

# Policy Analysis

No. 586

January 8, 2007

Routing


## Has U.S. Income Inequality *Really* Increased?

by Alan Reynolds

### Executive Summary

There are frequent complaints that U.S. income inequality has increased in recent decades. Estimates of rising inequality that are widely cited in the media are often based on federal income tax return data. Those data appear to show that the share of U.S. income going to the top 1 percent (those people with the highest incomes) has increased substantially since the 1970s.

However, there have been large changes in U.S. tax rules over time that have made a dramatic difference on what is reported as income on individual tax returns. Tax changes induced thousands of businesses to switch from filing under the corporate tax system to filing under the individual tax system. Corporate executives switched from accepting stock options taxed as capital gains to nonqualified stock options taxed as salaries. The huge growth in tax-favored savings plans, such as 401(k)s, has resulted in billions of dollars of investment income disappearing from tax returns. Meanwhile, studies of inequality that are based on tax return data usually exclude transfer payments, which results in exaggerating the shares of income received by

those at the top by ignoring growing amounts of income at the bottom.

Measurements of inequality have also been affected by large reductions in income tax rates, particularly in 1986. Estimates by many economists indicate that the reported income of high-income taxpayers is very responsive to tax rates. When top tax rates on wages or capital gains fall, reported incomes rise, and a larger fraction of the incomes of those at the top show up on tax returns. International comparisons show that reported income shares of those at the top have risen the most where top tax rates have been cut the most (the United States, the United Kingdom, and India) and have risen the least where top tax rates have remained very high (France and Japan).

In sum, studies based on tax return data provide highly misleading comparisons of changes to the U.S. income distribution because of dramatic changes in tax rules and tax reporting in recent decades. Aside from stock option windfalls during the late-1990s stock-market boom, there is little evidence of a significant or sustained increase in the inequality of U.S. incomes, wages, consumption, or wealth over the past 20 years.

---

*Alan Reynolds is a senior fellow at the Cato Institute and author of* Income and Wealth *(Greenwood Press, 2006).*

CATO  
INSTITUTE

**Seven major factors have seriously distorted measurements of income inequality in recent decades.**

## **Introduction**

Major newspapers and magazines repeatedly report that the share of national income received by the top 1 percent in the United States (the roughly 1.3 million tax returns with the highest reported incomes in the United States) has increased enormously and continuously since the 1970s. Of the many difficult statistics used to influence public perception and policy, this one is surely the most often repeated and the least often understood.

In February 2006, *The Economist* noted that Thomas Piketty (of Ecole Normale Supérieure in Paris) and Emmanuel Saez (of the University of California at Berkeley) had “calculated a long-run distribution of income in America from information on tax returns. Their latest study shows that the top 1 percent of Americans now receive 15 percent of all income, up from about 8 percent in the 1960s and 1970s.”<sup>1</sup> In June, another story in *The Economist* cited the same study and concluded: “The one truly continuous trend over the past 25 years has been toward greater concentration of income at the very top.”<sup>2</sup>

After 35 years of writing on economic issues, I do not recall any other private and unofficial estimates that were as widely and uncritically repeated as the Piketty-Saez estimates on income shares of the top 1 percent. The influential *New York Times* columnist Paul Krugman dubs Piketty and Saez “the leading experts on long-term trends in inequality,” and quotes them endlessly.<sup>3</sup> Searching Google for “Emmanuel Saez” in early October turned up 51,700 entries, including 871 that also involved the *New York Times*. Similar searches yielded 814 joint references to Saez and the *Washington Post*, 568 for the *Wall Street Journal*, 375 for the *Financial Times*, and 319 for *USA Today*.

Other economists have assembled estimates of income distribution based on income tax return data, including economists at the Congressional Budget Office. Various estimates of the ratio of top incomes to total incomes have differed substantially because of what is counted as income for the top 1 percent (the

numerator) and what is counted as total income for the nation (the denominator). By adopting the broadest conceivable measure of income at the top and the narrowest possible measure of everyone else’s income, the share going to the top 1 percent can be made to appear deceptively large and growing.<sup>4</sup>

The Piketty-Saez figures are by far the most popular income distribution estimates among news reporters, editorial writers, and columnists. The authors’ original study in 2001 covered the years from 1913 to 1998 (subsequently updated through 2001), using detailed micro data from the Internal Revenue Service.<sup>5</sup> They have also produced more recent estimates for 2002 to 2004 that were not taken from these micro files but “were estimated from the published IRS tables,” which show tax returns grouped by broad income bracket. Piketty and Saez claim that “the thresholds [defining the top 1 percent and other fractiles or groups] are usually very close to one of the income bracket thresholds.”<sup>6</sup> If so, they argue, “one can use standard Pareto interpolation techniques in order to estimate the top fractiles’ income thresholds and income levels of the tax unit distribution of net income.”<sup>7</sup> In other words, Piketty-Saez income shares for 2002–2004 are just estimates, rather than actual IRS data.

This paper reviews the estimates of the income shares of the top 1 percent, including the Piketty-Saez and CBO figures. It finds that income equality studies that are based on data reported on federal tax returns can be highly misleading. Table 1 lists seven major factors that have seriously distorted measurements of income inequality in recent decades. The following sections examine those factors and discuss the extent to which they have affected published inequality data.

## **Tax Rate Cuts and the Conversion of Corporate to Individual Income**

*The Economist* has depicted the apparent rise in the top 1 percent’s share as a “truly continuous trend.”<sup>8</sup> But that is not what the

**Table 1**  
**Factors Affecting Estimates of Income from Individual Tax Returns**

Factor	Main Effect of Factor
<i>Business Income.</i> Shifting of business from corporate tax returns to individual tax returns after individual tax rates fell.	Great expansion of reported income at the top.
<i>Personal Savings.</i> Large expansion in the use of tax-favored savings vehicles including 401(k)s and IRAs.	Reduced reported investment income among middle-income taxpayers, which raised the top’s apparent income share.
<i>Transfer Payments.</i> Large growth in transfer payments for low-income families—income that is excluded from most tax-return-based studies.	Reduced the total income denominator of income distribution in estimates of income shares at the top.
<i>Capital Gains.</i> Boom and bust cycle of capital gains realizations and stock option exercises as a result of tax rate.	Comparisons of income shares changes and stock market trends between two atypical years need not represent sustained trends.
<i>Stock Options.</i> Change in stock options for executives and workers from a type taxed as capital gains to a type taxed as salary in response to changes in tax rates.	Increased top incomes in comparison of capital gains and ordinary income with the 1970s in those studies that exclude capital gains.
<i>Tax Rate Changes.</i> Marginal tax rates changed in 1981, 1986, 1990, 1993, 2001, and 2003. Income reported by high-income taxpayers is highly responsive to such rate changes due to changes in avoidance, evasion, and other behaviors.	Marginal tax rate changes may have large effects on reported income at the top, in situations where actual income may not have changed very much.
<i>AGI Gap.</i> The AGI gap of unreported income on tax returns has grown since 1988.	May have exaggerated the apparent growth of top incomes due to greater underreporting of other incomes.

data actually show. Instead, the reported income share of the top 1 percent has changed sharply in periods when tax rules have changed. The 2001 paper by Piketty and Saez clearly explained that, “a significant part of the gain [in top income shares] is concentrated in two years, 1987 and 1988, just after the Tax Reform Act of 1986.”<sup>9</sup>

The top 1 percent’s share jumped from 9.1 percent in 1985 and 1986, when the top tax rate was 50 percent, to 13.2 percent in 1988 when the top tax rate dropped to 28 percent.

That was not a sudden two-year spurt in inequality. It was a sudden increase in the amount of high income reported on individual income tax returns rather than being concealed, deferred, or reported on *corporate* income tax returns. Dramatic changes in tax laws have changed the way that income has been reported on tax returns over time.

As discussed below, many studies of the elasticity (responsiveness) of reported income to changes in marginal tax rates by Emmanuel Saez and others show that when

**The reported income share of the top 1 percent has changed sharply in periods when tax rules have changed.**

**When individual tax rates were reduced, it provided a strong incentive to shift from reporting business income on corporate returns to individual returns.**

the highest tax rates are reduced, the amount of income reported on tax returns rises. The two-year spurt in income reported by the top 1 percent is therefore exactly what economists would have expected to happen after the top tax rate on income was cut from 50 percent in 1986, to 37.5 percent in 1987, and to 28 percent in 1988.<sup>10</sup>

One obvious reason for the surge in top incomes after 1986 is well known to economists, including Saez, yet never mentioned by journalists who cite these figures. “It seems clear,” Saez wrote in 2004, “that the sharp, and unprecedented, increase in incomes from 1986 to 1988 is related to the large decrease in marginal tax rates that happened exactly during those years.”<sup>11</sup> One reason that happened, he explained, was shifting of income from corporate tax returns (businesses reporting as C-corporations) to individual tax returns (businesses reporting as S-corporations and other business structures):

Before the 1980s, S-corporation income was extremely small, as indeed the standard C-corporation form was more advantageous for high-income individual owners because the top individual tax rate was much higher than the corporate tax rate and taxes on capital gains were relatively low. S-corporation income increases sharply from 1986 to 1988 and increases slowly afterwards. The sharp increase in S-corporation income just after TRA1986 certainly reflects in large part a shift in the status of corporations from C to S status to take advantage of the lower individual rates.<sup>12</sup>

Even before the 1986 tax act, the phased-in reductions in tax rates under the Economic Recovery Tax Act of 1981 “produced a sudden burst of S-corporation income (which was negligible up to 1981) . . . Almost all the increase in top incomes from 1981 to 1984 . . . is also due to the surge in S-corporation income,” according to Saez.<sup>13</sup>

In the late 1970s, the top individual income tax rate was 70 percent on taxable income above

about \$100,000 (for single filers).<sup>14</sup> Corporate tax rates were lower—46 percent on income above \$100,000 and reduced rates below that level.<sup>15</sup> The much *higher* tax rates on businesses filing under the individual tax code provided a strong incentive for those with substantial business income (such as professionals and farmers) to file as regular C-corporations.

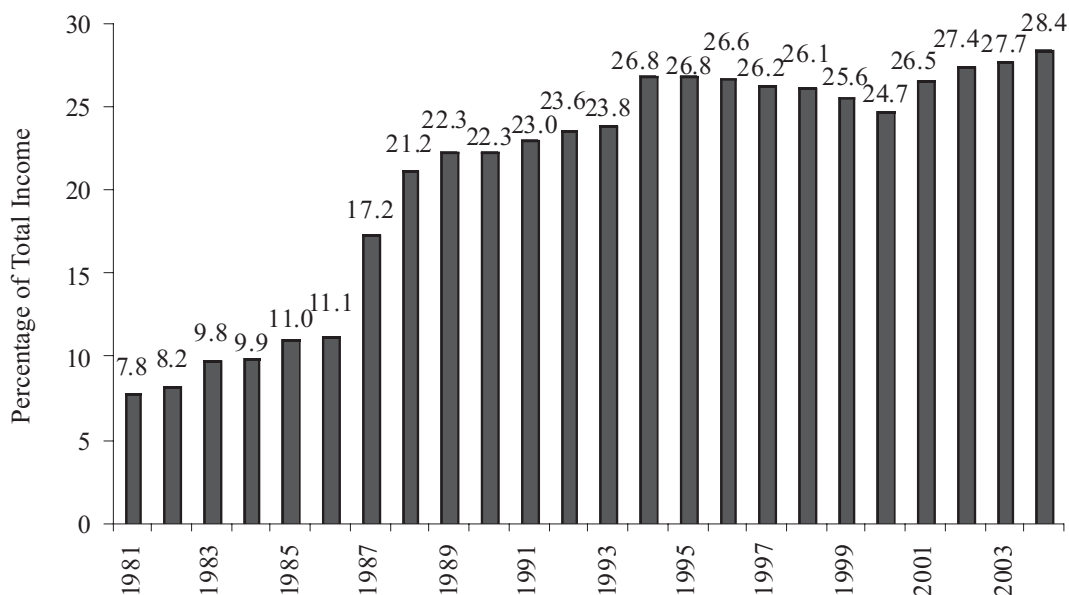
When individual tax rates were reduced after the 1981 tax act and again after the 1986 tax act, it provided a strong incentive to shift from reporting business income on corporate returns to individual returns by filing as S-corporations, limited liability companies (LLCs), partnerships, or proprietorships. In all these cases, business profits flow through to individual returns rather than being taxed at the corporate level on corporate tax returns.

One result is that those attempting to measure incomes by what has been reported on individual tax returns may erroneously view these large increases in income at the top as real changes in American’s incomes. Instead, they were simply the result of a bookkeeping change in the way business incomes were reported. Switching income from corporate returns to individual returns did not make the rich any richer—it simply made more of their income show up as “individual income” in the CBO and Piketty-Saez estimates.

Figure 1 shows that business profits accounted for more than 27 percent of the income of the top 1 percent reported on individual tax returns since 2002, up from just 7.8 percent in 1981. Most of the widely reported increase in the top 1 percent’s share was simply due to this income shifting from the corporate to individual tax returns after individual income tax rates came down. As Internal Revenue Service economist Kelly Luttrell explained:

The long-term growth of S-corporation returns was encouraged by four legislative acts: the Tax Reform Act of 1986, the Revenue Reconciliation Act of 1990, the Revenue Reconciliation Act of 1993, and the Small Business Protection Act of 1996 [which allowed banks to file as Subchapter

**Figure 1**  
**Business Share of the Income of the Top 1 Percent**



Source: Thomas Piketty and Emmanuel Saez, “Income Inequality in the United States,” as updated at <http://emlab.berkeley.edu/users/saez>.

**Shifting between the corporate and individual tax systems has accounted for more than half of the apparent increase in the top 1 percent’s income share since 1986.**

S corporations]. Filings of S-corporation returns have increased at an annual rate of nearly 9.0 percent since the enactment of the Tax Reform Act of 1986. During the same period, taxable [Subchapter-C] corporations have experienced an average annual decline of 1.3 percent.<sup>16</sup>

The broader problem of relying on tax return data while ignoring tax-caused shifts in income reporting has been recognized by economists Jagadeesh Sivadasan and Joel Slemrod. They have warned against “studies of wage inequality that rely on data that could be polluted by tax-induced income-shifting behavior.”<sup>17</sup> Some of the most dramatic reactions to lower U.S. income tax rates in the 1980s involved three types of “income shifting”: (1) shifts between corporate and individual income tax returns, as noted, (2) shifts between incentive stock options and restricted stock taxed as capital gains and nonqualified stock options taxed as salaries, and (3) shifts between investment income reported on tax returns and investment income diverted to tax-deferred savings accounts.

Here I only adjust for the first variety of income shifting, but Table 2 shows that this adjustment is sufficient to leave almost no increase in the top 1 percent’s income share between 1988 and 2003. The first column of Table 2 shows the Piketty-Saez data illustrating an apparent rise in the top 1 percent’s income share. (Note that their estimate for 2004 appears somewhat anomalous, as discussed below).

The second column of Table 2 shows the Piketty-Saez estimates of the top 1 percent’s share of income adjusted to exclude the increasingly huge share of income on individual returns coming from S-corporations, LLCs, and other businesses. The growing number and size of businesses filing under the individual income tax made little difference in the top 1 percent’s share until 1987. By 2004, however, this type of income shifting added 4 percentage points to the top 1 percent’s share. In short, shifting between the corporate and individual tax systems has accounted for *more than half* of the apparent increase in the top 1 percent’s income share since 1986.

**Table 2**  
**Estimated Share of Income of Top 1 Percent**

Year	Piketty and Saez Estimates	With Business Income Excluded	Portion due to Business Income
1981	8.0	7.4	0.6
1982	8.4	7.7	0.7
1983	8.6	7.8	0.8
1984	8.9	8.0	0.9
1985	9.1	8.0	1.1
1986	9.1	8.1	1.0
1987	10.8	8.9	2.8
1988	13.2	10.1	3.1
1989	12.6	9.8	2.8
1990	13.0	10.1	2.9
1991	12.2	9.4	2.8
1992	13.5	10.3	3.2
1993	12.8	9.8	3.0
1994	12.9	9.4	3.5
1995	13.5	9.9	3.6
1996	14.1	10.4	3.7
1997	14.8	10.9	3.9
1998	15.3	11.3	4.0
1999	15.9	11.8	4.1
2000	16.5	12.4	4.1
2001	15.4	11.3	4.1
2002	14.6	11.0	3.6
2003	14.9	10.8	4.1
2004	16.1	11.5	4.6

Source: Based on Thomas Piketty and Emmanuel Saez, "Income Inequality in the United States" as updated at <http://emlab.berkeley.edu/users/saez>.

Note: Income is adjusted gross income, plus adjustments, minus capital gains and transfer payments.

**Income accruing in tax-favored saving plans is not recorded on income tax returns.**

### **Increasingly Invisible Investment Income**

A variety of factors have served to depress the denominator of the ratio of top incomes to total

incomes in recent decades. If large amounts of income for those near the bottom and in the middle are not reported on tax returns, it means that the income share of those at the top is being exaggerated. A very important factor in this regard is that prior to the 1980s nearly all income from investments (dividends, interest, and capital gains) was reported on individual tax returns.<sup>18</sup> But in recent years, an increasingly large share of middle-income investment returns have been sheltered inside tax-favored accounts, such as 401(k)s, Individual Retirement Arrangements (IRAs), and 529 college savings plans. Investment income accruing in tax-favored savings plans is not recorded on income tax returns.

The earnings build-up inside tax-favored savings plans is income in exactly the same sense that *taxable* capital gains, dividends, and interest are income. However, this investment income is no longer visible on tax returns, as was most investment income of middle-income families in the 1970s and before. This factor has thus exaggerated the increase in top income shares by omitting a growing fraction of the denominator. By contrast, the bulk of investment income of those in the top 1 percent is still reported on tax returns, because most of it is taxable and not in the various tax-favored accounts such as IRAs and 401(k)s.

When various tax-favored accounts were being created and expanded in recent decades, there was a lively debate about the extent to which contributions to such accounts would represent new savings or income shifting—transferring existing savings from taxable accounts to tax-deferred or tax-exempt accounts. There was no serious dispute, however, that there would be considerable income shifting for many years. Yet this variety of income shifting, despite its vast scale, has not previously been brought into discussions about the validity of using income tax data to estimate multi-decade changes in the distribution of total income—including income from savings as well as work.

Piketty and Saez's 2001 paper did mention retirement savings accounts, but only in the context of one form of investment income (dividends) and only with respect to top income shares (the numerator). They observed:

The ratio of dividends reported on individual tax returns to personal dividends in the National Accounts has declined continuously . . . to less than 40 percent in 1995. But the point is that this decline is due mostly to the growth of funded pension plans and retirement savings accounts through which individuals receive dividends that are never reported as dividends on income tax returns. For the highest income earners, this addi-

tional source of dividends is likely to be very small relative to dividends reported on tax returns.<sup>19</sup>

Yet such invisible dividends are *not small* for those who are *not* the highest income earners. And that is also true of the tax-deferred or tax-exempt capital gains and interest income of middle-income savers that are also unreported on income tax returns.

Economist James Poterba of M.I.T. estimates that those in the (middle) 28 percent tax bracket held 32.1 percent of their assets in tax-deferred accounts in 1998.<sup>20</sup> By contrast, Federal Reserve Board economist Arthur Kennickel estimates that in 2001 the top 1 percent of wealth holders had only 5.5 percent of their assets in such unreported form.<sup>21</sup>

“At the end of 2002,” notes the CBO, “\$10.1 trillion was in tax-deferred retirement plans, of which \$9 trillion was taxable upon withdrawal.”<sup>22</sup> If that \$10.1 trillion earned a middling 7 percent return, the investment income alone would be *\$707 billion* in the first year—\$707 billion that could *not* appear in tax-based studies of income earned by those who own those accounts. Much of it should eventually show up as ordinary income upon withdrawal, but usually not for many years (or generations, since heirs do not have to tap an inherited IRA until they reach age 70.5).

Before a variety of tax-favored savings plans became commonplace, virtually every dollar of investment income from the savings of middle-income taxpayers was reported as taxable income, and it was therefore counted as income in studies that use tax returns to estimate income distribution in the 1970s. Today, by contrast, most investment returns from the saving of middle-income taxpayers are rarely or never taxed. This makes it singularly inappropriate to use tax data to compare income shares before and after the explosion of tax-deferred accounts. Doing so makes it appear as though middle-income investors had a far larger share of capital gains, dividends, and interest income in the 1970s than they did in the 1990s, simply because those investments used to be fully

**The earnings build-up inside tax-favored savings plans has exaggerated the increase in top income shares by omitting a growing fraction of the denominator.**

**Middle-income taxpayers appeared to have a larger share of before-tax income simply because their yearly income from their investments was taxed, and now most of it is simply invisible on tax returns.**

taxable and now are not. The actual increase of incomes among middle-income households since the 1970s is therefore greatly understated in tax data because an increasingly huge portion of their investment income is no longer reported on tax returns. The resulting statistical illusion shrinks the denominator of the ratio of top income to total income over time and thereby increases the apparent increase in the income share revealed within the top 1 percent of individual income tax returns.

Just like income shifting from the corporate to the individual tax system, the income shifting of middle-income savings from taxable to tax-deferred accounts has led to an understatement of the amount and growth of investment income of millions of taxpayers in all studies that use only the income reported on tax returns to estimate actual income, including the Piketty-Saez and CBO studies. This factor is not as easy to quantify as income shifting between corporate and individual tax returns, but it clearly presents a huge and rapidly growing problem with respect to all efforts to estimate income trends from tax returns. And it makes it ludicrous to compare today's tax-based income distribution estimates with those of the 1970s, when tax-deferred accounts for middle-income taxpayers were virtually nonexistent. Middle-income taxpayers appeared to have a larger share of before-tax income in the tax return data of the 1970s simply because their yearly income from their investments was taxed, and now most of it is simply invisible on tax returns.

There are other types of income that have disappeared from tax returns. The basic measure of income on tax returns, adjusted gross income (AGI), does not capture everything that might reasonably be considered income. In addition, tax returns do not capture all of AGI, which is evident when one considers that estimates of AGI based on personal income data are larger than AGI reported on tax returns. The Bureau of Economic Analysis estimates that this "AGI gap" rose from 9.7 percent in 1988 (when the top tax rate was 28 percent), to 12.7

percent in 1994, and to 14.4 percent in 2003.<sup>23</sup> Assuming for illustration that the top 1 percent accounted for 5 percent of the AGI gap, that gap was too small in 1988 to have made much difference in their income share. By 1999, on the other hand, that same assumption would reduce the top 1 percent's share by nearly a percentage point. The larger size of the AGI gap before and after the Tax Reform of 1986 is just one of many reasons why it is risky to compare income data from tax returns between greatly different tax regimes.

## **Top 1 Percent of What?**

Media reports about the supposed rise in the income share at the top, including references to the Piketty-Saez studies, never bother to ask the most basic question of all: the top 1 percent of *what*?

Most people assume that the "top 1 percent" and other income shares refer to the top percentiles of *household* or *family* income. *New York Times* columnist Paul Krugman wrote: "According to Piketty and Saez . . . in 1998 the top 0.01 percent received more than 3 percent of all income. That meant that the 13,000 richest families in America had almost as much income as the 20 million poorest households."<sup>24</sup> Yet the Piketty-Saez figures do not refer to households nor families (much less both)—they refer to "tax units," which can be much different.

Piketty and Saez point out that "average household income is about 28 percent higher than average tax unit income."<sup>25</sup> In some cases the differences are much larger than that. Two unmarried working people living together constitute one household but two tax units; their household income could be twice as large as their income per tax unit. Or consider that children with investment income above \$750 are required to file tax returns, with the result that they show up as extremely poor "tax units" in the Piketty-Saez figures, even though they are unlikely to be living in poor families.

Pointing to the Piketty-Saez data, the pre-



ceding remark by Paul Krugman claimed the 13,000 richest “families” received “more than 3 percent of all income.” But these are not “families,” they are tax units. Also note that Piketty and Saez do not measure “all income.” The authors do not include benefit payments from Social Security, Temporary Assistance for Needy Families, the Earned Income Tax Credit, Supplemental Security Income, or other government programs. Since not all income is counted, such figures cannot possibly tell us what share of all income was received by those at the top.

In 1970, wages and salaries accounted for 65.8 percent of personal income, while transfer payments accounted for just 8.5 percent.<sup>26</sup> In 2005, wages and salaries accounted for 55.3 percent of personal income, while transfers accounted for 14.5 percent. Because transfer payments have represented a rising share of total income, ignoring them makes the top 1 percent’s share appear to increase because a growing fraction of other people’s income is not counted. Yet there is no logical reason to arbitrarily exclude such benefits as Social Security from measured income, while including comparable benefits from private retirement plans.

The top 1 percent’s share of income is a *ratio*—the top 1 percent’s income is the numerator, and that plus everyone else’s income is the denominator. Excluding transfer payments from the denominator makes the top 1 percent’s share appear larger than it really is, but it also makes the top 1 percent’s share appear to rise more than it has because transfer payments have accounted for a rising share of actual total income (the denominator).

## Income Share Trends Since the 1980s

Table 3 presents data covering 1981 to 2004 to highlight the effects of transfer payments and capital gains on the top 1 percent’s income share. Column 1 in the table shows CBO data for the income share of the top 1 percent including capital gains.<sup>27</sup> To make these CBO figures more comparable to

those of Piketty and Saez, column 2 uses capital gains data from Piketty and Saez to approximate what CBO estimates would be if they excluded gains. Including realized capital gains causes large variability in the data—it adds 4.3 percentage points to the top 1 percent’s share in 1986 and 2.6 points in 2000.

Note that the CBO data includes transfer payments. Thus, the adjusted CBO data in column 2 can be compared to the Piketty-Saez data in column 4, which also excludes capital gains and includes transfer payments.

Neither of the two CBO series show any significant increase in the top 1 percent’s share between the late 1980s and the most recent years. Those determined to find an upward “trend” can always select some pair of years to create that impression. They would simply start with a year in which the number was relatively low (such as 1989 or 1994 in the Piketty-Saez series), end with a year that was unusually high, and show the percentage change between them.

The CBO series that includes capital gains rises in the late 1990s because of the stock market boom. But even the series without capital gains rises with the stock market boom, which likely reflects the proliferation of nonqualified stock options granted after 1986, most of which were exercised long after stocks recovered from the 1991 recession. The 1993 tax law contributed to the rise of such stock options among top executives because corporations could deduct the cost of exercised options but not salaries above \$1 million.

The last two columns of Table 3 are the most significant, and they are also shown in Figure 2. Column 4 (Piketty-Saez with transfer payments) simply adds transfer payments (from the Bureau of Economic Analysis’ personal income data) to the Piketty-Saez measure of total income. (This includes the refundable portion of the Earned Income Tax Credit.) This results in reducing the top 1 percent’s share of total income by rising amounts over time, reaching three percentage points by 2004.<sup>28</sup> Since total income grows more rapidly in this data series, due to the rapid growth of transfer payments, it diminishes any upward

**Excluding transfer payments makes the top 1 percent’s share appear larger than it really is.**

**Table 3**  
**Estimates of the Pretax Income Share of the Top 1 Percent**

	1. CBO (including capital gains)	2. CBO (excluding capital gains)	3. Piketty-Saez (excluding capital gains)	4. Piketty-Saez (including transfers)	5. Piketty-Saez (including transfers and excluding business income)
1981	9.1	8.2	8.0	6.9	6.3
1982	9.6	8.3	8.4	7.1	6.5
1983	10.3	8.6	8.6	7.2	6.5
1984	10.9	9.1	8.9	7.6	6.8
1985	11.5	9.4	9.1	7.8	6.9
1986	14.0	9.7	9.1	7.8	6.9
1987	11.2	10.2	10.8	9.2	7.6
1988	13.3	12.0	13.2	11.3	8.9
1989	12.5	11.4	12.6	10.8	8.4
1990	12.1	11.4	13.0	11.1	8.6
1991	11.2	10.7	12.2	10.2	7.8
1992	12.3	11.7	13.5	11.2	8.5
1993	11.9	11.1	12.8	10.5	8.0
1994	12.1	11.4	12.9	10.6	7.7
1995	12.5	11.6	13.5	11.1	8.1
1996	13.8	12.3	14.1	11.6	8.5
1997	14.9	13.0	14.8	12.2	9.0
1998	15.7	13.6	15.3	12.8	9.4
1999	16.7	14.4	15.9	13.3	9.9
2000	17.8	15.2	16.5	13.9	10.5
2001	14.8	13.6	15.4	12.8	9.4
2002	13.5	12.5	14.6	12.0	9.0
2003	14.3	13.1	14.9	12.1	8.8
2004	NA	NA	16.1	13.1	9.4

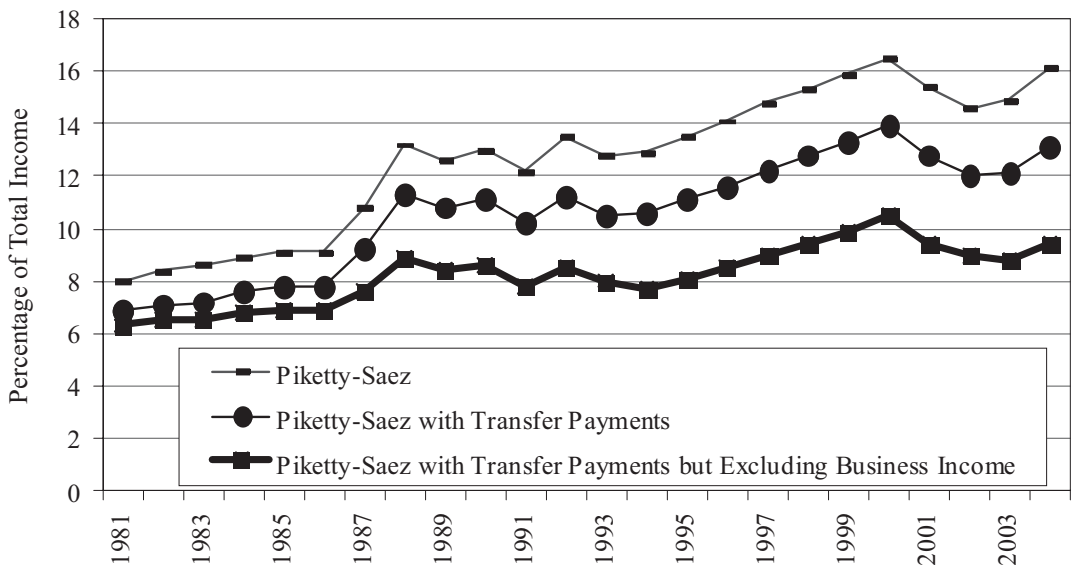
Source: Based on Congressional Budget Office, “Historical Effective Tax Rates: 1979 to 2003,” December 2005, Table 1C; and Thomas Piketty and Emmanuel Saez, “Income Inequality in the United States,” as updated at <http://emlab.berkeley.edu/users/saez>.

Note: Column 2 is Congressional Budget Office data as adjusted by the author to exclude capital gains based on the percentage of income attributed to capital gains by Piketty-Saez. Columns 1, 2, 4, and 5 include transfer payments. Columns 1, 2, 3, and 4 include business income.

trend in the top 1 percent’s share. The increase in the top 1 percent’s share from 1988 to 2003 was just 0.8 percentage points when transfers are included in the denominator, which compares to 1.7 percentage points when they are not. Similarly, the 1988 to 2003 increase in the top 1 percent’s share in the CBO series was negligible because the CBO data includes transfer payments.

Column 5 of Table 3 (and the bottom line in Figure 2) adds transfer payments to the denominator and subtracts business income from the numerator. That leaves *nonbusiness* income of the top 1 percent—mostly salaries, exercised stock options, and dividends—as a percent of total income, including transfers. The point of this exercise is the same as in Table 2, where we showed that about half of

**Figure 2**  
**Estimates of the Top 1 Percent's Share of Income**



Source: Author's calculations and data in Thomas Piketty and Emmanuel Saez, "Income Inequality in the United States," as updated at <http://emlab.berkeley.edu/users/saez>.

the rise in the top 1 percent's seemingly increased share of income (excluding transfers) was the result of income shifting from the corporate to the individual tax.

After making just those two adjustments, the *apparent* increase of 1.7 percentage points in the top 1 percent's share from 1988 to 2003 in the unadjusted Piketty-Saez estimates becomes no increase. Thus, the Piketty-Saez results that show an increase depend on two factors: (1) excluding transfer payments from income, and (2) treating the income shifting between the corporate and individual tax as an actual income increase rather than merely a matter of choosing to report income on different tax forms.

To summarize the results so far: Aside from the two-year spike in the 1980s that Piketty and Saez mentioned, which was due to the Tax Reform Act of 1986, there has been no sustained increase in the top 1 percent's share through 2003 that cannot be entirely explained by either (1) the arbitrary exclusion of transfer payments, or (2) income shifting between corporate and individual tax returns.

What about 2004? The unadjusted Piketty-Saez estimates suggest that the top 1 percent's share in 2004 of 16.1 percent was nearly back to the level during the stock market peak in 2000 of 16.5 percent. However, if we set aside the increased share from business income (28.4 percent of the total in 2004), the top 1 percent's remaining 9.4 percent share of total income in 2004 was more than a percentage point lower than the 2000 peak. Yet the 2004 figure, if it is sustained, is nonetheless a bit higher than the peak reached during the late 1980s.<sup>29</sup>

When transfer payments are counted as what they are—income—and any adjustment is made for the rising share of business income reported among the top 1 percent of "individual" incomes, it is clear that most of the supposedly continuous upward trend in the top 1 percent's share happened during the period between the horrific stagflation of the early 1980s (which did slash top investor incomes) and the spurious 1986 to 1988 spurt in reported incomes due to the 1986 tax act. There is also a four-year increase after the capital gains tax

**Neither of the two CBO series show any significant increase in the top 1 percent's share between the late 1980s and the most recent years.**

**Aside from the two-year spike in the 1980s, which was due to the Tax Reform Act of 1986, there has been no sustained increase in the top 1 percent's share through 2003.**

rate was cut in 1997, which will be discussed below in connection with capital gains, stock options, and CEO pay.

## **Before-Tax and After-Tax Income**

The exclusion of transfer payments, as discussed in the prior section, is particularly inappropriate for those economist such as Paul Krugman who cite the Piketty-Saez estimates to argue for greater redistribution of income. To the extent that high tax rates on the rich might actually be collected (an issue discussed below), such taxes might equalize after-tax incomes—even though they would not necessarily redistribute a dollar to the poor. Because the Piketty-Saez figures discussed above are *before taxes*, Krugman's rhetorical attempts to link *those* figures to "Bush tax cuts" are clearly irrelevant.<sup>30</sup>

The CBO's tax-return-based estimates of income distribution suffer most of the same shortcomings as the Piketty-Saez estimates, including business income being shifted to individual tax returns. But the CBO is unique in providing *after-tax* estimates, which are clearly more relevant to actual differences in living standards. CBO estimates of the top 1 percent's share of *after-tax* income (which are not shown in Table 3) jumped from 9.9 percent in 1984 to 13.2 percent in 1986 and 12 percent in 1988.<sup>31</sup> Unsurprisingly, the top 1 percent's reported income also rose with the stock market boom of 1997–2000 (when the capital gains tax rate was cut). By 2001–2003, however, the top 1 percent's after-tax share had dropped back to about where it had been in 1988: 12.6 percent in 2001, 11.5 percent in 2002, and 12.2 percent in 2003. It is impossible to find any "continuous" upward trend in such figures, as *The Economist* suggested occurred, despite massive income shifting from the corporate to the individual tax. That may explain why the CBO estimates have received far less media attention than the Piketty-Saez figures.

To the extent that more generous transfer payments to the poor do not discourage their efforts to earn, such payments could redistrib-

ute incomes from those who earned them to those who did not. Because the Piketty-Saez data exclude transfer payments, however, their measure of income distribution cannot possibly be directly affected by anti-poverty programs (or by taxes). Even doubling the size of means-tested transfer payments cannot help solve inequality if "inequality" is defined to exclude transfer payments.

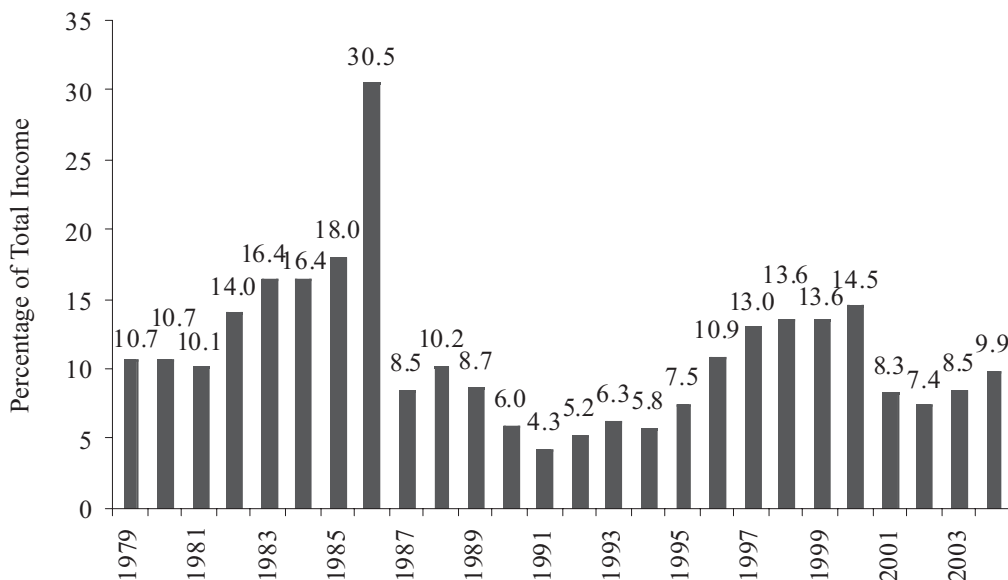
The CBO, by contrast, does make an effort to determine the distribution of *disposable* income—including subtracting taxes from higher incomes and adding transfer payments to lower incomes. But the CBO's "comprehensive" measure of expanded income includes interest on tax-exempt municipal bonds.<sup>32</sup> That introduces another difficulty with comparing data before and after the 1986 Tax Reform Act. Interest on tax-exempt bonds was not reported on tax returns before 1987. Thus tax return data before that date cannot reveal a very popular source of income among affluent taxpayers in the 1970s, when top tax rates on taxable investments were 70 percent or more. That is another reason why recent income share measures based on tax returns cannot be sensibly compared with those of 1985, much less those of 1973 or 1979 (years commonly selected for comparison because they were cyclical peaks preceding miserable years).

CBO's estimates of the effective individual income tax rate paid by the top 1 percent, including taxes on capital gains and dividends, are also interesting. The effective rate was 21.8 percent in 1979 when the top tax rate was 70 percent, 20.7 percent in 1988 when the top tax rate was 28 percent, and 20.8 percent in 2003 when the top tax rate was 35 percent. If it is hard to believe that lower marginal tax rates had so little impact on average taxes paid, just wait until we get to a later section on "taxable income elasticity."

## **Capital Gains and Stock Options**

The treatment of capital gains in studies of income shares raises many issues. The

**Figure 3**  
**Capital Gains Share of the Income of the Top 1 Percent**



Source: Author’s calculations based on data in Thomas Piketty and Emmanuel Saez, “Income Inequality in the United States,” as updated at <http://emlab.berkeley.edu/users/saez>.

CBO data includes only the portion of capital gains that shows up on tax returns but excludes capital gains accruing within tax-deferred savings accounts, the sizable exclusion of capital gains from home sales since 1997, and capital gains that are unrealized because the assets are not sold.

Many academic and government studies have shown that the amount of capital gains “realized” each year—by selling stock or other assets—is enormously affected by the top tax rate on such gains.<sup>33</sup> For example, CBO’s estimates show the top 1 percent’s share of expanded income jumping in 1986 to avoid the higher capital gains tax in 1987. And CBO’s estimates show the top 1 percent’s share rising sharply again in 1997–2000, after the top capital gains tax was cut from 28 to 20 percent.

Piketty and Saez wisely exclude capital gains from their basic series, but include gains in another series. The difference between the two series provides a handy measure of the changing importance of capital gains.

Figure 3 shows that a substantial share of the top 1 percent’s broader income (including

capital gains) consists of capital gains. Changes in the capital gains share illustrate to some extent another important example of “income switching.” There has been substantial switching between (1) incentive stock options or restricted stock taxed as a long-term capital gain and (2) “nonqualified” stock options reported as salaries when cashed in and taxed at ordinary income tax rates.

Figure 3 shows that capital gains accounted for 18 percent or less of all the broadly defined income (including those gains) reported on the top 1 percent of individual income tax returns in the early 1980s. The unprecedented spike to a 30.5 percent share in 1986 was clearly just a matter of timing—cashing out early to beat the higher 28 percent tax on gains in 1987.

Starting in 1987, capital gains became a much smaller portion of the income of the top 1 percent, dropping to an average of just 7.3 percent for the following 10 years. For business executives, however, receiving a smaller share of total compensation from capital gains (incentive stock options or

**By 2001–2003, the top 1 percent’s after-tax share had dropped back to about where it had been in 1988.**

**There has been substantial switching between (1) incentive stock options or restricted stock taxed as a long-term capital gain and (2) “nonqualified” stock options reported as salaries.**

restricted stock) can often reflect renegotiating compensation packages to receive a larger share from salary, bonuses, or nonqualified stock options. Such changes in the form of executive compensation do not make people richer or poorer, but they do affect the Piketty-Saez estimates because those estimates exclude capital gains.

The top 1 percent received a much larger share of their income in the form of realized capital gains from 1979 to 1986 than they did from 1987 to 1995. That doesn’t mean that they received less income in the latter period—only that they received it as nonqualified stock options, salary, or bonus taxed as salaries rather than as restricted stock or incentive stock options taxed as capital gains. Because the Piketty-Saez estimates exclude capital gains (correctly, in my judgment), this sort of income switching means that their estimates from 1979 to 1986 were artificially depressed (because a larger share of top incomes came from capital gains and are therefore not counted) relative to those from 1987 to 1995. And that, in turn, created a largely *illusory increase* in the top 1 percent’s income share between those two periods. This form of income shifting is yet another reason why such income share figures cannot be properly compared before and after 1986.

When the capital gains tax rate was cut from 28 to 20 percent in 1997, capital gains rose sharply as a share of the top 1 percent’s income (Figure 3), before stocks crashed in 2001. But realization is not a meaningful concept of income or a meaningful proxy for unrealized capital gains. Selling stock is no different from selling a house or car—it does not make anyone wealthier and is not income.

An additional issue is that investor responses to changes in the capital gains tax rate create serious problems for tax-return-based measures of top incomes, regardless of whether the capital gain is included or not. The CBO’s income distribution estimates (which include capital gains) are obviously distorted by changes in the frequency and timing of asset sales in response to actual or anticipated changes in the capital gains tax.

On the other hand, estimates that exclude reported capital gains (such as Piketty-Saez) are distorted by another form of *income shifting*—between compensation reported on Schedule D as capital gains and compensation reported on form W-2 as salaries. An important example is stock options granted to hundreds of corporate executives and millions of other employees.

Some stock options are “nonqualified,” and are reported on W-2 forms as salaries when they are “exercised” (cashed-in after three years of vesting but before the 10-year expiration date). “Incentive stock options,” by contrast, must be held for a while after they are exercised and are therefore taxed as long-term capital gains. Restricted stock is also held for a vesting period and, with luck, sold as a capital gain.

Economist John Karl Scholz rightly notes that, “there have been important changes in compensation in recent years in the U.S.—namely, there were unusually large increases in the use of [nonqualified] stock options. These have been shown by others to be a very substantial portion of the incomes of top earners.”<sup>34</sup> However, as Carola Frydman and Raven Saks point out, “because gains from stock options prior to the 1970s were not generally taxed as personal income and consequently not recorded on personal income tax returns, tax returns may provide a biased estimate of the incomes of top earners.”<sup>35</sup>

Before 1972, the top tax rate on ordinary income was 70 percent, so sensible executives negotiated to receive incentive stock options (ISOs), taxed at much lower capital gains tax rates of 25–34 percent. Any gains from nonqualified stock options granted in 1972 or later could eventually be taxed at a lower 50 percent rate on “earned income,” but only after another 3 to 10 years, when they were vested and exercised. Virtually all gains from exercising executive stock options before 1980 appeared as capital gains and are therefore invisible in 1970s salary data. This is another reason, in our growing list, why recent Piketty-Saez data are not comparable to those of the 1970s.

When the top tax rate on salaries was

reduced from 50 percent in 1986 to 28 percent in 1988, that provided a huge incentive to delay cashing in any nonqualified options until 1988. That is one reason why salary income jumped dramatically in 1988. And because the tax on capital gains also rose from 20 percent to 28 percent in 1987, that provided a huge incentive to cash in older incentive options in 1986. That is why CBO's estimates of top income shares, which include capital gains, spike the most in 1986 rather than 1988. What appears as a big increase in annual income in both 1986 and 1988 was simply a matter of when income would be realized. Timing is everything, but timing isn't really annual income.

Because the 1986 tax act slashed tax rates on salaries and raised the tax rate on capital gains, it promoted an increasingly wide distribution of nonqualified options (taxed as salary) and nearly killed incentive stock options (taxed as capital gains). The net result was massive income switching from 1986 to 1988—from reporting exercised stock options as capital gains to reporting them as salary income.

Nonqualified options granted between 1988 and 1992 were not vested until 1991 to 1995, and few were willing or able to exercise such options in the recession of 1991. By the time most of such options could be exercised, it was 1993, and the tax rate had gone up. That did not indicate that executives don't respond to tax rates. It just meant nonqualified stock options can only be exercised 3 to 10 years after they are granted, and, meanwhile, the rules may have changed.

Most of the executive and non-executive stock options cashed in during the stock boom of 1997 to 2000 were counted as salaries, whereas comparable stock options in the 1970s were of a different variety that did not appear in the salary data. As discussed earlier, tax-return-based income-distribution estimates from the 1970s are simply not comparable to data from recent years.

Since executives can choose the timing of stock option exercises and capital gains realizations, they naturally report most of such income in boom times and very little in

slumps. The resulting cyclical nature of the top 1 percent's share of reported income makes this a paradoxical way to define "inequality." Recessions increase the poverty rate and unemployment rate, yet appear to "reduce inequality" according to this "top 1 percent" criterion—partly because capital gain realizations and stock option exercises dry up.

Even in the series without capital gains, the Piketty-Saez estimates of top 1 percent income shares always fell, without exception, whenever the real economy and stock market contracted. The top 1 percent's share fell in 1920, 1929–32, 1938, 1949, 1953, 1957–58, 1960, 1970, 1975–76, 1981, 1991, and 2001–2002. If reducing the top percentile's share of income was a sensible policy objective, a dozen recessions taught us how to do that.

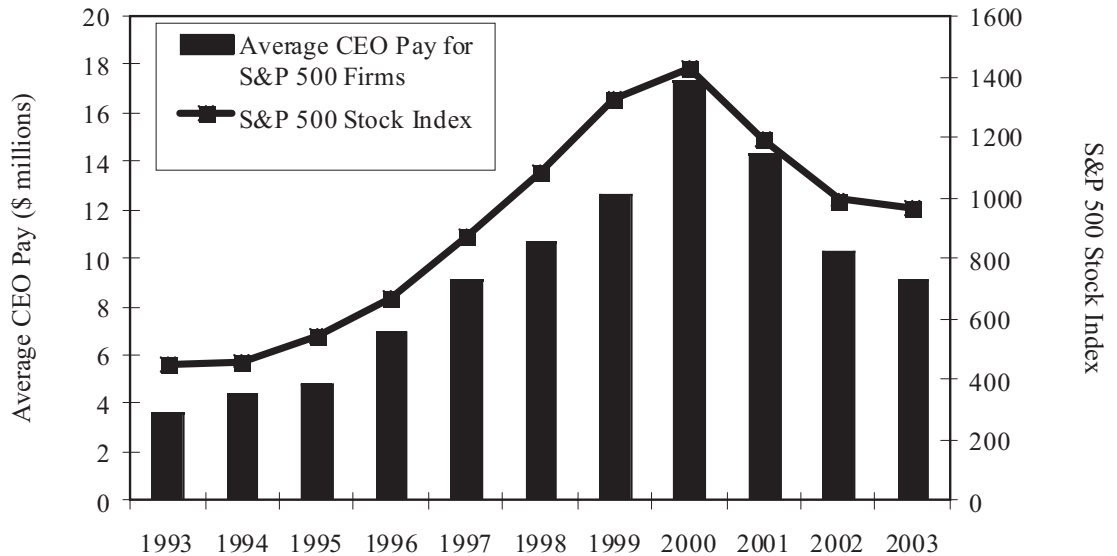
## CEOs and Celebrities

Income shifting and other varieties of taxable income elasticity are consistent with the U.S. time series data on top income shares. An alternative explanation, supported by Piketty and Saez and others, is that the observed increases in income reported by the top 1 percent of U.S. taxpayers since the 1970s has been due to large increases in the pay of chief executive officers. The market for CEOs is hypothesized to be limited to English-speaking countries, which is thought to explain why top income shares rose more dramatically in those countries than in France or Japan. According to Ian Dew-Becker and Robert Gordon, "CEOs together with sports and entertainment stars explain what is going on in the top 1 percent of the income distribution."<sup>36</sup>

There are now more than 1.4 million U.S. taxpayers in the top 1 percent. The only evidence that Piketty and Saez offer to suggest that the average income of those 1.4 million could be explained by CEO pay is an annually changing sample of the top 100 CEOs (those who happen to exercise old stock options in any particular year). Yet the Piketty-Saez estimates of average pay for that elite 100 fell by more than 54 percent from the year 2000 to 2003 (from \$40.4 million to \$18.5 mil-

**Changes in the form of executive compensation do not make people richer or poorer, but they do affect the Piketty-Saez estimates.**

**Figure 4**  
**Standard & Poor's 500 Stock Index and Average CEO Pay**



Source: Lucian Bebchuk and Yaniv Grinstein, “The Growth of Executive Pay,” *Oxford Review of Economic Policy* 21, no. 2 (2005).

**Recessions increase the poverty rate and unemployment rate, yet appear to “reduce inequality.”**

lion apiece).<sup>37</sup> That huge decline in top CEO pay was certainly not matched by a comparable drop in the estimated income share of the top 1 percent. But there was no reason to expect it to have had much impact, since the combined incomes of the top 100 CEOs in 2003 was only \$1.85 billion—just two-tenths of 1 percent of the \$886.5 billion that Piketty and Saez attributed to the top 1 percent.

Figure 4 shows that the rise and fall of pay among the Standard & Poor’s 500 chief executives, as calculated by Lucian Bebchuk and Yaniv Grinstein, was closely tied to the rise and fall of the S&P 500 index itself, which proves the vast majority of CEO pay at the biggest firms is tightly tied to stock performance (up to 78 percent of top 100 pay was stock-based in a Piketty-Saez sample).<sup>38</sup>

Top CEO pay is clearly insufficient to account for the level or growth of income among the top percentile. The proliferation of nonqualified stock options among several million non-executive employees in the 1990s is a far more plausible explanation of the obvious 1997–2003 link between the

stock market’s ups and downs and the unadjusted Piketty-Saez estimates of top percentile shares. Estimated income shares of the top 1 percent soared with the stock market in 1997–2000 and then fell with the market in 2001–2003. That was even true of estimates that excluded taxable capital gains, which suggests the link between top percentile pay and stock prices was dominated by nonqualified stock options.

### **Reported Income Depends on Marginal Tax Rates**

The numerator of the ratio of top incomes to total incomes has been seriously corrupted by tax-induced income shifting from the corporate tax to the individual tax, from taxable to tax-favored savings accounts, and from stock options taxed as capital gains to stock options taxed as salary. Yet this sort of income shifting is merely a partial manifestation of a broader phenomenon—namely, the elasticity of taxable income.



Reductions in marginal tax rates may induce people to alter their taxable income in many ways. Executives may negotiate for shares in their companies, for example, rather than receiving cozy salaries and tax-exempt perks.<sup>39</sup> Entrepreneurs may start more businesses, spouses of high-bracket taxpayers may join the labor force, those previously working in the underground cash economy may take jobs that require taxes to be paid, skilled professionals may work harder and retire later, executives may negotiate for cash rather than perks, high-income investors may hold fewer tax-exempt bonds and trade stocks more frequently, taxpayers may not try so hard to maximize tax deductions and adjustments.<sup>40</sup>

More than a dozen highly-regarded studies have shown that the amount of income reported by those facing the highest marginal tax rates is extremely sensitive to changes in those rates. This responsiveness goes by the cumbersome name of “taxable income elasticity.” The elasticity of taxable income refers to how much reported income will change when marginal tax rates are changed.

Economist Wojciech Kopczuk came up with an estimated elasticity of 0.53 for all taxpayers.<sup>41</sup> The Federal Reserve’s Adam Looney and Harvard’s Monica Singhal “estimate a significant elasticity of family labor income of 0.75 for families with base-year earnings between \$35,000 and \$85,000.”<sup>42</sup>

Studies that focus on taxpayers in the highest tax brackets generally find higher elasticities, which seems logical. At the lower end of the range for such estimates is a study by Jon Gruber and Emmanuel Saez, which found that “taxpayers who have incomes above \$100,000 per year . . . have an elasticity of 0.57.”<sup>43</sup>

At the high end, Harvard’s Martin Feldstein recently reported that estimates for high-income taxpayers show that “the elasticity of income with respect to one-minus-the-marginal-tax rate is about one.”<sup>44</sup> Thus, if the top tax rate drops from 40 to 30 percent, the amount of every extra dollar a taxpayer gets to keep (one minus the marginal tax rate) would rise by nearly 17 percent—from 60 to

70 percent. An elasticity of one means that the amount of income reported would also rise by 17 percent. In place of an extra \$100 taxed at 40 percent (\$40), the IRS would receive \$117 taxed at 30 percent (\$35).

The point is that all of these estimates of taxable income elasticity, including two by Emmanuel Saez, predict that a substantial reduction of top tax rates should be followed by a very substantial increase in the amount of income reported on tax returns by high-income taxpayers. And that is exactly what happened when U.S. tax rates on salaries (and S-corporation profits) were sharply reduced after 1986. According to Emmanuel Saez, “income shares within the top 1 percent show striking evidence of large and immediate responses to the tax cuts of the 1980s, and the size of those responses is largest for the very top income groups.”<sup>45</sup>

With the capital gains tax, the estimates of taxable income elasticity are generally higher, averaging at least 0.9 among a dozen leading studies.<sup>46</sup> That implies that reported income from realized capital gains should have been expected to increase substantially just after the U.S. capital gains tax was reduced from 28 percent to 20 percent in 1997. And Figure 3 shows that that is exactly what happened (partly because of income switching).

Raj Chetty and Emmanuel Saez found a surge in dividend payouts following the 2003 reduction in the top U.S. dividend tax rate from 35 to 15 percent.<sup>47</sup> Between 2002 and 2004, the amount of dividend income reported on individual tax returns nearly doubled—dividends increased from \$103.2 billion in 2002 to \$198.8 billion in 2004.<sup>48</sup> Under the plausible assumption that a large fraction of the dividends were reported by high-bracket taxpayers, the reduction of the dividend tax from 35 to 15 percent helps account for the otherwise anomalous magnitude of the Piketty-Saez estimate on income shares (Table 2) for 2004. But these higher dividend payouts mainly represent income shifting. After the dividend tax was cut, a smaller share of corporate income was retained or used for stock buybacks, so more profits were

**The combined incomes of the top 100 CEOs in 2003 was only \$1.85 billion—just two-tenths of 1 percent of the \$886.5 billion attributed to the top 1 percent.**

**A substantial reduction of top tax rates should be followed by a very substantial increase in the amount of income reported on tax returns by high-income taxpayers.**

paid out to stockholders and reported as taxable individual income. And a greatly reduced portion of dividend-paying stocks was held in tax-deferred accounts or by tax-exempt foundations and institutions, while a larger share was willingly held by investors happy to pay a 15 percent tax (yet easily able to avoid a 35 percent tax).

Despite all the evidence from Saez and others that taxable income elasticity is enormously significant for high-income taxpayers, for capital gains realizations, and for the taxable portion of dividends, Piketty and Saez were nonetheless strangely puzzled that “while top income shares have remained fairly stable in continental European countries or Japan over the past three decades, they have increased enormously in the United States and other English-speaking countries.”<sup>49</sup> Yet that is exactly what all the estimates of taxable income elasticity should lead us to expect. “While progressivity has unambiguously declined in the United States and in the United Kingdom,” note Piketty and Saez, “it has increased somewhat in France.”

We should have expected top income shares to have remained stable in France (and Japan) but to have increased enormously in the U.S. and other countries that cut tax rates sharply. Countries that cut top marginal tax rates in half, such as the United States, the United Kingdom, India, and New Zealand, experienced the largest increases in reported pretax income among top income groups. Countries that cut marginal tax rates less aggressively, such as Canada and Australia, experienced significant yet less dramatic increases in reported top income shares. And those countries that kept combined national and local income tax rates near 50 percent, such as Japan and France, did not experience a significant increase in top income shares. These international comparisons are entirely consistent with U.S. estimates of taxable income elasticity.<sup>50</sup> They show that having the top 1 percent *report* more income or capital gains on tax returns, simply because the tax penalty for doing so came down, says more about how people react to tax rates on

added income than it does about how much income or wealth (such as unrealized capital gains) they actually have.

## **Income Trends since the 1970s**

The widespread impression that the United States has experienced a large and continuous increase in income inequality since the 1970s is almost entirely dependent on the disingenuous practice of using estimates based on income tax returns to compare the distribution of incomes before and after the dramatic tax changes of 1981 and 1986. If the Piketty and Saez estimates actually demonstrated a continuous and credible upward trend toward greater inequality since the late-1980s, all other estimates of income distribution would have to be wrong—including those of the Census Bureau, the CBO, and the Federal Reserve Board.

In a recent column, Paul Krugman complained about “the amount of time that inequality’s apologists spend attacking a claim nobody is making: that there has been a clear long-term decline in middle-class living standards.”<sup>51</sup> Yet, in a 2004 column Krugman said, “according to estimates by the economists Thomas Piketty and Emmanuel Saez—confirmed by data from the CBO—between 1973 and 2000 the average real income of the bottom 90 percent of American taxpayers actually fell by 7 percent.”<sup>52</sup>

For Krugman to assert that there was a 7 percent drop in real income for 90 percent of taxpayers over 27 years certainly sounds like a “clear long-term decline in middle-class living standards.” To question such claims requires no straw man. On the contrary, Krugman’s astonishingly incorrect assertion provided an excellent example of how remarkably uncritical even professional economists have become toward the Piketty-Saez estimates.

Piketty and Saez recently acknowledged that, “our long-run series are generally confined to top income and wealth shares and contain little information about bottom segments of the distribution.”<sup>53</sup> Yet one of their figures from their

2001 paper (Figure A-1) encouraged the exact opposite impression. The figure *appeared* to show 27 years of real income stagnation (not decline) for the bottom 99 percent of taxpayers rather than Krugman’s bottom 90 percent. In a key footnote to that graph, however, they explain that “from 1973 to 2000, the average income of the bottom 99 percent would have grown by about 40 percent in real terms instead of stagnating (as displayed in the figure above) if we had included all transfers (+7% effect), used the CPI-U-RS (+13% effect), and especially defined income per capita (20% effect).”<sup>54</sup> That 40 percent increase in per capita real income for the bottom 99 percent makes it quite impossible that income of the bottom 90 percent of American taxpayers “actually fell by 7 percent,” as Krugman wrote.

CBO’s estimates began in 1979, not 1973, and they certainly do not “confirm” what Piketty and Saez deny (in the footnote). Between 1979 and 2000, the CBO estimates indicate that the average real income of the bottom 80 percent of American taxpayers *rose* by 12 percent before taxes and by 15 percent after taxes.<sup>55</sup> Real after-tax income of the middle quintile rose from \$38,900 in 1979 (in 2003 dollars) to \$44,700 in 2000, according to the CBO.

Census Bureau estimates of mean household income among the bottom four quintiles rose from \$32,786 in 1973 (in 2005 dollars) to \$40,640 in 2000.<sup>56</sup> That is, Census estimates show a 24 percent real increase for the bottom 80 percent—with all of that gain occurring since 1982. In fact, the Census estimates show an *accelerating pace* of gains among the bottom 80 percent, with real income in that group rising 7.6 percent from 1970 to 1980, 9.6 percent from 1980 to 1990, and 12.4 percent from 1990 to 2000.<sup>57</sup>

Aside from the Piketty-Saez comparisons of top income shares before and after the Tax Reform Act of 1986, there is surprisingly little U.S. evidence of any significant and sustained increase in inequality of income, wealth, wages, or consumption since the late 1980s.

The Census Bureau’s conventional measure of household income distribution (which excludes taxes and transfer payments) shows lit-

tle change in recent years aside from a one-time jump in 1993 when “a change in survey methodology led to a sharp rise in measured inequality.”<sup>58</sup> Figure 5 shows that the top 5 percent’s share of family income was virtually constant in recent years, drifting between 20 percent and 21 percent from 1993 to 2004. The Census estimates are in marked contrast to the Piketty-Saez estimates for the top 5 percent of tax units, which were much higher than the conventional Census figures (even though both series exclude capital gains and transfer payments) and fluctuated much more with the stock market and with changes in business income reported on individual tax returns. The Census estimates of the share of income received by the top 5 percent cast considerable doubt on the much higher and more volatile Piketty-Saez series, for reasons this paper explains.

The Census Bureau also uses Gini coefficients to measure broad changes in inequality. Larger Gini coefficients indicate increased inequality. Despite the break in the data in 1993, as noted, the Bureau’s Gini coefficient for *after-tax post-transfer* household income (which is the way most other countries measure inequality) has not increased—it was .409 in 1986, .398 in 1993, and .394 in 2002–2003.<sup>59</sup>

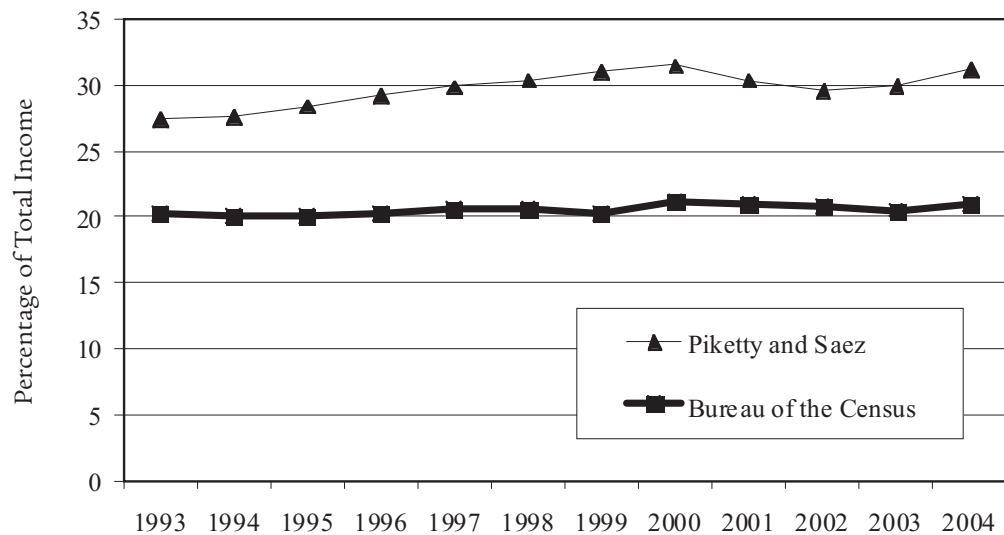
Note that the post-tax, post-transfer Census Bureau Gini coefficients are based on mean income by quintile. But mean income for, say, the top 5–20 percent is always much larger than median income because, unlike other income groups, top groups have no income ceiling to exclude extreme outliers (such as a hedge fund manager earning a billion dollars in one year). This makes it misleading to compare changes of *mean* income between top income groups and other quintiles or deciles.

Table 4 compares real *median* income by income group from the periodic Federal Reserve Board’s Survey of Consumer Finances.<sup>60</sup> Between 1989 to 2004 the increase in real median income for the top two deciles was about 20 percent—essentially identical to the increase for the bottom two quintiles.

The common impression that the United States remains in the midst of a large and persis-

**Countries that cut top marginal tax rates in half experienced the largest increases in reported pre-tax income among top income groups.**

**Figure 5**  
**Estimates of the Top 5 Percent's Share of Income**



Source: U.S. Bureau of the Census household income data, [www.census.gov/hhes/www/income/histinc/h03ar.html](http://www.census.gov/hhes/www/income/histinc/h03ar.html); and Thomas Piketty and Emmanuel Saez, "Income Inequality in the United States," as updated at <http://emlab.berkeley.edu/users/saez>.

tent 20-year increase in income inequality is also inconsistent with measures of consumption or wage inequality. A 2005 study published by the U.S. Bureau of Labor Statistics shows that the Gini coefficient for a broad measure of *consumption inequality* was 0.283 in 1986, 0.293 in 1990, 0.294 in 1994, 0.281 in 1999, and 0.280 in 2001.<sup>61</sup> The most recent two figures show *less* inequality of living standards (consumption) than in 1986.

Economists Wojciech Kopczuk and Emmanuel Saez examined the inequality of wealth. They concluded that in the 1980s, "top wealth shares increased only to the levels prevailing prior to the recessions of the 1970s. Furthermore, this increase took place in the early 1980s and top shares were stable during the 1990s."<sup>62</sup>

In another study, economists David Card and John DiNardo found that *wage inequality* did not increase before 1980 and that 85 percent of the increase during the 1980s happened before 1985, concluding that "none of the three series [measuring wage differences] . . . shows a noticeable change in inequality between 1988 and 2000."<sup>63</sup>

Most measures *do* show some increase in the inequality of income, wages, wealth, and consumption between 1981 and 1986. But 1981 was an atypical base year with acute stagflation and severely depressed stock and bond prices.

## Conclusions

The many changes in U.S. tax rules since 1980 have made a dramatic difference in what is reported as income on individual tax returns. One result is that it is misleading, if not meaningless, to compare income reported on tax returns in the 1970s and 1980s with data reported in recent years.

The estimated ratio of top percentile U.S. incomes to total incomes has been distorted by tax-induced changes to both the numerator and the denominator. The amount of business income reported on individual income tax returns by the top 1 percent rose from 7.8 in 1981 to 28.4 percent in 2004, following sharp reductions in individual income tax rates enact-

**There is surprisingly little U.S. evidence of any significant and sustained increase in inequality of income, wealth, wages, or consumption since the late 1980s.**

**Table 4**  
**Real Pretax Median Household Income (in 2004 dollars)**

Percentile of Income	1989	2004	Percent Change 1989–2004
0 to 20	9,173	11,100	21.0
20 to 40	21,439	25,700	19.9
40 to 60	38,292	43,200	12.8
60 to 80	59,731	68,100	14.0
80 to 90	87,250	104,700	20.0
90 to 100	153,168	184,800	20.7

Source: Federal Reserve Board, “Survey of Consumer Finances,” [www.federalreserve.gov/pubs/oss/oss2/scfindex.html](http://www.federalreserve.gov/pubs/oss/oss2/scfindex.html).

Note: The 1989 figures were converted to 2004 dollars using the CPI-U.

ed in 1981 and 1986. Corporate executives switched from accepting stock options taxed as capital gains to nonqualified stock options reported and taxed as salaries, and those newly popular stock options were distributed to millions of non-executives.

Estimates of the elasticity of taxable income among high-income taxpayers range from 0.56 to 1.0, implying that large increases in reported income should be observed when tax rates are cut. And that is what occurred in countries that cut top tax rates in half, such as the United States, the United Kingdom, New Zealand, and India. Estimates of the elasticity of reported income from capital gains cluster near 0.9, implying large increases in reported income from capital gains should have been observed (as they were) after the U.S. capital gains tax rate was cut in the early 1980s, in 1997, and in 2003.

This paper estimates that simply including transfer payments in the denominator of the Piketty-Saez data reduces the top percentile’s income share in 2004 from 16.1 percent to 13.1 percent. Just one form of income shifting—business income from corporate to individual returns—added another three percentage points to the share reported by the top 1 percent. The adjusted estimates show no increase in the top 1 percent’s income

share between 1988 and 2003. The top 1 percent’s income share rose in 2004 based on the Piketty-Saez interpolated estimate, but that appears to be partly explained by the near doubling of dividend income reported after the sharp dividend tax cut of 2003.

There is still much to be uncovered with respect to data on income shares, however. With respect to top percentile incomes, this paper did not attempt to estimate the size of tax shifting between stock options taxed as capital gains in the 1970s and those taxed as salary in the 1990s.

Most importantly, this paper just begins to focus attention on the large magnitude of shifting between taxable savings in the 1970s and tax-favored savings, such as in 401(k)s, today. Many new and expanded savings plans resulted in much of the dividends, interest income, and capital gains of middle-income taxpayers disappearing from tax returns, leaving only the investment income of affluent investors visible in the data. This paper makes no effort to estimate the magnitude of this disappearance, yet it is clearly very large and growing rapidly.

In sum, studies of changes in income distribution based on tax return data provide distorted and misleading comparisons of

**It is misleading, if not meaningless, to compare income reported on tax returns in the 1970s and 1980s with data reported in recent years.**

U.S. income shares because of dramatic changes in tax laws in recent decades. Aside from changes in taxpayer reporting due to changes in the tax laws, there is no clear evidence of a significant and sustained increase in the inequality of U.S. incomes, wages, consumption, or wealth since the late 1980s.

## Notes

1. "Dividing the Pie," *The Economist*, February 2, 2006, [www.economist.com](http://www.economist.com).
2. "The Rich, the Poor and the Growing Gap between Them," *The Economist*, June 15, 2006.
3. Paul Krugman, "Whining over Discontent," *New York Times*, September 8, 2006, p. A29.
4. For example, one study adds IRA rollovers and accelerated depreciation to top incomes while excluding Social Security and other transfers from the denominator. See Michael Strudler, Tom Petska, and Ryan Petska, "Further Analysis of the Distribution of Income and Taxes, 1979–2002," Statistics of Income Division, Internal Revenue Service, November 2004, [www.irs.gov/pub/irs-soi/04asastr.pdf](http://www.irs.gov/pub/irs-soi/04asastr.pdf).
5. Thomas Piketty and Emmanuel Saez, "Income Inequality in the United States, 1913–1998," NBER Working Paper no. 8467, September 2001. See also Thomas Piketty and Emmanuel Saez, "Income Inequality in the United States, 1913–2002," November 2004, <http://emlab.berkeley.edu/users/saez/piketty-saezOUP04US.pdf>. The authors have updated their data at <http://emlab.berkeley.edu/users/saez>.
6. Piketty and Saez, "Income Inequality in the United States, 1913–2002," p. 31.
7. Piketty and Saez explain the interpolation technique in the appendix to their November 2004 paper. Note that Anthony B. Atkinson of Oxford University cautions that "the Pareto distribution is at best an approximation." See A. B. Atkinson, "Top Incomes in the United Kingdom over the Twentieth Century," Nuffield College, Oxford University, December 2003, [www.nuff.ox.ac.uk/economics/people/atkinson.htm](http://www.nuff.ox.ac.uk/economics/people/atkinson.htm).
8. "The Rich, the Poor and the Growing Gap between Them."
9. Piketty and Saez, "Income Inequality in the United States, 1913–1998," p. 8.
10. In those series that include taxable capital gains, such as the CBO figures, reductions in the capital gains tax rate in 1997 and 2003 would be expected to increase the amount of gains reported on tax returns, since the amount of gains realized is very sensitive to the tax rate.
11. Emmanuel Saez, "Reported Incomes and Marginal Tax Rates, 1960–2000: Evidence and Policy Implications," NBER Working Paper no. 10273, January 2004, p. 21.
12. Saez, p. 27.
13. *Ibid.*, p. 28.
14. David Hoffman, ed., *Facts and Figures on Government Finance*, 36th edition (Washington: Tax Foundation, 2002), Table C29.
15. *Ibid.*, Table C34.
16. Kelly Luttrell, "S Corporation Returns, 2002," *SOI Bulletin*, Spring 2005, p. 59, [www.irs.gov/pub/irs-soi/02scorp.pdf](http://www.irs.gov/pub/irs-soi/02scorp.pdf).
17. Jagadeesh Sivadasan and Joel Slemrod, "Tax Law Changes, Income Shifting and Measured Wage Inequality: Evidence from India," NBER Working Paper no. 12240, May 2006.
18. These are a few exceptions, including interest on tax-exempt bonds and half of capital gains (60% after 1978).
19. Piketty and Saez, "Income Inequality in the United States, 1913–1998," p. 16.
20. James M. Poterba, "Valuing Assets in Retirement Savings Accounts," Center for Retirement Research, Boston College Working Paper 2004-11, April 2004, [www.bc.edu/centers/crr/papers/wp\\_2004-11.pdf](http://www.bc.edu/centers/crr/papers/wp_2004-11.pdf).
21. Arthur B. Kennickel, "A Rolling Tide: Changes in the Distribution of Wealth in the U.S., 1989–2001," Federal Reserve Board, September 2003, Tables 10 and 11, [www.federalreserve.gov/pubs/oss/oss2/method.html](http://www.federalreserve.gov/pubs/oss/oss2/method.html).
22. Congressional Budget Office, "Tax-Deferred Retirement Savings in Long-Term Revenue Projections," May 2004, p. 8.
23. Mark A. Ledbetter, "Comparisons of BEA Estimates of Personal Income and IRS Estimates of Adjusted Gross Income," *Survey of Current Business*, U.S. Bureau of Economic Analysis, November 2005, p. 30.
24. Paul Krugman, "For Richer," *New York Times Magazine*, October 20, 2002, p. 62.

25. Piketty and Saez, "Income Inequality in the United States, 1913–1998," footnote to Figure A-1.
26. Bureau of Economic Analysis, National Income and Product Accounts, Table 2.1, [www.bea.gov/bea/dn/nipaweb/SelectTable.asp?Selected=N](http://www.bea.gov/bea/dn/nipaweb/SelectTable.asp?Selected=N).
27. Congressional Budget Office, "Historical Effective Federal Tax Rates: 1979 to 2003," December 2005, Table 1C.
28. Transfer payments are added only to the measure of total income, on the uncontroversial assumption that the share of transfer payments received by the top 1 percent is small enough to ignore.
29. The estimates for the top 1 percent's share in 2004 are a curiosity because the stock market did not rise so dramatically. It will be interesting to see if the Piketty-Saez interpolations (approximations) turn out to be consistent with CBO estimates, which will be released in the future based on data not publicly available. Judging by a recent e-mail exchange with Saez, I believe we agree that reported *dividends* may be a large part of the explanation—arguably a response to the new 15-percent dividend tax.
30. Krugman's column of September 8, 2006 ("Whining over Discontent"), switched to an entirely different set of Piketty-Saez estimates of top income group's share of combined income and estate taxes—a questionable concept that I critiqued in a recent column. (Alan Reynolds, "The Top One-Hundredth of One Percent," May 17, 2006, [www.cato.org/pub\\_display.php?pub\\_id=6394](http://www.cato.org/pub_display.php?pub_id=6394)). Those estimates show the average tax of the *middle 20* percent dropping by 63 percent from 1980 to 2005, from 8.9 percent to 3.3 percent, which hardly looks like a tax cut for the rich.
31. Congressional Budget Office, "Historical Effective Federal Tax Rates: 1979 to 2003," December 2005, Table 1C.
32. *Ibid.* Footnotes to the CBO tables explain: "Comprehensive household income equals pretax cash income plus income from other sources. Pretax cash income is the sum of wages, salaries, self-employment income, rents, taxable and nontaxable interest, dividends, realized capital gains, cash transfer payments, and retirement benefits plus taxes paid by businesses (corporate income taxes and the employer's share of Social Security, Medicare, and federal unemployment insurance payroll taxes) and employees' contributions to 401(k) retirement plans. Other sources of income include all in-kind benefits (Medicare, Medicaid, employer-paid health insurance premiums, food stamps, school lunches and breakfasts, housing assistance, and energy assistance). Households with negative income are excluded from the lowest income category but are included in the totals."
33. For a critical survey of the evidence about elasticity of capital gains, see Alan Reynolds, "Capital Gains Tax: Analysis of Reform Options for Australia, Australian Stock Exchange Ltd," July 1999, Chap. 4, [www.asx.com.au/about/pdf/cgt.pdf](http://www.asx.com.au/about/pdf/cgt.pdf).
34. John Karl Scholz, "Saez Comments," on a panel entitled "Income and Wealth Concentration in a Historical and International Perspective," Berkeley Symposium on Poverty, The Distribution of Income and Public Policy, December 12–13, 2003, [http://www.asx.com.au/about/shareholder/media\\_releases/R160799\\_AS3.htm](http://www.asx.com.au/about/shareholder/media_releases/R160799_AS3.htm).
35. Carola Frydman and Raven E. Saks, "Historical Trends in Executive Compensation 1936–2003," University of Chicago Graduate School of Business, Applied Economics Workshop, November 15, 2005, <http://gsb.uchicago.edu/research/workshops/AppliedEcon/archive/WebArchive20052006/FrydmanSecondPaper.pdf>.
36. Ian Dew-Becker and Robert J. Gordon, "Where Did the Productivity Growth Go? Inflation Dynamics and the Distribution of Income," NBER Working Paper no. 11842, December 2005. Dew-Becker and Gordon converted the distribution of total W-2 income into a distribution of hourly income since 1967 by assuming the greatly increased proportion of two-earner joint tax returns at the top of the income distribution did not affect the distribution of hours per tax return. Income-switching between qualified and nonqualified stock options further complicates the Dew-Becker and Gordon conclusions.
37. Piketty and Saez, "Income Inequality in the United States, 1913–2002," Table B-4.
38. Lucian Bebchuk and Yaniv Grinstein, "The Growth of Executive Pay," *Oxford Review of Economic Policy* 21, no. 2 (2005): Table 1, [www.law.harvard.edu/faculty/bebchuk/pdfs/Bebchuk-Grinstein.Growth-of-Pay.pdf](http://www.law.harvard.edu/faculty/bebchuk/pdfs/Bebchuk-Grinstein.Growth-of-Pay.pdf).
39. Towers Perrin reports that CEOs in France receive a sizable 19 percent of their pay in the form of tax-favored benefits and perquisites and only 41 percent as "variable" (risky) pay that depends on performance. CEOs in the U.S. and Canada received only 11 percent of pay as benefit and perks, with 62 percent of the total pay package being variable in the U.S. and 51 percent in Canada. Towers Perrin, "Managing Global Pay and Benefits, 2005–2006," TP433-05, undated.
40. Martin Feldstein, "The Effect of Marginal Tax Rates on Taxable Income: A Panel Study," NBER

- Working Paper no. 4496, October 1993. See also Steven J. Davis and Magnus Henrekson, "Tax Effects on Work Activity, Industry Mix and Shadow Economy Size: Evidence from Rich Country Comparisons," Stockholm School of Economics Working Paper no. 560, June 2004, <http://ideas.repec.org/p/hhs/hastef/0560.html>. And see Edward C. Prescott, "Why Do Americans Work So Much and Europeans So Little?" Federal Reserve Bank of Minneapolis, July 2004, [http://minneapolisfed.org/research/common/pub\\_detail.cfm?pb\\_auto\\_num\\_id=905](http://minneapolisfed.org/research/common/pub_detail.cfm?pb_auto_num_id=905).
41. Wojciech Kopczuk, "Tax Bases, Tax Rates and the Elasticity of Reported Income," NBER Working Paper no. 10044, October 2003.
42. Adam Looney and Monica Singhal, "The Effect of Anticipated Tax Changes on Intertemporal Labor Supply and the Realization of Taxable Income," Federal Reserve Board Working Paper 2005-44, July 2006, [www.federalreserve.gov/pubs/feds/2005/200544/200544pap.pdf](http://www.federalreserve.gov/pubs/feds/2005/200544/200544pap.pdf).
43. Jon Gruber and Emmanuel Saez, "The Elasticity of Taxable Income: Evidence and Implications," *Journal of Public Economics* 84, no. 1 (April 2002): 1–32.
44. Martin Feldstein, "The Effect of Taxes on Efficiency and Growth," NBER Working Paper no. 12201, May 2006.
45. Saez, p. 4.
46. Reynolds, "Capital Gains Tax."
47. Raj Chetty and Emmanuel Saez, "The Effects of the 2003 Dividend Tax Cut on Corporate Behavior: Interpreting the Evidence," *American Economic Review* 96, no. 2 (May 2006): 124–129.
48. Internal Revenue Service, Statistics of Income Division, "Individual Income Tax Returns, Selected Income and Tax Items for Selected Years, 2000–2004," [www.irs.gov/taxstats/indtaxstats/article/0,,id=134951,00.html](http://www.irs.gov/taxstats/indtaxstats/article/0,,id=134951,00.html).
49. Thomas Piketty and Emmanuel Saez, "The Evolution of Top Incomes: A Historical and International Perspective," *American Economic Review* 96, no. 2 (May 2006): 200–05.
50. The international evidence is examined in Alan Reynolds, "The Misuse of Tax Data to Estimate Income Distribution," presented at the Western Economics Association International 81st Annual Conference, San Diego, July 1, 2006.
51. Krugman, "Whining Over Discontent."
52. Paul Krugman, "The Death of Horatio Alger" *The Nation*, January 5, 2004, [www.thenation.com/doc/20040105/krugman](http://www.thenation.com/doc/20040105/krugman).
53. Piketty and Saez, "The Evolution of Top Incomes: A Historical and International Perspective."
54. Piketty and Saez, "Income Inequality in the United States, 1913–1998," Figure A-1.
55. Congressional Budget Office, "Historical Effective Federal Tax Rates: 1979 to 2003," December 2005.
56. U.S. Bureau of the Census, "Historical Income Tables—Households," Table H-3, [www.census.gov/hhes/www/income/histinc/h03ar.html](http://www.census.gov/hhes/www/income/histinc/h03ar.html).
57. Alan Reynolds, *Income and Wealth* (Westport, CT: Greenwood Press, 2006) Table 2.1, p. 38.
58. Lawrence Mishel, et. al., *The State of Working America 2004/2005* (Washington: Economic Policy Institute, January 2005), p. 67, [www.epinet.org/content.cfm/books\\_swa2004](http://www.epinet.org/content.cfm/books_swa2004).
59. This refers to the Census Bureau's 14th definition of income, which is quite inclusive. Unfortunately, when the Census Bureau properly accounts for taxes and transfer payments, they include capital gains that are realized and taxable. See U.S. Bureau of the Census, "Percent Distribution of Households by Selected Characteristics within Income Quintile and Top 5 Percent in 2004," June 24, 2005, Table HINC-05, [http://pubdb3.census.gov/macro/032005/hhinc/new05\\_000.htm](http://pubdb3.census.gov/macro/032005/hhinc/new05_000.htm).
60. Data is discussed in Reynolds, *Income and Wealth*, Table 1.4, p. 20.
61. David Johnson et. al., "Economic Inequality through the Prisms of Income and Consumption," *Monthly Labor Review*, April 2005, [www.bls.gov/opub/mlr/2005/04/art2abs.htm](http://www.bls.gov/opub/mlr/2005/04/art2abs.htm).
62. Wojciech Kopczuk and Emmanuel Saez, "Top Wealth Shares in the United States, 1916–2000: Evidence from Estate Tax Returns," *National Tax Journal* 57, no. 2, part 2 (June 2004), <http://elsa.berkeley.edu/saez/estateshort.pdf>.
63. David Card and John E. DiNardo, "Skill-Biased Technological Change and Rising Wage Inequality: Some Problems and Puzzles," NBER Working Paper no. 9769, February 2002.



## OTHER STUDIES IN THE POLICY ANALYSIS SERIES

585. **The Cato Education Market Index** by Andrew J. Coulson with advisers James Gwartney, Neal McCluskey, John Merrifield, David Salisbury, and Richard Vedder (December 14, 2006)
584. **Effective Counterterrorism and the Limited Role of Predictive Data Mining** by Jeff Jonas and Jim Harper (December 11, 2006)
583. **The Bottom Line on Iran: The Costs and Benefits of Preventive War versus Deterrence** by Justin Logan (December 4, 2006)
582. **Suicide Terrorism and Democracy: What We've Learned Since 9/11** by Robert A. Pape (November 1, 2006)
581. **Fiscal Policy Report Card on America's Governors: 2006** by Stephen Slivinski (October 24, 2006)
580. **The Libertarian Vote** by David Boaz and David Kirby (October 18, 2006)
579. **Giving Kids the Chaff: How to Find and Keep the Teachers We Need** by Marie Gryphon (September 25, 2006)
578. **Iran's Nuclear Program: America's Policy Options** by Ted Galen Carpenter (September 20, 2006)
577. **The American Way of War: Cultural Barriers to Successful Counterinsurgency** by Jeffrey Record (September 1, 2006)
576. **Is the Sky Really Falling? A Review of Recent Global Warming Scare Stories** by Patrick J. Michaels (August 23, 2006)
575. **Toward Property Rights in Spectrum: The Difficult Policy Choices Ahead** by Dale Hatfield and Phil Weiser (August 17, 2006)
574. **Budgeting in Neverland: Irrational Policymaking in the U.S. Congress and What Can Be Done about It** by James L. Payne (July 26, 2006)
573. **Flirting with Disaster: The Inherent Problems with FEMA** by Russell S. Sobel and Peter T. Leeson (July 19, 2006)
572. **Vertical Integration and the Restructuring of the U.S. Electricity Industry** by Robert J. Michaels (July 13, 2006)
571. **Reappraising Nuclear Security Strategy** by Rensselaer Lee (June 14, 2006)

570. **The Federal Marriage Amendment: Unnecessary, Anti-Federalist, and Anti-Democratic** by Dale Carpenter (June 1, 2006)
569. **Health Savings Accounts: Do the Critics Have a Point?** by Michael F. Cannon (May 30, 2006)
568. **A Seismic Shift: How Canada's Supreme Court Sparked a Patients' Rights Revolution** by Jacques Chaoulli (May 8, 2006)
567. **Amateur-to-Amateur: The Rise of a New Creative Culture** by F. Gregory Lastowka and Dan Hunter (April 26, 2006)
566. **Two Normal Countries: Rethinking the U.S.-Japan Strategic Relationship** by Christopher Preble (April 18, 2006)
565. **Individual Mandates for Health Insurance: Slippery Slope to National Health Care** by Michael Tanner (April 5, 2006)
564. **Circumventing Competition: The Perverse Consequences of the Digital Millennium Copyright Act** by Timothy B. Lee (March 21, 2006)
563. **Against the New Paternalism: Internalities and the Economics of Self-Control** by Glen Whitman (February 22, 2006)
562. **KidSave: Real Problem, Wrong Solution** by Jagadeesh Gokhale and Michael Tanner (January 24, 2006)
561. **Economic Amnesia: The Case against Oil Price Controls and Windfall Profit Taxes** by Jerry Taylor and Peter Van Doren (January 12, 2006)
560. **Failed States and Flawed Logic: The Case against a Standing Nation-Building Office** by Justin Logan and Christopher Preble (January 11, 2006)
559. **A Desire Named Streetcar: How Federal Subsidies Encourage Wasteful Local Transit Systems** by Randal O'Toole (January 5, 2006)
558. **The Birth of the Property Rights Movement** by Steven J. Eagle (December 15, 2005)
557. **Trade Liberalization and Poverty Reduction in Sub-Saharan Africa** by Marian L. Tupy (December 6, 2005)
556. **Avoiding Medicare's Pharmaceutical Trap** by Doug Bandow (November 30, 2005)
555. **The Case against the Strategic Petroleum Reserve** by Jerry Taylor and Peter Van Doren (November 21, 2005)
554. **The Triumph of India's Market Reforms: The Record of the 1980s and 1990s** by Arvind Panagariya (November 7, 2005)

553. **U.S.-China Relations in the Wake of CNOOC** by James A. Dorn (November 2, 2005)
552. **Don't Resurrect the Law of the Sea Treaty** by Doug Bandow (October 13, 2005)
551. **Saving Money and Improving Education: How School Choice Can Help States Reduce Education Costs** by David Salisbury (October 4, 2005)
550. **The Personal Lockbox: A First Step on the Road to Social Security Reform** by Michael Tanner (September 13, 2005)
549. **Aging America's Achilles' Heel: Medicaid Long-Term Care** by Stephen A. Moses (September 1, 2005)
548. **Medicaid's Unseen Costs** by Michael F. Cannon (August 18, 2005)
547. **Uncompetitive Elections and the American Political System** by Patrick Basham and Dennis Polhill (June 30, 2005)
546. **Controlling Unconstitutional Class Actions: A Blueprint for Future Lawsuit Reform** by Mark Moller (June 30, 2005)
545. **Treating Doctors as Drug Dealers: The DEA's War on Prescription Painkillers** by Ronald T. Libby (June 6, 2005)
544. **No Child Left Behind: The Dangers of Centralized Education Policy** by Lawrence A. Uzzell (May 31, 2005)
543. **The Grand Old Spending Party: How Republicans Became Big Spenders** by Stephen Slivinski (May 3, 2005)
542. **Corruption in the Public Schools: The Market Is the Answer** by Neal McCluskey (April 14, 2005)
541. **Flying the Unfriendly Skies: Defending against the Threat of Shoulder-Fired Missiles** by Chalres V. Peña (April 19, 2005)
540. **The Affirmative Action Myth** by Marie Gryphon (April 6, 2005)
539. **\$400 Billion Defense Budget Unnecessary to Fight War on Terrorism** by Charles V. Peña (March 28, 2005)
538. **Liberating the Roads: Reforming U.S. Highway Policy** by Gabriel Roth (March 17, 2005)
537. **Fiscal Policy Report Card on America's Governors: 2004** by Stephen Moore and Stephen Slivinski (March 1, 2005)
536. **Options for Tax Reform** by Chris Edwards (February 24, 2005)

535. **Robin Hood in Reverse: The Case against Economic Development Takings** by Ilya Somin (February 22, 2005)
534. **Peer-to-Peer Networking and Digital Rights Management: How Market Tools Can Solve Copyright Problems** by Michael A. Einhorn and Bill Rosenblatt (February 17, 2005)
533. **Who Killed Telecom? Why the Official Story Is Wrong** by Lawrence Gasman (February 7, 2005)
532. **Health Care in a Free Society: Rebutting the Myths of National Health Insurance** by John C. Goodman (January 27, 2005)
531. **Making College More Expensive: The Unintended Consequences of Federal Tuition Aid** by Gary Wolfram (January 25, 2005)
530. **Rethinking Electricity Restructuring** by Peter Van Doren and Jerry Taylor (November 30, 2004)
529. **Implementing Welfare Reform: A State Report Card** by Jenifer Zeigler (October 19, 2004)
528. **Fannie Mae, Freddie Mac, and Housing Finance: Why True Privatization Is Good Public Policy** by Lawrence J. White (October 7, 2004)
527. **Health Care Regulation: A \$169 Billion Hidden Tax** by Christopher J. Conover (October 4, 2004)
526. **Iraq's Odious Debts** by Patricia Adams (September 28, 2004)
525. **When Ignorance Isn't Bliss: How Political Ignorance Threatens Democracy** by Ilya Somin (September 22, 2004)
524. **Three Myths about Voter Turnout in the United States** by John Samples (September 14, 2004)
523. **How to Reduce the Cost of Federal Pension Insurance** by Richard A. Ippolito (August 24, 2004)
522. **Budget Reforms to Solve New York City's High-Tax Crisis** by Raymond J. Keating (August 17, 2004)
521. **Drug Reimportation: The Free Market Solution** by Roger Pilon (August 4, 2004)
520. **Understanding Privacy—And the Real Threats to It** by Jim Harper (August 4, 2004)