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WORKING PAPER

THE MISUSE OF TOP 1 PERCENT INCOME SHARES AS A MEASURE OF INEQUALITY

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Abstract

This paper confirms recent studies which find little or no sustained increase in the inequality of disposable income for the U.S. population as a whole over the past 20 years, even though estimates of the top 1 percent's share of pretax, pretransfer (market) income spiked upward in 1986-88, 1997-2000 and 2003-2007.

It has become commonplace to use top 1 percent shares of market income as a shorthand measure of inequality, and as an argument for greater taxes on higher incomes and/or larger transfer payments to the bottom 90 percent. This paper finds the data inappropriate for such purposes for several reasons:

- Excluding rapidly increased transfer payments and employer-financed benefits from total income results in exaggerating the rise in the top 1 percent's share between 1979 and 2010 by 23 percent because a growing share of other income is missing.
- Using estimates of the top 1 percent's share of pretax, pretransfer income (Piketty and Saez 2003) as an argument for higher tax rates on top incomes or larger transfer payments to others is illogical and contradictory because the data exclude taxes and transfers.
- Using highly cyclical top 1 percent shares as a measure of overall inequality leads, paradoxically, to describing most recessions as a welcome reduction in inequality, because poverty and unemployment rates typically rise when the top 1 percent's share falls, and fall when the top 1 percent's share rises.
- Top 1 percent incomes are shown to be extremely sensitive ("elastic") to changes in the highest tax rates on ordinary income, capital gains and dividends. Although estimates of the elasticity of ordinary income for the top 1 percent range from 0.62 (Saez 2004) to 1.99 (Moffitt and Wilhelm), those estimates fail to account for demonstrably dramatic responses to changes in the highest tax rate on capital gains and dividends.

I estimate that more than half of the increase in the top 1 percent's share of pretax, pretransfer income since 1983, and all of the increase since 2000, is attributable to behavioral reactions to lower marginal tax rates on salaries, unincorporated businesses, dividends and capital gains. After reviewing numerous data sources, I find no compelling evidence of any large and sustained increase in the inequality of disposable income over the past two decades.

In previous research, I found “no clear trend toward increased inequality after 1988 in the distribution of disposable income, consumption, wages or wealth.” (Reynolds 2006a).¹

Several newer studies likewise suggest a leveling-off of various inequality measures after 1988 or 1993:

- Gordon (2009:1) finds, “The rise in American inequality has been exaggerated both in magnitude and timing. . . . By some measures inequality stopped growing after 2000 and by others inequality has not grown since 1993. This cessation of inequality’s secular rise in 2000 is evident from the growth of Census mean vs. median income, and in the income share of the top one percent of the income distribution.”
- Burkhauser, Larrimore and Simon (2010:34) compare inequality of after-tax income at cyclical peaks with only cash (not in-kind) transfers included, and find Gini coefficients of .394 in 1989, .390 in 2000 and .396 in 2007— indicating virtually no sustained change in inequality of aftertax money income since 1989. After also including the insurance value of private and public health insurance (and thereby coming closer to disposable income), the Gini measure of inequality *falls*—from .372 in 1989 to .364 in 2000 and .362 in 2007.²

¹ Goldin and Katz (2008: 45), argue that, “Economic inequality in terms of income, wages, consumption and wealth rose rapidly from the late 1970s to the mid-1990s.” But that clearly refers to what may have happened before 1993, while I focus on what happened after 1988. With the exception of income data from the Consumer Expenditure Survey, which shows inequality falling from 1984 to 1989 (see Appendix B), most measures *do* suggest that dispersion between higher and lower incomes was unusually narrow around the late 1970s (including the inflationary recessions of 1980-82) and that such dispersion increased from 1983 to 1988 as stocks, bonds and business rebounded.

² A Gini coefficient of 1 means perfect inequality (one person has all the income) and zero means perfect equality (everyone has the same income).

- Meyer and Sullivan (2010:15, 30) conclude: “Both income and consumption inequality rise in the early 1980s and remain somewhat flat in the 1990s, but in the 2000s overall consumption inequality shows little change while overall income inequality rises somewhat. . . . There is very little increase in after-tax money income inequality for the period from the early 1980s through the 1990s, although there is a small temporary increase centered around 1993.”³
- Antonczyk, DeLeire and Fitzenberger (2010:24, 29) find, “faster wage growth at the top (80% quantile) and bottom (20% quantile). . . . The polarization of wages, beginning at the end of the 1980s, has also been documented by Autor . . . Low-skilled workers in the U.S. experienced an astonishing decline in wage dispersion in the lower part of the wage distribution starting in the mid-1980s. . . . Moreover, inequality in the upper [quintile] was quite stable between 1980 and the end of the 1990s (thereafter wage inequality in the upper part decreased).”
- Kaplan (2012: 6) finds the average inflation-adjusted value of S&P 500 CEO compensation (salary, bonuses, perks and stock option grants) declined by more than 46 percent from 2000 to 2010.
- The Congressional Budget Office (2012: Table 5) finds that when after-tax median income is adjusted for inflation and family size (more singles, fewer

³ Gordon also mentions inequality peaking in 1993, rather than in 1988 as I suggest. However, as Burkhauser points out, "between 1992 and 1993, there was a change in the ability of the Census to capture exotic incomes of the top 1% of the income distribution. So, if people look at the CPS data and don't recognize that in 1993 we suddenly were able to better capture income, they will get the false notion that income inequality increased between 1992 and 1993." (Pethokoukis).

children), it increased by 32.8 percent from 1983 to 2000 and by an additional 12 percent from 2000 to 2009.

- With respect to wealth (rather than income), Kennickell (2012:16) finds “the share of the wealthiest one percent of households has shown no significant change since 1995” [it was 34.6 percent in 1995 and 34.5 percent in 2010].⁴

In contrast to these and similar findings, frequent press reports that inequality has increased dramatically in recent years is derived almost entirely from estimated shares of the top 1 percent’s share of income reported on individual tax returns, most commonly from Piketty and Saez (2003).

Citing Piketty and Saez, for example, Stiglitz concludes (2012: 7) that, “the rich are getting richer . . . the poor are becoming poorer and more numerous, and . . . the incomes of the middle class are stagnating or falling.” On the contrary, this paper shows that (1) the rich were becoming much poorer in 2008-2010, that (2) the poor became less numerous whenever the top 1 percent’s share increased, and that (3) real after-tax median household incomes rose by 48.8 percent from 1980 to 2009 (CBO). Such a wide gap between perception and reality, even among prominent economists, requires more careful reexamination of many alleged facts.

Some differences between popular impressions and recent research may reflect different answers to very different questions. If “rising inequality” is defined to mean cyclical spurts in top incomes, then it is undeniable that thousands of people experienced huge windfalls from stock options and capital gains at the peak of the tech stock boom in 1998-2000. Others enjoyed

⁴ The absence of compelling evidence of any significant increase in the top 1 percent’s share of either wealth or consumption is troublesome for contrary claims about the top 1 percent’s share of income, because income must either be used for consumption or used to add to wealth through savings.

huge but often fleeting gains in 2005-2007 from the explosion of home prices in several states or from related financial excesses (including mortgage-backed bonds). On the other hand, if the phrase “rising inequality” is meant to suggest that such periodic episodes of large gains at the top were accompanied by (or “caused”) increased poverty at the bottom and/or stagnation of “middle-class” income that is something that (1) cannot be inferred from top income shares alone, and (2) is factually inconsistent with all evidence in the paper and elsewhere.

To begin to illustrate the complexity of such evidence, the first three columns of **Table 1** compare Census Bureau and CBO estimates of Gini coefficients (or “indexes”) for disposable income (after-tax income including transfers, capital gains and benefits) with a Gini index for consumption from Hasset and Mathur. The last two columns compare CBO estimates of the top 1 percent shares of disposable income with the Piketty and Saez estimates of the top 1 percent’s share of “market income,” including capital gains but excluding taxes and transfer payments. Aside from the Gini coefficients for consumption, all of these series include realized capital gains from samples of tax returns. Including such capital gains realizations makes the income figures quite cyclical and, I later argue, unduly sensitive to changes in the capital gains tax in 1987, 1997 and 2003.⁵

Following Johnson, Smeeding and Torrey, the Gini index in the first column uses the Census Bureau’s broad 14th definition of income, which subtracts income and payroll taxes from income and adds cash transfer payments, the estimated value of in-kind transfers, and the Earned

⁵ Census Bureau and Congressional Budget Office estimates could be greatly improved by following the Canberra Group (2001: 2.3.2) “recommendation . . . that capital gains/losses should be treated as a memorandum item which may, optionally, be added to income measures for certain analyses.”

Income Tax Credit (EITC).⁶ The core income data from the Current Population Survey (CPS) uses internal Census data from the Current Population Survey (CPS) rather than “top coded” public use data (which has low limits on the amounts of income recorded in certain categories).

In 1993 the Census Bureau introduced new survey methods which replaced pencils with computers (facilitating more digits) and greatly increased limits on the amount of each of more than 50 income sources. The top 5 percent’s share of household money income, which had not risen significantly from 1987 to 1992, suddenly jumped from 18.6 percent in 1992 to 21 percent in 1993. But that was a statistical illusion, as was the related one-year spike in Gini coefficient. The dramatic changes in survey methods constitute a *data break* in the time series, making such figures incomparable before and after 1993.

Appendix A discusses persistent misunderstandings about “top coding” of CPS public use files before and after 1994, and unravels a related disagreement between Atkinson, Piketty and Saez and Burkhauser, Feng, Jenkins and Larrimore (who find no rise in the top 1 percent’s share from 1989 to 2005).

Once the 1993-94 data break in Census estimates is properly ignored, the first column of Table 1 shows *no upward trend for inequality* for the population as a whole after 1988, if taxes and transfers are taken into account. The Gini coefficient for disposable income was flat from 1988 to 1992, at 0.385 in both years. Aside from a surge in capital gains and stock options during the tech stock boom of 1997-2000, the Gini coefficient for disposable income hovered very close to 0.40 from 1993 to 2009. The second column provides alternative estimates of the Gini coefficient estimates from the Congressional Budget Office (CBO), which attempt to meld

⁶ The refundable portion of the EITC has grown from less than \$1.5 billion in 1986 to \$55.1 billion in 2009, according to the IRS Statistics of Income Division (SOI), while the number of EITC recipients expanded from 7.2 million to 25.3 million.

estimates of top incomes and realized capital gains from tax returns with a broad measure of household income that includes transfer payments and employee benefits and subtracts all federal taxes except the estate tax.⁷ The inclusion of top 1 percent income from tax returns presumably accounts for the CBO Gini indexes being higher than the Census Bureau estimates, largely because tax returns include one-time windfalls from exercised stock options (which were very large in 1999-2001) while the Census survey does not. The inclusion of realized capital gains largely explains why both CBO and Census Gini estimates are highest around cyclical peaks such as 2000 and 2007. Yet even the CBO Gini index was roughly the same, for example, in 1988, 1997, 2003 and 2009, showing little upward trend aside from the ephemeral peaks of the tech stock (1999-2000) and house-price (2005-07) asset bubbles.

The third Gini coefficient, from Hassett and Mathur, measures inequality of consumption rather than income. Several studies find the inequality of consumption, from the Consumer Expenditure Survey (CE), to be smaller and less volatile than measures of disposable income inequality. The consumption Gini is slightly higher in 2005-2007, possibly reflecting the housing bubble, but otherwise almost unchanged over the past two decades or more.

Although all three Gini coefficients were virtually unchanged between 1994-96 and 2009, the last column from Piketty and Saez shows two large increases in the top 1 percent's share of pretax, pretransfer income from 1994 to 2000 and again from 2002 to 2007, followed by sharp cyclical declines in 2001-2002 and 2008-2009. Those who use top 1 percent shares to assert that there was a large and sustained increase in U.S. inequality from about 1990 to 2010 are not usually referring to the distribution of *disposable* income or consumption among all households

⁷ The distributional impact of the estate tax is impossible to estimate because it is paid by heirs on rare occasions rather than by deceased people annually. The incidence of corporate taxes is also uncertain.

(which was little changed), but to the top 1 percent's average income divided by an increasingly constricted definition of everyone else's income.

Measures of changes in *disposable* income among *all* income groups (the Gini coefficients) do not confirm the common impression of a large, sustained increase in inequality since the late 1980s. The ambiguity of post-1988 trends in inequality measures is also found when using alternative sources.

Appendix B provides a critical review of alternative data sources that have been said to confirm the Piketty and Saez generalizations about a strong, sustained rise in inequality after the late 1980s. Those sources include Social Security data on labor earnings, CBO estimates of pretax top percentile shares, and the Panel Study on Income Dynamics (PSID). Appendix B rejects the findings of Attanasio, Hurst and Pistaferri who deploy the Consumer Expenditure (CE) survey and PSID as (conflicting) measures of income inequality, and also questions their critique of the customary CE measure of consumption (shown in Table 1).

Unlike these statistical distractions, which are relegated to an appendix, the Federal Reserve's triennial Survey of Consumer Finances (SCF) merits a brief digression because it is an unusually detailed, inclusive survey of both wealth and pretax income.

Table 2 shows changes since 1989 in real median pretax income by quartile and decile from the SCF. The reason for using median averages to explain the typical experience among high and low income groups is explained by the *Canberra Group Handbook on Household Income Statistics* (2011: 74-75): "Compared to the mean, the median is a more stable and robust measure and is less affected by extreme values and sample fluctuations. The median is often the preferred measure when a threshold for 'low' or 'high' income is required. . . . [T]he median is generally to be preferred particularly at the extremes of the distribution." Only top income

groups are unbounded by a ceiling, for example, so a few extremely high incomes distort the average and render it incomparable to other income groups (Reynolds 2006b: 52-55).

The SCF data reveals very little difference in the inflation-adjusted growth of median pretax income between the top 10 percent and the bottom 40 percent since 1989. Between the cyclical peaks of 1989 and 2007, real median income rose by 22-23 percent for the bottom two quintiles as well as for the top decile. From 2007 to 2010, in the wake of severe recession, only the lowest income group experienced any increase in real income, while the middle and fourth-highest quintile continued to fare relatively poorly in terms of pretax income. At least 60 percent of the U.S. families experienced more rapid growth of real pretax income than the median of the middle quintile, casting doubt on the convention of using median income as a proxy for “typical” family income.

It is important to note that these SCF figures are *pretax*, adjusted for inflation using the flawed consumer price index (CPI) and *not* adjusted for the shrinking size of average households. Congressional Budget Office (2012) calculations, using the personal consumption expenditure (PCE) deflator rather than the CPI and adjusting for household size, find real median household income rose by 34 percent from 1989 to 2007 after taxes, but only 28 percent before taxes. Tax cuts and tax credits made a difference. Just as the SCF estimate of only a 14.7 percent rise in real median income over the same period clearly understates actual *disposable* income gains in the middle, the SCF estimates also understate the larger real income gains for the top 10 percent and bottom 40 percent. Subtracting taxes at the top and adding refundable tax credits at the bottom would skew the relative gains even further toward lower incomes.

In short, the common impression that there has been a large and sustained increase in the inequality of some measure of income, consumption or wealth appears based almost entirely on

estimates derived from individual income tax returns, and (as further discussed in the Appendixes) is not readily confirmed by other sources.

Three Difficulties with Using Tax Returns to Measure Inequality

In this paper, I raise three principal objections to using data from the top 1 percent of tax returns as a measure of changes in income inequality among all households. I argue, first of all, that the Piketty and Saez estimate of total market income –the denominator of the ratio of top percentile income to total income– understates actual incomes of the “other 99 percent” by huge and growing amounts. Second, the top 1 percent’s share is *too cyclical* to be a meaningful measure of inequality, since reductions in the top 1 percent’s share are typically associated with higher rates of poverty and unemployment while increases in the top 1 percent’s share are associated with falling poverty and unemployment. To adopt top percentile shares as a measure of inequality requires accepting the paradoxical conclusion that inequality “improves” when poverty worsens, and vice-versa. Third, and perhaps most important, the top 1 percent’s share is shown to be extremely sensitive to changes in marginal tax rates on salaries, business income, dividends and capital gains. As a result, behavioral responses to higher or lower tax rates have been frequently misinterpreted as actual changes in top incomes rather than as changes in the way incomes are or are not reported on individual or corporate tax returns.

Regarding the first point, the understatement of total income, the top 1 percent’s share as estimated by Piketty and Saez excludes all transfer payments from the income of the “other 99 percent,” all tax-free employee compensation, and all investment income

and capital gains accruing inside tax-favored savings accounts for college and retirement (Appendix B includes evidence of the vanishing taxable investment income of the middle class). Because these excluded sources of income have rapidly increased in recent decades, the quality of the Piketty and Saez data worsened over time. Even the exclusion of public and private health benefits alone constitutes a huge understatement of income among those with modest incomes. As mentioned previously, Burkhauser, Larrimore and Simon find the Gini coefficient *fell* from .372 in 1989 to .362 in 2007 (indicating reduced inequality) after including the insurance value of private and public health insurance.

As Burtless points out (2011), the Piketty and Saez estimate of total U.S. income (excluding capital gains) excludes a growing fraction of total income because it excludes transfer payments and employer-paid health and other benefits.⁸ Transfers rose from 14.4 percent of personal income in 2007 to 17.9 percent in 2011 while employee benefits rose slightly (despite a big drop in employment) from 12.1 to 12.6 percent. As shown in **Figure 1**, the Piketty and Saez estimate of pretransfer income reported on tax returns accounted for only 62.1 percent of personal income in 2010 – down from 66.7 percent in 2000, 68.7 percent in 1990, 70.9 percent in 1980 and 76.5 percent in 1970.

If the Piketty and Saez definition of total income had even remained at the 1979 level of 71.7 percent of personal income, then by 2010 their measure of total income would have been \$8.835 trillion rather than the \$7.688 trillion they report, and the top 1 percent's share would have been 15.2 percent in 2010 rather than the reported 17.4 percent. The exclusion of a rising

⁸ A footnote to Table 1 in Piketty and Saez (2003) says, "Incomes exclude government transfers (such as unemployment insurance and social security) and non-taxable fringe benefits." Another footnote to Figure A1b adds, "Our income definition is . . . before individual income taxes and employee payroll taxes, and income excludes all government social transfers such as Social Security retirement and disability benefits, government health care insurance (Medicare and Medicaid), unemployment insurance, welfare assistance programs, the earned income tax credit, etc. The importance of taxes and transfers has grown over time . . ."

share of personal income thus exaggerated the apparent rise in the top 1 percent's share by 2.2 percentage points from 1979 to 2010, thus accounting for 23 percent of the reported rise in the top 1 percent's share between those dates.

The worsening mismeasurement of total income has artificially increased the top 1 percent's income share between 1979 and 2008. This is confirmed in Table 1 by comparing the top 1 percent's shares estimated by the CBO (which includes transfer payments and benefits) with those of Piketty and Saez. While Piketty and Saez show the top 1 percent's share rising by 2.6 percentage points between 1988 and 2010, the CBO finds a small decline, with the top 1 percent's share also about the same (11-12 percent) in 1988-90, 1996-97 and 2001-03.

If the Piketty and Saez estimate of aggregate top 1 percent incomes is divided by personal income, that results in the top 1% share for 1986 being only 6.1 percent, which is 3 percentage points smaller than the top 1 percent's share of total income as Piketty and Saez measure it (gross income reported on individual tax returns less transfers). That gap between the two measures rose to 4 percentage points by 1991, 5 points in 1997, 6.2 in 2005 and 6.6 in 2010. The problem is not the difference in the level of the top 1 percent's share but the *widening gap* between the two measures over time.

It is one thing to argue, as Piketty and Saez do (2007), that personal income is too broad a measure to use (indeed, the CBO measure is not as broad as personal income), but quite another to argue that the *growth* of personal income over time has been grossly exaggerated. If that were true it would mean the growth of GDP of the United States has been grossly exaggerated, because personal income accounts for the bulk of GDP.

Because the denominator of the ratio of top incomes to total incomes in the Piketty and Saez estimates is missing a rising share of personal income over time, it could be argued that the

top 1 percent's reported share of (increasingly understated) total income has been artificially increased by about 3.6 percentage points from 1986 to 2010 (the difference between the 6.6 percentage point difference between using personal income or Piketty and Saez income in 2010 and the 3.0 percent difference in 1986). As Tatom concludes, "Piketty and Saez (2007) responded to Reynolds, but miss his major point that the reported income they use has been increasingly biased over time because more and more of income is not reported for tax reasons."

To avoid this problem of underestimating total income by growing amounts over time, tax-based studies of top income shares in most other countries such as France, Canada and Japan use some fixed percentage of personal income as the denominator (total income). Although Atkinson, Piketty and Saez and their associates make comparisons between top income shares in the U.S. and these other countries, such comparisons are invalid because total income in the U.S. is not defined as a fixed percentage of personal income as it is most other countries but as a shrinking percentage of personal income. The pre-1944 Piketty and Saez estimates do define total income as 80 percent of personal income (assuming 20 percent of income is unreported) but also subtract transfer payments (which makes no difference in 1928 but a large and growing difference in recent years). Although some observers have compared top income shares in 2007 with those in 1928, the different measures of total income make prewar estimates of top 1 percent shares incomparable to recent estimates.

Even excluding just in-kind transfers and the EITC, as the Census Bureau's widely reported estimates of pretax "money income" do, greatly affects the apparent growth of middle incomes. Fitzgerald (2008: 26) finds the Census Bureau estimate of median "money" income rose by 44 to 62 percent from 1976 to 2006, rather than the reported 18 percent, after including

all transfer payments and accounting for the changing mix of household types and the consumer price index exaggeration of inflation.

In response to my objections to using pretax, pretransfer data to measure inequality, Piketty and Saez (2007) claim “it makes more sense to focus either on market income (before deducting taxes and including transfers) or on disposable income (market income net of taxes including transfers).” On the contrary, it never makes sense to ignore *either* taxes or transfers, so it cannot make “more sense” to exclude both than to exclude just one.

According to the original report of the Canberra Group of international experts on the measurement of income (2001: 2.4.2.4), “Transfers . . . are a major way in which income is redistributed and therefore a good classification of transfers is particularly important for income distribution studies.” Because of the post-1986 growth in the coverage and generosity of refundable tax credits in the U.S., transfers through the tax system are particularly important.

Piketty and Saez (2007) argue that, “it is obvious that the progressive income tax should be the central element of the debate when thinking about what to do about the increase in inequality. Even conservatives like Alan Reynolds would agree and that is why they prefer to dismiss the facts about growing income inequality rather than face the debate on income tax progressivity.” This comment seems poorly aimed, since one of my key objections to the use of their data to measure “the increase inequality” is that their estimates take no account of taxes at the top of the distribution or of tax credits at the bottom. What use is pretax, pretransfer data in a debate about taxes or transfers?

As it happens, most actual redistribution happens through transfers, not taxes, except in the U.S. where refundable tax credits are used as a negative income tax. The U.S. is one of very few countries that still attempts to use progressive income taxes to affect the distribution of

disposable income. In a Luxembourg Income Study of 36 countries, Wang and Caminda (2011:14) find, "On average, the share of social transfers play a major role of 85 percent in the total reduction of inequality, while taxes take account for 15 percent of total reduction of income inequality. . . . Besides Guatemala, only in a few countries taxes are important in equalizing incomes: the United States, Israel, and Canada. Generally speaking, redistribution of income in most countries relies to a large extent on social transfers" (financed with flat rate VAT and payroll taxes).

In a 2005 comparison that included both income and payroll taxes among 24 leading countries, the OECD (2008: 104-106) finds, "Taxation is most progressively distributed in the United States . . . [and] least progressive in the Nordic countries, France and Switzerland." The OECD finds the U.S. "collects the largest share of taxes from the richest 10% of the population." The top 10 percent in the U.S. received 33.5 percent of cash income in 2005, according to the OECD, but paid 45.1 percent of all income and payroll taxes. No other country in the sample had nearly as high a ratio (1.35) of the share of taxes paid to the share of income earned. Piketty and Saez are citizens of France, a country with one of the least progressive tax systems in the industrial world.

Even aside from the fact that the U.S. has the most progressive tax system in the OECD, the pretax, pretransfer "facts about growing inequality" from Piketty and Saez, are entirely irrelevant to the topic of tax progressivity – for the obvious reason that they ignore taxes, transfers and refundable tax credits. The highest tax rates could be doubled and/or means-tested transfers to the poor tripled with no *direct* effect at all on income as Piketty and Saez define it, because their concept of income excludes taxes and transfers. As Brewer, Saez and Shephard point out, however, such policies would have huge *indirect* effects on reported *pretax* incomes

for two reasons: “First, raising income taxes may weaken the labor supply and entrepreneurship incentives of middle-and high-income individuals who face the taxes. Second, income transfer programs may weaken the labor supply incentives of their recipients” (2010:93). Piketty and Saez presumably agree (with Brewer, Saez and Shephard). Perhaps that is why they prefer to dismiss the facts U.S. and European income tax progressivity rather than face the debate about the risks of weakening the “labor supply and entrepreneurship incentives” of high-income individuals with punitive marginal tax rates, or weakening work incentives of low and middle-income individuals by offering excessively attractive transfers from those who work to those who do not.

This paper presents evidence that (as a result of behavioral responses), higher tax rates on unincorporated business, exercised stock options, dividends and/or realized capital gains would indeed reduce the amount of *pretax* income reported on individual tax returns by the top 1 percent. By itself, however, imposing higher marginal tax rates on highly elastic (responsive) sources of top incomes would do nothing to raise the net incomes of the other 99 percent.⁹ Moreover, the effect on tax revenues, or on the actual distribution of *after-tax* income (including unrealized capital gains, income from tax-exempt bonds, tax-free perks, and income shifted to corporate tax returns), would be ambiguous at best and perverse at worst

The federal individual income tax (the focus of the Piketty and Saez data) has clearly become more progressive since 1979, not less so. Congressional Budget Office estimates show that from 1979 to 2007 average individual income tax rates at the federal level fell by 110

⁹ *The Economist* blog notes, "Mr. Krugman simply repeats that the top 1% and 0.1% have seen outsized gains, infers from this that 'we've become an oligarchy' and then stops. How does this help? To what question is this the answer? . . . How exactly would lopping the tall poppies improve the relatively poor prospects of the large percentage of children raised in single-parent households?"
<http://www.economist.com/blogs/democracyinamerica/2011/11/inequalities>

percent for the second-poorest quintile, by 56 percent for the middle quintile, 39 percent for the fourth, and 8% at the top (Reynolds 2011a: 12).

Meyer and Sullivan (2010: 20) find, “accounting for taxes considerably reduces the rise in income inequality over the past 45 years.” Heathcote, Perri and Violante (2009: 25) find, “Public transfers play a very important role in compressing inequality at the bottom of the income distribution. . . . The tax code also appears to be quite progressive overall. Disposable income inequality is much smaller than pre-tax income inequality.”

Poverty Falls When the Top 1 Percent Share Rises

My second objection to using top 1 percent shares as a proxy for the overall distribution of income is that the top 1 percent share would still not be a credible gauge of inequality even if income was properly measured to include transfers, refundable tax credits and tax-free benefits. For example, one problem with using the top 1 percent’s share as a proxy for how the other 99 percent are doing is that the top 1 percent’s share varies inversely with the poverty rate: **Figure 2** shows that the U.S. poverty rate falls when the top 1 percent’s share rises, and the poverty rate rises when the top 1 percent’s share falls. When the rich get richer, so do the poor. They float or sink in the same boat. Economic growth is not a zero-sum game.

Piketty and Saez estimate that the real income of the top 1 percent’s fell by 36.3 percent in 2008-09, while real income of everyone else fell by 11.6 percent. Those who claim the top 1 percent’s share is a meaningful measure of inequality are logically obliged to say that inequality “improved” during the 2008-2009 recession, despite rising poverty and unemployment. Aside from the unique exception of 1980-81 (when the Federal Reserve’s double-digit interest rates

raised the real interest income of the top 1 percent), the top 1 percent's share has always fallen in recession years – 1920, 1929-31, 1937-38, 1949, 1953, 1957-58, 1960, 1970, 1976, 1991, 2001-02 and 2008-09.¹⁰

In the past two decades, the cyclicity of top 1 percent incomes has become even more pronounced, even if we ignore capital gains. Guvenen, Ozkan, and Song (2012: 49-50), in a panel study of labor income of prime-age men (from uncapped Social Security data), find that, "During the last two recessions, these individuals [in the top 1 percent] have experienced enormous and persistent income losses, which dwarfs the losses of individuals even with slightly lower incomes. In fact, individuals who entered the last three recessions in the top 99.9th percentile of the income distribution [the top 1/10th of 1 percent] had incomes five years later that [were] at least 50 log points lower than their pre-recession levels." Showing how rising unemployment has been tied to falling top incomes since 1985, they found, "a 1 percentage point rise in the male unemployment rate has been accompanied with an average income decline of 6.87 percent for individuals that were in P99.9 before the shock. Similarly, a 1 percent slowdown in per capita GDP growth implies a 4.55% decline in the income of the same individuals. For comparison, the corresponding numbers for individuals at the median of the income distribution is 1.08 and -1.77."

Looking instead at consumer spending during the steep recession of 2008, Heathcote, J., Violante, G., and Perri (2010) find "a substantial fall in spending at the top of the consumption distribution, while spending at the bottom increases." They conclude that "households at the top

¹⁰ Parker and Vissing-Jorgensen conclude that incomes of the top 1 percent became highly cyclical only after the 1981-82 recession, but that conclusion is based on excluding capital gains and comparing booms as well as busts. For recessions alone, their estimates show that incomes of the top 1 percent were also highly cyclical from 1917 to 1958– with incomes (even excluding capital gains) falling far more rapidly for the top 1 percent than for the population as a whole in 1917-21, 1929-33, 1937-38, 1948-49 and 1957-58. Cyclicity was surely much more pronounced after 1982, however.

of the consumption distribution have been the worst-hit by falling housing and equity prices, while those at the bottom have been relatively unscathed.”

Comparing the 2008-2010 cyclical experience for the top 5 percent and bottom 20 percent, Perri and Steinberg find, “redistribution (through taxes and transfers) from high-earnings to low-earnings households in the United States was at its historical high. . . . [D]uring the Great Recession, inequality in disposable income did not increase because government transfers like unemployment insurance supported disposable income of low-earnings households.”

Such findings contrast sharply with a strong comment by Stiglitz (2012: 2). He wrote that, “the rich were getting richer, while the rest were facing hardships, seemed inconsistent with American dream.” Actually, that contention seems inconsistent with reality.

The shared cyclicity of top and bottom incomes also applies in the opposite situation, when the economy is growing briskly and unemployment and poverty are declining. Roine, Vlachos and Waldenström find that top 1 percent shares rose most during periods of rapid economic growth, along with falling unemployment and poverty.

Those who attempt to measure inequality by top percentile incomes shares are logically obliged to argue that U.S. inequality “improved” during every recession and “worsened” during every period of prolonged prosperity such as 1963 to 1968, 1981 to 88, or 1991 to 2000. In the Piketty-Saez series that includes capital gains, for example, the top 1 percent’s share dropped to an average of 9.2% for the entire period from 1970 to 1979 –compared to 10.4% from 1960 to 1969 and 10.9% from 1950 to 1959. According to the common ritual of using such data from the late 1970s as the benchmark, inequality would have to be considered “worse” during the prosperous 1960s than it was during the stagflationary 1970s.

In a study of a dozen major countries since 1960, Andrews, Jenks and Leigh (2009: 1,32) find “a one percentage point rise in the top decile’s income share is associated with a statistically significant 0.12 point rise in GDP growth during the following year.” Moreover, they add, “if a 10 point increase in [the top decile’s share] were sustained for ten years, GDP would be 12.2 per cent higher than if TopShare10 had not changed.”

Since top income shares typically fall in recessions and rise with faster economic growth, intellectual angst about top income shares implies that the bottom 99 percent would be better-off with economic stagnation, which is demonstrably nonsensical. As Hines, Hoynes and Krueger found, “the benefits of strong economic growth for the disadvantaged are at least as great as they are for the more advantaged.”

Piketty and Saez make doubtful comparisons of pretax, pretransfer income growth between the top 1 percent and lower income groups. Yet their data clearly undercounts both the level and growth of income of the bottom 90 percent (Burtless 2011, Reynolds 2006a). Atkinson, Piketty and Saez (2011:4) disclose that “The series measure only top income shares and hence are silent on how inequality evolves elsewhere in the distribution.” The data are silent but those who cite the data are not. Instead, it has become commonplace to misuse these tax-sensitive and cyclical top 1 percent estimates as a proxy for progress among the other 99 percent. Those who do so describe total income (of the 100 percent) as if it was a given, lump-sum annual endowment that could be shared more evenly without affecting the amount to be shared (through effects on incentives). “If the rich get more, that leaves less for everyone else,” says Krugman (2002). Such zero-sum reasoning precludes Pareto-optimal gains, such as the founders of Apple, Google and Microsoft becoming much wealthier without making anyone poorer.

Piketty, Saez and Stantcheva (2012:4 &32) ascribe growth in the top percentile share to “a bargaining view of top earners’, and especially CEOs’, compensation. . . . whereby gains at the top come at the expense of lower income earners.” As a factual matter, this does not add up. There are not more than a few thousand high-paid corporate executives – not enough to explain more than a small fraction of top 1 percent pay – and labor earnings account for no more than half of top 1 percent income.¹¹

Bakija, Cole and Heim found that compensation of all executives of nonfinancial corporations (not just CEOs) accounted for only 15 percent of the pay of the top 0.1 percent, which would be a much smaller share of the top 1 percent. Moreover, the vast bulk of top executive compensation after 1993 has come from restricted stock or stock options, which are entirely at the expense of other shareholders not other employees (Kaplan).

Tax Rates Affect Reported Income: The Elasticity of Taxable Income (ETI)

My third and most imperative objection to using tax returns of the top 1 percent as a measure of the overall income distribution involves demonstrating that estimates of top incomes reported on income tax returns are extremely sensitive to major changes in marginal tax rates. I argue that recent surges in top income shares were largely or entirely the result of well-documented behavioral responses to dramatic U.S. tax rate reductions that were phased-in by 1983-84, 1988 and 2003, and also to the reductions in tax rates on capital gains in 1983-86, 1997 and 2003.

¹¹ In a broad measure of market income that includes capital gains, the Congressional Budget Office (2012: Table 7) finds salaries, bonuses and stock options accounted for only 26.7 percent of the top 1 percent’s income in 2006, down from 41.5 percent in 1992.

As Feldstein explains (1995: 523), “A change in individuals’ marginal income tax rates can induce them to alter their taxable income in a wide variety of ways including changes in labor supply, changes in the form in which employees compensation is taken, change in portfolio investments, change in itemized deductions and in or expenditures that reduce table income, and changes in taxpayer compliance.”

A frequently reprinted graph from Atkinson, Piketty and Saez (their Figure 1) shows the top 1 percent’s share of market income – importantly including capital gains – from 1913 to the cyclical peak of 2007. This graph shows that “inequality” rose after WWI tax rates were reduced in the late 1920s, generally fell from the Hoover tax increase of 1932 to the inflationary bracket-creep era of the 1970s (except between the Kennedy tax cuts of 1964 and the surtax of 1969) and then began a seemingly persistent upward climb with cyclical waves. However, research by Gruber and Saez on the elasticity of taxable income predates the work by Piketty and Saez on top income shares and the earlier work shows that taxpayer response goes a long way toward explaining why top 1 percent income shares rose when the highest tax rates were reduced.¹² What appear superficially as changing trends of top income shares are, in reality, largely the consequence of changing tax rates applied to high incomes (including capital gains).

As Piketty, Saez and Stantcheva (2011: 26) explain, “There is a clear negative overall correlation between the top 1% income share and the top marginal tax rate: (a) the top 1% income share was high before the Great Depression when top tax rates were low (except for a short period from 1917 to 1922), (b) the top 1% income share was consistently low between 1932 to 1980 when the top tax rate was uniformly high, (c) the top 1% income share has

¹² Gruber and Saez (2002:3, 29) concluded that their finding of high elasticity at higher incomes "highlight the value of having low tax rates on a broad tax base" and "our estimates suggest that the optimal system for most redistributive preferences consists of a large demogrant [comparable to the EITC] that is rapidly taxed away for low income taxpayers, with lower marginal rates at higher income levels."

increased significantly since 1980 after the top tax rate has been greatly lowered. This clear visual correlation suggests that the overall elasticity of reported incomes is high. For the recent period that is of most interest for current policy debates, the top 1% income share more than doubled from around 8% in the late 1970s to around 18% in last five years, while the net-of-tax (retention) rate increased from 30% (when the top marginal tax rate was 70%) to 65% (when the top tax rate is 35%). If we attribute the entire surge in the top income share to the decline in the top tax rate, this translates into an elasticity of top incomes with respect to the net-of-tax rate around one.”

That last sentence is reversible: *If the elasticity of top incomes is “around one” then we could attribute the entire surge in the top income shares since 1980 to the decline in the top tax rate.*

The higher the elasticity, the greater the taxpayer response to higher or lower marginal tax rates. If the elasticity of reported taxable income among high-income taxpayers is as high as one then virtually all of the periodic surges in top income shares when marginal tax rates were reduced (notably, 1983 to 1989 and 2003 to 2007) should be interpreted as a behavioral response to lower tax rates on salaries, unincorporated business profits, interest income, and dividends. Reported capital gains are also highly responsive to tax policy, as this paper demonstrates, but are usually subject to different tax rates and excluded from ETI estimates.¹³

In their survey article, “The Elasticity of Taxable Income with Respect to Marginal Tax Rates: A Critical Review,” Saez, Slemrod and Giertz (2012:19) write, “It is striking to note that the share received by the top 1 percent of income recipients started to increase precisely after

¹³ Estimates of the elasticity of taxable or gross income do not account for changes in the tax rates on capital gains and dividends, and therefore understate behavioral effects when those tax rates change.

1981 — when marginal tax rates started to decline. Furthermore, the timing of the jump in the share of top incomes from 1986 to 1988 corresponds exactly with a sharp drop in the weighted average marginal tax rate from 45 percent to 29 percent after the Tax Reform Act of 1986. These correspondences in timing . . . provide circumstantial, but quite compelling evidence that the reported incomes of the high-income individuals are indeed responsive to marginal tax rates. . . . Comparing 1986 and 1988 around the Tax Reform Act of 1986 yields a very large elasticity of 1.36 for the top 1%.”

Near the end of that same article, however, Saez, Slemrod and Giertz (2010:42) suddenly proclaim—as a judgmental assessment— that “the best available evidence [of long-term elasticity] range from 0.12 to 0.40. Proceeding mechanically, at the approximate midpoint of this range—an ETI of 0.25—the marginal excess burden per dollar of federal income tax revenue raised is \$0.195 for an across-the-board proportional tax increase, and \$0.339 for a tax increase focused on the top 1 percent of earners.” But a critical and revealing footnote to that mechanical calculation warns “that the ETI for top earners could conceivably be higher than 0.25.” In fact, the following paragraph says, “There is also much evidence to suggest that the ETI is higher for high-income individuals.” Indeed, the article offered no evidence that the ETI might be even as low as 0.5 for the top 1 percent, much less 0.25.

The supposedly “best” estimates of 0.12 and 0.40 match the estimates for gross and taxable income respectively from a pioneering 2002 study by Gruber and Saez, which first appeared in draft form in 2000. But those early estimates were for all taxpayers, not the top 1 percent, and the 0.12 estimate is substantially lower than most recent studies have found. After reviewing 30 studies, the Canadian Ministry of Finance (2010: 51) found, “The central ETI estimate in the international empirical literature is about 0.4. An ETI of 0.4 implies that a

10% . . . decrease in the after-tax value of the final dollar of taxable income will result in approximately a 4% . . . decrease in the taxable income reported by the taxpayer.” Like every other study, however, “The ETI [for Canada] is found to be significantly higher for taxpayers with very high incomes.”

Giertz (2010: 410) updated the Gruber and Saez methodology for the 1990s, finding that "when measuring responses over three-year intervals "Gruber and Saez’s specification yields an ETI estimate of 0.54. . . . An alternative approach that includes lead and lag tax rate changes produces a short-term elasticity estimate of 0.43 and a longer-term estimate [over three-year intervals] ranging from 0.78 to 1.46. . . . when accounting for delayed and anticipatory responses." The Giertz estimates, like those of Gruber and Saez, are also for all taxpayers, not the top 1 percent.¹⁴

Using detailed Census CPS data rather than aggregate tax data, Burns and Zilak find "significant work disincentive effects of taxation" and a strong positive gradient in the elasticity across education attainment (0.5-0.6 [ETI] for those with post-graduate education compared to 0.18-0.25 for college graduates). Combining several methods "results in estimates of the ETI in the range of 0.4-0.7."

The midpoint of a range of many estimates for all taxpayers is not a representative average when the range consists of one or two outliers (such as the 0.12 figure from Gruber and Saez) and at least 30 other estimates clustered near 0.40 or higher. Yet that mechanical midpoint figure of 0.25 is adopted by Diamond and Saez as a justification for raising the marginal tax rate to 73 percent on the top 1 percent. They claim that 0.25 is “a mid-range

¹⁴ Gruber and Saez found an ETI of 0.57 for incomes above \$100,000 and 0.62 for incomes above \$350,000 but they excluded incomes above \$1 million—where the ETI is arguably highest.

estimate from the empirical literature,” but Saez, Slemrod and Giertz only claimed that figure was a mid-range estimate of the “best” studies for all taxpayers, not for the top 1 percent.¹⁵

When it comes to the top 1 percent, Chetty notes (2009: 33), “The empirical literature on the taxable income elasticity has generally found that elasticities are large (0.5 to 1.5) for individuals in the top percentile of the income distribution.” In fact, the empirical literature surveyed by Saez, Slemrod and Giertz finds elasticities for the top 1 percent that range from 0.62 (Saez 2004) to 1.99 (Moffitt and Wilhelm: 210), and those estimates are for gross income before deductions (estimates for taxable income are often higher).

By assuming much lower elasticity than his own research suggests is appropriate for the top 1 percent, Saez (2004:148) estimated that only “two out of the nine percentage point increase in the top 1 percent income share from the 1960s to 2000 [or 22 percent] is due to the decline in marginal tax rates.” Even if that estimate was credible from the 1960 to 2000, it would not help explain behavioral responses to the dramatic changes in tax rates that occurred between 1983 and 2003.

Atkinson and Leigh (2010: 31) co-authored another long-term study (1970 to 2000) using tax return data from the U.S., U.K., Canada, Australia and New Zealand. They find, “The share of the very rich appears to be extremely responsive to changes in marginal tax rates. Over the period 1970-2000, we estimate that reductions in tax rates can explain between one third and one half of the rise in the income share of the richest percentile group.”

¹⁵ Diamond and Saez (2011:6) claim, “[t]he key . . . empirical ingredient to implement the formula for the optimal tax rate is the elasticity e of top incomes with respect to the net-of-tax rate. . . . [I]f $e=.25$, a mid-range estimate from the empirical literature, then [the optimal top tax rate]=73 percent, substantially higher than the current 42.5 percent top US marginal tax rate (combining all taxes).” That supposedly revenue-maximizing tax rate calculation assumes no income effects on labor supply from higher taxes and constant elasticity within the top 1 percent; both assumptions are empirically doubtful.

The Atkinson and Leigh conclusion certainly calls into question the credibility of tax-based statistics as a method of estimating income changes at times of major tax rate changes. Yet attributing even half of the rise in the top 1 percent's share to lower tax rates is likely to be an understatement for the U.S. Bundling the U.S. with four other countries surely results in underestimating the uniquely dramatic tax rate changes affecting top percentile incomes in the U.S. – such as cutting the top tax rate on dividends from 70 percent in 1980 to 15 percent in 2003. Starting with 1970 and ending with 2000 also *dilutes* the impact of changes in U.S. tax rates from 1983 to 2003, because marginal U.S. tax rates were rising rather than falling from 1970 to 1981 (partly because of inflation), and because the 2003 tax cuts are excluded. Even attributing as much as half of the rise in top 1 percent shares to lower tax rates is still very likely to underestimate the actual impact of U.S. tax rate reductions in 1983-84, 1987-88 and 2003.

The sensitivity (“elasticity”) of taxable or gross income to changes in tax rates is an empirical matter which takes up a large portion of this paper. A simple way to begin may be to examine **Figure 3**, which shows average real incomes of the top 1 percent before taxes, with the dark bar showing the portion of such incomes attributed to taxable realized capital gains, and the light bar representing all other sources of income – salaries, unincorporated business, dividends, interest and rent. Contrary to the popular perception that incomes of the top 1 percent have been on a steady upward trend over the past two decades, real labor incomes of the top 1 percent actually ended up lower in 2010 than they had been in 1998. Top percentile incomes rose sharply when the top tax rate fell from 50 percent in 1986 to 28 percent in 1988 (which is what research on the elasticity of taxable income predicts), yet capital gains were weak from 1987 to 1996 while the tax on such gains was 28 percent (which is what research on the elasticity of capital gains realizations predicts). Top incomes soared during the tech stock boom of 1997-

2000, thanks in part to a lower 20 percent tax on capital gains but also because of the unprecedented proliferation of nonqualified stock options taxed as ordinary income. Reported incomes of the top 1 percent briefly soared again in 2004-2007 when reported capital gains and dividends rose dramatically after tax rates on gains and dividends were reduced to 15 percent.

Figure 3 shows that capital gains dominate all the periodic peaks in top 1 percent incomes. That fact highlights a key point that is commonly neglected—namely, that estimates of the elasticity of taxable income invariably *exclude capital gains*, even though public attention is usually focused on measures of top incomes (e.g., from the CBO) that *include* capital gains. A later section of this paper argues that the popular and media impressions about income shares of the top 1 percent have often confused an increased tax incentive to trade assets more frequently (and thus report more capital gains) with an actual increase in recurring income, even aside from the ETI estimates (which are also shown to be quite significant).

Putting capital gains aside for the moment, the extensive literature on ETI predicts that top incomes would appear to be smaller in times and places where marginal tax rates on top incomes are very high, and reported top incomes would likewise be larger in times and places where top marginal tax rates are lower. From this perspective, it is no mystery why very little taxable income was reported among the top 1 percent in the late 1970s, when inflation pushed many taxpayers into high tax brackets. It is also no mystery why countries that greatly reduced the highest tax rates since the 1980s (such as the U.S., U.K. and Canada) witnessed large increases in the amount of high incomes reported, while those that kept top income tax rates at 50 percent or more (such as Japan, or France before 2006) did not experience such large increases in top percentile incomes.

Conversely, when marginal tax rates are reduced there is substantial evidence that it changes taxpayer behavior in ways that result in more taxable income being earned and/or reported. This elasticity of taxable or gross income is estimated by examining income tax returns before and after marginal tax rates on ordinary income were changed (lower tax rates on capital gains or dividends are not usually considered). Elasticity measures the percent increase in average reported income (either taxable or gross income) when the net-of-tax rate changes by 1 percent. If average reported income rises by 35 percent when the net-of-tax rate on the top 1 percent falls by 35 percentage points (because the top tax rate fell from 70 to 35 percent), then the elasticity is 1.0.

Saez (2004: 151) estimated the elasticity of gross income as 0.59 to 1.58 for the top 1 percent, with 0.62 being the preferred estimate. He noted that “elasticities of taxable income are likely to be larger than the elasticities of reported incomes that I analyze here.”¹⁶

Saez, Slemrod and Giertz (2012: 42) also use an estimate of 0.5 as an illustrative norm, but add the crucially important caveat that, “there is much evidence to suggest that the ETI is higher for high-income individuals.” As they observe (2012: 6), “a number of empirical studies have found that the behavioral response to changes in marginal tax rates is concentrated in the top of the income distribution.” If the ETI for high-income households is significantly higher than the 0.4 norm for all taxpayers, as the evidence suggests, it would suggest that much of the increase in reported top incomes observed in the wake of major reductions in marginal tax rates is a behavioral response to changed incentives to earn and report marginal additions to income. A substantially lower tax rate would be expected to induce high-income individuals to minimize

¹⁶ Unlike gross income, taxable income can be reduced by becoming self-employed with a company car and lavish expense account and large contributions to Keogh plans, or by increasing mortgage and investment interest deductions and charitable contributions, and generally becoming more aggressive in maximizing tax adjustments, deductions and credits (e.g., the \$7500 credit for buying a \$100,000 Fisker Karma hybrid).

burdensome tax-avoidance strategies, maximize lifetime work effort, and report more taxable income from otherwise easily avoided transactions (such as realization of taxable capital gains, or holding taxable rather than tax-exempt bonds).

In another study using gross income for only the top one-tenth of one percent (0.1), Bakija, Cole and Heim (2010: 34) “estimate a long-run elasticity of gross income [not taxable income] with respect to a persistent change in net-of-tax share of 0.716, . . . suggesting a high degree of responsiveness to incentives for income-earning efforts (or income reporting) among those with the highest incomes, and a correspondingly large deadweight loss from imposing highly progressive tax rates on these taxpayers. Simulations . . . suggest that an elasticity of that magnitude would imply that the marginal deadweight loss from raising an additional dollar of government revenue through an increase in the top marginal tax rate (35 percent) would be between \$2.03 and \$6.57.”

Heim (2009:155), in a study spanning 1999-2005, estimates that the elasticity of *taxable* income (with capital gains excluded) for that period was nearly 1.25 at incomes above \$500,000, but with lower estimates of 0.67 to 0.90 for elasticity of *gross* income at such high incomes. The estimated tax-induced rise in reported income above \$500,000 is surely understated, however, because Heim excludes reported capital gains, which are demonstrably sensitive to the reduced 15 percent capital gains tax rate of 2003. Nevertheless, as Heim concludes (2009:163), “These results suggest that recent tax changes induced individuals to increase their income and/or decrease their deductions, credits and exclusions in response to lower marginal tax rates. Further, they suggest that it is important for policymakers to take such responses into account when considering further changes to the tax code.” Similarly, Auten and Joulfaian also find “The implied long-run taxable income elasticity is about 1.0 for taxpayers in the

\$500,000 to \$2,000,000 income classes.” In their study of Anglo-Saxon countries, Atkinson and Leigh estimate an ETI of 1.2 to 1.6.

Focusing on only the earned (W2) income of corporate executives (not investment or business income), Eissa and Giertz (2006: 26, 34) “find a permanent earned income elasticity for the early 1990s of 0.8 . . . For 2000 to 2004, the estimate is much larger. . . . For the full period, the estimated elasticity with respect to the current after-tax share rises . . . to 1.35 for executives with more than \$650,000 in permanent income, and 1.71 for those with at least one million dollars (all statistically significant). . . . Tax responses appear much larger for all high-income taxpayers than for the subset of top executives.”

High elasticities at high incomes are not unique to the U.S. In a study of 16 countries over the entire 20th century, Roine, Vlachos and Waldenström (2009: 974) find that “top marginal taxes have a negative effect on [reported income of] the whole top group, both the top percentile and the following nine percentiles. . . . Tax progressivity reduces top income shares and when accounting for real dynamic effects the impact can be important over time.”

In a study of U.K. tax rates, Brewer, Saez and Shepard (2010: 107) noted that, “The top income share series shows an erosion of the top 1% income share up to 1978, followed by a sharp upturn starting exactly when the top METR was reduced in 1979. . . . [T]he top 1% income share doubled from 6% in 1978 to 12.6% in 2003. . . . If all the increase in top incomes (relative to the average) can be attributed to the reduction in the METR, this would imply a substantial elasticity almost equal to one. . . . [Moreover] it is conceivable that income earners in the next 4% group were also motivated to work harder by the prospect of facing much lower rates should they succeed in getting promoted and become part of the top 1% in coming years. In that case, if

a cut in the METR facing the top 1% stimulated incomes below the top 1%, our estimate of 0.93 would understate the overall effect on government revenues.”

So long as the estimated elasticity is even slightly below 1.0, such as 0.93 in this example, then it would not be strictly accurate to attribute 100 percent (rather than 93 percent) of the rise in the top 1 percent’s reported income to the reduction of the highest marginal tax rates. Any elasticity estimate below 1.0 among the top 1 percent allows Saez, Slemrod and Giertz to say, “The secular increase in income concentration in the United States since the 1960s was probably not entirely driven by changes in the top tax rates.” And it allows Saez to say (2004: 115) that “it is unlikely that the extraordinary trend upward of the shares of total wages accruing to top wage income earners . . . can be explained solely by the evolution of marginal tax rates.” But it is not necessary to explain changes in top incomes “solely” or “entirely” by marginal tax rates to make the top 1 percent’s reported income or wage shares almost entirely untrustworthy as a measure of actual income changes in the wake of major tax rate changes.

The finding of many studies that the ETI is especially high for high-income individuals implies that large reductions in tax rates on marginal additions to high incomes after 1983, 1988, 1997 and 2003 should have been expected to be followed (as they were) by large increases in the amount of pretax income reported in the top 1 percent by Piketty and Saez and the CBO. Conversely, the combination of rapid tax-bracket creep in the 1970s and much higher tax rates (the capital gains tax reached 39.9 percent in 1977) should likewise have been expected to have resulted (as it did) in an unusually small amount of income reported by the top 1 percent.

In short, abundant evidence of high elasticity of reported income at the highest incomes strongly suggests that what appears superficially as an increase in top incomes since the late 1970s must be, to a quite significant extent, a reflection of the high elasticity of reported pretax

income with respect to high marginal tax rates in the late 1970s and to lower marginal tax rates in the past two decades. When comparing a top tax rate of 70 percent in 1979 with a top tax rate of 28% after 1987 or 35 percent after 2003, or when comparing a capital gains tax of nearly 40 percent in 1977 with a rate of 15 percent after 2003, all recent long-run ETI estimates predict an enormous increase in the top 1 percent's share of reported income that would persist (aside from cyclical downturns) as long as those tax rates remained relatively low.

Creating Theories to Deny Facts

Because a high elasticity of reported income can explain a very large fraction of the apparent rise in top incomes, those most eager to avoid that conclusion have devised three contrary arguments:

1. The top 1 percent's share supposedly did not rise much in other countries that are said to have cut top tax rates as much as the U.S. did, such as Japan, Sweden and the Netherlands.
2. Response to changes in tax rates is said to be just a temporary matter of retiming, such as selling stock before the 1987 increase in capital gains tax rates or exercising stock options before the 1993 increase in income tax rates.
3. Response to changes in tax rates is said to be just a matter of having too many tax loopholes, such as a lower tax rate on capital gains and corporate earnings, thus making tax avoidance much simpler in the U.S. than it should be.

“Interestingly, no country experiences a significant increase in top income shares without implementing significant top rate tax cuts,” note Piketty, Saez and Stantcheva (2011:13), yet they also argue (2011: 4n) that “top income shares have remained relatively low in countries

such as Japan where top tax rates have also decreased dramatically and where incentives for tax avoidance are not higher than in the United States.” This stylized impression presumably comes from Moriguchi and Saez (2007: 28) who say, “the marginal tax rate faced by the top 0.1% wage income earners in Japan has also declined by 20 percentage points between 1980 and 2005, the magnitude roughly comparable to that in the United States during the same period. These reductions, however, have failed to generate supply-side effects in Japan, at least until recently. The comparative experience of Japan and the United States thus also rules out tax incentives as the primary determinant of wage inequality.”

Unlike the U.S., however, Japan made only very belated and grudging reductions in the highest marginal tax rates on income, despite a long episode of rapid bracket creep, while adding and raising a new value-added tax on consumption and introducing (in 1989) a new capital gains tax on the sale of securities. It was not until 1999 that the top marginal tax rate was reduced to 37 percent at the national level, but it is still close to 50 percent when local taxes are included.

The fact that top income shares in Japan did not rise “until recently” (e.g., 1999-2005) is because that series ends with 2005 and top tax rates were not significantly reduced until 1999.

At the national level, the top tax rate in the U.S. fell from 70 percent in 1980 to 28 percent in 1988-90, and then rose to 35 percent by 2005. That was a decline of 42 percentage points in the 1980s, later reduced to 35 percentage points. In Japan, the top tax rate was 50 percent until 1999, and has been 40 percent since 2006, which certainly appears to be a decline of 10 percentage points. Moriguchi and Saez arrive at the contrary conclusion that Japan reduced top tax rates by as much as the U.S. did (35-42 percentage points) by (1) comparing top tax rates on labor income alone between 1980 and 2005, and by (2) excluding local income taxes which are much higher in Japan. Moriguchi and Saez claim that “including local income taxes . . . would

not affect our comparative analysis,” but local income taxes add at least 10 percentage points to Japan’s top marginal rates, compared with an average of less than 4 percent in the U.S. (once the deductibility of state taxes is taken into account).¹⁷

At the national level, the top U.S. tax rate was 70 percent in 1980, but generally capped at 50 percent for labor income, which is why Moriguchi and Saez carefully limit the comparison to “wage earners.” By subtracting Japan’s 5 percent “employment income deduction” from the statutory rate, the top marginal *wage* tax at the federal level is trimmed from 50 to 47.5 percent in 1980, and from 37 to 35.2 percent after 1999. That was a still a decline of only 12 percentage points –not 20– but the top 1 percent’s share of income (not just wages) rose quite sharply when the top tax rate was reduced. From 1998 to 2005, according to the Piketty and Saez “World Top Income Database” (WTID), the income share of the top 1 percent rose by 21.2 percent in Japan (from 7.59 to 9.2) and by 15.6% in the U.S. (from 15.29 to 17.68).

The comment by Piketty, Saez and Stantcheva about the *level* of top income shares being “relatively low in countries such as Japan,” involves an invalid comparison because total income is defined much more inclusively for Japan than for the U.S., which automatically makes top income shares of that expanded income look relatively smaller. Moriguchi and Saez (2007:8) “estimate a top income share by dividing the amount of income accruing to a top income group by total personal income computed from National Accounts,” even including imputed rents of homeowners. Top income shares in the U.S. would also be much smaller and flatter if compared to such a broad measure of personal income, as previously explained in the discussion of Figure 1.

¹⁷ As usual with highly progressive marginal tax rates, the revenue yield is very small: Revenues from Japan’s individual income tax were only 2.95 percent of GDP at the national level in 2002. Such meager revenue suggests substantial tax avoidance.

As Japan's example shows, the level of top 1 percent shares cannot be compared from one country to another when the definition of total income differs. Percentage point changes are also misleading when starting from a lower base. From 1990 to 2010, for example, the top 1 percent's share in Sweden rose from 4.38 to 6.9 -- a 57.5 percent increase, compared with a 34.2 percent rise for the U.S. (from 12.98 to 17.42).

Another way of denying the elasticity evidence is to suggest that because two behavioral responses in the U.S. were temporary episodes, then all behavioral responses in all countries and at all times must likewise be ephemeral. Piketty and Saez (2007) claim, "The emerging consensus is that there can be substantial responses in the short-run due to retiming of income such as realizing capital gains before a tax rate increase, but that the long-term response is small." On the contrary, that alleged "consensus" is contradicted by Saez (2004), Heim, Auten and Joulfaian, Gruber and Saez, Atkinson and Leigh, Eissa and Giertz, and Brewer, Saez and Shepard, among others who estimated elasticity over various periods while taking care to adjust for short-term timing issues.

One or two tax-induced spikes in top incomes were indeed temporary episodes of intertemporal income shifting. The first involved realizing capital gains in 1986 to avoid a higher capital gains tax in 1987. The second example of a temporary tax effect supposedly involved cashing-out executive stock options in 1992 to avoid the uncertain risk of a higher income tax rate in 1993. Yet Hall and Liebman (2000: 41-42) noted that vesting and expiration rules do not permit great discretion about when to exercise nonqualified stock options, and that stock prices "strongly predict option gains" while "the tax-timing explanation fails, even in 1992." These results, they add, "cast doubt on the conclusion that large timing shifts are ubiquitous and

capable of explaining away the more careful estimates of taxable income elasticities that have been produced.”

All other examples of tax-induced increases in reported top incomes have been persistent, not temporary. When the tax rate on dividends was reduced in 2003 that change provided a *continual* incentive for firms to pay out larger dividends when possible and for investors to report more dividends every year. When the tax rate on capital gains was reduced to 20 percent in May 1997, and further reduced to 15 percent in May 2003, those changes provided a *continual* incentive to trade assets more frequently and thereby realize more taxable gains every year. When the tax on partnerships and Subchapter S corporations was as low as the tax on corporations (1987-1992 and 2003 to date), that provided a *continual* incentive for more old and new enterprises to file under the individual income tax as partnerships or Subchapter S corporations rather than filing under the corporate tax. There is no reason in theory or fact to expect such effects to be short-term.

The last figure in this paper will later show, using time series data adapted from Piketty and Saez, that most effects of lower (or higher) marginal tax rates persist for as long as the changed tax rates remain in effect.

A third way of disregarding the elasticity evidence is to attribute most of the observed elasticity to “tax loopholes” which could supposedly be easily closed. Piketty, Saez and Stantcheva allude to “evidence that upper incomes respond to tax rates whenever the tax code offers opportunities for tax avoidance,” implying a different tax code would not offer such opportunities. They highlight lower tax rates on capital gains and corporate earnings as examples of such opportunities for high-salaried taxpayers to avoid high marginal tax rates by sheltering retained income within a closely-held corporation or by negotiating to be paid in the

type of stock options that qualify for the lower tax rate on long-term capital gains. But attributing high elasticity in the U.S. to lower tax rates on corporate earnings or capital gains is inconsistent with their (questionable) claim that Japan, Italy, Sweden, Portugal and the Netherlands “experienced significant top rate cuts” but “only modest increases in top income shares.”¹⁸ All those countries have a lower corporate tax than the U.S. (25-28 percent aside from Japan) and most have a lower capital gains tax—zero in the Netherlands and Portugal, 12.5 percent in Italy, 10 percent in Japan (Carroll and Prante).

For 18 OECD countries, Piketty, Saez and Stantcheva estimate a relatively low elasticity for the top 1 percent of “about 0.5,” with additional rough estimates that no more than 40 percent of that figure reflects changes in real economic activity (defined narrowly as hours of work) while the remaining 60 percent (0.3) is attributed to tax avoidance. “If the government can broaden the base and reduce the avoidance elasticity from 0.3 to 0.1,” they argue, “then the [elasticity would fall to 0.3 and the] optimal top tax rate increases to 71%.” Yet Piketty, Saez and Stantcheva also suggest that tax avoidance is mostly a myth.

Like the contrived distinction between “left-wing” and “right wing” critics of tax-based income statistics, there is another contrived distinction between “old” and “new” versions of supply-side analysis (Goolsbee 2008). The “new tax avoidance literature” emphasized tax avoidance, while the older supply-side theorists supposedly claimed marginal tax rates had a large effect on the labor supply. As Goolsbee put it (1999:2), “An extensive literature in labor economics has shown that there is very little impact of changes in tax rates on labor supply for

¹⁸ In Portugal, the top 1 percent’s share rose from 3.97 percent in 1982 to 6.84 percent in 1989 and 9.77 percent in 2005. In Italy, the top 1 percent’s share rose from 7.81 percent in 1992 to 9.86 percent in 2007. WTID data end in 1999 for the Netherlands— before the top tax rate was reduced to 52 percent from 60 percent in 2001. Data for France end with 2006, the year France cut the top tax rate. Japan and Sweden were discussed previously. <http://g-mond.parisschoolofeconomics.eu/topincomes/#Database>:

most people, particularly for prime-age working men. This would seem to indicate that the central tenet of the Laffer curve is demonstrably false—marginal rates seem to have little impact on the amount that people work.”

Similarly, Slemrod and Bakija (2000: 12) wrote that, “With some exceptions, the profession has settled on a value for the compensated elasticity close to zero for prime age males, although for married women the responsiveness of labor force participation appears to be significant. Overall, though, the compensated elasticity of labor appears to be fairly small. In models with only a labor-leisure income choice, this implies that the efficiency cost of income taxation is bound to be low, as well.” A dozen years later Saez, Slemrod and Giertz (2012: 3) repeated that same passage from Slemrod and Bakija, word-for-word.

One problem with these stylized facts is that prime-age males (age 25 to 54) accounted for just 36.4 percent of the labor force in 2008, and the Bureau of Labor Statistics projects that figure to fall to only 34.3 percent in 2018 (Tossi: 44). Women and people older than 54 account for a growing majority of the labor force, and their decisions to enter or exit the labor force are known to be quite responsive to after-tax incentives. Since the elasticity of labor participation is unquestionable high for married women in particular, it could not possibly be true that “the efficiency costs of income taxation is bound to be low” unless the country had very different two different tax schedules— one set of tax rates for men and another for women.

The claim of Slemrod and Bakija that overall compensated elasticity of labor among working-age men and women appears “fairly small” may have appeared plausible in 2000, but is inconsistent with two recent surveys of research. In “Labor Supply and Taxes: A Survey” Keane reports (2011:1071), “when I simply average the Hicks [compensated] elasticity across twenty-two well known studies of males, I obtain 0.31. . . . sufficient to induce substantial inefficiency losses

from progressive taxation.” Similarly, Chetty, Guren, Manoli and Weber estimate the long-run elasticity of labor at 0.25 to 0.5, with a preferred figure of 0.3 for most purposes.

Older estimates from surveys of working individuals did not appear to capture “extensive” participation elasticity – decisions whether or not to work at all in the formal economy. Since potential workers can more easily decide whether or not to enter the formal job market than to dictate their working hours once employed, some studies suggest that elasticity of participation may be several times higher than intensive elasticity of hours.

After studying many countries over many years, Davis and Henrekson (2005: 89) found that “higher tax rates on labor income and consumption expenditures lead to less work time in the market sector, more work time in the household sector [and] a bigger underground economy. . .” Such well-documented behavioral responses clearly affect the amount of income reported on tax returns, but none of that behavior can be captured by studying variation of work hours among those already working in the formal economy.

Contrary to Goolsbee (1999), Laffer and other first-generation supply-side theorists never described crude measures of labor supply as “the central tenet” of what is now called the elasticity of taxable income. Tax incentives were said to affect the intensity of lifetime work effort, the willingness to take entrepreneurial risk, to save and invest, and so on. Yet tax avoidance in the broadest sense (including the underground cash economy) was always a major part of the supply-side explanation for why reducing the highest tax rates, or the capital gains tax, would not (and did not) result in lower revenues (Kemp 1978: 56-58).

Whether it is described as left or right, old or new, high elasticity of taxable income means, as d Gordon and Slemrod (2000: 240) put it, “the observed growth in the income of the richest individuals relative to the rest of the population may, at least in part, be a fiction.” To the

extent that rapid growth of top incomes reflects avoidance in the broad sense (such as trading stocks more frequently after the capital gains tax is reduced) it is mainly a statistical illusion. To the extent that growth of top incomes reflects greater work effort, entrepreneurship and investment after high marginal tax rates were reduced (e.g., in India, South Korea and Brazil in recent decades, or the U.S. in the 1920s, 1960s and 1980s) it will be reflected in greater prosperity in general (confirming “the supply-side success story”). Both real incentives and avoidance are often involved, as Piketty, Saez and Stantcheva imply by assigning 0.2 of their low 0.5 elasticity estimate to real, supply-side effects.

Capital Gains Realizations are not Income, and they are Voluntary

In the end, all efforts to downplay or deny the high elasticity of taxable or gross income among high-income taxpayers must fail. If such elasticity was not persistently high then we would be left with no explanation of why U.S. individual income tax revenues did not decline as a percentage of GDP even as the top tax rate was reduced from 91 percent to 28 percent.

The highest U.S. income tax rate was 91 percent from 1951 to 1963, but revenues from the individual income tax brought only amounted to 7.7 percent of GDP. The top tax rate was reduced to 70 percent in 1964 (part of a 22 percent reduction in all tax rates) and capped at 50 percent for labor income in 1969, but revenues rose to 8 percent of GDP from 1964 to 1981. All tax rates were again reduced in 1982-83, taking the top rate down to 50 percent, and revenues from the individual income tax were further increased to 8.3 percent of GDP. The top tax rate was slashed to 28 percent from 1988 to 1990, yet revenues were still 8.1 percent of GDP. Without a high taxpayer response to high marginal tax rates, the disconnection between top tax rates and revenues would be inexplicable.

Useful as it is, however, the literature elasticity of taxable or gross income leaves out a critical piece of the puzzle—namely, capital gains. **Figure 4** compares the top U.S. income tax rate with the amount of revenues collected from the individual income tax, as a percent of GDP. Aside from recessions, the income tax almost always brought in about 8 percent of GDP regardless whether the top tax rate was 91 percent or 28 percent – powerful evidence that high elasticity of taxable income is no temporary anomaly.¹⁹ The graph shows three exceptional peaks in revenue, however, that need more explanation.

The first brief surge in tax revenues came from the surtaxes of 1968-70, which were applied to *all* tax brackets (not just top rates) and did indeed bring in considerable revenue until the economy slipped into recession. There was another brief revenue spike in 1979-81 because inflation pushed more and more people into higher and higher tax brackets. Both episodes qualify as contractionary “tax shocks” which arguably contributed to or caused the recessions (in 1970-71 and 1980-82) that put an end to the ephemeral revenue windfalls.

The revenue surge of 1997-2000 was unique and unexpected, arising largely from an unusual technology shock (commercialization of the Internet and cellular phones) and the related stock market boom. The impact of tax policy was also unique and unexpected. The top tax rate on ordinary income was increased in 1993 to 39.6 percent from 31 percent, and up to 85 percent of Social Security benefits became taxable (compared with 50 percent before 1993). Yet revenues from the individual income tax were only 8 percent of GDP from 1993 to 1996 – less than when the top tax rate was 28 percent and only half of Social Security benefits were taxed. One part of the 1993 tax law that I later argue had a big effect was a rule limiting employer

¹⁹ Individual income tax receipts dropped to 7.5 percent of GDP from 2001 to 2010 largely because of the new 10 percent bracket in 2001, two recessions and temporary tax cuts in 2008 and 2009 (Kliesen and Thornton).

deductions for executive salaries to \$1 million, in a successful effort to tilt executive compensation toward incentive pay such as stock options.

When the tax rate on ordinary income came down sharply after the late 1970s, so did the top tax rate on long-term capital gains. The top statutory rate on long-term capital gains was reduced from 35 percent (39.9 percent in some cases) to 28 percent after November 1, 1978, and to 20 percent on gains realized after January 1, 1982. The top tax on capital gains was increased to 28 percent in January 1987, then once again reduced to 20 percent effective May 7, 1997 and further reduced to 15 percent after May 6, 2003.

Since a lower tax on realized capital gains encourages more capital gains to be added to top incomes, the fact that top income shares increased for both the series that includes capital gains and the one that does not cannot be considered evidence (as Piketty, Saez and Stantcheva suggest) that tax avoidance was insignificant in the 1970s when tax rates were higher on both capital gains and ordinary income. Lowering top tax rates on both ordinary income and capital gains (as was done in 1982-83 and 2003) encourages top taxpayers to report both more income and more capital gains.

The trouble with estimates of the elasticity of taxable (or gross) income is that they *exclude capital gains*, which Figure 3 shows are a huge part of the income of the top 1 percent whenever the capital gains tax was reduced (accounting for more than 28 percent of top 1 percent incomes from 2003 to 2007).

Table 3 provides a representative sample of governmental and academic estimates of the long-term elasticity of U.S. capital gains realizations, which are generally close to 1.0 or more. That means a 10 percent cut in the capital gains tax can be expected to result in a 10 percent

increase in the amount of capital gains reported on tax returns. Although skeptics cite a seemingly contrary study of the unusual bust-to-boom 1980-83 period by Burman and Randolph, that paper was actually inconclusive since, “long-run elasticities of 0.0 and -1.0 are both included in a 95 percent confidence interval.” Burman and Randolph also neglected the fact that the reduction in marginal tax rates for those in the 50 percent bracket or lower was *phased-in*, so that only those in the very highest 70 percent tax bracket had their capital gains tax rate reduced after June 9, 1981. The full reduction of the capital gains tax rate for most taxpayers did not actually take effect until late 1983, giving them an incentive to *delay* realizations. Consistent with that incentive, the volume of realized gains rose from 2.7 percent of GDP in 1981 to 2.9 percent in 1982, 3.6 percent in 1983, 3.7 percent in 1984 and 4.2 percent in 1985, according to the U.S. Treasury Office of Tax Analysis.

Auerbach and Siegel later modified the Burman and Randolph model to account for expectations by allowing realizations in one year to be influenced by the tax rate expected in the following year, which makes their estimate of the permanent elasticity increase to -1.73.

Even with a smaller elasticity of -1.0, a cut in the tax rate of 10 percent leaves tax collections unchanged because realizations of taxable capital gains rise by 10 percent –enough to offset the effect of a lower tax rate. For the purpose of this paper, the point is that research on the elasticity of capital gains tax realizations means reductions in the tax rate on capital gains in 1983, 1997 and 2003 should have been expected to produce (as they did) a large and sustained increase in the amount of income reported by the top 1 percent in all series that include capital gains.

The third column of **Table 4** shows that from 1987 to 1996, when the capital gains tax was 28 percent, realized gains accounted for 17.7 percent of reported income of the top 1 percent

in the Piketty and Saez series that includes capital gains. From 1997 to 2002, when the capital gains tax was 20 percent, realized gains accounted for 26 percent of reported income of the top 1 percent. From 2003 to 2007, when the capital gains tax was 15 percent, realized gains accounted for 28.1 percent of reported top 1 percent income.

A realized capital gain is no more valuable than an unrealized gain: Selling your house or liquidating your stock portfolio will not make you wealthier. High capital gains taxes locked people into the assets they have, so lowering the capital gains tax increased the fraction of unrealized gains that became realized and taxed (and reduced the share that was unrealized and untaxed). This appears as a surge in “income” among the top 1 percent, but realizations are not income.

Because even the highest estimates of the elasticity of taxable or gross income exclude capital gains, they are seriously biased toward understating the importance of tax rate changes when explaining why (1) reported income of the top 1 percent appeared relatively unchanged from 1987 to 1996 while the capital gains tax was relatively high, and why (2) incomes of the top 1 percent surged for several years after the capital gains tax was reduced in 1997 and 2003.

Switching Income from Corporate to Individual Taxes

Piketty, Saez and Stantcheva (2012:2) write that “it has been pointed out – originally by Slemrod, 1996 – that many of those dramatic responses were actually primarily due to [reduced] tax avoidance rather than real economic behavior. Although this argument started as a left-wing critique of the supply-side success story, it has more recently been used as a right-wing argument to deny that any real increase in income concentration actually took place (Reynolds, 2007).”

On the contrary, the supposedly “left-wing” version of Gordon and Slemrod (2000: 240) concludes as I have that, “if the big jump in reported income of the richest individuals following the tax cuts of the early 1980s simply reflects a shift in the form of compensation—e.g., away from accruing capital gains on [qualified] stock options to cash wages—then their true income may not in fact have changed much. The further reduction in personal relative to corporate tax rates in 1986 would have reinforced this incentive to shift to observed rather than unobserved forms of compensation. Thus the observed growth in the income of the richest individuals relative to the rest of the population may, at least in part, be a fiction. . .”

One of many examples that Gordon and Slemrod chose to focus on is that any relatively small business or professional can easily choose to report most taxable income on a corporate tax return or to file as an individual using a pass-through entity such as an S-corporation, partnership or proprietorship. A limited liability company may file as either a corporation or as an individual. Since Piketty and Saez only measure income reported on individual tax returns, any reasonably profitable enterprises that respond to lower individual tax rates by reporting earnings on individual rather than corporate tax returns will, in the process, make it look as though the top 1 percent have more money than before. But all that really changed was the form on which the business elected to report its income.

Gordon and Slemrod rightly observed that more business income was “shifted” to individual tax returns whenever the highest individual income tax rate was as low as or lower than the corporate tax rate (1988-92 and 2003 to date). By itself, however, such “income shifting” was *not* an effective “critique of the supply-side success story” (otherwise known as a high elasticity of taxable income), because corporate tax receipts *increased* as a percentage of GDP after top individual tax rates came down in 1988 and 2003. The fact (shown in Figure 4)

that lowering the top individual tax rate did not reduce revenues from the individual income tax in the 1980s cannot be explained-away by any matching loss of revenue from the corporate income tax. That means elasticity of taxable income is indeed high, due to some combination of tax avoidance in the broadest sense and real, supply-side responses (more and better labor and capital).

Piketty and Saez (2007), and Atkinson, Piketty and Saez (2011: 29-30), claim that shifting income from the corporate tax to the individual tax should soon be followed by a matching drop in capital gains tax receipts because, they contend, retained earnings in a corporation are soon cashed-out by selling the company or shares in the company.²⁰ Atkinson, Piketty and Saez say, “The series excluding capital gains does display a large 4.0 point upward jump from 1986 to 1988. As is well known . . . almost one-half of this jump is due to a shift from corporate income toward individual business income due to the Tax Reform Act of 1986. However, corporate retained earnings translate into capital gains that are eventually realized and reported on individual tax returns. Therefore, in the medium run, this shift [from corporate to individual income tax returns] will be matched by an equivalent reduction in capital gains.” The idea that owners of a closely-held corporation must liquidate the enterprise to benefit from deferred income is scarcely self-evident, but if they did so any resulting capital gain would not be “equivalent” but would instead depend on what the market would bear.

To verify this hypothetical equivalency between a reduction in retained earnings and a subsequent reduction in realized capital gains, Atkinson, Piketty and Saez point to a reduction between 1985 and 1990 in capital gains reported by the top 1 percent. Unfortunately, that

²⁰ In reality many family and professional firms retained C-corporation status for generations when individual tax rates were much higher than corporate rates, and never went public or sold out. That is because (1) there are no time limits on the advantages of tax deferral, and (2) there are ways of living well without cashing out, such as company cars and a lavish expense account, or borrowing against company assets.

example assumes zero elasticity of capital gains realizations (because the tax on capital gains tax was higher in 1990 than in 1985) and ignores cyclicity (because 1990 marked the start of a recession).

In reality, the incentive to shift income from corporate to individual tax returns through passthrough entities not only results in an exaggeration of changes in ordinary incomes when the gap narrows between corporate and individual tax rates, it results in an exaggeration of top incomes from *capital gains* that are passed through to individuals (e.g., from the profitable sale of a business by a private equity firm) rather than such income being retained within a corporation, or taxed at the high U.S. corporate rate.

Just as lower tax rates on individual income induced more businesses to more report income on individual tax returns, as passthrough entities, that also resulted in relatively more *capital gains* being reported on individual returns (where such gains were taxed at a 15 percent rate) and fewer such gains reported on corporate tax returns (where they would have been taxed at the 35 percent corporate tax rate). This is another example of meaningless tax shifting from corporate to individual tax returns, which makes it look as though top incomes are larger than in the past when, in reality, they are simply being reported differently (because being taxed at the individual level becomes more advantageous when the individual tax rates are reduced relative to the uniquely high U.S. corporate tax rate).

Of all the net capital gains reported on individual returns in 2007 (62.5 percent of which were from incomes above \$1 million), Wilson and Liddell (2010:76) report that "the most [capital] gains were (\$366.9 billion) from passthrough entities, followed by \$227.9 billion from corporate stock sales. Capital gain distributions from mutual funds were \$86.0 billion. Other assets types with a significant amount of net gain were partnerships and residential rental

property, with \$49.1 billion and \$37.3 billion in gains, respectively." The added incentive (from lower individual tax rates in 1988 and 2003) to switch toward reporting business income as passthrough entities did not reduce income reported as individual capital gains, as Atkinson, Piketty and Saez speculated, but instead contributed (together with much lower tax rates on passthrough capital gains) to large increases in capital gains from the sale of businesses appearing as higher top 1% incomes on individual rather than corporate tax returns.

Piketty, Saez and Stantcheva (2012: 4, 27) offer a similar misinterpretation of the data we first looked at in Figure 3, showing how important capital gains were to the spikes in top 1 percent incomes in 1997-2000 and 2003-2003. They argue that "the US case suggests that the tax avoidance response cannot account for a significant fraction of the long-run surge in top incomes because top income shares based on a broad definition of income (that includes realized capital gains and hence a significant part of avoidance channels) has increased virtually as much as top income shares based on a narrower definition of income subject to the progressive tax schedule." They go on to say, "The time series regressions also generate virtually identical estimates as the series excluding capital gains. This suggests that income shifting responses do not account for much of the evolution in top income shares."

This argument has two parts. The first is the debatable assertion that "tax avoidance exploits primarily deferral and the favorable treatment of capital gains." If that were correct, then the second part of argument is that we might have expected that marginal tax rates of 50-70 percent on top incomes would have resulted in a larger share of the top 1 percent's income coming from capital gains before 1983-88, and therefore a smaller share reported in the Piketty and Saez series that excludes realized capital gains. After marginal tax rates on salaries came down to 28-35 percent, for example,

corporate executives might have negotiated to receive more of their compensation in cash or “nonqualified” stock options (taxed at ordinary income tax rates) rather than in restricted stock or incentive stock options taxed at the lower rate for long-term capital gains.

The most obvious difficulty with this theme is that the tax on capital gains is itself rather easy to avoid by simply not selling assets subject to the tax, or by offsetting gains with losses (keep winning stocks and sell the losers). Realization of capital gains is voluntary among those with substantial wealth, and at least half of all gains are never realized (the inheritance tax forgives past gains in favor of taxing the entire value of the estate). If the incentive to sell assets and realize taxable capital gains is acutely sensitive to the tax rate on such gains, then we would expect to see top income shares (in measures that include capital gains) rise for at least a few years after the capital gains tax was reduced and also to flatten-out or decline after the capital gains tax was increased. In that case, however, the alleged similarity between the rise of top income shares with and without capital gains included would be (1) incorrect during periods when the capital gains tax rate changed, and (2) invalid as a way to measure avoidance of the tax on ordinary income.

Figure 5 confronts the claim, by Piketty, Saez and Stantcheva, that “The time series regression . . . generates virtually identical estimates as the series excluding capital gains.” The bars show the top federal tax rate on long-term capital gains. The line is the difference or gap between the top 1 percent’s share as measured by the Piketty and Saez series with and without capital gains – a proxy for the importance of capital gains in broader measures that include them (including broader Census Bureau definitions of income and the CBO).

The gap between the series including and excluding capital gains narrowed dramatically when the capital gains tax rate was increased from 25 percent in the 1960s to 35-39.9 percent in the 1970s, and it narrowed again (ignoring the fluke in 1986) when the capital gains tax rate was increased from 20 to 28 percent from 1988 to 1996. The line also reflects cyclical peaks and troughs in the value of stocks and real estate, of course, but capital gains nevertheless represent a persistently larger share of top percentile incomes when the capital gains tax is lower than when it is higher. This demonstrates a significant weakness and limitation of the academic ETI estimates, because they all omit the elasticity of capital gains realizations with respect to the tax rate on long-term gains realized in taxable accounts (as opposed to being unrealized or realized within tax-exempt accounts). This is a particularly troublesome limitation for the period from 1997 to 2000 and 2003 to 2007.

Sources of Top 1 Percent Income Respond to Changing Tax Rates

To clarify and reinforce previous observations about the extremely cyclical nature of top 1 percent incomes and their responsiveness (elasticity) to changing tax incentives, **Figure 6** illustrates the cyclicity and elasticity of top 1 percent incomes by showing how various sources of income have changed with the economy and/or with changing tax rates. The same data is also shown in **Table 5**, together with the dates of key tax changes and bold figures indicating apparent behavioral responses to those tax changes.

Four principal sources of the top 1 percent incomes (excluding rent for simplicity) are expressed in constant 2010 dollars, partly to emphasize the apparent cyclicity of top salaries (including exercised stock options), earnings of unincorporated businesses and realized capital gains. The data are constructed by applying the percentage distribution of sources of income to

average real income, both from Piketty and Saez. The breakdown by source for salary, business and investment income is available only for the measure of income that excludes capital gains. Real capital gains are therefore constructed from a separate series showing capital gains as a percentage of the broader measure of income that includes them.²¹

Looking first at the 1980s, there is a pronounced rise in reported salary income after the reduction of tax rates (which greatly increased the income thresholds at which higher tax rates applied) is phased-in during 1983-84. This was by a dramatic rise in top salaries as the top tax rate is reduced to 28 percent in 1988. Both increases predated and inspired later research on the elasticity of taxable income, and were completely consistent with that research. The economy was also growing by more than 4 percent a year from 1983 to 1989, so the cyclicity of top incomes may also have played a part.

A dark line in **Figure 6** shows the huge tax-induced spike in realized capital gains in 1986 that was previously discussed, surpassing total labor income of the top 1 percent. More importantly, the bars reveal a *tripling* in just two years, from 1986 to 1988, in the amount of business income reported on individual tax returns by unincorporated businesses (passthrough entities). This is the “income switching” that was rightly emphasized by Gordon and Slemrod, although it clearly does not explain the larger simultaneous rise of salary income (that is, income switching does not contradict or substitute for the elasticity of taxable income). Although Atkinson, Piketty and Saez claim the 1986-88 surge in business income does not appear in the

²¹ This is an imperfect mix, because the top 1 percent of taxpayers in the series that include capital gains do not share the identical weighting of other income sources as the top 1 percent in the series that excludes capital gains (e.g., those who rank in the top 1 percent without capital gains may also have relatively fewer dividends). However, the sum of the five displayed sources of income plus rent (not shown) is a very close approximation (within 2 percent) of average top 1 percent income in the Piketty and Saez series that includes capital gains.

series that includes capital gains, that is simply because the 1986 spike in capital gains offset the 1988 spike in business income.

Atkinson, Piketty and Saez theorized that the exodus from C-Corporations would be followed by a reduction in realized capital gains, because pre-1986 C-corporations would otherwise have been sold at a price equivalent to their stash of retained earnings. Figure 6 shows that what happened to reported capital gains is far more consistent with the literature on the elasticity of capital gains realizations when the capital gains tax rate went up in 1987 and when it went down in 1997 and 2003.

Higher marginal tax rates on top incomes took effect in January 1991, largely by phasing-out itemized deductions and personal exemptions. Top incomes then declined, as did individual tax receipts as a percent of GDP. There was a mild recession at the time, which may have been aggravated by the unfruitful effort to raise only the highest effective tax rates.

A frequently repeated theme of Saez (2012) is that, "The share of wage and salary income has increased sharply . . . since the 1970s. Therefore, a significant fraction of the surge in top incomes since 1970 is due to an explosion of top wages and salaries." The salary series in Figure 6 does show the real labor income of the top 1 percent increasing sharply through 2000, but not since then. *Average real labor income of the top 1 percent fell by 2.5 percent from 2000 to 2007, and by 11.5 percent from 2000 to 2010.*

Average salaries of the top 1 percent fell in 1993 which some explain as shifting income forward to 1992 in anticipation of higher tax rates in 1993. But salaries of the top 1 percent also fell again in 1994 – to a level 6.1 percent lower in real terms than they had been in 1988 when the top tax rate was 28 percent. The drop in reported top salaries from 1988 to 1994 appears reasonably consistent with a behavioral response (ETI) to higher tax rates in 1991 and 1993.

Real income from dividends among the top 1 percent also fell by nearly 24 percent from 1990 to 1994 while reported interest income fell 47 percent, and both real dividends and interest hovered below the 1989 level until after the 2003 tax cut, which is also consistent with ETI.

What happened to top labor income between mid-1995 and early 2000, by contrast, appears superficially *inconsistent* with all other national and international evidence about the elasticity of taxable income: Real income of the top 1 percent from salaries, bonuses and (especially) stock options rose by 8 percent a year in 1995-96, 10 percent a year in 1997-1999 and 7 percent in 2000. By no coincidence, this was also when NASDAQ stocks *quintupled* from about 1000 when Netscape went public on August 9, 2005 and the peak of 5132 on March 10, 2000. What linked NASDAQ to top incomes can be explained in two words – stock options.

Tax policy had relatively little to do with the proliferation and success of stock options from 1995 to 2000, except that (1) the 1997 reduction of the capital gains tax rate to 20 percent was almost certainly capitalized in higher stock prices, and (2) the 1993 Clinton tax law gave a strong push to replacing a portion of executive salaries with larger (because they were risky) nonqualified stock option grants. Nonqualified options, taxed at ordinary income tax rates, had already displaced most “incentive” stock options after 1986 because the capital gains tax was increased.

The Revenue Reconciliation Act of August 6, 1993 denied public companies any deduction for the cost of executive compensation in excess of \$1 million a year, aside from performance-related pay, such as restricted stock or grants of stock options. By over-promoting stock options, the 1993 limit on executive salaries had the ironic result of generating huge

windfalls for corporate executives in 1997-2000.²² Once the stock option grants of 1993-97 became vested three years later, the U.S. was in the midst of an explosive stock market boom thanks to commercialization of the Internet starting when Netscape went public in August 1995 and the first popular smart phone (Palm Pilot) in March 1996. This was a technological revolution unmatched since the mass marketing of cars and radios in the 1920s.

Gordon (2009: 17-18) notes that, “Not only do stock options provide a channel by which the stock market influences top incomes, but also stock options became much more important as a source of executive compensation in the 1990s (increasing from roughly 40 to 70 percent of executive compensation between 1990 and 2000). . . . [T]he timing of the increased shares in the top groups [through 2000] appears consistent with an important role for stock options as a major source of CEO pay.” Saez (2012) likewise cites “executive stock options” as a major explanation for the subsequent sharp decline in top incomes in 2001-2003. What these explanations miss, however, is that the *mass proliferation* of nonqualified stock option grants by the late 1990s reached far below the executive level. In 1999, the Bureau of Labor Statistics found, “4.2 percent of those earning \$50,000 to \$74,999 per year, and 12.9 percent of those earning \$75,000 or more per year received stock option grants in 1999”(Shildkraut).

By the year 2000, as I previously noted (Reynolds 2005: 267), “Ford Motor granted options to nearly 10 percent of employees, Southwest Airlines to about a third and Amazon to nearly every employee. Microsoft grant[ed] options to ‘everyone from administrative assistants to senior vice presidents but not the chairman and CEO.’ Intel and Sun Microsystems also

²² Gordon likewise notes,(2009:24) that the surge in stock option exercises in the tech stock boom "can be traced directly to the 1986 and 1993 changes in tax law and tax regulation that created a sharp increase in the share of CEO compensation taking the form of stock options."

distribute most options to ordinary workers, not to senior executives. The National Center for Employee Ownership estimated that 7-10 million Americans held stock options by 2001. The Execucomp database shows that in the year 2000 the top five executives accounted for only 7.6 percent of all stock options granted to employees but 12.1 percent of all such options exercised that year.”

Some 78 percent of all those options were “nonqualified” meaning they were taxed at ordinary income tax rates when exercised. Nonqualified options become deductible only after they are vested, in-the money and exercised. At that point, any gain becomes taxable to the employee and deductible to the employer, which raises income reported on individual tax returns (e.g., by Piketty and Saez) just as much as it reduces the income taxed by the corporate tax. In a sense, the huge windfalls from exercised stock options in 1997-2000 (many of which were one-time windfalls by “Microsoft millionaires” and other non-executives) were another form of income shifting from corporate to individual tax returns. As Figure 6 suggests, however, what happened in 1997-2000 was a one-time event, not part of some allegedly ongoing trend toward ever-increasing paychecks for the top 1 percent. It is highly unlikely that NASDAQ stocks will ever again quintuple in fewer than five years, and equally unlikely that so many American non-executive employees (or the U.S. Treasury) will ever again benefit as they once did from stock options.

In December 2004, the Financial Accounting Standards Board (FASB) required publicly traded companies to list an estimated value of stock option grants as an actual expense on their financial statements, even though the actual expense (dilution) could not be known until the options were vested (assuming the employee was still with the firm), and that expense would be

zero if the stock price failed to rise. The effect of this bookkeeping rule was to greatly diminish the use of stock options, particularly among non-executive employees. The Survey of Consumer Finances found that, “In 2010, 6.2 percent of families reported having received stock options, a decline of 2.1 percentage points below the level in 2007; this decrease continues a downward trend since the peak of 11.4 percent recorded in the SCF in 2001” (Bricker, et.al.).

The sharp rise in top 1 percent incomes from about mid-1995 to early 2000 paralleled the rise of tech stocks through exercised stock options and realized capital gains. It had little to do with tax policy during that period, aside from increasing realizations of gains due to the 1997 reduction of capital gains tax. Once the tech stock “bubble” imploded, and FASB curbed the spread of stock options, that marvel of technology and market euphoria became a matter of history. The tech stock windfalls of 1997-2000 were unique –not part of any previous or later trend in top incomes. And restoring the tax regime of that period would not come close to restoring a comparable tax revenue windfall from stock options and capital gains, because that would require (1) tripling the value of NASDAQ stocks again and (2) persuading FASB to relent on their strict accounting rules for nonqualified stock options.

The next interesting episode began with the Bush tax cuts of June 2001 and May 2003. Following House and Shapiro, who they cite, Merten and Ravn also “find the anticipation effects of the first of these tax acts contributed to the slow recovery from the 2001 recession, while the implementation of the tax cut helped stimulate the economy from 2002 onwards.” Accepting that analysis, as I do, then the “cyclical” rise in top 1 percent incomes after May 2003 is itself partly explained by tax policy. But Figure 6 tells us much more about the other, non-cyclical

drivers of top incomes – namely, the elasticity of dividends and capital gains realizations with respect to the new 15 percent tax on qualified dividends and realized capital gains.

The amount of real dividends reported by the top 1 percent (shown by a dotted line in Figure 6) fell by 22.1 percent from 1990 to 1992 as the tax rate on dividend income rose to 31 percent, and then fell by another 9 percent in 1993 when the dividend tax rose to 39.6 percent. Even at the cyclical peak of 2000, the top 1 percent still reported fewer real dividends than they had in 1988. After the dividend tax dropped to 15 percent in 2003, by contrast, average real dividends reported by the top 1 percent nearly tripled from \$31,882 in 1992 to \$83,817 in 2007, rising by 21.6 percent a year. This was clearly a behavioral response to lower tax rates by high-income investors, who opted to hold more dividend-paying stocks in taxable accounts, and by corporations who responded to that new investor demand by increasing dividend payouts (Chetty and Saez).

After the capital gains tax was reduced by 8 percentage points in 1997, realized gains among the top 1 percent shot up by 34.3 percent in 1997 alone and by 23.1 percent a year from 1997 to 2000. After the capital gains tax was reduced by an additional 5 percentage points in May 2003, realized gains among the top 1 percent shot up by 53.2 percent in 2004 alone and by 21.1 percent a year from 2003 to 2007.

The large surge in reported capital gains among the top 1 percent after every reduction in the capital gains tax is mainly due to realization elasticity not the cyclical rise in asset values. Looking at total capital gains, not just those of the top 1 percent, the Treasury Department's Office of Tax Analysis finds long-term capital gains realizations rose from 2.23 percent of GDP in 1987 to 1996 (when the capital gains tax was 28 percent) to a previously unprecedented 5.3

percent of GDP in 1998-2000 and 5.62 percent in 2005-2007. The market value of stocks, bonds, private firms and real estate also increased at times during the late 1980s and early 1990s, when Figure 6 shows that relatively few gains were realized at the higher 28 percent tax rate and thus added to the Piketty and Saez or CBO estimates of top incomes.

The higher capital gains tax held down reported top percentile incomes from 1987 to 1996, and the lower capital gains tax raised reported top percentile incomes after 1997 and 2003. But because a realized gain is no more valuable than an unrealized gain, these tax-induced changes in realizations (like the post-2003 rise in reported dividends) were not actual changes in top incomes but merely taxpayer responses to different incentives to sell or hold appreciated assets without offsetting such gains with capital losses.

Reducing the top individual rate to 35 percent in 2003 made it equivalent to the corporate tax. That appears to have encouraged a brief spurt of income shifting, with unincorporated business income (which was flat from 1998 to 2002) rising 13.2 percent in 2004 and 20.1 percent in 2005.

In the preceding discussion of Figure 6, we found the surge in reported incomes after tax rate reductions in 1983-88 is partly cyclical, although lower marginal tax rates arguably contributed to the strong economic growth of that period. Some seemingly dramatic additions to top incomes during the late 1980s, however, were behavioral responses to new tax incentives. Changing tax rates provided incentives, for example, to (1) shift income from corporate retained earnings into passthrough entities taxed at the individual level, to (2) substitute cash compensation for executive perks, to (3) report more taxable income from dividends and taxable bonds, and to (4) realize capital gains in 1986 before the capital gains tax rate went up.

After the capital gains tax was reduced by 8 percentage points (nearly 29 percent) in 1997 the unprecedented growth of capital gains realizations demonstrates how lower tax rates result in more top income being reported on individual tax returns. The 1997-2000 surge of top labor incomes, which began about four years after the highest tax was raised in 1993 is not compelling evidence that the elasticity of taxable income was low. The proliferation of nonqualified stock options among 11.4 percent of households by 2001 adequately explains how the astonishing tech stock boom created many unexpected windfalls that inflated top labor income reported on W2 forms, though sometimes for just one year.

The peak of the economic expansion of 2003-2007, despite well-known excesses in real estate and related finance, did not even lift labor incomes of the top 1 percent back to the level of 1999-2000. That raises doubts about the academic emphasis on labor income as the explanation of “rising inequality.” What is most clear about 2003-2007 is that most of the apparent rise in top percentile incomes was the result of taxpayer response to the reduced 15 percent tax rate on capital gains and dividends and the reduced (35 percent) tax on business and interest income. Capital gains accounted for 53.8 percent of increase rise in real income of the top 1 percent from 2002 to 2007, dividends and interest accounted for 15.3 percent, but salaries, bonuses and capital gains accounted for only 13,6 percent of the 2002-2007 increase.

What is not fully explained by elasticity is usually explained by cyclicity. By 2010, after the Great Recession, real salaries of the top 1 percent were lower than they had been in the recession of 2001, as were capital gains and interest, but dividends and passthrough business income were still significantly higher.

Using data on specific sources of top 1 percent income, derived from Piketty and Saez, Figure 6 and Table 5 show that (1) the top 1 percent's income from capital gains remained depressed as long as the 28 percent tax on capital gains was in effect but soared whenever that tax rate was reduced; that (2) switching business income from the corporate to the individual tax after 1986 and 2003 continued for as long as the top individual tax rate was as low or lower than the corporate tax rate; and that (3) reported dividend income of the top 1 percent moves inversely, dramatically and persistently with changes in the top tax rate on qualified dividends.

The evidence clearly shows that significantly higher marginal tax rates on top salaries, passthrough entities, capital gains and dividends would indeed greatly reduce *pretax* income reported on individual tax returns, thus making it appear (in Piketty and Saez or CBO estimates) as though the top 1 percent were suddenly poorer, on a pretax basis. But the main effect would be to reduce the amount of reported taxable income subjected to the higher tax rates, and quite possibly to reduce over time the amount of taxes paid by the top 1 percent.

Conclusion

Recent academic studies, as well as data from the Federal Reserve and CBO, cast considerable doubt on the common belief, aptly expressed by Stiglitz, that “the rich are getting richer. . . the poor are becoming poorer and more numerous, and . . . the incomes of the middle class are stagnating or falling.”

Some have searched diligently to discover an inexorable trend toward rising inequality in Social Security data, CBO pretax estimates, the Consumer Expenditures Survey, the Panel Study on Income Dynamics, or the Survey of Consumer Finances.

After reviewing those sources, in the text and an appendix, I find that evidence entirely unpersuasive.

This paper finds the widespread use of top 1 percent shares of pretax, pretransfer income unreliable and inappropriate as a measure of inequality or as a rationale for increasing tax rates or transfer payments.

Excluding rapidly increased transfer payments and employer-financed benefits from total income results in exaggerating the rise in the top 1 percent's share between 1979 and 2010 by 23 percent because a growing share of other income is missing.

Using estimates of top 1 percent shares of pretax, pretransfer income (Piketty and Saez 2003) as an argument for higher tax rates on top incomes or larger transfer payments to others is illogical and contradictory because the data exclude taxes and transfers.

Using highly cyclical top 1 percent shares as a measure of overall inequality results in a paradoxical concept of fairness. If a reduction of top 1 percent shares is described as an improvement in inequality that logically requires describing recessions as a welcome reduction in inequality, because poverty and unemployment rates typically rise when the top 1 percent's share falls and fall when the top 1 percent's share rises.

Top 1 percent incomes are shown to be extremely sensitive ("elastic") to changes in the highest tax rates on ordinary income, capital gains and dividends. Although estimates of the elasticity of ordinary income are high for the top 1 percent, ranging from 0.62 (Saez 2004) to 1.99 (Moffitt and Wilhelm), they nevertheless understate the impact on broader measures of income because those estimates do not account for response to changes in the highest tax rate on capital gains and dividends.

I estimate that nearly a fourth of the apparent increase in the top 1 percent's share of pretax, pretransfer income since 1979 was due to excluding a rising portion of everyone else's income – notably, transfer payments and tax-free employee benefits. Excluding the investment earnings of middle-income savers accumulating in tax-sheltered savings for retirement or college has greatly inflated the top 1 percent's apparent share of capital income (in CBO data) and further exaggerated top 1 percent shares in general.

The big income windfalls of 1997-2000 were real, and extended well below the top 1 percent, but they were also unrepeatable and therefore not part of any trend.

In addition, the elasticity of taxable income alone suggests that at least half of the increase in the top 1 percent's share of pretax, pretransfer income since 1983, and all of any increase since 2000, is attributable to behavioral reactions to lower marginal tax rates on salaries, unincorporated businesses, dividends and capital gains. When that tax-induced exaggeration of top incomes is combined with the growing understatement of everyone else's income, there is very little remaining credibility in tax-based estimates of top 1 percent income shares.

After reviewing alternative sources of data on the distribution of income, wealth and consumption, I find no compelling evidence of any large and sustained increase in the inequality of disposable income since 1988.

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Figure 1: Piketty & Saez Income Accounts for a Declining Percentage of Personal Income

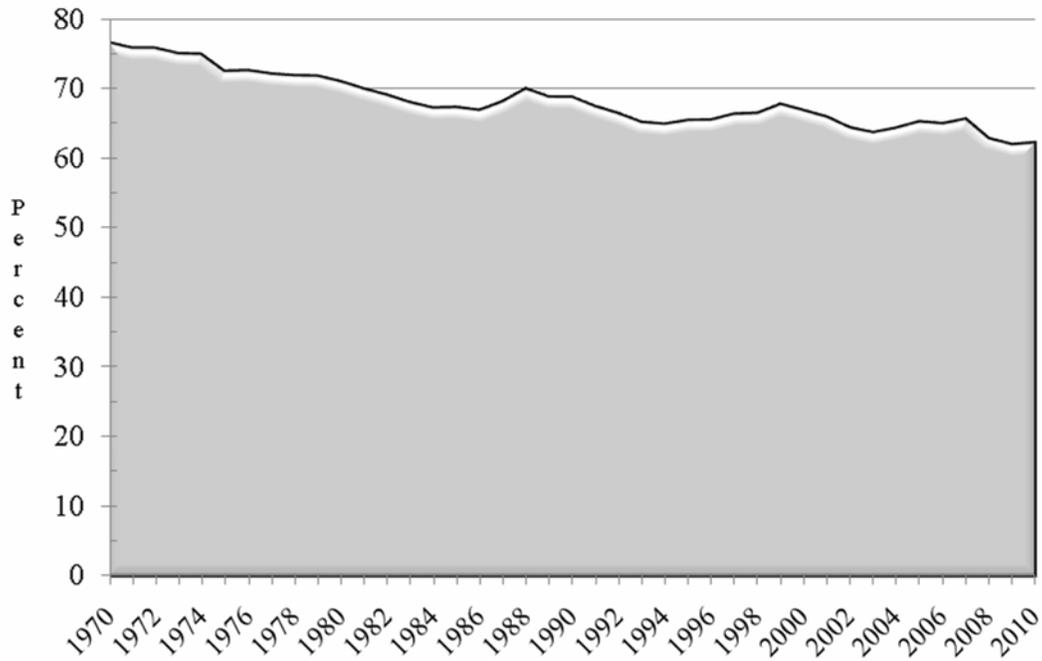
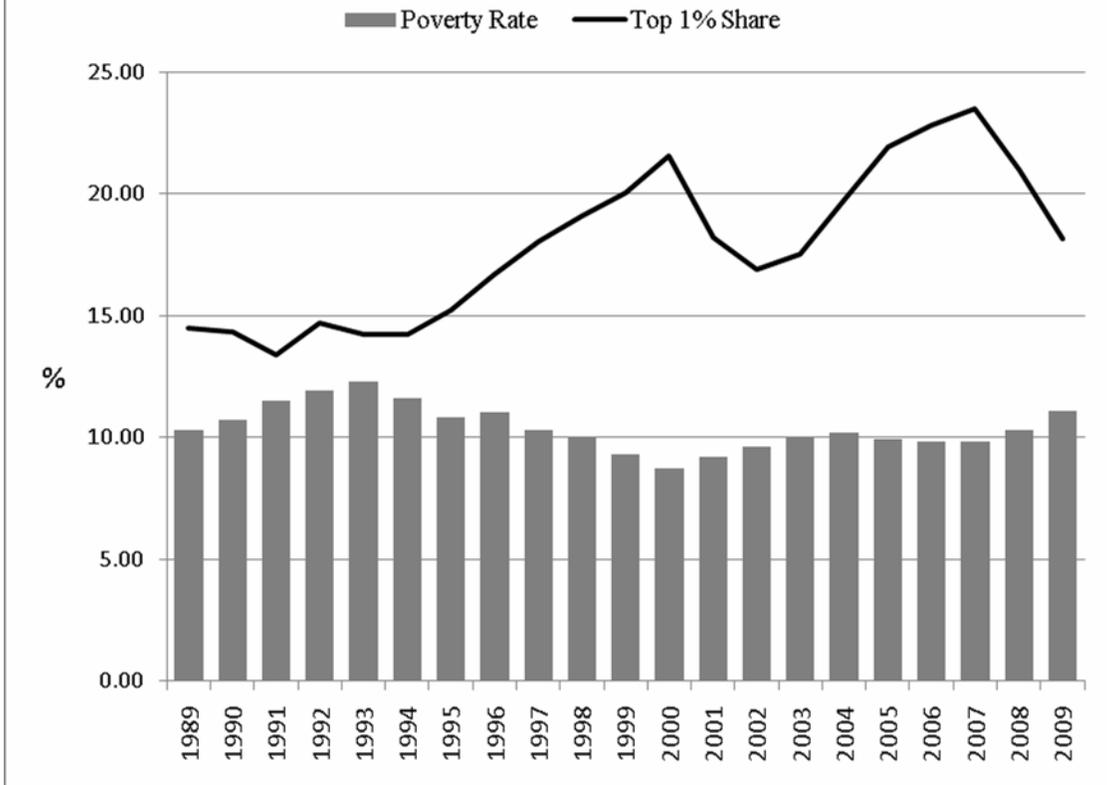


Figure 2: Poverty Rate Falls When Top 1% Rises



Top 1% income share from Piketty and Saez, includes capital gains

Figure 3: Average Income of Top 1% (in 2010 \$)

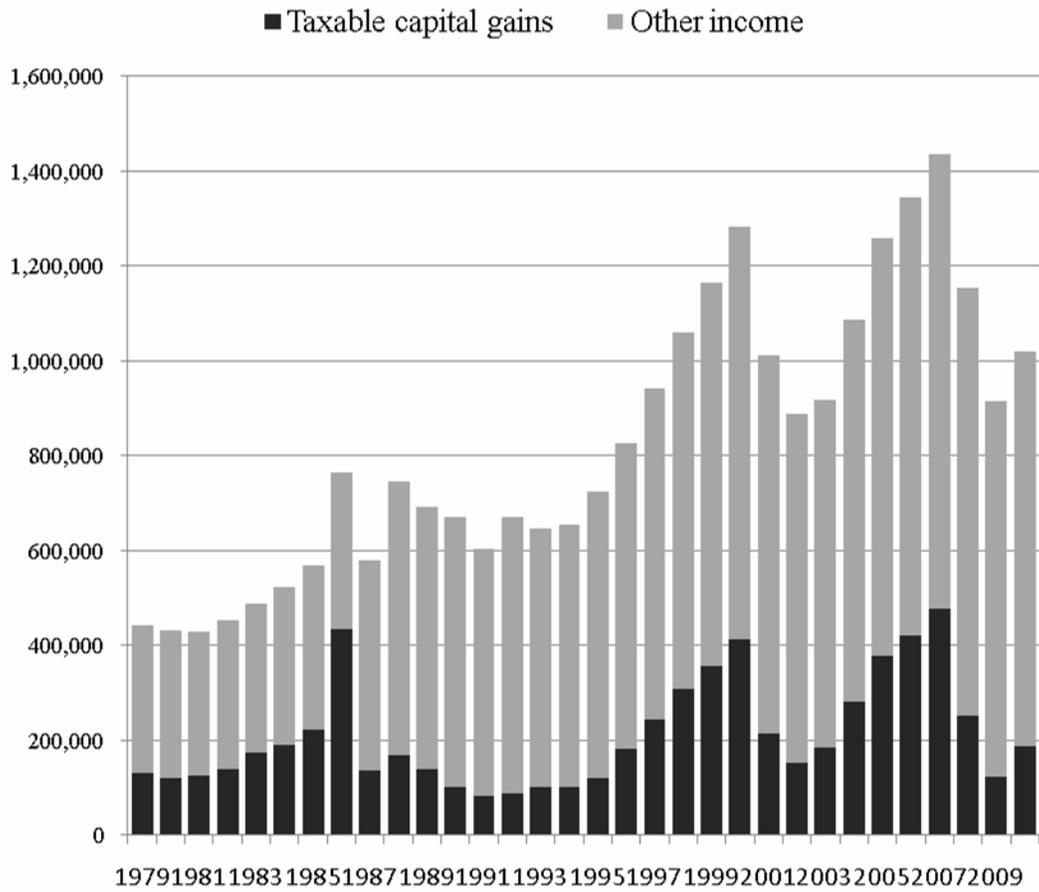


Figure 4: Top Tax Rate for U.S. Individual Income Tax and Revenues as a Percent of GDP

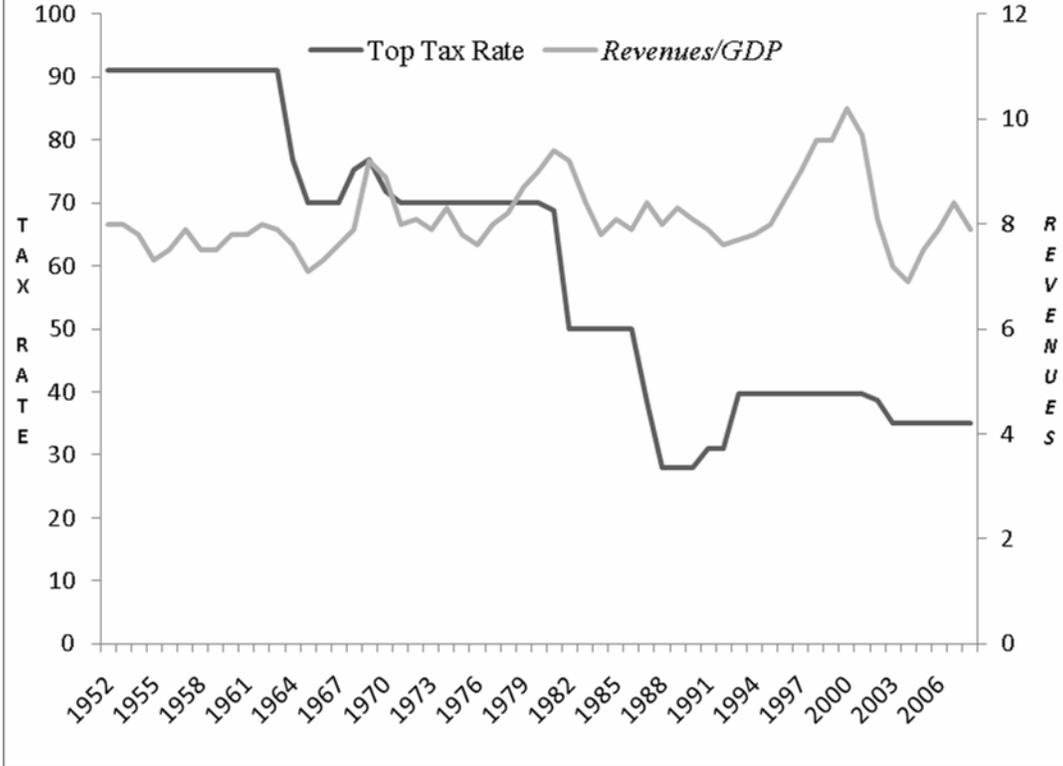
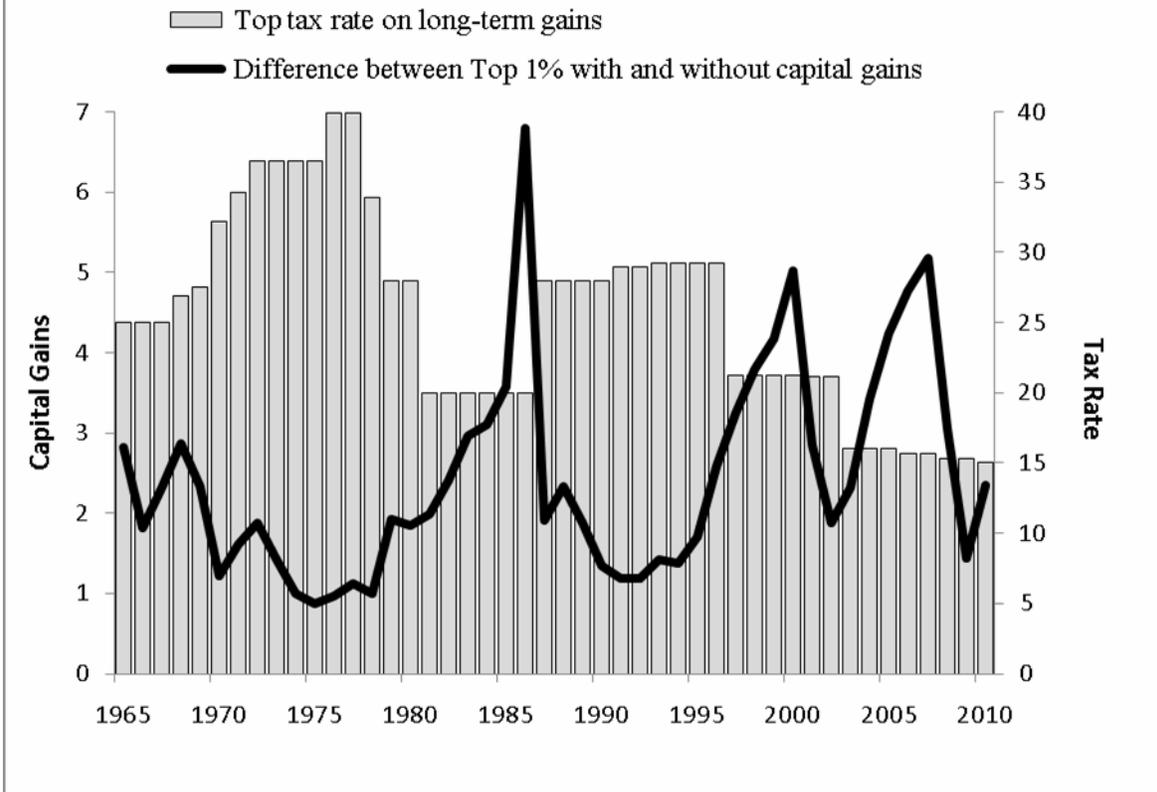
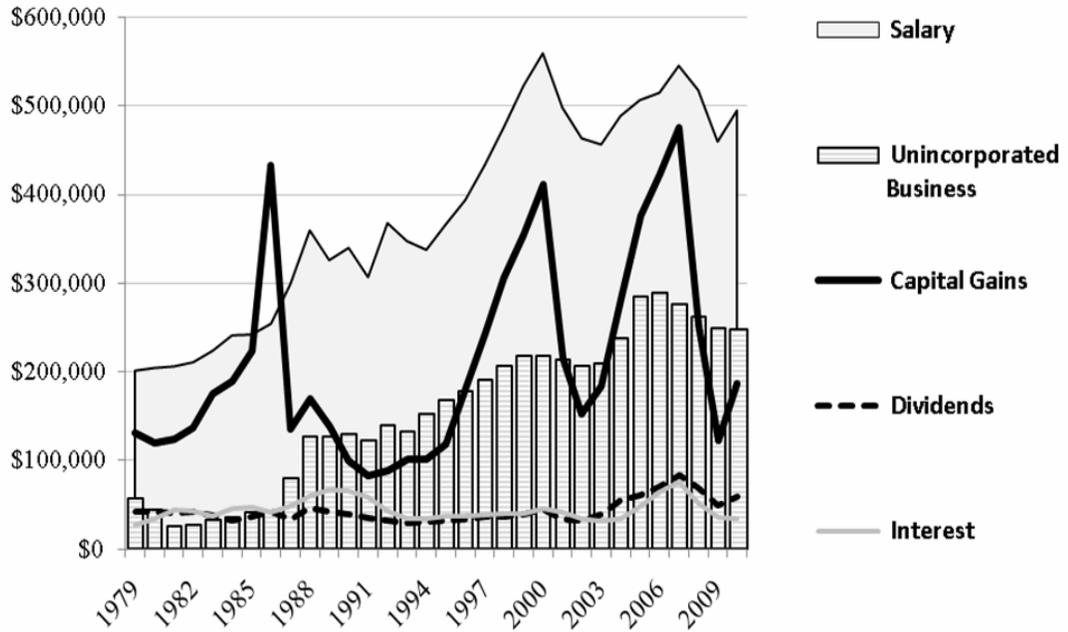


Figure 5: Capital Gains of Top 1% Rose when the Capital Gains Tax Rate Fell



The line is the difference, in percentage points, between the top 1 percent's share when capital gains are included and when they are not – which indicates the varying influence of capital gains on measures that include them (including CBO). Capital gains tax rates (shown as bars) are from Len Burman

**Figure 6: Sources of Average Top 1% Incomes
in 2010 dollars**



See Table 5 for annual data.

Table 1:
Gini Coefficients for Disposable Income and Consumption
Compared with Top 1 Percent Share of Pretax, Pretransfer Income
(all figures except consumption Gini include realized capital gains)

	Census Gini index Disposable Income	CBO Gini index Disposable Income	Hassett- Mathur Gini index Consumption	CBO Top 1% share of After-Tax Income	Piketty & Saez Top 1% share of Pretax Pretransfer Income
1988	0.385	0.424	0.289	11.8	15.49
1989	0.389	0.417	0.292	11.1	14.49
1990	0.382	0.410	0.293	10.8	14.33
1991	0.380	0.401	0.291	9.9	13.36
1992	0.385	0.408	0.296	10.6	14.67
1993	0.398	0.400	0.291	9.8	14.24
1994	0.400	0.398	0.285	9.7	14.23
1995	0.394	0.401	0.284	10.1	15.23
1996	0.398	0.412	0.286	11.2	16.69
1997	0.403	0.424	0.281	12.3	18.02
1998	0.405	0.429	0.289	13.3	19.09
1999	0.409	0.438	0.296	14.1	20.04
2000	0.412	0.452	0.282	15.2	21.52
2001	0.412	0.423	0.282	12.3	18.22
2002	0.394	0.416	0.283	11.1	16.87
2003	0.405	0.426	0.296	11.9	17.53
2004	0.398	0.439	0.301	13.6	19.75
2005	0.402	0.452	0.305	15.2	21.92
2006	0.400	0.457	0.301	15.9	22.82
2007	0.403	0.465	0.303	16.7	23.50
2008	0.392	0.444	0.294	14.1	20.95
2009	0.392	0.426	0.293	11.5	18.12

Census Gini coefficient is Census Bureau income definition number 14.

http://www.census.gov/hhes/www/cpstables/032010/rdcall/1_001.htm.

<http://www.census.gov/hhes/www/income/data/historical/measures/rdi5.html>

Note: CBO Gini peaked at 0.433 in 1986, due to tax-induced capital gains.

Table 2:
 Median Before-Tax Family Income in 2007 dollars*
 Federal Reserve Board Survey of Consumer Finances
 (Includes transfers payments and taxable capital gains)

	Bottom Fifth	2nd Fifth	Middle Fifth	4th Fifth	2nd Highest 10%	Top 10%
1989	10,100	23,500	41,400	65,500	95,700	167,900
1992	9,800	23,000	38,600	61,100	91,300	155,800
1995	9,300	23,800	41,500	61,600	92,800	152,200
1998	10,500	25,800	42,600	67,800	100,600	166,300
2001	12,000	28,500	46,700	75,800	115,400	198,300
2004	12,200	28,200	47,500	74,900	115,100	203,000
2007	12,300	28,800	47,300	75,100	114,000	206,900
<i>Percent change 1989-2007</i>	21.8%	22.6%	14.3%	14.7%	19.1%	23.2%
<i>Percent change 2007- 2010</i>	0.4	-6.6	-7.7	-8.9	-5.6	-5.3

http://www.federalreserve.gov/econresdata/scf/files/2007_SCF_Chartbook.pdf
<http://federalreserve.gov/pubs/bulletin/2012/PDF/scf12.pdfB>.

Table 3:
Estimated Long-Term Elasticity of U.S. Capital Gains Realizations

Author	Time Period Studied	Elasticity Estimates	Mid-Point Estimate
Auerbach (89)	1956-87	-.5	-.5
U.S. Treasury Office of Tax Analysis (Jones 89)	1948-87	-1.2	-1.2
Gillingham & Greenlees (92)	1954-89	-1.07	-1.07
Bogart & Gentry (93)	1982-90	-.67 to -.82	-.75
Slemrod & Shobe (90)	1979-84	-.89 to -1.75	-1.32
Auten, Burman & Randolph (89)	1979-83	-1.63	-1.63
U.S. Joint Committee on Taxation (94)	NA	-.9 to-1.1	-1.0
U.S. Treasury Office of Tax Analysis (98)	NA	-.76 to 1.3	-1.03
Auerbach & Siegel (2000)	1984-94	-0.34 to -1.73	-1.03
Eichner & Sinai (2000)	1986-97	-0.74 to -1.3	-1.02
Dowd, McClelland & Muthitacharoen (CBO 2012)	1999-2008	-0.58 to -1.41	-1.0*
Average of Averages (mid-points)	1948-2008	NA	-1.06

Reynolds (1999:31). More recent sources are cited in Eichner and Sinai.

Note: Short-term estimates are excluded

* The authors' preferred estimate is =0.79

Table 4
 More Long-Term (LT) Capital Gains Were Realized and Taxed
 When the Capital Gains Tax Was Reduced

	Top Tax Rate On LT Capital Gains	Realized LT Capital Gains % of GDP	Capital Gains % of Top 1 Percent Incomes	LT Capital Gains % of Individual Tax Revenue
1987-1996	28	2.5	17.7	6.9
1997-2002	20	4.6	26.0	9.0
2003-2007	15	5.0	28.1	9.0

Capital Gains share of top 1% incomes (including capital gains) from Piketty and Saez (2003:Table A8).
 Realized LT gains as a percent of GDP and revenues from the U.S. Treasury Department, Office of Tax Analysis.

Table 5:
Average Top 1 Percent Income by Source (in 2010 dollars)
Reacts to Changes in Marginal Tax Rates

	Change in Tax Rates	Salary, Bonus, Stock Options	Unincorporated Business	Taxable Capital Gains	Dividends	Interest
1979		\$201,067	\$57,897	\$131,090	\$42,576	\$27,296
1980		204,165	45,005	120,197	42,325	33,892
1981		205,859	25,739	124,507	40,743	43,765
1982		210,605	27,640	137,344	41,521	43,489
1983		223,518	33,460	174,512	37,540	36,446
1984	Marginal rate cuts of 22% phased-in calendar 1984	240,921	36,086	189,744	32,617	45,325
1985		241,711	41,783	223,014	36,627	46,724
1986	Tax Reform enacted	253,985	43,025	433,283	41,592	41,053
1987	28% on capital gains	298,690	80,568	136,029	33,488	48,452
1988	28% on salary, dividends, interest & unincorporated business	359,298	127,305	168,838	45,821	60,041
1989		325,665	128,146	137,480	42,216	67,586
1990		339,527	130,839	100,074	39,679	65,169
1991		306,434	122,759	82,558	35,134	58,742
1992		367,572	140,791	87,949	32,477	42,566
1993	39.6% tax on salary, business, dividends & interest	347,196	133,248	100,542	29,797	34,609
1994		337,297	152,890	100,660	30,331	34,574
1995		365,975	168,380	118,810	31,665	36,692
1996		393,294	178,307	180,980	34,199	37,418
1997	20% tax on capital gains	432,533	191,483	243,141	36,866	38,618
1998		476,009	207,406	306,761	36,989	40,164
1999		522,222	219,162	354,728	39,723	40,237
2000		558,986	218,980	411,831	44,453	45,517
2001		497,958	214,137	214,880	34,155	41,019
2002		463,081	207,497	151,934	31,882	34,684
2003	15% tax on capital gains & dividends; 35% on salary & business	456,080	210,073	184,032	39,346	31,689
2004		488,293	237,792	281,946	54,264	34,281
2005		506,252	285,535	376,215	60,565	48,082
2006		514,400	289,326	421,440	70,985	64,060
2007		544,858	277,548	475,990	83,817	74,883
2008		517,421	263,122	251,417	69,844	51,640
2009		459,298	249,896	121,854	49,050	35,769
2010		494,593	248,240	185,882	58,994	33,870

Adapted from Piketty and Saez and depicted in Figure 5.
Bold figures suggest some possible behavioral responses to changing tax rates.

Appendix A

Comparing Census Bureau Survey Data with the Piketty and Saez Estimates

In 1993-94 the Census Bureau's Current Population Survey (CPS) introduced new survey methods which replaced pencils with computers (allowing more digits) and greatly increased limits on the amount of each of more than 50 income sources. "This had a profound effect on the upper data on the income distribution by recording income levels that had been previously underreported," note Jones and Weinberg, which "suggests pre-1993 and post-1992 estimates are not comparable." The improved survey methods of 1993 caused an *overstatement* of top income growth when comparing years before and after 1993, because pre-1993 data (such as 1989) excluded a larger portion of high earnings.

Polivka (2000: 4) explains that, "Since January 1994, interviewers, for the most part, have been able to record high earnings amounts as respondents actually report them, no matter how large the amount. Prior to January 1994, interviewers recorded any weekly earnings greater than \$1999 as \$1999, and these earnings were further "top coded" at \$1923 prior to release to the public. However, even though the actual amount individuals earn has been recorded since January 1994, to protect the confidentiality of respondents, high weekly amounts continue to be 'top coded' in the data released to the public."

Contrary to a common misimpression, Census Bureau "top coding" never imposed *any* maximum on individual income – only on specific sources of income. Krugman (2006) argues that, "The Census . . . questionnaire is 'top-coded': if the individual interviewed has earnings higher than \$999,999, those earnings are recorded simply as \$999,999." On the contrary, as Welniak explains, "each of the four earned income sources allowed the recording of amounts to \$9,999,999" since 1993. Several income sources of \$10 million each add up to serious money.

“Top coding” refers to censoring of top incomes in public-use data, and has nothing to do with the Census Bureau’s own reports on income shares (such as the first column of Table 1), which are based on *internal* data that is not normally available to private researchers or to public agencies outside the Treasury Department (such as the CBO). Researchers commonly deal with top-coding of public use files through some variation of Pareto interpolation, which adds an estimate of higher incomes based on the assumption that the upper tail of the income distribution follows a normal pattern. Heathcote, Perri and Violante (2010:26), for example, “deal with top-coded observations by assuming the underlying distribution for each component of income is Pareto, and . . . by forecasting the mean value for top-coded observations by extrapolating a Pareto density fitted to the non-top-coded upper end of the observed distribution. This procedure automatically takes care of the internal censoring problem, since the internal threshold always exceeds the public use limit. It also has the advantage that in principle it adjusts appropriately to changes in top-code thresholds.”

Internal data within the Census Bureau also has some self-imposed limits, which do undercount top incomes (particularly before 1993), but not nearly to the extent that unadjusted top-coded public use files would. In either case, a chronic annual understatement of top incomes cannot explain why, as Saez, Slemrod and Giertz observe, “the timing of the jump in the share of top incomes from 1986 to 1988 [in Piketty and Saez or CBO estimates] corresponds exactly with a sharp drop in the weighted average marginal tax rate from 45 percent to 29 percent after the Tax Reform Act of 1986.” Only the elasticity of taxable income can explain sudden changes.

“First and most important,” write Piketty and Saez (2007), “Alan Reynolds points out that, in contrast to our results, the official Census Bureau figures show only a modest increase in the top 5% income share. The reason for the discrepancy is that the Census Bureau estimates are

based on survey data which are not suitable to study high incomes because of small sample size [about 60,000] and top coding of very high incomes.”

It is true that Piketty and Saez use a somewhat larger sample of about 100,000 public use files from Statistics of Income (SOI) which does overweight top incomes, but is also top coded to some extent. As Saez, Giertz and Slemrod (2012: 47) observe, “SOI has released to the public the so-called Public Use File (PUF) version of the SOI annual cross-sections. In order to protect the identity of taxpayers, those public use files have a lower sampling rate at the very top (1/3 instead of 1) and they also blur some variables for very high incomes by combining several tax returns together. The PUF contain about 100,000 tax returns per year.”

It would be a serious exaggeration to claim that *internal* (not top-coded) “Census Bureau figures . . . cannot measure top 1% incomes.” The top 1 percent means all income above \$335,861 in 2010 (excluding capital gains), and the bulk of income above that level falls well within most internal Census limits (such as the aforementioned questionnaire limits of \$9,999,999 for each source of earned income). Even if the CPS somehow missed every dollar above \$5.84 million (the top 0.01 percent), which is a preposterous idea, that would have negligible relevance to *changes* in the top 5 percent’s income share. The top 0.01 percent reported 3.34 percent of pretax, pretransfer income in 2008, according to Piketty and Saez – just one-tenth of the income share of the top 5 percent (33.37 percent).

The critique of tax-based estimates in Reynolds (2007) was not about comparing *levels* of top income, but about sudden changes over time.²³ The *timing* of increases in the top 5 percent’s share is entirely different between CPS data and Piketty and Saez data after major reductions in marginal tax rates.

²³ Atkinson, Piketty and Saez likewise compare timing between CPS and tax-based data by saying, “(the CPS top income shares increase as fast as the tax return based top income share including capital gains in the medium run from 1985 to 1990).”

Such irregular timing cannot be blamed on routine CPS undercounting. Census reports the top 5 percent's share as 18 percent in 1986 and 18.3 percent in 1988, for example, and both of those figures are probably *at least* 2-3 percentage points too low. Yet chronic Census undercounting of the highest incomes cannot explain the sudden jump in the Piketty and Saez estimate of the top 5 percent's share from 22.6 percent in 1986 to 26.9 percent in 1988. Only high elasticity of taxable income can explain moves like that.

Census estimates show the top 5 percent's share falling slightly from 22.2 percent in 2003 to 21.7 percent in 2007, while Piketty and Saez show the top 5 percent's share suddenly soaring from 29.9 percent in 2003 to 33.6 percent in 2007. Missing income in the Census figures cannot explain such a huge difference in trends over such a short period of time. Only high elasticity of taxable income can do that.

Using *internal* (not top-coded) Census estimates – with careful imputation to account for missing data at the highest incomes – Burkhauser, Feng, Jenkins and Larrimore endeavor to reconcile income distribution estimates from the CPS with tax-based estimates of top income shares from Piketty and Saez for 1967-2006. To do so, however, they had to exclude all transfer payments and taxes, as Piketty and Saez do, and compare “tax units” rather than households. College students with part-time jobs, or two or more working singles living together, are counted as low-income tax units in the Piketty and Saez data even if they are members of high-income households.

How income is defined turns out to make a huge difference, which is why this paper has repeatedly emphasized the importance of taking accounts of transfers, taxes and benefits to measure disposable income, and also adjusting for changing household size. Burkhauser found that what appears to be only a 3.2 percent rise in real median income of “tax units” from 1979 to 2007 in the Piketty and Saez estimates becomes a 15.2 percent rise for households if transfers are

included, a 23.6 percent rise if the figures are also adjusted for household size, and a 29.3 percent rise if taxes (and refundable tax credits) are taken into account (Pethokoukis: 2).

By reluctantly adopting the flawed definition of income of Piketty and Saez, however, Burkhauser, Feng, Jenkins and Larrimore were able to replicate trends in Piketty and Saez estimates fairly well with Census data—but only *from 1967 to 1985*. “Prior to 1986,” they write, “the trends in the income share for [the top 1 percent] are remarkably similar,” with top income shares in Piketty and Saez only one or two percentage points higher than the adjusted CPS data. Both series show the top 1 percent’s share rising from 1980 to 1989, for example. It was only *after* the Tax Reform of 1986 (and again after Bush tax cuts of 2003), that Piketty and Saez estimates went awry (or, as Atkinson, Piketty and Saez suggest, Census suddenly miscounted).

Piketty and Saez show incomes of the top 1 percent rising at the unbelievable pace of 22.1 percent a year from 1986 to 1988— compared with a 2 percent rate in the adjusted CPS figures. That anomalous 1986-88 explosion of top incomes in the Piketty and Saez estimates clearly reflects, as I have frequently insisted, a *data break* caused by behavioral responses to the 1986 tax reform. It is *extremely* misleading to compare tax-based estimates of top percentile income shares before and after the Tax Reform Act of 1986.

Piketty and Saez also show incomes of the top 1 percent rising at a feverish 4.1 percent annual pace from 1993 to 2000 – a figure that drops to a middling 1.5 percent in the Burkhauser-adjusted Census figures.

Cowen (2009) quotes the Burkhauser team’s tentative conclusion from a preliminary draft that “if inequality has increased substantially since 1993, the increase is confined to income changes for those in the top 1 percent.” Yet the authors acknowledge that they could *not* confirm

the Piketty and Saez finding of rapid “income changes for those in the top 1 percent” for 1993-2000 or for 1986-88. “As I read this paper,” says Cowen, “the Piketty and Saez result, with some modifications for 1993-2000, basically holds up.” On the contrary, the quoted passage is clearly unsure “if” inequality has increased since 1993, much less since 1988, and can only confirm a modest cyclical recovery in the top 1 percent’s share after the tax cuts of 2003 by excluding taxes and transfers and using “tax units” instead of households.

Gordon (2009: 11) also interprets the Burkhauser team’s study as “finding that all of the increase of inequality after 1993 occurred in the top 1 percent group, and there was no increase of inequality in the bottom 99 percent of the population.” That is not what the data show.

Unlike the Piketty and Saez estimates, the top 1 percent share in Burkhauser *et. al.* (2012: Figure 4) is still lower in 2005 (about 12 percent) than it was in 1989 (above 13 percent), and shows no upward trend at all from 1989 to 2006 aside from a single-year spike to nearly 14 percent in the final year. One year does not demonstrate a trend. Excluding 2006, the top 1 percent share is essentially unchanged after 1988. That does not contradict my reading of the evidence from a variety of sources, but it does challenge the Cowen and Gordon interpretation of these adjusted Census estimates of top 1 percent income shares as confirmation of the Piketty and Saez or CBO estimates of top 1 percent shares.

Burkhauser, Feng, Jenkins and Larrimore (2012: 378) write that, “It is only during the periods 1986–1988, 1992–1993, and 1993–2000 that the two sources show markedly different trends, and only for the top 1% of the population.” But the top 1 percent of the population is what the debate is all about. And those 13 years with “markedly different trends” from 1986 to 2006 add up to 62 percent of the time during which the U.S. experienced uniquely dramatic

reductions in tax rates on salaries, dividends and business income (the study excludes realized capital gains). Also, because the study ends with 2006, it cannot confirm the cyclical peak that appears in the Piketty and Saez series for 2007.²⁴

The divergent trends in top 1 percent shares after 1986 appear entirely consistent with high elasticity of taxable income and capital gains, which affect the Piketty and Saez estimates but not the Census survey. As the authors explain (2012: 378-79), “For 1986 to 1988, we argue that the increased share of the top 1% shown by the Piketty-Saez series primarily reflects a change in tax policy rather than any genuine change in the incomes controlled by the richest 1%. . . . What explains the divergences for 1993 to 2000? . . . One potential explanation, as Reynolds (2006b) suggests, is that changes in tax rules, requiring [nonqualified] executive stock options to be reported as taxable income, led to the estimated rise in income share of the top 1% in the Piketty- Saez personal income tax series Another possible explanation is that a greater increase in the use of tax-deferred savings accounts (401k plans, Keogh plans, and IRA tax shelters) by individual in top income groups outside the top 1% may explain part of the rise in the income share of the top 1% in the Piketty-Saez series for the late 1990s.”

A more recent paper by Burkhauser, Larrimore and Simon examined *after-tax* incomes of size-adjusted *households* and also included cash transfers and health benefits. By this definition, real median income grew by 36.7 percent from 1979 to 2007, compared with only a 3.2 percent increase when using the Piketty and Saez definition (pretax, pretransfer income of tax units). They show inequality (the Gini coefficient) increasing from 1979 to 1989 but *not* after 1989.

²⁴ Gordon (2009: 21) adds that "CPS data [for the top 10 percent] . . . exhibits almost all of its increase between 1980 and 1993, whereas the Piketty-Saez data on the top income classes. . . continues to increase from 1993 to 2000 and then exhibits a U-shaped pattern after 2000 that is not evident at all in the CPS data."

A discussion of the Burkhauser, Feng, Jenkins and Larrimore paper by Atkinson, Piketty and Saez focuses on 1976 to 2006, when the top 1 percent's share of pretax, pretransfer income rises by a relatively modest 4.1 percentage points in the Burkhauser-adjusted CPS figure, compared with 14 percentage points in the broader Piketty and Saez series that includes capital gains. Atkinson, Piketty and Saez claim this difference reflects faults in the CPS – even after it is purged of any trace of top coding – rather than the sensitivity of reported top incomes and capital gains to changes in tax rates. “The CPS top 1% share,” they write, “effectively misses 10.4 points of the surge of the top 1% income share relative to income tax data including realized capital gains (the most economically meaningful series to capture total real top incomes).”

On the contrary, the fact that the Piketty and Saez estimates show a much larger cumulative 30-year rise in top percentile share than the Burkhauser-adjusted CPS does not prove the latter “misses” anything (aside from capital gains). The difference could just as well indicate that the changes in Piketty and Saez estimates have been *exaggerated* by well-documented taxpayer responses to dramatic reductions in tax rates in 1986 and 2003.

Atkinson and Leigh “estimate that reductions in tax rates can explain between one third and one half of the rise in the income share of the richest percentile group” in a study of five Anglo-Saxon countries from 1970 to 2000. By narrowing that topic to only the U.S. experience from 1986 to 2010, this paper suggests that reductions in tax rates probably explain *nearly the entire* rise in income share of the richest percentile group, if (1) income is defined to include realized capital gains as Atkinson, Piketty and Saez prefer and if (2) we include transfers and benefits in definition of total income. Even if reduced tax rates merely explain “between one third and one half” of the post-1986 rise in the top 1 percent's share in the Piketty and Saez

estimates, that is surely sufficient to raise serious doubts about the credibility of estimates derived from a sample of tax returns as a measure of income distribution.

Because this paper mainly set out to re-examine what happened to the distribution of *disposable* income *since 1988*, neither survey-based nor tax-based estimates of *pretax*, *pretransfer* income *since 1967 or 1976* are directly relevant. Like the findings of Atkinson and Leigh, however, key differences between the Piketty and Saez estimates and those of Burkhauser, Feng, Jenkins and Larrimore appear entirely consistent with this paper's hypothesis that the unique bursts of top percentile income after 1986 and 2003 in tax-based data mainly reflect the sensitivity (elasticity) of reported top incomes to changes in marginal tax rates.

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Appendix B:
Alternative Sources of Data:
Social Security, Congressional Budget Office,
And the Consumer Expenditure Survey

To defend the Piketty and Saez estimates, the OECD (2008: 32) says, “While these tax data are better at capturing what happens at the top end of the distribution . . . they are also affected by changes in provisions that alter taxpayers’ incentives to report capital (and other) income in their tax declarations (Reynolds 2007). In the case of the United States, however, the strong rise in the income share of the top 1% is confirmed by other administrative sources (e.g., the tabulations of the US Social Security Administration of personal earnings) and by [CBO] studies that take into account payments of both personal and corporate taxes.”

On the contrary, CBO and Social Security data about incomes of the top 1 percent do not constitute independent confirmation of the Piketty and Saez estimates because all of these figure come from the same IRS Statistics of Income (SOI). The W2 earnings of the top 1 percent from Social Security (Kopczuk, Saez and Song) would be identical to W2 earnings in Piketty and Saez except that Social Security measures income by individual rather than by tax unit (there are typically two salaries per tax return among high-income taxpayers).

CBO estimates of pretax income of the top 1 percent also come from the same source used by Piketty and Saez, but there are two major differences in the calculations. Unlike Piketty and Saez, the CBO does include employee benefits and government transfer payments. The more inclusive measure of total income leaves CBO estimates of top 1 percent’s share of after-tax income unchanged between 1988 and 2009, which does *not* confirm the increase found in the Piketty and Saez estimated top shares of pretax, pretransfer income.

The second major difference between CBO and Piketty and Saez estimates, however, is that the CBO estimates exaggerate growth of the top 1 percent’s share of *pretax* income by

imputing a rising share of corporate income and payroll taxes as income of the top 1 percent. The CBO does “take into account payments of . . . corporate taxes,” as the OECD remarked, but it does so by *adding* corporate income and payroll taxes to individual income. From 1982 to 1986, only 39.3% of capital income is imputed to the top 1%, so imputed corporate taxes are only 6.8% of the top percentile's pretax income. From 1997 to 2000, 49.3 percent of capital income is imputed to the top 1%, so imputed taxes account for 8.1 percent of the top percentile's estimated pretax income. From 2003 to 2007, 57.8 percent of capital income is imputed to the top 1%, so imputed taxes account for 10.3 percent of their pretax income. There is no such imputation of corporate taxes in the Piketty and Saez data, which actually makes their pretax estimates of the dollar value of top 1 percent incomes significantly smaller than those of the CBO (even though top percentile income *shares* appear 35 percent larger because of the exclusion of transfer payments and benefits).

Adding business taxes to personal income does absolutely nothing to insulate CBO estimates from *tax shifting* from the corporate to the individual income tax, contrary to the OECD. The only thing accomplished by adding nearly 60 percent of corporate taxes to top percentile incomes accomplishes is to create an untenable and growing exaggeration of the top 1 percent's share of pretax income. Meanwhile, income gains in the bottom quintile are artificially depressed because the earned income tax credit is excluded from CBO pretax estimates.

CBO estimated that the top 1 percent's share of income from capital (i.e., wealth) soared from 39.1 percent in 1989 to 57 percent in 2007. That is why Stiglitz (2012:8) writes that, “Given the inequality of wealth, it's not surprising that those at the top get the lion's share of the income from capital – before the crisis in 2007, some 57 percent went to the top 1 percent.” On the contrary, it would be quite surprising to see such a large increase in the top 1 percent's share

of income from capital because the top 1 percent's share of wealth has always been much smaller than 57 percent and little changed. As Kennickell notes (2012: 11), "one striking finding has been the relatively small changes in the shares of wealth owned by different parts of the wealth distribution. . . . Over the 1989–2007 period . . . the wealthiest one percent of households held about a third of total household wealth." Kopczuk and Saez find the wealthiest one percent held about a fifth of household wealth.²⁵ Since the top 1 percent held no more than a third of household wealth from 1989 to 2007, how could their share of income from capital have increased from 39 to 57 percent in those years? That could not and did not happen. What actually happened is that a rising share of the capital income of the "other 99 percent" was sheltered in tax-deferred or tax-exempt saving accounts for retirement and college. Because contribution limits for high-income households are generally binding, a rising fraction of top incomes from capital still appear in tax returns data.

Data below, adapted from the Investment Company Institute, show that accumulation of assets in defined contribution plans (mainly IRAs and 401k plans) since the early 1980s was not merely a *replacement* for defined benefit plans as Piketty and Saez (2007) contend.²⁶ Only 73 percent of private household financial assets were likely to generate investment income or capital gains that might appear on tax returns in 2011, compared with 89 percent in 1980. That means *the investment income on about 16 percent of private household assets has disappeared from tax-based estimates of income since 1980*. If we also included the tax-favored retirement plans

²⁵ Kopczuk and Saez, using estate tax data, estimate that the top 1 percent's share of wealth was 22 percent in 1989, 20.8 percent in 2000, and higher in previous decades.

²⁶ Piketty and Saez (2007) write, "the small point [in Reynolds 2007] on 401(k)s is conceptually mistaken: pension income is reported on tax returns when withdrawn during retirement and hence returns on pension funds are implicitly included in our income measure. Furthermore, before 401(k)s were introduced in the 1980s, workers had traditional Defined Benefits pensions which also generated capital income which were not reported on tax returns before retirement." The issue is not just 401(k)s but also 529s and Roth IRAs which are tax-exempt rather than tax deferred. Tax-deferred funds must be *gradually* tapped after age 70 ½, but most participants are still young and many current and future seniors will pass on a large share of their retirement assets to heirs.

of federal, state and government employees, then total retirement assets have increased from 15 percent of household financial assets in 1980 to 35 percent in 2011, which means 20 percent of household financial assets have disappeared from the tax net since 1980. This has artificially *reduced* IRS-reported income gains among middle-income tax units since 1980 in both CBO and the Piketty and Saez data, thus exaggerating the relative income gains at the top and the top 1 percent’s share of investment income in CBO estimates.

Private Retirement Assets in \$ billions and as a Percentage of Total Household Financial Assets

	Defined Contribution	Defined Benefit	Annuities	Total as % of Financial Assets
1980	219	373	130	11%
1990	1528	892	391	19%
2000	5496	2020	951	25%
2011	9371	2335	1623	27%

http://www.ici.org/info/ret_12_q2_data.xls. Tables 1 & 3

Estimated pretax income of the top 1 percent grew larger as the share of business taxes assigned to the top 1 percent grew larger. But that proves the CBO assigned a large and growing share of investment income (not just business taxes) to the top 1 percent, and a correspondingly shrinking share to everyone else. This estimating technique exaggerates top income shares in CBO estimates of either pretax or after-tax income, and it also contaminates Piketty and Saez estimates.

Before 2012 (when the CBO began assigning 25 percent of corporate taxes to labor), the rationale for assigning a large a rising share of business taxes to the top 1 percent was that, “CBO assumes that corporate income taxes are borne by owners of capital in proportion to their income from interest, dividends, rents and capital gains.” In practice that meant the CBO allocated corporate taxes on the basis of only those dividends, interest payments, rents and capital gains that accrue in taxable accounts and therefore appear in the tax statistics the CBO

uses for this purpose. But this method of using tax returns to estimate the distribution of (taxable) investment returns by income groups has become less and less credible over time as middle-income savers began sheltering larger and larger portions of their dividends, interest income and capital gains inside tax-free accounts.

Krugman (2011) cites CBO estimates to argue that, "There has been no rise in the share of the 81-99 percent group! It's all about the top 1 percent." And "even within the top 1 percent," he adds, "the big gains have gone to the top 0.1 percent" (just 11,000 households in CBO estimates). The cited figures for the top 0.1 percent, however, were from the CBO's *pretax* estimates, which highlights two additional problems with such pretax data: The estimates are hugely sensitive to (1) changes in the capital gains tax, and to (2) changes in the amount of corporate taxes the CBO chooses to "impute" to the richest taxpayers because most of their investment income is not sheltered in tax-free savings accounts (corporate profits tax receipts were an unusually large share of GDP in 2007, for example).

Regarding the first point, the CBO (2008) estimates of income shares of the top 0.1 percent, which Krugman displays in a graph, are clearly dominated by capital gains realizations, which account for 45.2 percent of this group's reported pretax income from 1979 to 2005, compared to a mere 14 percent share for salaries, bonuses and stock options. While the capital gains tax was increased from 1987 to 1996 the top 0.1 percent accounted for 2.1 percent of pretax income reported to the IRS. After the capital gains tax was reduced in 1997-2000 and 2003-2005, that share increased to 3.4 and 3.5 percent respectively (or 3.0 percent after taxes).

Second, gyrations in the pretax series were heavily influenced by large changes in the amount of corporate taxes imputed to the highest income group. Imputed taxes accounted for an incredible 21.7 percent of the CBO estimate of top 0.1 percent pretax income in 1979, while

salaries accounted for only 5.9 percent and business income for 4.1 percent. Imputed taxes were only 6.7 percent of the top 0.1 percent's pretax income in 1986, then 16.5 percent in 1994, 9.3 percent in 2000 and 14.9 percent in 2004. By contrast, the top 0.1 percent's share of *aftertax* income (which *excludes* imputed taxes) rose *more* rapidly than the pretax series from 1979 to 1985, but was relatively stable after that (aside from periods when the capital gains tax was reduced). The top 0.1 percent's share was 2.1 percent in 1988, 1996 and 2002, and exceeded 3 percent only in 1999-2000 and 2003-2005 after the capital gains tax was reduced.

Hines and Summers (2009:128-129) also cite “data compiled by the Congressional Budget Office on shares of pretax income accounted for by. . . the top 1 percent” to demonstrate rising inequality. The pretax CBO data, with their heavy reliance on imputed corporate taxes, are far too flawed to be used for that purpose, even if it were (1) feasible to infer changes in the overall distribution of income using data for only 1 percent and (2) sensible to recommend increases in top tax rates on the basis of what supposedly happened to pretax rather than *aftertax* incomes.

The OECD also claims, “the strong rise in the income share of the top 1% is confirmed by . . . the tabulations of the US Social Security Administration of personal earnings.” This refers to estimates from W2 tax returns in Kopczuk, Saez and Song. Like the W2 estimates from the Internal Revenue Service in Piketty and Saez, the W2 estimates from Social Security show a rapid jump in the top 1 percent’s share from 9.22 percent in 1986 to 11.26 percent 1988, reflecting taxpayer response (ETI) to a reduction in top income tax rates from 50 to 28 percent.²⁷ Contrary to the OECD, however, Kopczuk, Saez and Song data do *not* show a “strong rise in the

²⁷ After rising two percentage points in two years from 1986 to 1988, the Piketty and Saez series on the top 1 percent’s share of W2 income rose modestly from 9.39 in 1988 to 10.22 at the time of the 2003 tax cuts, when ETI began to matter again, as it had from 1986 to 1988.

income share of the top 1%” *after 1988*. Table A1 in the authors’ more-detailed working paper (2007: 37) show that top 1 percent’s share of payrolls increased by little more than one percentage point between 1988-90 (11.12 percent) and 2002-2004 (12.38 percent). Excluding the top one-tenth of one percent (0.10), whose earnings fluctuate violently with stock options or business failures, the remaining 90% of the top 1% received a remarkably stable average of 7.8% of earnings from 1988 to 2004. After that, however, updated Social Security data shows the entire top 1 percent suffered by far the worst drop of labor income from 2007 to 2010. Specifically, according to a study of labor income of prime-age males by Guvenen, Oskan and Song (2012: 4), “those in the top 1%, based on their 2002–2006 average income, experienced an average loss that was 21 percent worse than that of workers in the 90th percentile.”

Moreover, the top 1 percent ranked by W2 labor income alone is likely to be a very different group of people than the top 1 percent ranked by total income from labor, business and investments. Investors with large capital gains in any given year, or businessmen with large profits, are not the same as executives reporting large and possibly unusual bonuses or exercised stock options. Capital gains alone accounted for 25.4% of the broader Piketty and Saez measure of top 1% incomes from 1979 to 2010; labor income accounted for only 60.1% of the narrower measure that excludes capital gains. For those who nevertheless attempt to explain the top 1 percent’s share of total income by focusing on labor income alone, the Kopczuk, Saez and Song estimates suggest that *all* of the modest 1 percentage point increase in the top percentile share of labor income from 11.26 percent in 1988 to 12.24 percent in 2003 was accounted for by the top one-tenth of one percent— only about 140,000 taxpayers.

Whatever motivates academic fascination with the salaries, bonuses and stock options of 140,000 people in the top one-tenth or 14,000 in the top one-hundredth of one percent (Dew-

Becker and Gordon), it has nothing to do with any defensible measure of inequality. Even if “the rich were getting richer” (before 2008) that does not suggest they were doing so at the expense of the less poor, and it tells us nothing about whether or not “the poor are getting poorer.” In recent years, the poor only became poorer when the top 1 percent’s share fell.

The Consumer Expenditure Survey

Attanasio, Hurst and Pistaferri (2012: 2, 12) dismiss many other studies which found essentially no increase in consumption inequality since 1983 from the Consumer Expenditure Survey (CE) interviews.²⁸ They choose to focus instead on an alternative series based on personal diaries over two weeks, and they choose a definition of consumption that excludes health, education and nondurables except cars.

Their argument for changing the subject is that “the CE does a poor job at reproducing the level of expenditure in National Account data A particular worry is the lack of correspondence between aggregates derived from the CE survey and the Personal Consumer Expenditure series published in the National Accounts. Not only does the CE seem to underestimate substantially the level of PCE consumption, but the ratio of CE aggregates to PCE aggregates has declined substantially over time.” In reality, the more rapid rise of PCE than of CE should be neither worrisome nor surprising. The PCE counts spending *on behalf of* consumers by Medicare and Medicaid as if that was “personal” rather than government spending, while the CE counts only out-of-pocket expenses on health care and insurance. Explosive growth of Medicare and Medicaid coverage, services and expenses made the PCE rise faster than CE. The CE measure of health care appears more relevant than the PCE measure, and certainly more relevant than arbitrarily *excluding* health care spending.

²⁸ “Starting in 1983,” they note, “there was essentially no increase in the standard deviation of log consumption.”

Attanasio, Hurst and Pistaferri also graph *income* data from the Consumer Expenditure Survey, but their preferred measure of income inequality is from the Panel Study on Income Dynamics (PSID). They use *pretax* income, adjusted for household size but inadequately adjusted for inflation by the antiquated CPI-U. They define inequality by the standard deviation of logarithms (SDL).

The resulting graph (their Figure 1) shows inequality by the PSID measure peaking in 1993, falling sharply (and surprisingly) during the tech stock boom of 1997-2000, then rising through 2008 yet remaining well below the 1993 peak (2012: 18).²⁹ Although these somewhat counterintuitive ups and downs are described as "well known facts," the PSID data actually depict a net *decline* in inequality from 1993 to 2007, which agrees with Gordon but contrasts sharply with both conventional wisdom and the authors' own verbal description of their results.

The authors depict "a few differences between the PSID trends and the CE trends," noting that the "CE data suggests a sharp rise in income inequality in the early 1980s that is not present in the PSID data." The standard deviation of logs for pretax CE income shows rising inequality only in the 1990s, with no net trend from 1999 to 2009, but a rise in 2010.³⁰ What is most remarkable, however, is that their graph of the CE income data suggests a very sharp *drop* in inequality from 1984 to 1989. This is even clearer in the raw CE data for after-tax income.

According to the CE, after-tax (nominal) income of the poorest quintile (fifth) rose by 73.1 percent from 1984 to 1989 -- more than twice as fast as the 34.2 percent gain for the top quintile. As a result, the 80/20 ratio of top to bottom income – a simple measure of the gap

²⁹ The impression of declining inequality from 1996 to 2000 (when CBO or CPS estimates show a surge in top incomes) may be because the PSID was top-coded before 2007, capital gains realizations and the EITC are excluded from PSID income, and the SDL measure of inequality is heavily affected by transfers to low-incomes.

³⁰ The CE graph shows income inequality falling sharply during the late 1980s, rising sharply during the 1990s and remaining flat from 1999 to 2009. Yet the authors conclude that income inequality "increased during the 80s, leveled off during the 1990s, and increased further in the 2000s."

between rich and poor – dropped quite dramatically during the Reagan years from 15.9 to 11.8. That certainly contradicts mainstream opinion, but also most other data sources. During the Clinton years from 1993 to 1999, by contrast, the same 80/20 ratio rose from 12.0 to 14.0, indicating rising inequality.

It is intriguing that CE data suggests that after-tax income inequality fell sharply from 1984 to 1988, which trumps my own heretofore controversial claim that inequality has been relatively unchanged only since 1988. But it is difficult to have too much confidence in CE income data, which is based on a small sample, top-coded and partly imputed after 2003. As the CE web page explains, “For users interested only in income information, data published by the Census Bureau of the U.S. Department of Commerce may be a better source of information.” There is a major data break in 2004 when BLS began imputing (estimating) income in an effort to account for notorious underreporting, particularly of low-income transfers (Fisher). Yet the ostensibly improved estimates after 2004 appear peculiarly volatile. Top quintile incomes (after tax) were supposedly unchanged by the recession of 2008, for example, then rose 4.6 percent as recession continued in 2009 and fell 4.7 percent as the economy recovered in 2010.

Still, the CE income data, for all their flaws, do show sharply falling inequality during the 80s and rising inequality during the 1990s, with the data break in 2004 raising serious suspicions about comparing the period from 2000 to 2008. In other words, the CE income data totally contradict the conclusion of Attanasio, Hurst and Pistaferri that, “Both inequality measures (imputed consumption inequality and income inequality) increased during the 80s, leveled off during the 1990s, and increased further in the 2000s.” In fact, that conclusion rests precariously on (1) the exclusion of the highest incomes from PSID income data and (2) the authors’ choice to

exclude consumer spending on health, education and durable goods from the consumption data.

There is no good reason to measure income or consumption in such a selective way.