation income taxes, and excise taxes are not.

Overall, we believe that retrospective income is an outstanding measure even though it does have limitations in coverage and scope. Some conclusions can be drawn from examination of these data. Both the income and tax shares of the top 1-percent size class increased substantially in this period. The income share of the 1-to-10 percent group increased modestly, but its share of taxes remained essentially unchanged. The income share of the top quintile increased from 50 percent to nearly 60 percent of the total, and its share of taxes increased from two-thirds to over three-fourths of the total.

The bottom four quintiles all had declining shares of total income between 1979 and 1997. Further, while the declines in the percentage shares of total income decreased with decreasing income size, the percentage

changes in the shares were actually largest with the lowest quintiles. Clearly, the pre-tax income shares have shifted upward. However, the declining shares of pre-tax income of the bottom quintiles were somewhat mitigated by their declining shares of taxes.

Concerning average tax rates, most income-size classes had declining average rates between 1979 and 1997. These declines would have been even larger except that all size classes exhibit increases between 1993 and 1996. The only group for which average taxes declined for 1997 was for the top 1-percent size class. We attribute this decline to the reduced tax rate available for capital gains income. Overall, the levels of average taxes clearly increase with increasing income size, which is conclusive evidence of tax progressivity.

In summary, the upper tail of the income distribution has increased its share of total income at the expense of the lower income-size classes. However, this rise in inequality in pre-tax income has been somewhat offset by increases in taxes paid by the top income-size classes, particularly from the tax rate increases for 1993 through 1996. However, it remains to be seen if the reduction in the average tax rate for the top 1 percent for 1997, which we attribute to the reduction in the maximum capital gains tax rate, is a sign that the Federal income tax system will once again have a somewhat diminished effect in reducing income inequality.

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[8] After the original estimates, we broke out additional subgroups within the top 1-percent income-size class by increasing the stratification of retrospective income and re-computing the interpolations.

[9] The CPI-U from the U.S. Department of Labor, *Monthly Labor Review*, was used for deflation of the income thresholds.

[10] Taxes, taxes paid, tax liabilities, tax shares, and average or effective tax rates are based on income tax, defined as income tax after credits plus alternative minimum tax less the nonrefundable portion of the earned income credit.

[11] The one exception is for the lowest quintile for Tax Year 1979. The Revenue Act of 1978 increased both exemption and zero-bracket amounts so that many low income tax returns became nontaxable. For 1979, many low-income taxpayers still had to file a return in order to receive refunds. Once they had been nontaxable for one year, these individuals could file Forms W-4 instructing their employers to stop withholding income taxes. Thus, after 1979, many taxpayers with low incomes were no longer part of the individual taxpayer filing population.

[12] A comparison of the before- and after-tax Gini coefficient values does not exclusively measure the effects of the tax system in that the tax laws can also affect before-tax income. For example, capital gain realizations have been shown to be sensitive to the tax rates so the tax system affects both the before- and after-tax income distributions.

[13] The period 1982-86 also had relatively high tax rates for ordinary income although it was lower than the preceding years.

[14] See, for example, Plotnick, Robert D.; Smolensky, Eugene; Evenhouse, Eirik; and Reilly, Siobhan, "The Twentieth Century Record of Inequality and Poverty in the United States," Institute for Research on Poverty Discussion Paper no. 1166-98, 1998.

[15] See, for example, the following for discussions on measuring economic income: Haig, Robert Murray, “The Concept of Income—Economic and Legal Aspects,” *The Federal Income Tax,* Columbia University Press, 1921; Simons, Henry C., *Personal Income Taxation: The Definition of Income as a Problem of Fiscal Policy*, Chicago University Press, 1938; and Nelson, Susan, “Family Economic Income and Other Income Concepts Used in Analyzing Tax Reform,” *Compendium of Tax Research, 1986,* Office of Tax Analysis, U.S. Department of the Treasury, 1987.

SOURCE: *Turning Administrative Systems Into Information Systems,* Statistics of Income Division, Internal Revenue Service, as presented at the 1999 Joint Statistical Meetings of the American Statistical Association, Baltimore, MD., August, 1999.

Table 1.-- Income Thresholds for Percentile Size-Classes, 1979-1997 (whole dollars)

Year	Top 1%	Top 5%	Top 10%	Top 20%	Top 40%	Top 60%	Top 80%
1979	79,679	41,167	32,586	24,721	15,721	9,356	4,676
1980	85,498	44,570	35,496	26,862	17,002	10,106	5,008
1981	93,679	49,483	39,143	29,451	18,577	11,055	5,504
1982	97,376	51,914	41,237	31,016	19,342	11,637	5,857
1983	105,038	55,429	43,596	32,639	20,127	11,970	6,003
1984	114,370	59,420	46,258	34,543	21,179	12,607	6,306
1985	124,120	63,460	48,923	36,217	22,025	13,201	6,552
1986	147,688	68,347	52,034	38,131	23,059	13,605	6,673
1987	145,646	69,216	53,092	39,050	23,318	13,600	6,358
1988	161,795	73,442	55,524	40,405	24,072	14,104	6,589
1989	169,588	77,552	58,436	42,168	24,906	14,514	6,854
1990	174,721	80,408	60,630	43,689	25,929	15,090	7,095
1991	180,316	83,317	62,421	44,600	26,336	15,349	7,281
1992	197,080	87,389	65,295	46,339	27,380	15,970	7,612
1993	199,698	88,992	66,685	47,249	27,663	16,140	7,770
1994	210,056	93,042	69,023	48,963	28,417	16,667	8,050
1995	224,448	98,469	72,179	50,839	29,338	17,151	8,254
1996	245,951	103,773	75,476	52,632	30,449	17,733	8,430
1997	269,414	110,765	79,639	55,202	31,961	18,694	8,998

Table 2.– Number of Returns by Percentile Size-Classes, 1979 - 1997 (thousands of returns)

Year	Total	Top 1%	1-5%	5-10%	10-20%	Top 20%	20-40%	40-60%	60-80%	Low 20%
1979	92,224	922	3,689	4,611	9,222	18,445	18,445	18,445	18,445	18,445
1980	92,671	927	3,707	4,633	9,267	18,534	18,534	18,534	18,534	18,534
1981	94,629	946	3,785	4,732	9,463	18,926	18,926	18,926	18,926	18,926
1982	94,378	944	3,775	4,719	9,438	18,876	18,876	18,876	18,876	18,876
1983	95,233	952	3,810	4,761	9,524	19,047	19,047	19,047	19,047	19,047
1984	98,335	983	3,934	4,916	9,834	19,667	19,667	19,667	19,667	19,667
1985	100,543	1,005	4,022	5,027	10,055	20,109	20,109	20,109	20,109	20,109
1986	101,881	1,019	4,075	5,094	10,188	20,376	20,376	20,376	20,376	20,376
1987	106,128	1,061	4,245	5,307	10,613	21,226	21,226	21,226	21,226	21,226
1988	108,832	1,088	4,354	5,441	10,883	21,766	21,766	21,766	21,766	21,766
1989	111,274	1,113	4,451	5,563	11,128	22,255	22,255	22,255	22,255	22,255
1990	112,644	1,126	4,506	5,632	11,265	22,529	22,529	22,529	22,529	22,529
1991	113,755	1,138	4,550	5,688	11,375	22,751	22,751	22,751	22,751	22,751
1992	112,594	1,126	4,504	5,629	11,260	22,519	22,519	22,519	22,519	22,519
1993	113,722	1,137	4,549	5,686	11,372	22,744	22,744	22,744	22,744	22,744
1994	115,061	1,151	4,602	5,753	11,506	23,012	23,012	23,012	23,012	23,012
1995	117,334	1,173	4,694	5,866	11,734	23,467	23,467	23,467	23,467	23,467
1996	119,487	1,195	4,779	5,975	11,948	23,897	23,897	23,897	23,897	23,897
1997	121,555	1,216	4,862	6,077	12,155	24,311	24,311	24,311	24,311	24,311

Table 3.– Retrospective Income by Percentile Size-Classes, 1979 - 1997 (millions of dolllars)

Year	Total	Top 1%	1-5%	5-10%	10-20%	Top 20%	20-40%	40-60%	60-80%	Low 20%
1979	1,536,181	147,101	193,551	167,232	260,245	768,129	367,338	227,676	128,647	44,390
1980	1,679,428	169,392	209,174	182,643	284,456	845,665	400,132	247,013	139,040	47,579
1981	1,877,525	182,158	236,287	206,330	320,539	945,314	446,685	275,552	155,473	54,501
1982	1,978,441	201,591	246,539	216,532	336,339	1,001,001	469,059	286,663	164,055	57,664
1983	2,108,846	229,430	267,437	231,637	357,074	1,085,578	493,138	300,263	170,044	59,823
1984	2,330,667	274,964	297,836	254,737	390,584	1,218,121	536,949	326,831	184,139	64,627
1985	2,519,323	306,854	326,387	276,765	421,089	1,331,095	574,624	348,296	196,418	68,890
1986	2,801,375	426,237	368,797	300,270	451,879	1,547,183	610,354	367,642	204,446	71,751
1987	2,854,624	363,729	385,150	317,991	480,041	1,546,911	645,647	384,619	209,480	67,967
1988	3,152,156	484,475	426,365	343,751	511,394	1,765,985	685,718	407,451	222,938	70,064
1989	3,335,581	486,816	460,189	370,113	547,890	1,865,008	728,790	430,576	236,620	74,588
1990	3,494,266	503,585	482,525	388,375	575,784	1,950,269	763,973	453,699	247,466	78,860
1991	3,575,798	478,588	506,650	405,164	596,999	1,987,401	785,662	465,653	255,099	81,982
1992	3,760,326	556,143	533,268	419,450	615,704	2,124,565	808,649	478,496	262,242	86,373
1993	3,849,532	554,075	550,939	432,271	635,060	2,172,345	828,540	490,810	268,962	88,874
1994	4,033,642	579,600	582,355	455,180	664,994	2,282,129	865,129	510,789	282,072	93,522
1995	4,317,506	653,811	630,924	488,204	705,067	2,478,006	911,545	535,622	295,446	96,888
1996	4,670,662	772,718	690,180	522,029	747,684	2,732,611	962,912	564,842	310,196	100,101
1997	5,112,845	917,481	762,536	562,373	798,966	3,041,356	1,025,982	603,545	332,357	109,605

Table 4.– Taxes by Percentile Size-Classes, 1979 - 1997 (millions of dollars)

Year	Total	Top 1%	1-5%	5-10%	10-20%	Top 20%	20-40%	40-60%	60-80%	Low 20%
1979	214,480	42,361	37,594	26,899	36,452	143,306	43,424	20,834	6,577	339
1980	244,902	43,799	43,305	31,262	42,586	160,952	50,594	24,589	8,001	766
1981	283,894	49,457	49,944	36,674	50,016	186,091	58,937	28,349	9,627	889
1982	277,142	52,646	47,177	34,843	47,631	182,297	57,485	26,883	9,478	998
1983	273,777	55,822	46,303	34,262	46,054	182,441	55,252	26,069	9,053	963
1984	301,386	64,528	51,060	37,578	49,764	202,930	58,959	28,269	10,049	1,179
1985	325,276	71,739	55,215	40,679	53,072	220,705	62,710	29,978	10,670	1,212
1986	366,468	92,954	62,347	43,276	57,497	256,074	66,574	31,871	10,807	1,142
1987	368,902	89,885	68,596	45,558	57,940	261,979	66,090	29,988	9,551	1,294
1988	412,540	112,191	74,612	48,344	62,780	297,927	71,189	31,855	10,292	1,277
1989	432,643	107,515	81,053	51,630	67,977	308,175	77,942	34,270	10,950	1,306
1990	446,896	110,560	82,415	52,875	71,725	317,575	80,595	36,160	11,147	1,420
1991	448,176	107,908	84,603	54,204	72,574	319,289	81,716	35,149	10,773	1,249
1992	476,067	127,345	88,922	56,060	73,600	345,927	83,098	35,225	10,600	1,217
1993	502,638	142,329	93,579	58,330	76,046	370,284	84,845	35,824	10,541	1,144
1994	534,693	150,679	100,227	63,276	80,871	395,053	89,694	37,569	11,122	1,254
1995	588,292	174,582	109,437	69,742	86,067	439,828	95,971	39,442	11,721	1,330
1996	658,055	208,463	122,436	76,964	91,343	499,206	102,921	42,071	12,426	1,431
1997	731,123	238,196	137,353	84,663	98,371	558,583	111,066	46,121	13,568	1,785

Table 5.-- Constant Dollar Income Thresholds, 1979 - 1997 (whole 1982-84=100 dollars)

Year	Top 1%	Top 5%	Top 10%	Top 20%	Top 40%	Top 60%	Top 80%
1979	109,751	56,704	44,884	34,051	21,654	12,887	6,441
1980	103,760	54,090	43,078	32,600	20,633	12,265	6,078
1981	103,057	54,437	43,062	32,399	20,437	12,162	6,055
1982	100,908	53,797	42,733	32,141	20,044	12,059	6,069
1983	105,460	55,652	43,771	32,770	20,208	12,018	6,027
1984	110,077	57,190	44,522	33,246	20,384	12,134	6,069
1985	115,353	58,978	45,467	33,659	20,469	12,269	6,089
1986	134,752	62,360	47,476	34,791	21,039	12,413	6,089
1987	128,210	60,930	46,736	34,375	20,526	11,972	5,597
1988	136,767	62,081	46,935	34,155	20,348	11,922	5,570
1989	136,765	62,542	47,126	34,006	20,085	11,705	5,527
1990	133,681	61,521	46,389	33,427	19,839	11,546	5,428
1991	132,391	61,173	45,830	32,746	19,336	11,269	5,346
1992	140,470	62,287	46,540	33,029	19,515	11,383	5,426
1993	138,199	61,586	46,149	32,698	19,144	11,170	5,377
1994	141,738	62,781	46,574	33,038	19,175	11,246	5,432
1995	147,276	64,612	47,362	33,359	19,251	11,254	5,416
1996	156,757	66,140	48,105	33,545	19,407	11,302	5,373
1997	167,859	69,012	49,619	34,394	19,913	11,647	5,606

Table 6.– Income Shares by Percentile Size-Classes, 1979 - 1997

Year	Total	Top 1%	1-5%	5-10%	10-20%	Top 20%	20-40%	40-60%	60-80%	Low 20%
1979	100.00	9.58	12.60	10.89	16.94	50.00	23.91	14.82	8.37	2.89
1980	100.00	10.09	12.46	10.88	16.94	50.35	23.83	14.71	8.28	2.83
1981	100.00	9.70	12.59	10.99	17.07	50.35	23.79	14.68	8.28	2.90
1982	100.00	10.19	12.46	10.94	17.00	50.60	23.71	14.49	8.29	2.91
1983	100.00	10.88	12.68	10.98	16.93	51.48	23.38	14.24	8.06	2.84
1984	100.00	11.80	12.78	10.93	16.76	52.26	23.04	14.02	7.90	2.77
1985	100.00	12.18	12.96	10.99	16.71	52.84	22.81	13.82	7.80	2.73
1986	100.00	15.22	13.16	10.72	16.13	55.23	21.79	13.12	7.30	2.56
1987	100.00	12.74	13.49	11.14	16.82	54.19	22.62	13.47	7.34	2.38
1988	100.00	15.37	13.53	10.91	16.22	56.02	21.75	12.93	7.07	2.22
1989	100.00	14.59	13.80	11.10	16.43	55.91	21.85	12.91	7.09	2.24
1990	100.00	14.41	13.81	11.11	16.48	55.81	21.86	12.98	7.08	2.26
1991	100.00	13.38	14.17	11.33	16.70	55.58	21.97	13.02	7.13	2.29
1992	100.00	14.79	14.18	11.15	16.37	56.50	21.50	12.72	6.97	2.30
1993	100.00	14.39	14.31	11.23	16.50	56.43	21.52	12.75	6.99	2.31
1994	100.00	14.37	14.44	11.28	16.49	56.58	21.45	12.66	6.99	2.32
1995	100.00	15.14	14.61	11.31	16.33	57.39	21.11	12.41	6.84	2.24
1996	100.00	16.54	14.78	11.18	16.01	58.51	20.62	12.09	6.64	2.14
1997	100.00	17.94	14.91	11.00	15.63	59.48	20.07	11.80	6.50	2.14

Table 7.– Tax Shares by Percentile Size-Classes, 1979 - 1997

Year	Total	Top 1%	1-5%	5-10%	10-20%	Top 20%	20-40%	40-60%	60-80%	Low 20%
1979	100.00	19.75	17.53	12.54	17.00	66.82	20.25	9.71	3.07	0.16
1980	100.00	17.88	17.68	12.77	17.39	65.72	20.66	10.04	3.27	0.31
1981	100.00	17.42	17.59	12.92	17.62	65.55	20.76	9.99	3.39	0.31
1982	100.00	19.00	17.02	12.57	17.19	65.78	20.74	9.70	3.42	0.36
1983	100.00	20.39	16.91	12.51	16.82	66.64	20.18	9.52	3.31	0.35
1984	100.00	21.41	16.94	12.47	16.51	67.33	19.56	9.38	3.33	0.39
1985	100.00	22.05	16.97	12.51	16.32	67.85	19.28	9.22	3.28	0.37
1986	100.00	25.36	17.01	11.81	15.69	69.88	18.17	8.70	2.95	0.31
1987	100.00	24.37	18.59	12.35	15.71	71.02	17.92	8.13	2.59	0.35
1988	100.00	27.20	18.09	11.72	15.22	72.22	17.26	7.72	2.49	0.31
1989	100.00	24.85	18.73	11.93	15.71	71.23	18.02	7.92	2.53	0.30
1990	100.00	24.74	18.44	11.83	16.05	71.06	18.03	8.09	2.49	0.32
1991	100.00	24.08	18.88	12.09	16.19	71.24	18.23	7.84	2.40	0.28
1992	100.00	26.75	18.68	11.78	15.46	72.66	17.46	7.40	2.23	0.26
1993	100.00	28.32	18.62	11.60	15.13	73.67	16.88	7.13	2.10	0.23
1994	100.00	28.18	18.74	11.83	15.12	73.88	16.77	7.03	2.08	0.23
1995	100.00	29.68	18.60	11.85	14.63	74.76	16.31	6.70	1.99	0.23
1996	100.00	31.68	18.61	11.70	13.88	75.86	15.64	6.39	1.89	0.22
1997	100.00	32.58	18.79	11.58	13.45	76.40	15.19	6.31	1.86	0.24

Table 8.– Average Tax Rates by Percentile Size-Classes, 1979 - 1997

Year	Total	Top 1%	1-5%	5-10%	10-20%	Top 20%	20-40%	40-60%	60-80%	Low 20%
1979	13.96	28.80	19.42	16.08	14.01	18.66	11.82	9.15	5.11	0.76
1980	14.58	25.86	20.70	17.12	14.97	19.03	12.64	9.95	5.75	1.61
1981	15.12	27.15	21.14	17.77	15.60	19.69	13.19	10.29	6.19	1.63
1982	14.01	26.12	19.14	16.09	14.16	18.21	12.26	9.38	5.78	1.73
1983	12.98	24.33	17.31	14.79	12.90	16.81	11.20	8.68	5.32	1.61
1984	12.93	23.47	17.14	14.75	12.74	16.66	10.98	8.65	5.46	1.82
1985	12.91	23.38	16.92	14.70	12.60	16.58	10.91	8.61	5.43	1.76
1986	13.08	21.81	16.91	14.41	12.72	16.55	10.91	8.67	5.29	1.59
1987	12.92	24.71	17.81	14.33	12.07	16.94	10.24	7.80	4.56	1.90
1988	13.09	23.16	17.50	14.06	12.28	16.87	10.38	7.82	4.62	1.82
1989	12.97	22.09	17.61	13.95	12.41	16.52	10.69	7.96	4.63	1.75
1990	12.79	21.95	17.08	13.61	12.46	16.28	10.55	7.97	4.50	1.80
1991	12.53	22.55	16.70	13.38	12.16	16.07	10.40	7.55	4.22	1.52
1992	12.66	22.90	16.67	13.37	11.95	16.28	10.28	7.36	4.04	1.41
1993	13.06	25.69	16.99	13.49	11.97	17.05	10.24	7.30	3.92	1.29
1994	13.26	26.00	17.21	13.90	12.16	17.31	10.37	7.36	3.94	1.34
1995	13.63	26.70	17.35	14.29	12.21	17.75	10.53	7.36	3.97	1.37
1996	14.09	26.98	17.74	14.74	12.22	18.27	10.69	7.45	4.01	1.43
1997	14.30	25.96	18.01	15.05	12.31	18.37	10.83	7.64	4.08	1.63