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6 High-Income Families and the Tax Changes of the 1980s: The Anatomy of Behavioral Response

Joel Slemrod

6.1 Introduction

It is indisputable that many high-income individuals took notice of, and responded to, certain aspects of the tax changes enacted in the 1980s. Indeed, some of the behavioral responses are now the stuff of legend, such as the 96.3 percent increase in capital gains realizations in 1986 compared to 1985, in anticipation of the tax increase on gains scheduled for 1987.

Another striking bit of evidence is the enormous increase in the real income levels of high-income families during the 1980s, both in absolute terms and relative to the real income increases of everyone else. Between 1978 and 1990 the real increase in the reported income of the top 1 percent of tax returns, ranked by income, was 91.6 percent; the real increase for everyone else was 18.9 percent. Over this period, the shares of total income received by the top 1 percent of tax returns rose from 8.8 to 13.4 percent.

In contrast to the capital gains episode, there is much controversy over the causal connection between the increased incomes of high-income families and the tax changes of the 1980s. There is a large literature ascribing the increased income inequality during the decade to technological change, particularly computerization, that increased the relative productivity of skilled labor, and a related literature associating the inequality to increased globalization of the U.S. economy. Even in the absence of any behavioral response at all, the in-

creasing return to highly skilled occupations would cause increasing absolute and relative incomes of the well-to-do.

One of the objectives of this paper is to separate out the nontax and tax explanations of the increased income dispersion. I investigate this issue in section 6.3 of the paper, where I report the results of some aggregate time-series regression analysis. I conclude that, although the nontax demand factors can explain much of the increased concentration of income up to 1985, they are unlikely to be the cause of the spike in concentration of reported incomes that began in 1986.

The second objective of the paper is to characterize what behavioral response did occur by whether it was timing or likely to be permanent, and in particular whether it reflected income creation or income shifting. This characterization has important implications for the revenue, incidence, and efficiency of tax changes, and for the generalizability of the behavioral response of the tax changes of 1980s to future tax changes. This task is attempted in section 6.4.

Before I get to these tasks, I first review, in section 6.2, the existing literature on these issues.

6.2   A Critical Review of Existing Literature

The details of the two major tax bills of the 1980s have been carefully laid out elsewhere (see Steuerle 1992) and need not be repeated here. In brief, the Economic Recovery Tax Act of 1981 (ERTA) lowered the top individual income tax rate from 70 to 50 percent and lowered all other tax rates in three annual steps by a total of about 23 percent (not 23 percentage points). The reduction in the top rate overstates somewhat the decline in the effective marginal tax rate on labor income because since 1970 the maximum tax on earned income had limited the marginal tax rate nominally to 50 percent and effectively to no more than a number in the mid-50s for nearly all high-income workers.

The Tax Reform Act of 1986 (TRA86) contained scores of provisions and cannot be adequately summarized in a sentence or two. Of direct concern to this paper is the reduction of the top rate of individual income tax from 50 to 28 percent, in two steps from 1986 to 1988. The exclusion of 60 percent of long-term capital gains was eliminated, so that the top effective rate on gains increased from 20 percent (40 percent of 50 percent) to 28 percent (100 percent of 28 percent). The basic corporate tax rate was lowered from 46 to 34 percent.

There have been innumerable studies of the impact of the federal tax changes enacted since 1981. In what follows I attempt only a selective review of some of the research which focused on the response of high-income taxpayers. Lindsey (1987) was among the first to point out that the 1981 cut in the top tax rate from 70 to 50 percent coincided with a very large increase in the share of income reported by the top 1 percent of the income distribution to

the Internal Revenue Service (IRS). He argued that the tax cut was a principal cause of this income increase, as it reduced the penalty for earning (to be precise, reporting) taxable income.

Lindsey's methodology did not enable him to distinguish his tax causality hypothesis from an obvious alternative—that, for nontax reasons, pretax income inequality was growing rapidly between his two years of data, 1981 and 1985. To be fair, this alternative hypothesis is more apparent in 1995 than it was at the time that Lindsey was writing. In the past decade there has arisen a voluminous literature documenting an increase in inequality in the United States, much of it summarized in Levy and Murnane (1992). As Karoly (1994) documents, data from the Census Bureau revealed that inequality among families, after reaching a postwar low in 1967–68, began to increase during the 1970s and continued to rise through the 1980s. Although the trend toward greater inequality began in the late 1960s, about two-thirds of the absolute increase in the Gini coefficient between 1968 and 1989 occurred between 1980 and 1989. Although these basic facts are now widely acknowledged, the origin of the increase in inequality remains highly controversial. The two leading explanations, which are not mutually exclusive, are (1) technological change that increased the relative return to skilled labor and (2) increased globalization of the U.S. economy, which increased the effective relative supply of unskilled labor and thereby lowered its relative return.

That inequality began to increase in 1970 does not rule out the tax causality hypothesis. As Feenberg and Poterba (1993) and Slemrod (1994b) point out, the top individual marginal tax rate has been monotonically declining since 1962. Moreover, the approximate starting time of the increase in inequality, 1970, coincides with the introduction of the maximum tax on earned income, which reduced the marginal tax rate on labor income to 50 percent (or slightly more), even though the top marginal tax rate on other income stayed at 70 percent until 1981. Thus, there is an a priori case to be made that the tax causality hypothesis applies much more generally than the period Lindsey analyzes—at least since 1970.

At this point a caveat is in order about the data commonly used to measure income inequality. The Current Population Survey (CPS) data analyzed by Karoly and others features top-coding of income amounts at a constant (although occasionally increased) nominal level. For this reason it cannot measure reliably changes in, for example, the share of income earned by the top 1 percent of the distribution. Standard summary measures of income distributions, in addition to the Gini coefficient, are the income at the 10th, 25th, 50th, 75th, 90th, and 95th percentiles, but none higher than the 95th percentile.

Thus, any conclusion about, say, the share of income earned by the top 1 percent of the population must come from some other data source other than the CPS or, because it suffers from the same sort of problem, the Panel Study of Income Dynamics. Tax researchers have made use of the public-use files of tax return data released by the Statistics of Income (SOI) Division of the IRS.

There is no top-coding problem with this data; in fact, high-income individuals are oversampled in order to produce a very precise picture of their tax returns. The tax return data, though, have their own strengths and weaknesses. They contain virtually no demographic information—marital status, state of residence, and whether the taxpayer or spouse is over age 65 being notable exceptions—and no information on labor supply or labor market status more generally. These data also exclude those households whose income is below the threshold for filing an income tax return.

Summary measures of income inequality based on the tax data show the same patterns as more commonly used data—continually increasing inequality since 1972 of all income, and also of wages and salaries by themselves. Feenberg and Poterba (1993) have recently used tax return data to calculate a time series of inequality measures that focuses on high-income households. Using interpolations of published SOI aggregated data, they calculate the share of adjusted gross income (AGI) and several components of AGI that were received by the top 0.5 percent of households arranged by income. Their plot of the high-income share of AGI is reproduced in the bold line in figure 6.1. After being approximately flat at about 6.0 percent from 1970 to 1981, it begins in 1982 to increase continuously to 7.7 percent in 1985, and then jumps sharply in 1986 to 9.2 percent. There is a slight increase in 1987 to 9.5 percent, then another sharp increase in 1988 to 12.1 percent. After 1988 there is a decline to 11.2 percent in 1989 and 10.9 percent in 1990.

Feenberg and Poterba also report that, among the top income earners, the largest increase in share is attributed to the top 0.2 percent. This fact, they assert, "casts doubt on the view that the factors responsible for the increase in reported incomes among high-income taxpayers, especially in the 1986–1988 period, are the same factors that were responsible for the widening of the wage distribution over a longer time period" (1993, 161). Rather, they argue, "it reflect[s] other factors including a tax-induced change in the incentives that high-income households face for *reporting* taxable income" (170, emphasis added). They add that with their data "it is impossible to determine how much of the increase in reported income was due to changes in tax avoidance behavior; how much was due to changes in real behavior such as labor supply; and how much was due to changing returns to the factors, labor and capital, that high-income taxpayers own" (163).

The Feenberg-Poterba calculations refer to the share of AGI received by the rich, despite the fact that the definition of AGI changed during this period.[1] A change in the definition of AGI has two distinct effects on a share measure of income concentration. These two distinct effects are nicely illustrated using the most important set of changes in AGI definition over the period in question—those pertaining to long-term capital gains. From 1970 to 1978 half of realized long-term capital gains were included in AGI. The Tax Reform Act of

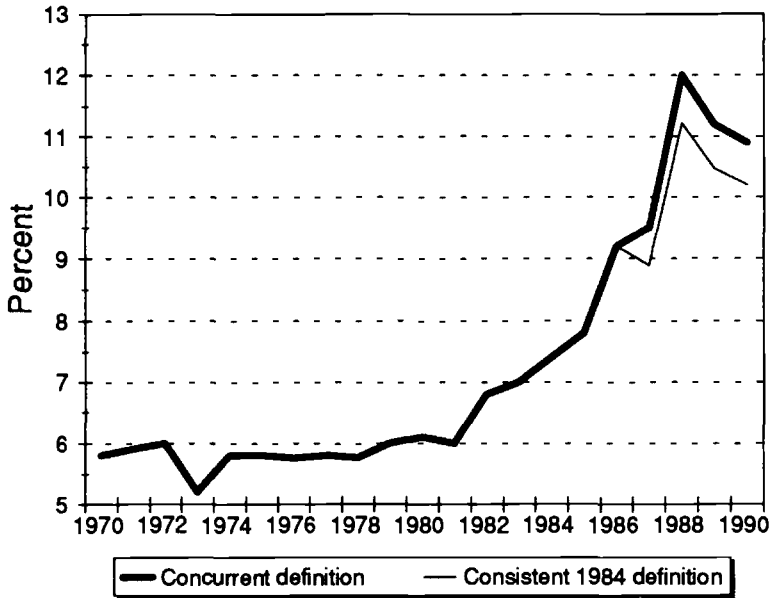1. This is noted in footnote 5 of Feenberg and Poterba (1993).

Fig. 6.1   Share of AGI received by top 0.5 percent of taxpayers, adjusted for consistency with 1984 definition of AGI
Sources: Feenberg and Poterba (1993) and author's calculations based on 1990 Individual Tax Model file from the SOI Division of the IRS.

1978 lowered the fraction included in AGI to 40 percent for gains realized after October 31, 1978. TRA86 eliminated the exclusion altogether, so that for gains realized as of January 1, 1987, all of realized long-term gains were included in AGI.

Consider the change in AGI definition made as of 1987. As long as income is measured by AGI, including 100 rather than 40 percent of capital gains in AGI increases the apparent concentration of income because capital gains are heavily concentrated among high-income households. It also changes the ranking of taxpayers, pushing toward the top of the income distribution those households whose income consists of a relatively high share of capital gains. This reranking makes the apparent share of capital gains received by high-income households increase and the share of other sources of income increase or decline depending on the cross-sectional correlation of that source with capital gains.

In order to investigate the empirical importance of these effects, I first recalculate the top income shares of AGI, wages and salaries, and capital gains in 1984 and 1990, using in each case both the 1984 and 1990 definitions of AGI. These results are shown in table 6.1, calculated separately for the top 1 percent of households ranked by AGI and (approximately) the top 0.5 percent, the Feenberg-Poterba cutoff. Consider, as an example, the AGI figures in columns

Table 6.1   **High-Income Shares of Income, Wages and Salaries, and Capital Gains Using Concurrent and Consistent AGI Definitions**

	Top 1 Percent		Top 0.5 Percent	
	1984 Definition (1)	1990 Definition (2)	1984 Definition (3)	1990 Definition (4)
AGI				
1984 Data	9.9	11.5	7.4	8.9
1990 Data	13.4	14.2	10.1	10.8
Wages and salaries				
1984 Data	6.5	6.2	4.5	4.2
1990 Data	8.7	8.6	6.1	6.0
Capital gains				
1984 Data	58.1	65.6	52.2	58.4
1990 Data	56.2	62.7	49.1	54.8

Source: Author's tabulations using 1984 and 1990 Individual Tax Model data from the SOI Division of the IRS. Not all the relevant changes in the definition of AGI were, or could be, accounted for. In converting 1984 data to the 1990 definition, the following items were accounted for: dividends exclusion, excluded long-term capital gains, moving expenses, employee business expenses, and the two-earner deduction in unemployment benefits included in AGI and gross unemployment benefits. In converting the 1990 data to the 1984 definition, the following were accounted for: capital gains, dividend exclusion under 1984 law, unemployment compensation, self-employment tax deduction, self-employed health insurance deduction, unreimbursed employee business expense deduction, and moving expense deduction.

(3) and (4). They show that the share of AGI received by the top 0.5 percent of income earners increased from 7.4 percent in 1984 to 10.8 percent in 1990, using concurrent definitions of income. But a significant fraction of that 3.4 percent increase is an artifact of changing AGI definitions. When one uses a consistent 1990 definition of income to compare concentration, the 3.4 percent increase becomes a 1.9 percent increase; when one uses a consistent 1984 definition, the 3.4 percent increase falls to 2.7 percent.

It is also insightful to compare measures of capital gains concentration using concurrent and consistent definitions of income, as is also done in table 6.1. Consider the numbers based on the top 0.5 percent of income earners. Using a concurrent definition of income, one would conclude that the concentration of capital gains increased by 2.6 percent, from 52.2 to 54.8 percent. In contrast, using a consistent definition reveals that the concentration actually declined over this period by either 3.1 or 3.6 percent, depending on which consistent definition of income is used.

Aggregate time-series data on shares should, for more accurate comparability, be evaluated with a consistent definition. As a first step toward that task, figures 6.1 and 6.2 present the Feenberg-Poterba time series on AGI and capital gains, from 1970 to 1990, and how the post-1986 figures would be adjusted to reflect the definition of income from 1978 to 1986; the adjustments in 1987, 1988, and 1989 are assumed to be proportionately the same as in 1990.
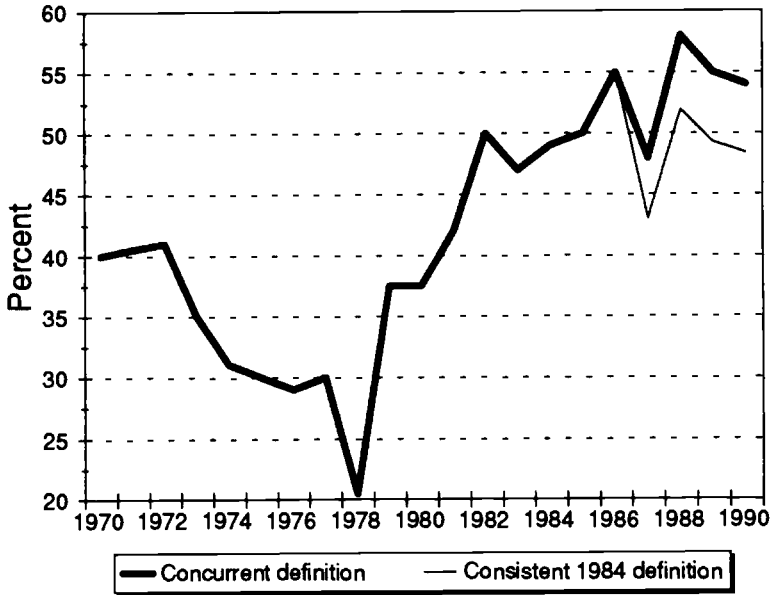
Fig. 6.2 Share of capital gains received by top 0.5 percent of taxpayers, adjusted for consistency with 1984 definition of AGI
Sources: Feenberg and Poterba (1993) and author's calculations based on 1990 Individual Tax Model file from the SOI Division of the IRS.

Adjusting the data in this way does not change the impression that the measured concentration of AGI increased sharply between 1981 and 1990; the magnitude of the increase is, though, smaller than what one would estimate using concurrent income definitions. Using consistent income definitions also clarifies the temporary upward blip of the concentration of capital gains in 1986, due to extraordinary capital gains realizations in anticipation of the tax increase scheduled for 1987. With a consistent definition, the 1986 blip becomes much more apparent, and the post-1986 era is characterized by a concentration that is no higher than the 1982–85 period.

I have argued for the importance of using consistent income definitions when doing cross-year comparisons of the distribution of income and income components. However, even when consistent income definitions are employed, there are important conceptual problems with comparing cross-sectional slices of income distributions because one is comparing different groups of households across years.

The potential problem due to rank reversals can be illustrated by an extreme example. Imagine that all of these taxpayers in the top 1 percent of the income distribution in 1990 were below the 1 percent cutoff in 1984, with marginal tax rates below 28 percent, and furthermore, as follows from the above, that all of the households in the top 1 percent in 1984, who had tax rates of 50

percent, were below the top 1 percent cutoff in 1990, with tax rates of 28 percent or lower. In this case it would certainly not be valid to conclude, from observing that the top 1 percent in 1990 received a larger share of total income than did the top 1 percent in 1984, that the reduction in the top tax rate "caused taxpayers to report more income." In this hypothetical example those households that experienced the largest increase in income had an increase in their tax rate.

There is, in fact, considerable year-to-year movement within the top income class. Slemrod (1992) reports that in the 1980s, between 28 and 40 percent of the households in the top 1 percent were new from one year to the next. Another reason to be wary of comparing cross sections of high-income households is that, in a critical dimension, this group is bimodal. In particular, as Slemrod (1994b) discusses, the distribution of the ratio of wages and salaries to total income is bimodal, with local maxima at 0–10 and 90–100 percent and a minimum at 50–60 percent. This reflects the fact that the affluent consist of both retired households, whose income is almost entirely the returns from their accumulated wealth, and well-compensated people in their working years.

There is some intriguing evidence that the set of high-income taxpayers in 1990 in fact has a very different demographic makeup than the set in 1984. According to tax return data, the fraction of tax-paying units containing at least one person aged 65 or over fell dramatically over this period, from 22.4 to 14.1 percent for the top 0.5 percent of the population, and from 20.5 to 13.4 percent for the top 1 percent; over the same period for all taxpayers the fraction rose only very slightly, from 12.0 to 12.1 percent.[2] The same demographic pattern is observed in comparing the 1983 and 1989 data from the Survey of Consumer Finances. Apparently in the highest income group the retired, coupon-clipping rentiers were to a large extent displaced by high-earning people between 1984 and 1990. Thus, the reasons to be cautious about comparing cross-sectional slices are not only hypothetical but quantitatively significant.

The potential hazards of inferring behavioral response from comparing the behavior of two distinct groups of taxpayers can be mitigated by analyzing longitudinal, or panel, data on an unchanging set of taxpayers. This has been done in the work of Feldstein (1993) and Auten and Carroll (1994).

Feldstein (1993) investigates the high-income response to TRA86 by making use of the Ernst & Young/University of Michigan tax return panel data. This panel, based on SOI tax return data, follows the same set of taxpayers from 1979 to 1988. Feldstein analyzed married couples for whom both 1985 and 1988 tax returns were available. After making several adjustments to the data, he concludes that the 1985–88 percentage increase in various measures of income, particularly taxable income excluding capital gains, was much higher, compared to the rest of the population, for those high-income groups whose marginal tax rate was reduced the most. Based on this finding, he estimates that the elasticity of taxable income with respect to the marginal tax rate is

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2. The ranking of households is based on a 1984 definition of AGI.

very high and suggests that an increase in the top marginal tax rate will raise little, if any, revenue.

A few caveats must be attached to this finding. First, because the panel data is not stratified, it contains only a very small number of high-income observations. For example, the top income class on which Feldstein focuses most of his attention (nonelderly couples in the 49–50 percent tax brackets in 1985) contains only 57 observations. Because of the wide variation among this group in financial situation and in income changes over time, generalizing from such a small sample is problematic.

This difficulty is illustrated by taking a closer look at the exercise reported in Feldstein. The most striking result is a 71.6 percent increase in the taxable income of those in the top income class between 1985 and 1988, after subtracting out capital gains and indexing for per capita personal income growth. Of the total increase in this measure of income, nearly three-quarters was accounted for by an increase in two sources of income which are reported on schedule E—partnerships and S-corporations. One taxpayer, whose S-corporation income increased from about $5,000 in 1985 to over $3 million by 1988, was responsible for 47.5 percent of this growth in net partnership and S-corporation income. Just four taxpayers accounted for 87.0 percent of the increase. As the analysis of stratified cross-sectional data in section 6.4 will make clear, changes in S-corporation and partnership income were in fact probably an important part of the income gains of the affluent, although they did not dominate to the extent that this panel data, dominated by a single observation, would suggest.

The importance of S-corporation and partnership income in Feldstein's results also suggests caution regarding the interpretation that lower marginal tax rates induced the rich to engage in more real-income-producing activities. The tremendous growth in S-corporation income may simply represent a shift from C to S status among corporations, rather than the creation of new income that would not otherwise have been taxed.[3] Moreover, as Feldstein notes, some of the large reduction in partnership losses was probably due to new passive loss limitation rules rather than the reduction in rates. Other non-marginal-rate fac-

3. As discussed in detail later, TRA86 reduced the top individual tax rate below the top corporate rate, repealed the "General Utilities doctrine" (which increased the tax burden on sales of C-corporation assets), and instituted a tough alternative minimum tax for C-corporations. This made S-corporations (which face only the individual income tax) more attractive than C-corporations (which face the corporate profits tax) for many small business owners. Thus, a large increase in S-corporation income after 1986 probably represents a shifting of taxable income from the corporate to individual tax systems, rather than growth of companies that already held S status before 1986. Feldstein attempted to avoid this problem by excluding from his sample all taxpayers who reported S-corporation income in 1988 but *not* in 1985. However, the one taxpayer remaining in the sample who accounted for almost all of the growth in S-corporation income had only a nominal amount of S-corporation income in 1985 and over $3 million in 1988. Although this may represent an incredible success story for a small S-corporation of which the taxpayer was a shareholder in 1985, it is also possible that this taxpayer was also a shareholder of at least one already-large C-corporation that switched to S status between 1985 and 1988. In any event, it is difficult to make generalizations about high-income taxpayers from the behavior of any one household.

tors, such as elimination or limitation of some types of itemized deductions, also contributed to the growth in taxable income among the rich.

Auten and Carroll (1994) make use of a much larger longitudinal data set, consisting of 14,102 tax returns for the same set of taxpayers for 1985 and 1989. The sample observations are stratified, so that high-income taxpayers are oversampled. Thus, there are 4,387 taxpayers in the 49–50 percent tax rate brackets in 1985; this compares to 57 in Feldstein's panel. They regress the change in AGI between 1984 and 1989 against the change in marginal tax rate and, in some specifications, some demographic variables. They also control for occupation, as a proxy for demand-side, nontax factors that affected the change in compensation over this period. They conclude that changes in tax rates appear to be an important determinant of the income growth of the late 1980s, although the results are somewhat sensitive to the choice of sample and weighting. They caution, as I will later in the paper, that their results do not necessarily indicate that tax-induced income growth yielded a proportional rise in total tax revenues; because of the potential for shifting of income, that depends on the source of the income change.

6.3   Aggregate Time-Series Analysis of Trends in Income Inequality

Many have suggested that the changes in the pattern of income tax rates was a key causal factor behind the data shown in figures 6.1 and 6.2; they argue that the increased concentration reflects a larger behavioral response of high-income individuals due to the larger drop in their marginal tax rates. There is, though, a competing nontax explanation for the trend of increased concentration of income that began about 1970 but accelerated about 1980—a change in the structure of wage rates due to an increase in the premium on education. Between 1979 and 1988 there was a 15 percent increase in the average wage of a college graduate relative to that of a high school graduate; the high-school/elementary-school wage differential also increased substantially. A large literature in labor economics has documented the increasing inequality in pretax earnings and has debated the underlying causes of this phenomenon; analysis of the tax changes over this period has been conspicuously absent from this debate. Instead the debate has centered around technological changes which favor skilled over unskilled labor, the increased integration into the world economy of countries with abundant unskilled labor, and changes in the U.S. supply of skilled versus unskilled workers.

Virtually all of the empirical research on trends in inequality has been based on data that does not include the high-income households that are the subject of this paper. Yet it is arguable that the same factors which have caused the increasing dispersion of income in the lower 99 percentiles are also relevant to the relative earnings of the high-income households in the top percentile. For this reason it is important in an empirical analysis of the effect of taxes to control for the exogenous nontax factors that have been affecting the distribution of income.

In what follows I describe a series of multivariate regression analyses of the time-series evidence on high-income shares of income and sources of income. The objective of this exercise is to identify the permanent and temporary impact of changes in the tax structure and anticipated changes in that structure, holding constant some nontax influences.[4] By separately performing the regressions for the years up to 1986 and for the years up to 1990, I also investigate whether there was a change in the structure of the model in 1986.

The dependent variables for the regressions are the shares of AGI and four sources of income—wages and salaries, interest, dividends, and capital gains[5]—received by the top 0.5 percent of households for 1954 through 1990. The data up to 1986 are taken directly from Feenberg and Poterba (1993). The data from 1987 through 1990 are based on Feenberg and Poterba's but are adjusted to correspond to a pre-TRA86 definition of AGI, for reasons described in section 6.2.[6]

Given the small number of observations in this analysis, a critical challenge is to identify the best small set of tax variables that captures the important aspects of a given year's tax environment. Because the focus of this inquiry is the behavior of the high-income group relative to the rest of the population, I construct a measure of the difference between a weighted-average marginal tax rate on labor income for the top 0.5 percent of taxpayers and the weighted-average marginal rate on all other tax return filers, using AGI as the weighting factor. This is denoted TL.[7]

Included as regressors are the current rate, the expected one-year-ahead change (measured by the actual change), and the change from the previous year. The maximum marginal tax rate on long-term capital gains (denoted TC) is also included, although not compared to the average rate;[8] this is also entered in concurrent, expected change, and lagged change form. The standard corporation income tax rate is not included as an explanatory variable, on the grounds that over this period it changed substantially only once, by virtue of

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4. These regressions should be interpreted as the reduced form of a structural model in which the own inequality of each income source depends on the dispersion in how it is taxed and, via rank reversals, in which each income source's concentration as ranked by income depends on all other sources' inequality and the shares of each source in total income. Thus the right-hand side of each reduced-form equation ought to contain the set of all right-hand variables in the structural equations.

5. Unfortunately, the data do not permit an analysis over this period of the concentration of business income.

6. The adjustment is carried out as follows. The 1990 tax return data are sorted by the pre-TRA86 definition of adjusted income, and the high-income shares are recalculated. The Feenberg-Poterba shares for 1987, 1988, and 1989 are then multiplied by the ratio of recalculated 1990 share to the Feenberg-Poterba 1990 share. This procedure is carried out separately for each of the five shares.

7. The construction of TL and the other variables are described in more detail in a data appendix available from the author.

8. For 1954–78, the rate is taken from the first row in table 1.13 of U.S. Department of Treasury (1985). This measure takes into account the provisions that would commonly affect very high income taxpayers, including the alternative minimum tax and temporary surcharges in 1968, 1969, and 1970. For years after 1978, the top rate is taken from annual *Statistics of Income* publications.

TRA86; for this reason this variable would likely pick up much of the explanatory power of all of the TRA86-induced changes. I return to this issue below.

As discussed above, many economists accept that there were economic forces, unrelated to the tax system, which over this period caused increased inequality in the return to labor. The issue at hand is how to statistically control for these factors. One approach would be to include measures of the alleged causes of the earnings dispersion; for example, technological change could be proxied by the extent of computerization, globalization by the import share of GNP, and the cohort effect by the fraction of college-educated youth. I have chosen, however, to adopt a more direct approach to this problem by using as a control a measure of the dispersion of earnings in the population as a whole. Specifically, I use the difference between the logarithm of the 90th percentile and the logarithm of the 10th percentile of male weekly wages (denoted WGINEQ), based on census data, as reported in Katz and Murphy (1992), updated past 1987 using data reported by Karoly (1993), and extended before 1963 using data from Goldin and Margo (1992). Because this index is not affected by changes in the share of wages going to the very affluent, it is not endogenous. It does, however, arguably reflect the same economic forces that would affect the return to the labor of the most affluent.

As additional explanatory variables I include the real level of stock prices (RSTPR), to pick up its impact on capital gains realization behavior, and the average nominal corporate AAA bond rate (AAARATE), to account for its influence on the receipt of taxable interest. I experimented with the prime-age male unemployment rate as a business-cycle indicator, but it was not an important factor and is not included in the regressions reported here.

The results of the regression analyses are presented in table 6.2. In discussing them, I will refer to the effect of the concurrent tax rate as the permanent effect and to the effect of the expected future and lagged tax changes as timing effects. Several tentative conclusions can be drawn from table 6.2. One striking conclusion is the large impact of capital gains tax on the share of capital gains of the affluent. Using either the series ending in 1985 or in 1990, the results suggest that an 8 percentage point increase in the top capital gains tax rate (the increase due to TRA86) would permanently lower the high-income share of capital gains by about 9 or 10 percentage points; if the increase were to be expected in advance, a 6 percentage point *increase* in the high-income share would occur the year before the increase went into effect. The ultimate impact of the capital gains effect on the high-income share of AGI is, however, dampened substantially; it moves only about a tenth as much as the capital gains share itself.

I turn now to the core issue of the relative importance of tax effects and demand-side effects on the increase in inequality. Consider the determinants of the high-income share of total wages and salaries. According to the regression analyses, the relative contributions of the demand-side effect, represented by WGINEQ, and the permanent tax effect, represented by TL_t, depend entirely

Table 6.2   Time-Series Regression Analyses of the High-Income Shares of AGI, Wages and Salaries, Capital Gains, Interest, and Dividends, 1954–85 and 1954–90

Independent Variables	AGI		Wages and Salaries		Capital Gains		Interest		Dividends	
	1954–85	1954–90	1954–85	1954–90	1954–85	1954–90	1954–85	1954–90	1954–85	1954–90
TL_t	−0.00565	−0.190*	−0.0266	−0.126*	0.484	−0.277	0.312	−0.459*	0.433*	0.124
	(0.0471)	(0.0253)	(0.0179)	(0.0111)	(0.393)	(0.148)	(0.180)	(0.0832)	(0.219)	(0.0915)
$TL_{t+1} - TL_t$	0.0502	−0.0672	0.0213	−0.0571*	0.549	0.281	0.182	−0.263*	0.205	0.207
	(0.0445)	(0.0356)	(0.0170)	(0.0156)	(0.373)	(0.209)	(0.170)	(0.117)	(0.207)	(0.129)
$TL_t - TL_{t-1}$	0.0491	0.0434	0.0303*	0.0267	−0.224	−0.134	0.0193	0.148	−0.318*	−0.174
	(0.0254)	(0.0338)	(0.0112)	(0.0148)	(0.246)	(0.198)	(0.112)	(0.111)	(0.137)	(0.122)
TC_t	−0.108*	−0.0806*	−0.0154*	−0.00385	−1.20*	−1.10*	−0.265*	−0.182*	−0.193*	−0.139
	(0.0139)	(0.0196)	(0.00529)	(0.00862)	(0.116)	(0.115)	(0.0531)	(0.0645)	(0.064)	(0.0710)
$TC_{t+1} - TC_t$	0.0294*	0.0450	−0.0195	−0.0280	0.859*	0.823*	0.224	0.126	−0.0725	0.0968
	(0.0328)	(0.0423)	(0.0124)	(0.0186)	(0.274)	(0.248)	(0.125)	(0.139)	(0.153)	(0.153)
$TC_t - TC_{t-1}$	0.0813	0.0500	−0.00988	0.00582	0.516	0.239	0.258	0.245	0.00562	−0.297
	(0.0409)	(0.0459)	(0.0156)	(0.0202)	(0.342)	(0.269)	(0.156)	(0.151)	(0.190)	(0.166)
WGINEQ	0.955	−2.030	2.406*	−0.227	12.5	−6.74	−2.58	−25.1*	−19.1	−19.9
	(2.33)	(3.712)	(0.889)	(1.19)	(19.5)	(15.9)	(8.92)	(8.92)	(10.9)	(9.82)
RSTPR	−0.00705*	−0.0109*	−0.00683*	−0.00900*	0.0416*	0.0306	−0.0463*	−0.0596*	−0.00575	−0.0109
	(0.00232)	(0.00317)	(0.000884)	(0.00139)	(0.0194)	(0.0186)	(0.00888)	(0.104)	(0.0108)	(0.0115)
AAARATE	−0.0895	−0.291*	0.0227	−0.0584*	0.424	−0.217	−0.149	−0.704*	−0.774*	−1.20
	(0.0537)	(0.0585)	(0.0205)	(0.0257)	(0.449)	(0.343)	(0.205)	(0.193)	(0.250)	(2.12)
Intercept	10.2*	21.5*	2.19	9.47*	32.9	86.5*	18.0	76.1*	58.2*	−12.5
	(4.39)	(4.14)	(1.67)	(1.82)	(36.7)	(24.3)	(16.8)	(13.6)	(20.5)	(15.0)
R^2	0.829	0.902	0.965	0.969	0.879	0.870	0.876	0.780	0.958	0.950
D-W	1.612	1.458	1.739	1.519	1.194	1.242	0.949	0.876	1.659	2.033

Note: Numbers in parentheses are standard errors.

*Significance at the 95 percent level of confidence.

on the weight placed on the experience of 1986–90. Based on the regression for the period 1954–85, the demand-side effect dominates. For example, of the 1.3 percentage point increase in the high-income share of wages between 1973 and 1985, 0.53 can be associated with the increase in WGINEQ (a 0.22 increase in WGINEQ multiplied by the estimated coefficient of 2.406), and only 0.26 can be associated with TL_t (a 9.8 decline in TL_t multiplied by an estimated coefficient of -0.0266). However, the regression using data through 1990 tells a completely different story.[9] Based on this regression, one would conclude that almost the entire increase in the high-income share of wages can be associated with the decline in TL_t, leaving no role for WGINEQ. A similar story can be told about the high-income share of AGI, although in this case the wage inequality variable is not as successful in explaining the pre-TRA86 variation.[10]

The proximate cause for the divergence in results is clear. The 1985–90 increase in the high-income share of wages exceeded the increase over the entire period of 1973–85. Yet over this period the measure of demand-side effects, the difference between the log of earnings at the 90th percentile and 10th percentile, actually fell after rising continuously for two decades, while the tax rate measure continued its downward trend, having its steepest decline of any comparable period.

These findings are open to two, not mutually exclusive, interpretations. One interpretation is that there was a fundamental break in the nature of the demand-side factor, so that up until 1985 its impact on the relative return to high-income occupations was well proxied by the changes in the overall distribution of earnings but that after 1985 the relative return to the 99.5th percentile and above continued to increase even though the relative return to the 90th percentile did not. A second possible interpretation is that the observed changes in high-income shares between 1986 and 1990 were primarily tax driven but, except for the capital gains response, were of a fundamentally different nature and/or magnitude than what had been observed until 1986.

Although I cannot rule out the first explanation, I do not explore it further in this paper. Instead, in the following section I take a closer look at the high-income behavioral response to TRA86, with the goal of learning more about its nature.

6.4   A Closer Look at the Income Gains of the Affluent: Income Creation versus Income Shifting

Table 6.3 allows a closer look at the composition of the high-income real income increases in the late 1980s by comparing the top 1.0 and 0.5 percent

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9. A Chow predictive test (Fisher 1970) rejects the null hypotheses that the set of coefficients is the same in the pre- and post-TRA86 periods.

10. Note, though, that many of the coefficient estimates shown in table 6.2 are sensitive to the inclusion of the variable AAARATE; the qualitative conclusions discussed here are not.

of income earners in 1984 and 1990. Columns (5)–(8) reveal that the total increase in real reported income among the top 0.5 percent of taxpayers (in 1990 dollars) from 1984 to 1990 was $137.5 billion. Three sources accounted for 76.8 percent of the total increase. Wages and salaries accounted for $57.0 billion, or 41.5 percent of the total income. Small business corporation income (subchapter S corporations) accounted for $27.2 billion, or 19.8 percent of the total increase. Partnership income accounted for $21.3 billion, or 15.3 percent of the total increase.

Auten and Carroll (1994) report, using their panel data set, that of the total change in *nominal* AGI of their highest income group (those subject to the 49 or 50 percent rate in 1985), only 29.1 percent was accounted for by the increase in wages and salaries. More than that was due to the combination of S-corporation income, which by itself was 25.1 percent of the increase, and part-nership income, which accounted for 12.1 percent of the increase. Strikingly, they report that the real wages and salaries of the highest income group increased by only 4.9 percent between 1985 and 1989, compared to 161.8 percent for income from S-corporations, and 351.4 percent for income from part-nerships.[11] Because both the comparative cross-sectional and panel data indicate that the same three sources of income dominated the income gains of the rich over this period, I devote the rest of this section to further analysis of their trends.

6.4.1   Subchapter S Income

There are clear tax reasons for the $27.2 billion increase in the reported income of the affluent from S-corporations. The top individual income tax rate was cut by 22 percentage points, compared to a 12 point cut in the corporation income tax rate. By 1988 the top individual income tax rate was actually lower than the corporate tax rate for the first time since the introduction of the federal income tax. Because S-corporations are not subject to corporate income tax and are taxed essentially as partnerships, the tax penalty for high-income own-ers from operating as a corporation widened substantially upon the passage of TRA86.

There is substantial evidence of a large shift in activity from C-corporations to S-corporations. For one thing, the number of corporations filing to obtain S status increased dramatically at the time of enactment.[12] In the first six months of 1987, there were 375,000 filings, compared to a six-month change of 150,000 from 1983 to 1986.

Figure 6.3 shows that the relative number of C- and S-corporation returns

11. Note that, because Auten and Carroll group taxpayers by their marginal tax rate in 1985, the subsequent income growth is subject to downward bias due to the presence of transitory income and regression toward the mean.

12. These filings could be either new corporations or C-corporations changing status. Nelson (1993) reports that in 1989, 69.5 percent of the assets of new S-corporations were held by "conver-sions," defined as a firm electing S status more than one year after its date of incorporation.

Table 6.3   **Reported Personal Income of High-Income Taxpayers, 1984 and 1990 (1990 dollars)**

	Top 1 Percent				Top 0.5 Percent			
Income	1984 (1)	1990 (2)	Increase (3)	Percentage of Total Increase (4)	1984 (5)	1990 (6)	Increase (7)	Percentage of Total Increase (8)
AGI	265.6	445.9	180.2	100.0	198.4	335.8	137.5	100.0
Wages and salaries	145.9	226.9	80.9	44.9	101.6	158.6	57.0	41.5
Dividends	20.8	27.1	6.3	3.5	16.9	22.3	5.4	3.9
Interest	28.1	44.3	16.2	9.0	21.1	35.5	14.4	10.4
Business income	14.6	31.4	16.8	9.3	9.0	20.3	11.2	8.2
Capital gains	39.8	26.5	−13.3	−7.4	35.7	23.2	−12.6	9.1
Partnership	−0.5	26.2	26.7	14.8	−1.2	20.1	21.3	15.5
S-corporation income	10.3	40.0	29.7	16.5	9.6	36.9	27.2	19.8

Source: Author's tabulations using 1984 and 1990 Individual Tax Model data from the SOI Division of the IRS. The ranking of households and definitions of income are based on the 1984 definition of AGI. Discrepancies among cols. (1)–(3) and (5)–(7) are due to rounding error.

has changed dramatically since 1986. The number of C-returns, which had increased at an average rate of 3.5 percent in the two decades from 1965 to 1985, actually started to decrease after 1986, and fell by over 450,000 from 1986 to 1990. At the same time S-corporation returns more than doubled from 1985 to 1990. S-corporation returns, which represented 19 percent of all corporation returns in 1981 and 22 percent by 1985, had surged to 42 percent of all returns by 1990. The share of total corporate assets in S form has also nearly doubled since the early 1980s although it is still only slightly above 4 percent.[13]

As Nelson (1993) reports, much of the increase in S-corporation activity was undertaken by high-income individuals. Whereas in 1985, 56 percent of the positive income went to taxpayers with income over $200,000, in 1990 the figure was 71 percent. In 1985, of this group 23.9 percent had some S-corporation income or loss; in 1990 this percentage had risen to 31.7.

Of most direct interest is the change in where net income is reported. The net income of S-corporations has increased sharply since TRA86, from $8.3 billion in 1986 to $32.3 billion in 1990.

Non-rate-related tax changes may also have contributed to the shift from C-to S-corporations. In particular, the TRA86 repeal of the General Utilities doctrine, which allowed corporations to avoid two levels of capital gains tax on asset sales, made C-corporations a relatively less attractive organizational form. The expanded alternative minimum tax on corporations also had such an effect.

13. See Gordon and MacKie-Mason (1994) for an empirical analysis of how tax factors have affected the relative size of the corporate and noncorporate business sectors.
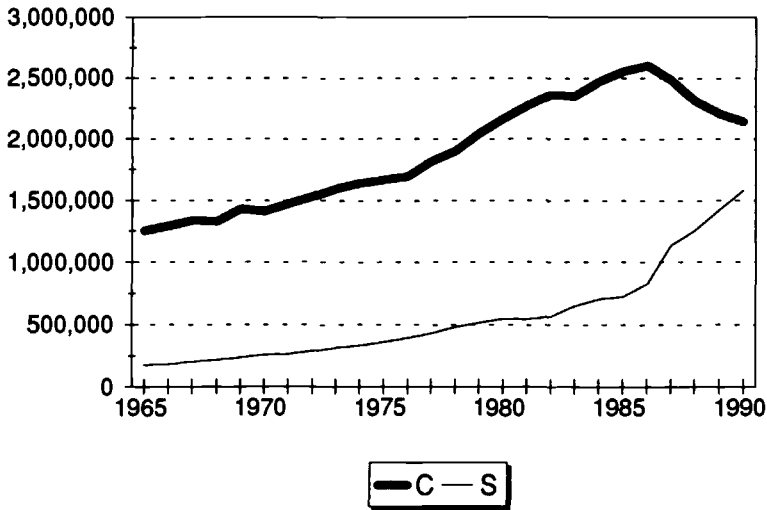
Fig. 6.3 Returns of C- and S-corporations
Source: IRS *Statistics of Income: Corporation Income Tax Returns.*

6.4.2 Partnerships

The TRA86 reversal of the relative position of the top corporate and individual marginal tax rates also increased the attractiveness of partnerships (and sole proprietorships) relative to C-corporations. As in the case of S-corporations, though, a potentially important non-rate-related change occurred—the passive loss limitations. These limitations disallowed, under certain conditions, individual taxpayers' deductions from taxable income of business losses defined as originating in "passive activities" (where the individual does not materially participate in the active conduct of the trade or business on a regular, continuous, or material basis). Before TRA86, most passive losses were allocated to the partners in limited partnerships. The limitations were phased in, beginning in 1987 and ending in 1991.[14]

As Petska and Wilson (1994) document, the total number of partnerships, which had increased by 23 percent between 1980 and 1986, started to decline markedly in 1987, and by 1990 was 9 percent lower than in 1986. Aggregate net income of partnerships averaged −$7.1 billion between 1981 and 1986 but had risen to +$16.6 billion by 1990.

6.4.3 Wages and Salaries

The comparative cross-sectional evidence, and to a much lesser extent the panel data, suggest that increased wages and salaries are an important part

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14. See Samwick (chap. 7 in this volume) for an attempt to empirically identify how much of the change in reported partnership income is due to the change in tax rates and how much is due to the passive loss limitation rules.

of the high-income behavioral response. Part of the cross-sectional story is undoubtedly that the demographic makeup of the rich changed significantly from 1984 to 1990. This demographic change is reflected by the sharp drop in the fraction of rich households who are over age 65, from 23.4 to 14.1 percent for the top 0.5 percent of taxpayers. The mere fact that fewer of the rich are likely to be retired in 1990 will account for some amount of increased wages and salaries. There is also likely to be a rank reversal effect in which, as net partnership and S-income surges, it brings into the top income group more people who also have relatively high wages and salaries.

The preceding are cautions about inferring real behavioral changes from comparing cross-sectional slices of an income distribution. Leaving this issue aside, the key question is how much of the observed relative increase in labor income is explained by increased relative pretax rates of compensation, increased labor supply, or by some sort of income shifting.

The first explanation cannot be ruled out. However, as discussed in section 6.3, if this occurred, it occurred in the face of a decline in the dispersion of earnings between the 10th and 90th percentile of earners.

Eissa (1995) presents evidence, based on comparing cross-sectional slices of the pre- and post-TRA86 CPS, that the labor supply of those married women facing sharp marginal tax declines due to TRA86 did in fact increase their labor supply relative to other married women. The labor income of married women, though, constitutes a small fraction of the total labor income of the top 1 percent of households. Moreover, the labor supply literature speaks clearly that this is the group whose labor supply responsiveness is larger than that of any other, so that one cannot generalize from their behavior about the labor supply behavior of all members of affluent households. More definitive statements about the magnitude of labor supply response will have to await future research.

Another intriguing, and unanswered question is, To what extent is the increase in the wages and salaries of the rich itself a reflection of income shifting? For example, the TRA86 reduction in the top rate of tax on ordinary income made it relatively less attractive to receive compensation in the form of untaxed fringe benefits and relatively more attractive to receive taxed monetary compensation. The elimination of the tax rate differential between ordinary income and long-term capital gains eliminated the incentive to repackage labor income into capital gains, including the incentive to receive stock options as part of one's compensation package. These are examples of changes in the form of one's labor income payments that would show up in concurrent tax return data as an increase in labor income. More generally, the inversion of the top corporate and personal tax rates also eliminated the incentive to retain labor income within the corporation, so that one would expect that after TRA86 there would be an increase in payments from the corporations to individuals, payments that reflect neither a change in labor supply nor in the present value of labor compensation. The fact that the increase in the reported labor income of

affluent individuals has been paralleled by a secular decrease in reported corporate profits is causal evidence for this income-shifting hypothesis, but there is as of yet no evidence making the causal link anything more than speculative.

6.4.4   Implications for the Regression Analyses

The preceding discussions make clear that much of the post-TRA86 increase in the income reported by high-income households on their personal tax returns was probably not due to a standard (e.g., increased labor supply) behavioral response to lower marginal tax rates. Instead there was a great deal of income shifting and changed reporting due to unique aspects of TRA86 that did not accompany previous marginal tax rate changes and are not likely to accompany future changes. According to this argument, the sharp divergence in the regression results when the post-TRA86 era is included occurs because there was indeed a new (tax) structure instituted then, one that provided very different incentives and opportunities for high-income individuals to report income (and losses) via the individual income tax system. The results do not imply that taxpayer response to marginal tax rates, holding structure constant, was different (in particular, higher) after TRA86. Instead the tax rate variables, which changed dramatically at the same time the structure changed, are picking up some of the effect of the structural change.[15]

An intriguing question is, Why, given that many of the structural changes in TRA86 concerned business income, is there a break at 1986 in the equation explaining the high-income share of wages and salaries? One possible answer is that there is a positive cross-household correlation between the share of total income that is net business income and the share that is wages and salaries. Given this correlation, any exogenous increase in the concentration of reported business income will, by pulling more households with business income into the top 0.5 percent, also increase the concentration of wages and salaries. The other answer is that there were aspects of TRA86 that affected the incentive to report labor compensation as wages and salaries, as discussed in section 6.4.3. It is unlikely that these two explanations are the whole story, implying that this paper has not completely explained the surge in the concentration of wages and salaries after TRA86.

6.5   Conclusions

The relative income gains of the affluent after the passage of TRA86 are overstated by comparing cross-sectional slices using concurrent income definitions, but they are large nevertheless. Although an index of the demand-side factors affecting inequality throughout the income distribution can explain much of the increased high-income concentration until 1985, it cannot ade-

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quately explain the post-TRA86 spurt. TRA86 is likely to have been a principal cause of the large increase in the reported personal income of the affluent. A close look at the sources of the post-1986 increases in the reported individual income of high-income households suggests that much of it represents shifting of income—for example, from the corporate tax base to the individual tax base—and not income creation such as additional labor supply.

This distinction is critical because knowing how much the reported individual income of a particular group of people changes in response to a tax change is not a sufficient statistic for evaluating adequately the revenue consequences. This is because the change in reported personal income may be accompanied by offsetting changes in other tax bases, in particular the corporation income tax, and by offsetting changes in reported income in other time periods. Thus, the extent to which changes in reported income are indications of the shifting of income across tax bases or time periods needs to be carefully studied.

The nature of the behavioral response is also critical for evaluating the incidence and efficiency of taxation. In Slemrod (1994a) I argue that the standard tools for measuring these concepts must be modified in the presence of what I call "avoidance," defined as responses to taxation other than altering one's consumption bundle, including income shifting.

References

Auten, Gerald, and Robert Carroll. 1994. Behavior of the affluent and the 1986 Tax Reform Act: The role of demand-side characteristics. Washington, D.C.: Department of Treasury, Office of Tax Analysis, November. Manuscript.

Eissa, Nada. 1995. Taxation and the labor supply of married women: The Tax Reform Act of 1986 as a natural experiment. NBER Working Paper no. 5023. Cambridge, Mass.: National Bureau of Economic Research.

Feenberg, Daniel, and James Poterba. 1993. Income inequality and the incomes of very high income taxpayers. In *Tax policy and the economy,* vol. 7, ed. James Poterba. Cambridge: MIT Press.

Feldstein, Martin. 1993. The effect of marginal tax rates on taxable income: A panel study of the 1986 Tax Reform Act. NBER Working Paper no. 4496. Cambridge, Mass.: National Bureau of Economic Research, October.

Fisher, Frank. 1970. Tests of equality between two sets of coefficients in two linear regressions: An expository note. *Econometrica* 28: 361–66.

Goldin, Claudia, and Robert A. Margo. 1992. The great compression: The wage structure in the United States at mid-century. *Quarterly Journal of Economics* 107 (February): 1–34.

Gordon, Roger, and Jeffrey MacKie-Mason. 1994. How much do taxes discourage incorporation? Ann Arbor: University of Michigan, Department of Economics. Manuscript.

Karoly, Lynn. 1993. The trend in income inequality among families, individuals, and workers in the United States: A twenty-five year perspective. In *Uneven tides: Rising*

inequality in America, ed. S. Danziger and P. Gottschalk. New York: Russell Sage Foundation. Also data updates obtained from the author.
————. 1994. Trends in income inequality: The impact of, and implications for, tax policy. In *Tax progressivity and income inequality,* ed. J. Slemrod. Cambridge: Cambridge University Press.
Katz, Lawrence F., and Kevin M. Murphy. 1992. Changes in relative wages, 1963–1987: Supply and demand factors. *Quarterly Journal of Economics* 107 (February): 35–78.
Levy, Frank, and Richard S. Murnane. 1992. U.S. earnings levels and earnings inequality: A review of recent trends and proposed explanations. *Journal of Economic Literature* 30 (September): 1333–81.
Lindsey, Lawrence. 1987. Estimating the behavioral responses of taxpayers to changes in tax rates, 1982–1984: With implications for the revenue-maximizing tax rate. *Journal of Public Economics* 33 (July): 173–206.
Nelson, Susan C. 1993. S corporations: The record of growth after tax reform. *Journal of S Corporation Taxation* 5 (Fall): 138–61.
Petska, Thomas, and Robert Wilson. 1994. Trends in business structure and activity, 1980–1990. *Statistics of Income Bulletin* 13 (Spring): 27–72.
Slemrod, Joel. 1992. Taxation and inequality: A time-exposure perspective. In *Tax policy and the economy,* vol. 6, ed. James Poterba. Cambridge: MIT Press.
————. 1994a. A general model of the behavioral response to taxation. Ann Arbor: University of Michigan, Department of Economics, September.
————. 1994b. On the high income Laffer curve. In *Tax progressivity and income inequality,* ed. J. Slemrod. Cambridge: Cambridge University Press.
Steuerle, C. Eugene. 1992. *The tax decade: How taxes came to dominate the public agenda.* Washington, D.C.: Urban Institute Press.
U.S. Department of Treasury. Office of Tax Analysis. 1985. *Report to the Congress on the capital gains tax reductions of 1978.* Washington, D.C.: Superintendent of Documents.

Comment   Don Fullerton

Wage inequality has been increasing in recent decades, just as the top personal marginal tax rate has been falling. Some of this increasing wage inequality can be explained by tax changes, if high-income individuals in the top brackets react to rate reduction by working more hours, by working harder to get a higher wage, or even just by rearranging affairs. They might receive more of their income in the form of reportable wages and salaries instead of untaxed fringe benefits, instead of converting that income into capital gains, or even instead of retaining that income within a closely held corporation. On the other hand, some of the increasing inequality may have nontax explanations such as cohort effects, technological change, or increased globalization of the economy. To help inform future policy decisions about the effects of proposed tax

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changes on economic behavior, and on the real distribution of income, we need to know how much of the increasing wage inequality can be attributed to each of these explanations.

Joel Slemrod nicely articulates the problem, summarizes what we know, and adds to that knowledge. In particular, he seeks to separate nontax and tax explanations for this increased wage dispersion and to determine whether behavioral responses are permanent changes to income or only temporary changes in the timing of income. Two aspects of the paper seem especially valuable. First, Slemrod does not try to explain everything from a single narrowly defined model with a single set of assumptions. Instead, he reaches out for any sort of information and then explains how it might apply to this problem. Second, he diverges from previous efforts that use microsimulation models with thousands of individuals in two different years. Instead, he uses overall information about wage inequality and tax rates for 37 years (1954–90) in simple aggregate time-series regressions. This approach can help shed light from a different direction.

To prepare for these regressions, Slemrod first must adjust the available measures of income inequality that show the increase in the percentage of total adjusted gross income (AGI) received by the top 0.5 percent of families ranked by AGI. The problem, pointed out by Slemrod, is that the definition of AGI changed in 1986. When he uses a consistent definition of AGI (either the 1984 definition or the 1988 definition), he shows that income dispersion did not increase quite as much as previously measured. This correction is valuable in itself. Slemrod also discusses the possibility of reranking, with different individuals appearing in the top group in a later year.

The dependent variable is the top 0.5 percent group's share of AGI (or wages and salaries, interest income, dividends, or capital gains). Independent variables include the extra tax rate paid by that group (TL) and the top capital gains rate (TC), both appearing with leads and lags. The rate in the same year indicates permanent effects, the rate in the previous year indicates timing adjustments, and the rate in the following year indicates planning ahead (to the extent that next year's rate explains this year's reported income). The other crucial variable, of course, is the measure of nontax factors. Instead of trying to measure technological change or increased globalization, Slemrod includes the difference between wages in the 90th percentile and the 10th percentile (WGINEQ). The basic idea is that *whatever* nontax factors drive wage inequality between the 90th and 10th percentiles, the same factors would similarly affect the 99.5th percentile. Those nontax factors are similar for the 90th and 99.5th percentiles, but the tax rate is different. Thus WGINEQ controls for the nontax factors, and the estimated coefficient on the tax rate of the 99.5th percentile will indicate tax factors.

And here I would make a suggestion. That use of WGINEQ is very clever, but it is not the only possibility. Technological or global forces might differently affect those in the top 10 percent (who may be plumbers, computer tech-

nicians, and college professors) and those in the top 0.5 percent (who may be doctors, business executives, and professional baseball players). Personally, I do not know. But the paper would be more convincing if it tried a number of the other possibilities for those technological and global factors it mentions, such as the extent of computerization in the workplace, the import share of GNP, and the fraction of youth who are college educated.

Also, the paper refers to "core" results for the wage and salary share regressions, noting that the nontax explanation (WGINEQ) is largest and the tax variable (TL) insignificant for the 1954–85 period but that they reverse in importance when the period is extended to 1990. This result is extremely interesting, but I am not sure exactly what it means. If tax effects or timing effects are important, then they would be important before 1986 as well as after. Indeed, if the highest tax rates induce the most tax avoidance, then the largest tax effect would appear in the earlier period when the top marginal rate fell from 90 to 70 percent (in 1964) and again from 70 to 50 percent (in 1981). In other words, how does the break at 1986 relate to the point of the paper?

I think the answer lies in the *other* changes in the Tax Reform Act of 1986 such as the passive loss rules and the smaller fall in the corporate income tax rate. In particular, 1986 marks the first time in history that the corporate rate exceeds the top personal tax rate. Doctors, business executives, and other professionals no longer have incentive to employ themselves in closely held corporations, pay themselves artificially low salaries, and retain more of their income in lesser-taxed corporate form. When the personal rate falls below the corporate rate, they just assign themselves higher salaries.

The point has a number of implications for the paper. First, I think Slemrod could better explain this reason for breaking the data at 1986. Second, instead of just pointing to the "large" changes in the tax and nontax coefficients, he could perform a statistical test for structural change in a times-series regression. Third, an implication is that the personal tax rate variables (TL and TC) may not really be the crucial tax-related determinants of reported wage inequality. Instead one might include the differential between the corporate rate and the top personal rate. Slemrod points out that this differential does not change much except in 1986, when it goes from negative to positive, so it would act like a dummy for post-1986 years. But the paper does essentially the same thing by breaking the data at 1986 anyway.

For his interpretation of these results, Slemrod uses the last section of the paper to discuss changes after 1986 in the composition of income for this top-income group, particularly the major increases in their wages and salaries, income from partnerships, and income from subchapter S corporations. He nicely describes how each of those changes can result from tax avoidance behavior. But this discussion needs to relate back to the big change in estimated coefficients after 1986. Should we infer that behavior became more responsive after 1986? No!

For my interpretation of these results, each behavior must be categorized as

a response to a change in the *rate* of tax or a response to a change in the *structure* of tax. Any response in the first category should be found throughout the whole period from 1954 to 1990. Marginal rate reduction might induce shifts from untaxed fringe benefits into reportable wages and salaries, for example, or shifts from the underground economy to the market economy. But such shifts would pertain to all rate reductions in 1954–90. Thus these behaviors do not explain the break at 1986.

Most of Slemrod's other examples are responses to a change in the structure of taxation. First, changes in the passive loss rules in 1986 might induce high-income taxpayers to report more income from partnerships. Second, the inversion of the corporate rate and top personal rate in 1986 might induce them to report more income from S-corporations (instead of the more highly taxed C-corporations). Third, the same inversion might induce holders of closely held corporations to assign themselves higher salaries (instead of retaining income as corporate income). Fourth, the repeal of the General Utilities doctrine might shift activity from C-corporations to partnerships or S-corporations. Fifth, the expansion of the corporate alternative minimum tax might do the same. Sixth, the elimination of the rate differential between ordinary income and capital gains eliminates the incentive to repackage labor income to look like capital gains, such as through stock options or through renovating old houses to resell at higher prices.

All six of these structural changes occurred in 1986, and none of them relate to the tax *rate* variable in Slemrod's regressions. Without these structural changes, using only the data from 1954 to 1985, the tax rate variable is insignificant (for wages and salaries or for all of AGI). Inclusion of the 1986–90 period *appears* to make the coefficient on the tax rate much larger and highly significant, but Slemrod's regressions for 1954–90 do not allow for the important structural changes in 1986. One should not attribute those behavioral responses to the tax rate.

A logical conclusion, therefore, is that responses to changes in the rate of tax pale in comparison to responses to changes in the structure of taxation. Perhaps we have paid too much attention to theory and evidence on responses to tax rates, including efforts to measure the peak of the Laffer curve or the deadweight loss of high marginal tax rates. Perhaps instead we need to bite the bullet and tackle the more difficult issues of how the tax is designed, what is included in each tax category, and how those categories are taxed relative to each other. As Slemrod points out, we need to shift attention from optimal tax rates to optimal tax systems.