TAXING INCOME OF TOP WEALTH HOLDERS

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Increasing wealth concentration in recent decades has generated renewed interest in the ability of the tax system to offset rising inequality. Income tax data show that average effective tax rates have declined relatively more at the very top of the income distribution. However, effective tax rates by taxable income alone do not tell the whole story about the taxation of top wealth holders. In this paper we use the Survey of Consumer Finances (SCF) from 1998 through 2013 to study trends in effective taxation across the entire distribution of families, with a particular focus on the very top of the distribution.

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I. INTRODUCTION

The economics profession has a long-standing interest in estimating the shares of wealth owned and income received by those at the very top of the income and wealth distributions. Estimates of top wealth and income shares date back at least to Pareto (1896) and Kuznets (1953), and the conceptual and methodological issues associated with measuring concentration continue to be actively debated. In many advanced economies, progressive income and estate tax policies are defended as a tool for counteracting high and rising wealth and income concentration. In just the past decade, estimates of high and rising wealth concentration based on newly-available administrative tax data have sparked renewed debate about the redistributive role for tax policy, reflected, for example, in the popularity of and controversy surrounding Piketty’s (2014) Capital in the Twenty-First Century.1

1 See Kopczuk (2015) and Jones (2015) for a discussion of some of the issues in Piketty (2014).

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There is an active academic debate about the levels and growth rates of wealth and income concentration in the United States and other industrial countries, but it is fair to say that most observers agree that top shares have been high and rising in recent decades. At the same time, tax policy in the United States has become (at least on the surface) systematically less progressive at the very top in recent decades because of major changes in estate tax policy, decreases in top marginal income tax rates (relative to the early 1980s), and changes in effective tax rates on some types of capital income disproportionately received by those at the top. The effects of recent changes in estate and income taxation are illustrated clearly in regularly published IRS Statistics of Income (SOI) tables, which are based on actual tax filings. For example, the effective tax rate on estates above $20 million was 15 percent in 2012, down from 18 percent in 2000. Income taxes were 31 percent of Adjusted Gross Income (AGI) in 2000 for families with AGI above $10 million, but by 2013, that ratio had fallen to 22 percent.

However, analysis of effective tax rates using actual estate and income tax filings provides an incomplete picture of how tax policy is interacting with top wealth and income trends. In an important sense, the IRS sees only part of the story about income and wealth, because the tax code itself determines what must be reported. Also, the incomes and wealth reported to the IRS are the end result of a series of decisions being made by taxpayers, especially those that are relatively wealthy. Those decisions include, for example, how to value certain wealth holdings and whether and how to realize certain income streams. Those decisions are often made with the goal of lowering effective tax rates, so using tax data alone to measure the wealth and incomes being taxed means that the denominators are potentially distorted, especially by the types of tax base changes and differential taxation by type of income that have recently emerged in the tax code.

One specific sense in which tax data alone provides an incomplete picture of effective tax rates involves the relationship between income and wealth at the top. Top wealth holders are often business owners or have some other means to employ discretion about how and when they realize incomes, and changes in tax policy will almost certainly affect those decisions. The U.S. estate and income tax systems are related in an important sense, because wealthy taxpayers are often choosing between realizing capital gains and paying income tax while they are living versus leaving the unrealized gains as part of the estate.

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2 See, in particular, Bricker et al. (2016) for a discussion of the conceptual and measurement pitfalls associated with existing top share estimates. The most widely-available and often-cited statistics on top wealth and income shares are based on the techniques described in Piketty and Saez (2003) and Saez and Zucman (2016). Their estimates for the United States (and many other countries) are regularly updated and available on the World Top Incomes and Wealth Database, http://www.wid.world/.  
3 Anderson (2013) discusses how various tax reforms in the past several decades have affected average tax rates across income groups.  
5 For example, the Congressional Budget Office (2014) discusses the shift from C-Corp to S-Corp status by taxpayers after the Tax Reform Act of 1986. Also see Poterba (2007) for an analysis of the pre-tax and post-tax income distributions.
an estate (Avery, Grodzicki, and Moore, 2015; Kopczuk, 2016). However, because the estate tax only applies to very few taxpayers and only at death, a combination of linked estate and income tax data are generally not directly usable for studying the relationship between income and wealth for most taxpayers (Jacobson, Johnson, and Raub, 2007; Moore and Johnson, 2008; Johnson, Moore, and Schreiber, 2009).

The Survey of Consumer Finances (SCF) is uniquely well-suited for studying the relationship between wealth, income, and taxes. The SCF is a household survey, focused on balance sheet and incomes. The SCF has been conducted using a relatively stable methodology and question wording every three years since 1989, with the most recent available data from the 2013 survey. For the purpose of this paper, a key feature of the SCF that differentiates it from other household surveys with income and wealth is a substantial oversample of very wealthy families. The oversample is based on administrative data derived from tax records, and the statistical methodology used makes it possible to test how well the survey captures wealthy families in the sample. Supporting evidence also comes from the observations that the SCF does a good job tracking conceptually equivalent macroeconomic measures of income and wealth over time (Dettling et al., 2015; Henriques and Hsu, 2014; Brown et al., 2011) and can also match (again, in a conceptually and methodologically consistent manner) top income and wealth shares estimated directly from income tax data.

Having incomes and wealth (by type) together at the household level for a representative sample of the populations makes it possible to answer key questions about effective taxation of top wealth holders. In this paper, the relationship between taxes and wealth is broken down into a series of relationships and decisions. How does using more comprehensive measures of income and wealth (as in Bricker et al., 2016) affect conclusions about effective tax rates? How has the relationship between income and wealth changed over time? To what extent has the income tax code become a more or less effective check against increasing inequality?

Our results confirm previous research that shows top wealth and income shares rising over time, including over the period of our analysis, 1998 to 2013. However, the

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6 See Bricker et al. (2014) for a description of the SCF and a discussion of the results from the most recent available wave, conducted in 2013.
7 See Bricker et al. (2016) for evidence that the SCF does in fact capture the top of the wealth distribution, as the sampling strategy is designed to do. In particular, the strategy overcomes the fact that response rates drop systematically as one approaches the very top, but corrects for that by increasing sample sizes in progressively smaller slices (“strata”) of the wealth distribution near the top. The final step is showing that survey respondents within each of the top strata are observationally equivalent to the non-participants in the same stratum.
8 Bricker et al. (2016) find smaller and more slowly rising top shares for both wealth and income, relative to estimates based directly on income tax data. The evidence (by comparison to tax data) that the SCF captures the top end comes from conceptually and methodologically constraining the SCF to only reflect what one would measure if the SCF were conducted using tax-system consistent unit of observation, concepts, and methodology.
9 See Smeeding and Thomspson (2011) for a discussion on constructing more complete measures of income and Zucman (2014) for a discussion of “hidden” wealth.
SCF expanded wealth and income measures show a slower rate of increase and lower levels of concentration than studies based on tax data alone. In terms of the effect of tax policy changes, we find that at the aggregate level, changes to the income tax code have lowered the share of income being taxed and the effective tax rate. At the micro level, we also find a similar trend across the distribution of wealth, but the impact is greater, both in absolute and relative terms for the top wealth groups. Overall, our results show that although all wealth groups have benefited from changes to the income tax code over the 1998 to 2013 period, the income tax code has become a less effective check against increasing income and wealth inequality.

The paper is organized as follows. The next section briefly describes the key tax policy changes that occurred from 1998 to 2013. The third section presents results on the trends in aggregate taxable income and effective tax rates. The fourth section describes wealth and income growth over the period using the SCF data. The fifth section presents results on changes in effective tax rates by wealth groups. The final section concludes.

II. TAX POLICY CHANGES

Over the 1998 to 2013 period there were numerous changes in the federal income tax code. For the purposes of our analysis, we focus on three tax reform acts that brought significant changes to tax rates. The Tax Reform Act of 1997 (TRA) contained many important changes, but one of the key changes was the reduction in the maximum capital gains rate from 28 to 20 percent. In 2001, the Economic Growth and Tax Relief Reconciliation Act (EGTRRA) introduced significant reductions in individual income tax rates across the existing tax rate schedule, including the creation of a 10 percent rate, and a reduction in the maximum rate from 39.6 to 35 percent. The Jobs and Growth Tax Relief Reconciliation Act of 2003 (JGTRRA) accelerated the phase in of the tax rate reductions in EGTRRA, reduced the maximum capital gains rate to 15 percent and created a 15 percent rate for dividend income. The combined effects of these three tax reform acts were substantial reductions in tax rates for most types of income over the 1998 to 2013 period.

III. TRENDS IN AGGREGATE TAXABLE INCOME AND EFFECTIVE TAX RATES

We start our analysis by examining the macro effects of the tax policy changes enacted during the 1998 to 2013 period. We first examine the aggregate trends in “taxability” of personal income and effective tax rates (ETRs) using aggregate data from the Bureau of Economic Analysis (BEA) and Statistics of Income (SOI). Figure 1 shows the ratios of SOI taxable income and tax liability to BEA’s National Income and Product Accounts’ (NIPA) personal income. Over the 1998 to 2013 period, the ratio of SOI taxable income to NIPA personal income (the solid line) shows an overall downward trend. The ratio is somewhat volatile due to capital gains realizations, but by 2013 the ratio of taxable income to personal income had declined about 2 percentage points. This result is driven
by a shift in the composition of income over the period to include a larger share that is non-taxable, such as employer and government benefits. As noted in Bricker et al. (2016), the increase in non-taxable income is mostly for households below the top 1 percent, is not accounted for in the tax data, and leads to upward bias in estimates of top shares using tax data.

Figure 1 shows a similar trend for the ratio of tax liability to personal income (the dotted line). This ratio is the aggregate ETR, which declined about 2 percentage points over the period. However, the proportional decline in the ETR was much larger than for the ratio of taxable income to personal income. The decline in aggregate ETR is a function of the decline in tax rates on a variety of income sources, including earnings, dividends, and capital gains. In other words, the tax liability per dollar of taxable income is declining over the period.

Although the aggregate data show a decline in both ratios over time, they do not indicate which households are benefitting the most from the decrease in taxable income and tax liability. To answer that question, we turn to the micro data.
IV. WEALTH AND INCOME GROWTH AT THE TOP OF THE WEALTH DISTRIBUTION

The second part of our analysis uses micro data from the Federal Reserve Survey of Consumer Finances (SCF) to examine the extent to which different types of households were affected by the changes in income tax policy over the period.

The SCF is a triennial survey that provides the most detailed micro data available on the assets, liabilities, income, and demographic characteristics of U.S. families. Wealth (and income) is highly concentrated in the United States, and a simple random sample would not yield enough observations at the top of the wealth distribution to provide reliable estimates of wealth. To address this problem, the SCF combines a standard nationally-representative area probability (AP) sample with a “list” sample that oversamples high-wealth households. The list sample is drawn using statistical records derived from tax returns at the Statistics of Income (SOI) Division of the Internal Revenue Service. Relatively consistent sample methodology between the 1989 and 2013 surveys facilitates comparisons over time. Bricker et al. (2014) provide a summary of the SCF survey methods and results of the most recent survey.

In this analysis, we use the expanded income and expanded wealth measures developed in Bricker et al. (2016). For wealth, the published SCF measure of household wealth is fairly complete, but one missing element is defined-benefit pension wealth. Our expanded wealth concept adds defined-benefit wealth to the SCF measure of wealth. The algorithm used to distribute defined-benefit pension wealth is detailed in Devlin-Foltz, Henriques, and Sabelhaus (2016), but the basic premise is to apportion the aggregate value of defined-benefit wealth from the Financial Accounts of the United States (FA) across households based on wages, plan coverage, years in plan, and current benefits. For income, the goal is to adjust the SCF income measure to align with NIPA personal income by adding non-taxable government transfers and in-kind compensation. More details on this algorithm can be found in Bricker et al. (2016). Our expanded income concept includes these addition sources of income.

We examine the entire distribution of expanded wealth, with special emphasis on the very top. The expanded wealth groups are the bottom 90 percent, the next 9 percent, the top 1 percent, and the top 0.1 percent. Figure 2 shows the growth in average expanded wealth and average expanded income for each of the expanded wealth groups. For average expanded wealth, the growth for the top three groups has been faster over the 1998 to 2013 period than for the bottom 90 percent, but there is less difference among the top three groups. Since 1998, average expanded wealth has increased by a factor of two for the top three groups, but only by a factor of 1.5 for the bottom 90 percent. Thus, top wealth shares are rising over the period, but not as fast as estimates reported by Saez and Zucman (2016).10

10 This is mainly due the gross capitalization method used by Saez and Zucman (2016); see their paper and Bricker et al. (2016) for details.
The growth in average expanded income over the period was similar to average expanded wealth for all but the very top of the expanded wealth distribution. Only for the top 0.1 percent did growth of average expanded income outpace the growth of average expanded wealth. Again, this finding of rising top income shares is similar to Bricker et al. (2016), while Saez (2015) shows faster growth and higher levels for top income shares. The fact that income growth has been greater at the top of the distribution would have led to higher tax liability for that group if the tax system remained unchanged over the period, but that was not the case. The next section estimates how taxable income, tax liability, and effective tax rates (ETRs) actually evolved across the distribution of expanded wealth during this period.

V. EFFECTIVE TAX RATES ON TOP WEALTH HOLDERS

We estimate the tax liabilities for each individual SCF household based on their income, family structure, state of residence, deductions, and other characteristics for the
year prior to the survey year using NBER TAXSIM. This program encapsulates both the federal income tax code and state income tax code and provides estimates of tax rates and liabilities for each SCF household. For our analysis, we focus on the federal tax liability for each household. The tax information generated by TAXSIM from the SCF matches published SOI estimates fairly well.

Figure 3 shows the ratio of average estimated taxable income to average expanded income by expanded wealth group. This ratio is the distributional analog to the aggregate ratio shown by the solid line in Figure 1. Since 1998 the ratio of average taxable income to average expanded income has declined for all expanded wealth groups, but there is a substantial gap between the bottom 90 percent and top 10 percent of

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12 Detailed comparison tables between estimates generated by SCF TAXSIM and published SOI tables are available from the authors upon request.
the distribution. All groups experienced a similar absolute decline in size of about 10 percentage points in the ratio over the period, and there was a slightly larger relative decline for the bottom 90. For the top three wealth groups, most of the decline in the ratio occurs prior to 2004, while the ratio for the bottom wealth group continues until 2010.

Figure 4 presents the ETR, or the ratio of average estimated tax liability to average taxable income, by expanded wealth group from 1998 to 2013. As with Figure 3, there is a large gap between the bottom 90 percent and the top three wealth groups, showing the progressivity of the tax system, and the ETRs for all groups are falling over time. However, the ETR for the bottom 90 percent of the distribution declined by 26 percent over the period, compared to declines of between 11 and 15 percent for the top three wealth groups. One interesting result is that the smallest decline in ETR occurred for the 90–99 percentile group (27 to 24 percent), which may be driven by their smaller share of capital gain income compared to the top two wealth groups.

Figure 5 presents an alternative definition of the ETR, the ratio of average tax liability to average expanded income, by expanded wealth group. This ETR measure incorporates expanded income, which is a much broader measure of income than taxable

Figure 4
Ratio of Estimated Tax to Estimated Taxable Income by Wealth Group

Source: Authors’ calculations using Survey of Consumer Finances (SCF) and NBER’s TAXSIM
income. As discussed earlier, expanded income contains non-taxable components and is arguably a more complete definition of income. As expected, ETRs are falling over time for all wealth groups, and by 2013 the ETR for the bottom 90 percent is only about 7 percent, a decline of 35 percent over the period. The ETRs for the top two wealth groups fell about 25 percent over the period, but the smallest decline of about 20 percent was for the 90–99th percentile group. In fact, by 2013, the gap between the ETR for the 90–99th percentile group and the top 1 percent was half the size it was in 1998. The main driver of this result is the substantial decline in the maximum capital gains rates after 2001 coupled with a larger share of income in capital gains or dividends for the top two wealth groups.

Although Figures 4 and 5 show progressivity in tax rates across the distribution of expanded wealth, it appears that changes in tax rates over the 1998 to 2013 period have muted the effectiveness of the income tax in offsetting increasing top income shares. Figure 6 examines this question by plotting the growth of average expanded income and average net-of-tax expanded income by expanded wealth groups. A key result
illustrated in Figure 6 is that average net-of-tax expanded income grew faster than average expanded income for all wealth groups. However, the difference between the growth of expanded and net-of-tax expanded income increases as one moves up the expanded wealth distribution, a clear sign of the differential impact of the reduction in tax rates over the period.

Figure 7 shows the absolute and relative differentials between the growth of average net-of-tax expanded income and average expanded income reported in Figure 6. In terms of the absolute differentials, the growth for the top 1 percent is four times as large as the growth of the bottom 90 percent, with a much smaller gap between the bottom 90 percent and the next 9 percent. This effect is somewhat dampened by using the relative differential, but the growth for the top 1 percent is still two times as large as the growth for the bottom two wealth groups. The impact of tax changes on net-of-tax expanded income is greater (absolutely and relatively) at the top of the wealth distribution and is due to a combination of higher expanded income growth and large cuts in tax rates on capital gains and dividend income.
VI. CONCLUSIONS

The results of our analysis show that top wealth and income shares are rising over time, including the 1998 to 2013 period, but the SCF estimates show lower levels and a slower rise than other estimates. We also find that trends in the composition of income by type and changes in income tax rates have lowered shares of taxable income and expanded income being taxed, leading to declines in ETRs at the aggregate level and household level. This result also holds across all wealth groups. However, the benefits of the tax changes, as measured by the growth of net-of-tax expanded income, is greater (absolutely and relatively) at the top of the wealth distribution. The muted effectiveness of the tax system in offsetting the rise in top income shares has a feedback effect on rise in top wealth shares, showing that the income tax system can effect both income and wealth inequality.\textsuperscript{13}

\textsuperscript{13} See Looney and Moore (2016) for a similar result based on an analysis of the after-tax distribution of wealth.
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DISCLOSURES

The authors have no financial arrangements that might give rise to conflicts of interest with respect to the research reported in this paper.

REFERENCES


