Analysis of the Distributions of Income, Taxes, and Payroll Taxes via Cross Section and Panel Data, 1979-2004

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Keywords: Income distribution, income and tax shares, tax burden, Gini coefficient.

Different approaches have been used to measure the distribution of individual income over time. Survey data have been compiled with comprehensive 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 income tax returns, may be less susceptible to underreporting of income but exclude certain nontaxable income types and can be inconsistent in periods when the tax law has been changed. 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 seventh 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.[1,2,3,4,5,6] In the previous papers, we demonstrated that the shares of income accounted for by the highest income-size classes clearly have increased over time, and 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 the analysis of individual income and tax distributions, adding for eight years (1996 - 2003) Social Security and Medicare taxes to this analysis and using panel data (for 1996 – 2003). The paper has three 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. We conclude with an examination of Gini coefficients computed from these data.

Derivation of the Retrospective Income Concept

The tax laws of the 1980's, 1990's, and early 2000'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, 2,3,4,5,6] Law changes effective for 1997 substantially lowered the maximum tax rate on capital gains. The newest law changes, beginning for 2001, lowered marginal rates and the maximum tax rate on long-term capital gains, as well as decreased the maximum rates for most dividends. With all of these changes, the questions that arise are what have happened to the distribution of individual income, the shares of taxes paid, and average taxes 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 26 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), has changed over time making 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.[7,8,9,10] 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 including the same components common to all years.

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. [1,2,3,4,5,6] 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 (SSB) 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. 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 2004. 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 estimated or interpolated for income-size classes ranging from the top 0.1 percent to the bottom 20 percent.[11,12,13] 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 average taxes were computed for each size class for all years.

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 $233,539 was needed to enter the top 0.1 percent for 1979, $1,639,047 was needed for entry into this class for 2004. This represents more than a 600-percent increase. Also, while $79,679 of retrospective income was needed to enter the top 1-percent size class for 1979, $363,905 was needed for entry into this size class for 2004, an increase of 357 percent. For the top 20 percent, the threshold increased by 179 percent, and, for the bottom 20 percent, the increase was only 139 percent. Since much of these increases is attributable to inflation, we computed constant dollar thresholds, using the Consumer Price Index.[14]

What is most striking about these data are the changes between 1979 and 2004 for the various income-size percentile thresholds (see Figure A). For example, the threshold for the top 0.1 percent grew (using a 1982-1984 base) from $321,679 for 1979 to $867,680 for 2004, an increase of 170 percent. Similarly, the threshold for taxpayers in the 1-percent group rose from $109,751 for 1979 to $192,644 for 2004, an increase of just over 75 percent. However, the thresholds for each lower percentile class show smaller increases in the period; the top 20-percentile threshold increased only 7.2 percent, and the 40-percent and all lower thresholds declined.

Income Shares

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 (3.28 for the top 0.1 percent) for 1979 to a high of 21.55 (10.49 for the top 0.1 percent) for 2000. With the recession and, then, the stagnating economy of 2001 and 2002, this share declined for two years but has increased from then to 19.65 percent (9.06 for the top 0.1 percent) for 2004. While this increase has been mostly steady, there were some significantly large jumps, particularly for 1986, due to a surge in capital gains realizations after the passage, but prior to implementation, of the Tax Reform Act of 1986 (TRA). The top 1-percent share also increased rapidly for 1996 through 2000, when sales of capital assets also grew considerably each year. Notable declines in the top 1-percent share occurred in the recession years of 1981, 1990-1991, and 2001.

Figure A - Constant Dollar Income Thresholds, 1979-2004 (1982-84=100)

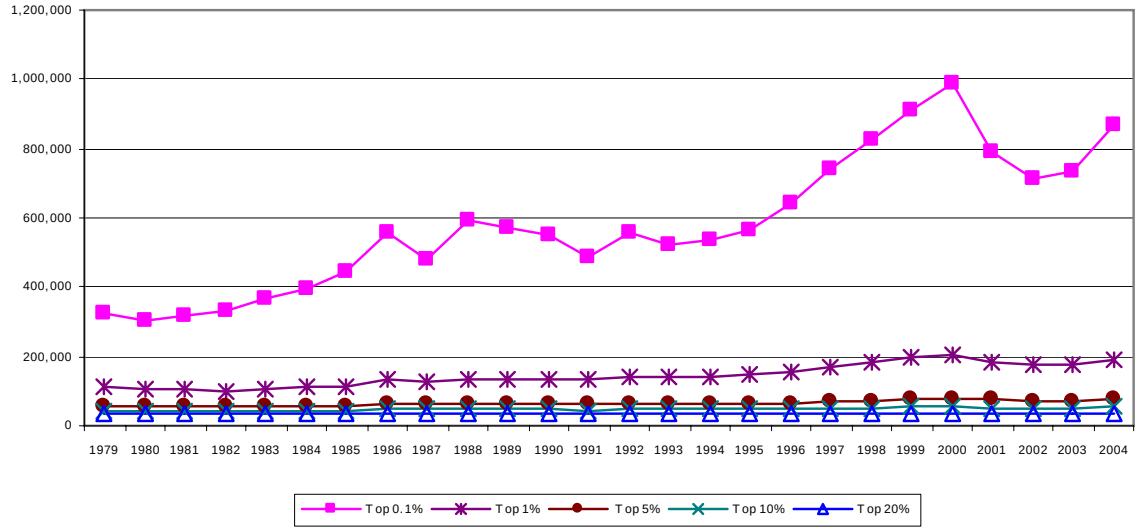
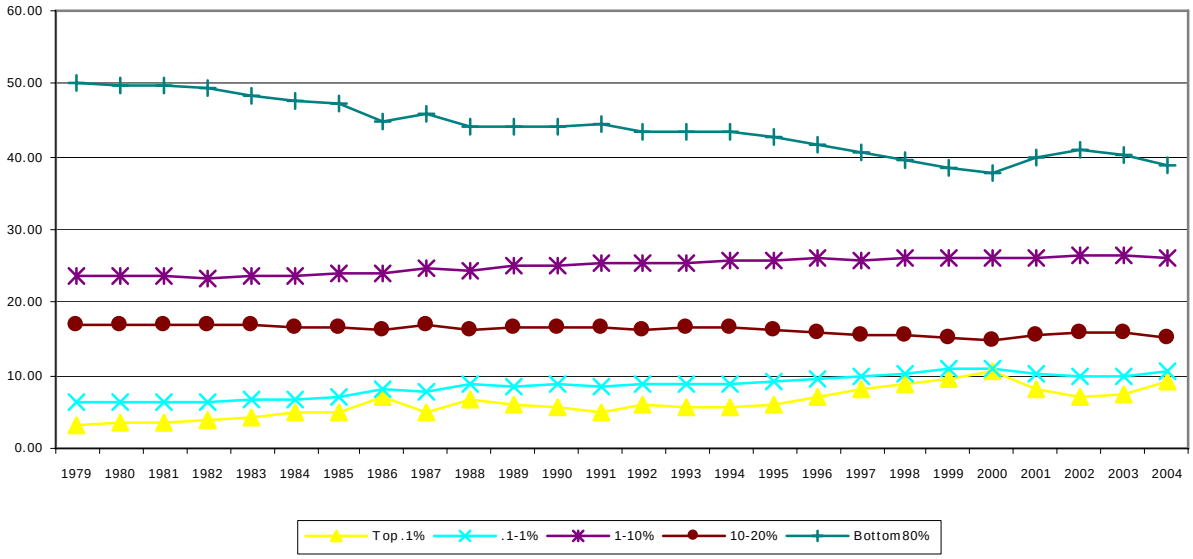


Figure B – Income Shares by Income Percentile Size-Classes, 1979 - 2004

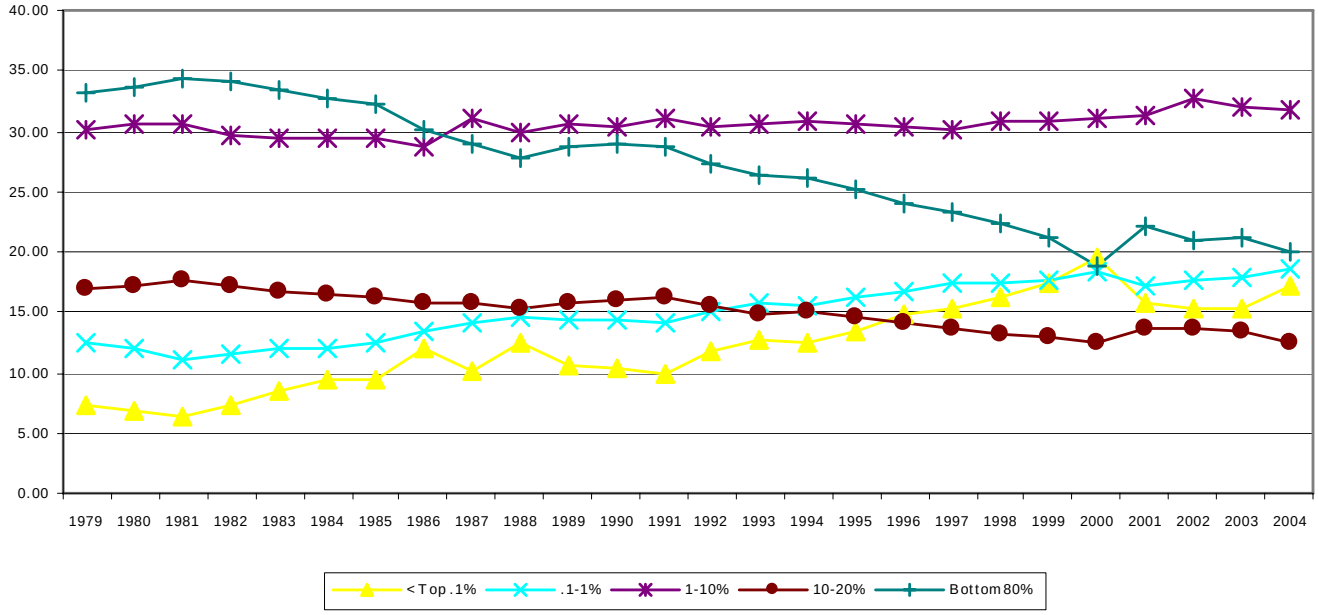


This pattern of an increasing share of total income is mirrored in the 1-to-5-percent class but to a considerably lesser degree. For this group, the income share increased from 12.60 percent to 15.19 percent in this period. The 5-to-10-percent class's share of income held fairly steady over this period, going from 10.89 percent for 1979 to 10.99 percent for 2004. The shares of the lower percentile-size classes, from the 10-to-20-percent classes to the four lowest quintiles, show declines in shares of total income over the 26-year period (see Figure B).

Tax Shares -- Income Tax

The share of income taxes accounted for by the top 1 percent also climbed steadily during this period, from 19.75 percent (7.38 for the top 0.1 percent) for 1979, then declined to a low of 17.42 percent (6.28 for the top 0.1 percent) for 1981, before rising to 36.30 percent (18.70 for the top 0.1 percent) for 2000 (Figure C). The corresponding percentages for 2000 for the 1-percent and 0.1-percent groups are 37.68 percent and 19.44 percent, respectively, accounting for the 2000 tax rebate, which is discussed below. For the recession year of 2001 and the subsequent year (2002) with its large decline in net gains from the sale of capital assets, these shares declined to 32.53 percent for the top 1 percent and 15.06 percent (15.25 percent including the rebate of the child tax credit) for the top 0.1-percent group (32.95 percent and 15.25 percent, respectively, including a rebate of a portion of the child tax credit). These have since increased to 35.73 percent for the top 1-percent group and 17.16 percent for the top 0.1 percent. As with incomes, there were some years with unusually large increases though a common feature for these years was double-digit growth in net capital gains.[9,10]

Figure C - Income Tax Shares by Income Percentile Size-Classes, 1979-2004



The 1-to-5 percent size class exhibited relatively modest change in its share of taxes, increasing from 17.53 percent to 20.50 percent in the period. The 5-to-10 percent class, and all lower income-size classes, had declining shares of total tax.

Average Tax Rates -- Income Tax

What is most striking about these data is that the levels of the average tax burdens increase with income size in most years (the only exceptions being 1980 through 1986 for just the highest group). The progressive nature of the individual income tax system is clearly demonstrated.

Despite the fact that the overall average tax rate remained virtually the same for 1979 and 2001, the average rate for all but the very lowest size class actually declined (see Figure D).[15] While this at first appears to be inconsistent, it is clear how this did in fact occur -- over time, an increasing proportion of income has shifted to the upper levels of the distribution where it is taxed at higher rates (see Figure B). For 2003, the average tax rate fell to 11.63 percent, the lowest rate over the 26 years of this study. For 2004, this increased slightly to 11.81 percent.

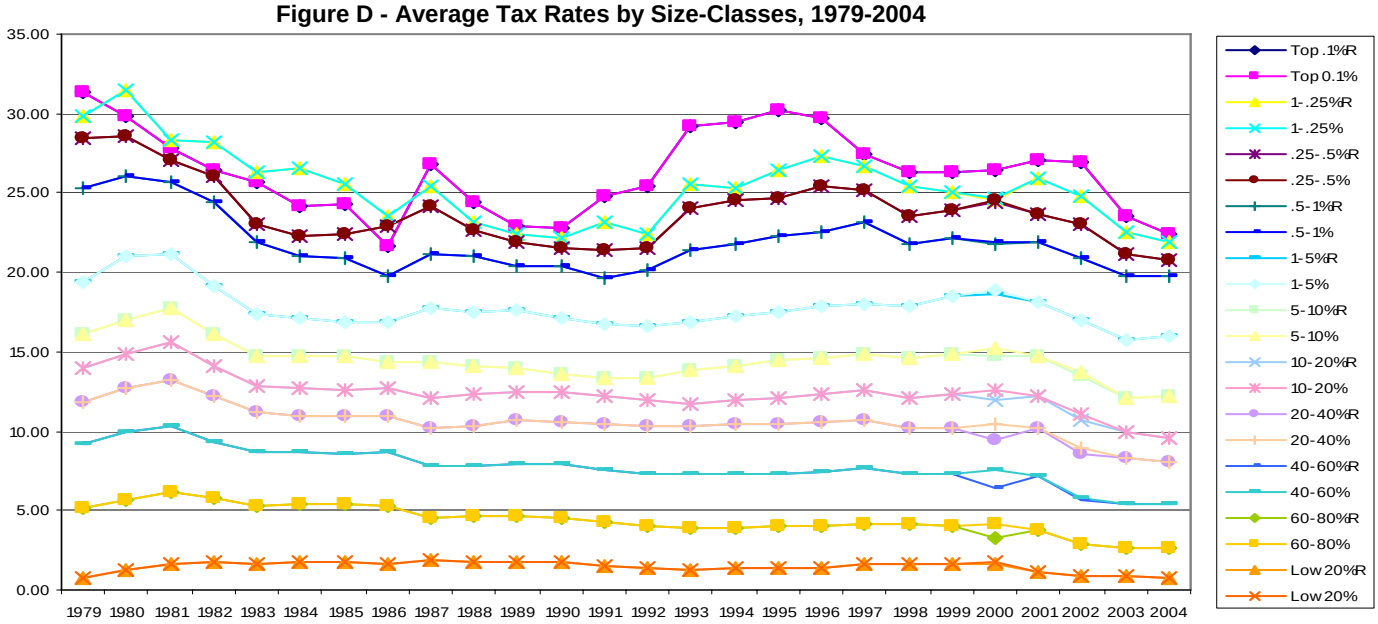
In examining the average tax data by income size, four distinct periods emerge. First, the average tax rates were generally climbing up to the implementation of the Economic Recovery Tax Act (ERTA) effective for 1982. This was an inflationary period, and prior to indexing of personal exemptions, the 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.[7]) 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-1996 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 0.1 percent clearly show the effects of the 1986 capital gains realizations, in anticipation of the end 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 it rose sharply for 1987, before dropping again for each of the next 3 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,

Figure D - Average Tax Rates by Size-Classes, 1979-2004



which had a maximum effective tax rate of 20 percent, it is not surprising that the average tax rate for these top size classes declined.

Next, to consider if those years are affected by the Taxpayer Relief Act of 1997 (1997 through 2000), where the top rate on long-term capital gains was reduced significantly from 28 percent to 20 percent. For 1997, the first year under this law, when the lower rates were only partially in effect, the average tax rate fell for the top 0.1-percent group of taxpayers but increased for all other groups. However, for 1998, the first full year under lower capital gains rates, all groups above and including the 40-to-60-percent class had reduced average tax rates (while the lowest two quintiles had virtually the same average tax rates). For all groups (except for the 20-to-40 and the 60-to-80-percent groups in 1999), the average rates returned to increasing for both 1999 and 2000.

The Economic Growth and Tax Relief Reconciliation Act of 2001 (EGTRRA) further reduced marginal tax rates over several years. One of these reductions was the introduction of a 10-percent bracket on the first $6,000 ($12,000 if married filing a joint return) of taxable income. In an attempt to fuel a recovery from recession, this reduction was introduced retroactively in the form of a rebate based on Tax Year 2000 filings. Therefore, we simulated the rebate on the Tax Year 2000 Individual File to see its effects on average tax rates. When the rebate (estimated at $40.5 billion) is taken into account, the average rates for 2000 decreased for all groups, except for the top 0.1 percent and the 1-to-5 percent, reversing the pre-rebate increases. Tax Year 2001 was a mixture of increases and decreases in average tax rates by income group. Most groups paid higher average taxes; however, the 1-to-5-percent and 5-to-10-percent groups paid lower average taxes along with the bottom 20-percent group.

For 2002, when the 10-percent rate applied to all returns and all rates above 15 percent were reduced by one-half of 1 percentage point, the average tax rate fell for every group. Further, as the economy stagnated, another rebate of $400 per child was sent to individuals who received a child tax credit for that year. This was in lieu of receiving the additional amount for 2003 as part of the increased child tax credit provided by the Jobs and Growth Tax Relief Reconciliation Act of 2003 (JGTRRA). Simulating this on Tax Year 2002, we estimated that $14.2 billion was sent to taxpayers further reducing average taxes for 2002. The individuals who gained the most from this rebate were in the 5-to-10-percent group through the 40-to-60-percent group. For 2003 and 2004, with further reductions in marginal rates, capital gains rates (to 15 percent) and the introduction of the same rates for qualified dividends, average tax rates decreased further to 11.63 percent and 11.81 percent, respectively. These were the lowest averages over the 26 years of this study. Further, aside from the 0.1-percent group in 1986 and the 0.5-to-1-percent group in 1991, all groups had their lowest average rates in these two years.

Tax Shares --Income Plus Social Security Tax

For individual taxpayers, Social Security taxes compose a fairly large portion (about 40 percent for 2003) of their Federal tax burden.[16] To broaden our analysis, we merged data from W-2's with individual income tax records for the years 1996 - 2003. Total Social Security taxes included self-employment taxes and taxes on tips reported on tax returns and two times the Social Security taxes (representing both the taxpayers' and the employers' shares) reported on W-2's. The employers' share of this tax was added into retrospective income, as well. Also, in order to have a better income concept over time, we altered retrospective income by including total Social Security benefits. As stated above, this was not included in income because it was not on older (pre-1984) tax returns, but since this part of our study began with 1996, we were able to relax this constraint.

Including Social Security taxes (see Figure E), an interesting trend occurred. Through 2000, the tax share of all the higher income groups up to the 5-percent class increased each year, while the share of all the groups above the 20-percent class went down. However, after 2000, the top 0.1-percent group paid a decreasing share each year, while individuals in the 20-40-percent class paid an increasing share each year. The tax shares of other groups varied between the years. Overall, the top 20 percent paid a lower tax share (68.03 percent) in 2003 than they did in 2000 (70.27 percent), but this share was still higher than they paid in 1996 (66.21 percent). This occurred despite the fact that the share of the top 0.1-percent group declined

Figure E - Tax Shares (Including Social Security Taxes) by Percentile Size-Classes, 1996 - 2003

Year	Top 0.1%	0.1-1%	1-5%	5-10%	10-20%	Top 20%	20-40%	40-60%	60-80%	Low 20%
1996	9.30	11.58	16.40	12.29	16.64	66.21	19.82	10.23	3.19	0.55
1997	9.69	11.96	16.35	12.10	16.36	66.46	19.38	10.27	3.28	0.60
1998	10.39	12.08	16.63	12.11	16.13	67.34	18.78	9.96	3.32	0.61
1999	11.24	12.43	17.05	12.06	15.85	68.62	18.23	9.48	3.12	0.55
2000	12.65	12.50	17.26	11.95	15.54	70.27	17.34	8.89	2.95	0.55
2001	9.95	11.95	17.16	12.51	16.44	68.01	18.59	9.74	3.12	0.54
2002	9.17	11.74	17.64	12.89	16.91	68.47	18.71	9.46	2.85	0.52
2003	9.02	11.75	17.54	12.73	16.99	68.03	19.08	9.58	2.78	0.53

from 9.30 percent for 1996 to 9.02 percent for 2003.

Average Tax Rates Including Social Security Taxes Using Panel Data

For 1996 through 2003, we used a panel of individual tax returns that were selected at a 1-in-5,000 return random sample embedded in each year's Individual Statistics of Income (SOI) sample. These returns were based on the primary taxpayer having certain Social Security number endings and are part of Social Security's Continuous Work History Sample (CWHS). The reason for studying a panel of returns is to obtain a more well-rounded approach to analyzing tax returns over time. While "the rich" may appear to be getting greater concentrations of income over time, the composition of who "the rich" are may also be changing over time. By looking at the panel, we defined income groups from the combined data (indexed for inflation) over this time period. As with the 1996 – 2003 cross-sectional study, in order to have a better income concept over time, we altered retrospective income by including total Social Security benefits. Then, we analyzed how income and taxes changed in each of these years, classifying each year's returns in quintile classes.

In analyzing this panel over time, we classified returns into quintile classes for each of the eight years, 1996 through 2003. We started with 120 million returns filed for 1996 and followed these returns. In analyzing this panel over time, we only included returns that were filed for each of the eight years. This left us with 76.8 million returns out of the 120 million returns filed for 1996. Using inflation-indexed income, we then combined the income and taxes over time to create a "combined income and tax" for each of the tax returns. We then reclassified each return into percentile classes, with the 5-percent income class being the highest class analyzed (due to the high sampling variability at levels above this). Looking at average taxes for the combined income groups (Figure F), while all groups' average tax rated declined over the period between 1996 from 2003 by 11.6 percent, the largest decline was in the higher income groups. The average tax rate of the top 5-percent group went down by 13.8 percent (from 28.0 percent to 24.2 percent) and the 5-to-10-percent group by 12.9 percent. The rates fell for all groups below the 80-percent level. The bottom 20-percent group, however, paid 19.1 percent higher average tax rates in 2003 than in 1996 (from 8.9 percent to 10.6 percent).

Analysis of Gini Coefficients

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 reordered the percentile classes from lowest to highest and used the income thresholds as "plotting points" to fit a series of regression equations for each income-size interval in the 26 years, both before- and after-taxes.

Once the Lorenz curves were estimated for all years, Gini coefficients were calculated for all 26 years. The Gini coefficient, which is a measure of the degree of inequality, generally increased throughout the 26-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, Figure G shows that the before-tax Gini coefficient value increased from 0.469 for 1979 to 0.588 (25.4 percent) for 2000, while the after-tax Gini value increased from 0.439 to 0.558 for a slightly higher percentage increase (25.5 percent). The economic downturn in 2001 and 2002 actually decreased the levels of inequality to 0.555 (pre-tax) and 0.525 (after-tax). For 2004, these rose back to 0.575 (pre-tax) and 0.549 (after-tax).

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 to answer this question is to compare the before- and after-tax Gini values.[17] Looking at 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.

Figure F-Combined Panel 'P': Average Tax Rates (Including Social Security Taxes) by Size-Classes, 1996-2003

Year	Top 5% 'P'	5-10% 'P'	10-20% 'P'	20-40% 'P'	40-60% 'P'	60-80% 'P'	Low 80% 'P'
1996	28.01	24.73	23.23	21.82	19.53	16.53	8.91
1997	27.44	24.34	23.73	21.87	19.86	16.89	9.23
1998	25.05	23.78	22.59	21.00	19.33	16.76	9.53
1999	26.91	24.19	22.96	21.34	19.25	16.86	9.88
2000	26.60	24.13	23.11	21.50	19.38	17.32	10.92
2001	26.27	24.06	23.00	21.42	19.38	17.17	10.31
2002	26.78	22.85	22.00	20.33	18.41	16.22	10.01
2003	24.15	21.55	20.90	19.30	17.72	15.78	10.61

The after-tax series closely parallels the before-tax series, with reductions in the value of the Gini coefficient ranging from 0.024 to 0.032. The largest differences, which denote the largest redistributive effect of the Federal tax system, have generally been in the periods of relatively high marginal tax rates, particularly 1979-81 and for 1993 and later years. In fact, simulating the tax rebate for Tax Year 2000 results in the largest difference (0.032) over all the years. If this were the only change in marginal rates of the new tax law (EGTRRA), the results would have been to increase the redistributive effects of Federal taxes. However, for Tax Year 2001 and beyond, the marginal rates of higher income classes were reduced from 38.6 percent to 35 percent for 2004.

To investigate further, the percentage differences between before- and after-tax Gini values were computed. These percentage changes in the Gini coefficient values, a "redistributive effect," show a decline ranging from 4.5 percent (1990) to 6.5 percent (1980). As for the differences, the largest percentage changes are for the earliest years, a period when the marginal tax rates were high. The largest percentage reduction was for 1980, but the size of the reduction generally declined until 1986, fluctuated at relatively low levels between 1986 and 1992, and then increased from 1993 to 1996. However, coinciding with the capital gains tax reduction for 1997, the percentage change again declined for 1997 and 1998. Nevertheless, it increased for 1999, 2000, and 2001 (although the 2001 percentage increased slightly if the rebate is included with the 2000 data). For 2003 and 2004, this difference declined to 4.7 percent and 4.6 percent, respectively, approaching the 1990 level.

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 TRA 1986. 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.

Figure G-Gini Coefficients for Retrospective Income, Before and After Taxes, 1979 – 2004

Year	Gini Before Tax	Gini After Tax	Difference	Percent Difference
1979	0.469	0.439	0.030	6.32%
1980	0.471	0.441	0.031	6.48%
1981	0.471	0.442	0.029	6.23%
1982	0.474	0.447	0.027	5.73%
1983	0.482	0.458	0.025	5.13%
1984	0.490	0.466	0.024	4.93%
1985	0.496	0.471	0.024	4.86%
1986	0.520	0.496	0.024	4.57%
1987	0.511	0.485	0.026	5.10%
1988	0.530	0.505	0.026	4.82%
1989	0.528	0.504	0.024	4.59%
1990	0.527	0.503	0.024	4.50%
1991	0.523	0.499	0.024	4.58%
1992	0.532	0.507	0.025	4.71%
1993	0.531	0.503	0.028	5.21%
1994	0.532	0.503	0.028	5.29%
1995	0.540	0.510	0.029	5.40%
1996	0.551	0.521	0.030	5.50%
1997	0.560	0.530	0.030	5.37%
1998	0.570	0.541	0.029	5.14%
1999	0.580	0.550	0.030	5.18%
2000	0.588	0.558	0.031	5.22%
2000 Rebate	0.588	0.557	0.032	5.42%
2001	0.564	0.534	0.030	5.35%
2002	0.555	0.525	0.030	5.34%
2002 Rebate	0.555	0.525	0.030	5.41%
2003	0.559	0.533	0.026	4.71%
2004	0.575	0.549	0.026	4.59%

For the post-TRA period, the redistributive effect was relatively low, and it did not begin to increase until the initiation of the 39.6-percent tax bracket for 1993. But since 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. Data from 2003 and 2004 show that the new tax laws have continued this trend. Analysis of panel data shows that these trends are not quite as great as seen by looking at annual cross-section data, but the trends cited above are still apparent.

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

[15] 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 (AMT) less the nonrefundable portion of the earned income credit (for 2000 and 2001, AMT was included in income tax after credits). However, for Figure F, tax includes Social Security and Medicare taxes less all of the earned income credit and refundable child credit.

[16] Internal Revenue Service, *Data Book 2003*,– Publication 55B. For Fiscal Year 2003, total Individual Income Taxes collected from withholding and additional taxes paid with tax forms filed were $987.2 billion, while total Social Security taxes were $647.9 billion.

[17] A comparison of the before- and after-tax Gini coefficients 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.