

Volatility of Income Reported on Montana Income Tax Returns, 1997 – 2011

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Introduction

The degree of volatility of individual incomes has important implications for revenue forecasting and for tax policy.

Forecasters need to try to predict cyclic movements of tax revenue as well as long-term trends. Information about the variability of individual incomes should be useful for forecasting aggregate fluctuations, or at least for countering anecdotal data coming from legislators and other interested parties.

The degree and sources of individual income volatility can have important implications for the appropriate degree of progressivity of a tax system, whether particular tax expenditures should be means tested, and other issues relating to different treatment for taxpayers with different incomes.

Sources of Volatility

The observed distribution of annual incomes is quite unequal. This inequality could have several sources. It could be due to inequality of lifetime incomes, to the general pattern of income over a lifetime, or to transitory income fluctuations.

Differences in lifetime income are largely determined by the luck of the draw in the game of life and by the circumstances and actions of a person's family of origin. The luck of the draw affects a person's intelligence, particular talents and aptitudes, and general health. The family of origin's income and other circumstances also have a strong effect on a person's lifetime health, and their childhood opportunities for intellectual and social growth. Inheritance or help in financing an education from family or other sources can dramatically increase lifetime income. Lifetime income can also be strongly affected by a person's own choices, such as the choice of career, the choice of whether to attend college, or the choice to become a drug addict.

Most people's income follows the general pattern of lower income as a young adult just starting a career with limited skills and experience, highest income in middle age followed by lower income later in life as the person retires or stays in the labor force but with declining health and vigor and possibly outdated skills.

Transitory fluctuations, one-time or short-term increases or decreases in income can come from a variety of sources. A bonus or temporary promotion or working extra hours can result in a temporary increase in income. So can selling an appreciated asset. Being laid off or having hours of work reduced can result in a temporary decrease in income. So can selling an asset at a loss. Business income varies up and down depending on the business cycle and changes in sales and costs. Short-term fluctuations can also come from decisions to enter or leave the labor force or to change jobs.

Policy Considerations

If observed income differences are primarily due to differences in lifetime income, redistribution [differences in relative tax burden] through the tax system will be primarily offsetting (or amplifying) the effects of the luck of the draw in the game of life and of childhood advantages or disadvantages. If observed income differences are primarily due to the life-cycle pattern of earnings, redistribution through the tax system will be primarily redistribution between generations or life stages. If observed

income differences are primarily due to transitory income fluctuations, redistribution through the tax system will be primarily offsetting (or amplifying) short term luck.

Policy makers may want different degrees of progressivity if observed high incomes are mostly the result of one-time events than if the same people have high incomes year after year.

Another consideration is that, with a progressive income tax, a taxpayer with very volatile income will pay more tax over a lifetime than one with the same average income but less volatility.

These policy considerations apply to sales and property taxes as well as income taxes. Sales taxes often exempt necessities in an attempt to make them less regressive, but also usually exempt services and many goods that are bought disproportionately by high-income people. Different types of property often are taxed at different rates, and consumption of residential property is not proportional to income.

Forecasting Considerations

Understanding the sources and degree of volatility in individual incomes may help forecasters predict short-term fluctuations in aggregate income. It also may help forecasters respond appropriately, based on solid information, when legislators or other want to affect the forecast because of anecdotes, rumors or theories they have heard.

Empirical Questions

This paper examines the following three questions using incomes reported on Montana individual income tax returns for 1997 through 2011.

- How much movement is there up and down the income distribution? What share of high, low and middle income taxpayers move up or down in the income distribution in the short term and in the long term? How long do individual taxpayers stay in a particular decile of the income distribution
- How much do individual incomes vary over time? Are incomes more variable at higher or lower incomes?
- How is the variability of individual incomes affected by the sources of taxpayers' incomes? Do taxpayers who receive more of their incomes from certain sources, such as capital gains or business income, have more variable incomes.

Movement Within the Income Distribution

This section looks at movement of taxpayers within the income distribution in three somewhat different ways. The first two look at the proportions of taxpayers who move between income groups over time. The first assigns taxpayers to an income group for 1997 and then tracks the proportions of each 1997 income group that are in each of the income groups in the following years. The second assigns taxpayers to an income group for 2011 and then tracks the proportion of each 2011 income group that were in each of the income groups in the preceding years. The third looks at the number of years that a taxpayer stays in an income group.

Since this paper is concerned with income volatility as it affects income tax revenue, income is measured as the taxpayer's Montana taxable income. This equals adjusted gross income less the sum of deductions and exemptions.

Using this definition of income means that income is measured using the accounting conventions allowed by the IRS code, which can differ significantly from an economic concept of income. This affects the volatility of measured income several ways. Some types of income, such as capital gains, are counted as income not when they accrue but when some event, such as sale of an appreciated asset, triggers their recognition. Some taxpayers are allowed to do income averaging, and taxpayers are allowed to carry business losses backward or forward to another year. Taxpayers who take advantage of tax-preferred savings accounts also shift measurement of income from the year it is earned to the year when it is withdrawn.

Year to year changes in deductions and exemptions contribute another component of volatility to taxable income.

Four income groups were analyzed:

- the top decile, or the 10% of taxpayers with the highest taxable incomes,
- the bottom decile, or the 10% of taxpayers with the lowest taxable incomes,
- the middle quintile, or the 20% of taxpayers with taxable incomes closest to the median, and
- the top percentile, or the 1% of taxpayers with the highest taxable incomes.

The top percentile is analyzed by itself as well as as part of the top decile because taxpayers with the highest incomes are often portrayed as having the most volatile incomes and, because of this presumed volatility, driving volatility of aggregate collections.

A complete set of Montana tax returns is available for tax years 1997 through 2011. Since the population of taxpayers changes over time, a choice had to be made of how to deal with taxpayers who filed a return for some but not all years of the study period. Taxpayers may stop filing returns because they die, move out of state, or have their income drop below the filing threshold. Taxpayers may start filing returns because they moved to the state or because they just entered the labor force. The tax return database does not contain information that would make it possible to identify the reasons why

individual taxpayers start or stop filing and take them into account in the analysis.¹ Therefore, it was chosen to only look at taxpayers who filed a return every year during the period. The following table shows the proportion of returns in each decile and the top percentile of taxable income for 1997 that have a matching return for each later year.

¹ There are many other types of information, such as age and occupation, that affect income volatility, that also are not recorded on tax returns.

Percent of 1997 Income Tax Returns with Matching Returns in Later Years

1997 Income Group	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Top 1%	96.5%	92.9%	91.0%	88.7%	86.4%	84.1%	82.5%	80.3%	78.9%	75.8%	76.7%	75.5%	74.4%	72.7%
Top 10%	96.3%	93.4%	91.5%	89.3%	87.4%	85.2%	83.9%	81.7%	80.7%	78.8%	78.7%	77.3%	76.2%	75.1%
80% to 90%	96.0%	93.0%	90.8%	88.6%	87.0%	85.0%	83.8%	81.6%	80.9%	79.5%	78.5%	77.0%	75.8%	75.0%
70% to 80%	94.9%	91.2%	88.9%	86.3%	84.5%	82.7%	81.6%	79.4%	78.7%	77.3%	76.5%	75.1%	73.8%	72.8%
60% to 70%	93.5%	89.4%	86.6%	84.0%	82.0%	79.8%	78.5%	76.5%	75.6%	74.7%	73.6%	71.9%	70.6%	69.4%
50% to 60%	92.0%	86.9%	83.5%	80.8%	78.4%	75.8%	74.1%	72.0%	71.0%	70.2%	68.9%	66.8%	65.5%	64.4%
40% to 50%	89.3%	83.2%	79.0%	75.6%	73.1%	70.7%	68.9%	66.5%	65.7%	65.0%	63.4%	61.6%	60.0%	58.6%
30% to 40%	86.5%	79.0%	74.1%	70.0%	66.8%	64.4%	62.5%	60.2%	59.3%	59.1%	57.5%	55.5%	54.2%	52.8%
20% to 30%	84.1%	76.6%	71.3%	66.4%	62.7%	59.5%	57.5%	55.2%	54.6%	54.3%	52.8%	50.9%	49.5%	48.6%
10% to 20%	82.3%	75.4%	70.6%	64.6%	60.6%	56.7%	53.6%	50.9%	49.3%	48.8%	46.1%	43.4%	41.7%	40.2%
Bottom 10%	78.4%	72.4%	68.0%	63.6%	59.9%	56.5%	54.5%	51.8%	51.4%	52.0%	49.9%	47.7%	46.0%	45.0%

The next table shows the proportion of returns in each decile and the top percentile of taxable income for 2011 that have a matching return for each earlier year.

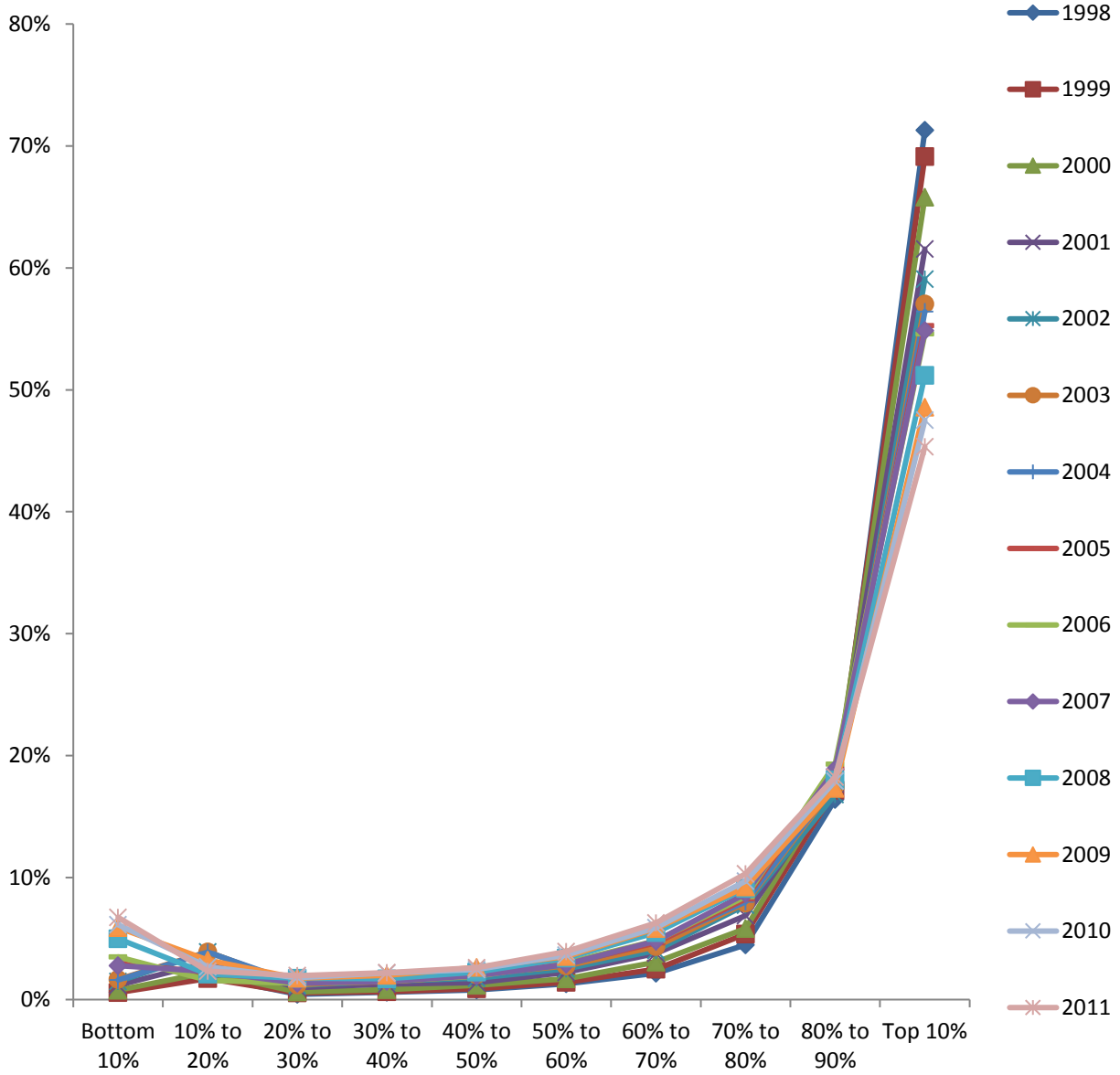
Percent of 2011 Income Tax Returns with Matching Returns in Earlier Years

2011 Income Group	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999	1998	1997
Top 1%	95.2%	92.8%	89.3%	83.9%	83.8%	81.0%	79.5%	77.5%	75.8%	73.9%	71.8%	69.7%	68.7%	66.9%
Top 10%	95.8%	93.3%	91.0%	87.4%	86.0%	83.1%	82.0%	79.8%	78.2%	76.5%	74.9%	72.9%	71.4%	69.7%
80% to 90%	95.8%	93.3%	91.0%	88.0%	85.8%	82.8%	81.1%	78.8%	77.2%	75.1%	73.1%	70.9%	68.9%	66.9%
70% to 80%	95.1%	92.3%	89.9%	86.9%	84.4%	81.2%	79.3%	76.6%	74.6%	72.3%	70.2%	67.5%	65.3%	62.9%
60% to 70%	94.6%	91.1%	88.4%	84.9%	81.7%	77.7%	75.6%	72.1%	70.0%	67.5%	65.1%	62.2%	59.9%	57.4%
50% to 60%	93.2%	88.8%	85.6%	81.5%	77.6%	72.5%	69.7%	65.9%	63.1%	60.2%	57.6%	54.3%	51.8%	49.2%
40% to 50%	90.1%	83.7%	79.7%	74.4%	68.9%	62.4%	59.0%	54.6%	51.7%	48.8%	46.6%	43.5%	41.2%	39.1%
30% to 40%	85.1%	76.9%	72.4%	66.4%	59.8%	53.0%	49.4%	45.5%	43.1%	40.8%	39.0%	36.7%	34.7%	32.9%
20% to 30%	78.3%	69.7%	65.5%	59.1%	52.7%	46.6%	43.6%	40.5%	38.9%	37.3%	35.9%	33.6%	32.0%	30.6%
10% to 20%	68.1%	59.6%	54.4%	48.0%	39.9%	32.9%	28.2%	26.7%	26.1%	25.2%	24.8%	24.4%	23.9%	23.5%
Bottom 10%	91.2%	89.5%	89.0%	88.6%	86.6%	83.9%	85.6%	82.0%	79.9%	77.9%	76.4%	72.3%	69.7%	67.3%

1997 Top 10%

Seventy-five percent of the 10% of taxpayers with the highest taxable incomes in 1997 filed a return in each of the following years through 2011. The graph and table on the next page show the distribution of these taxpayers across decile groups in each of the later years.

10% of Taxpayers with Highest 1997 Taxable Incomes Distribution in Following Years



Share of Returns from 1997 Top 10% by Year and Income Group

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Top 10%	71.3%	69.1%	65.8%	61.5%	59.1%	57.0%	56.4%	55.3%	54.6%	54.9%	51.2%	48.6%	47.5%	45.3%
80% to 90%	16.4%	17.2%	17.9%	17.7%	16.8%	17.5%	17.7%	19.0%	19.3%	18.9%	18.0%	17.3%	17.9%	18.3%
70% to 80%	4.5%	5.4%	5.8%	6.9%	7.8%	7.9%	8.0%	8.2%	8.4%	8.7%	9.1%	9.2%	9.7%	10.3%
60% to 70%	2.2%	2.5%	3.1%	3.8%	4.0%	4.4%	4.7%	4.6%	4.8%	4.8%	5.5%	5.8%	5.9%	6.3%
50% to 60%	1.3%	1.4%	1.7%	2.2%	2.5%	2.8%	2.9%	3.0%	3.0%	2.9%	3.4%	3.5%	3.6%	3.9%
40% to 50%	0.8%	0.9%	1.2%	1.4%	1.8%	2.0%	1.9%	2.0%	1.9%	2.0%	2.3%	2.6%	2.5%	2.6%
30% to 40%	0.6%	0.7%	0.8%	1.3%	1.5%	1.6%	1.5%	1.5%	1.5%	1.5%	1.7%	2.0%	2.2%	2.2%
20% to 30%	0.4%	0.5%	0.6%	1.0%	1.2%	1.2%	1.3%	1.3%	1.3%	1.4%	1.7%	1.8%	1.8%	2.0%
10% to 20%	1.9%	1.7%	2.2%	3.0%	3.9%	3.9%	3.9%	2.2%	1.6%	2.3%	2.1%	3.2%	2.7%	2.3%
Bottom 10%	0.6%	0.6%	0.8%	1.2%	1.5%	1.7%	1.6%	3.0%	3.5%	2.8%	5.0%	5.9%	6.2%	6.7%

Almost all of the taxpayers in the top decile in 1997 stayed in the top half of the income distribution. Only 4.4% had moved to the bottom half of the distribution after one year, and this increased to only 15.9% after fourteen years.

Taxpayers who were in the top decile in 1997 are more likely to be in the top decile in each later year than in any other decile. The fraction still in the top decile falls slowly over time, but is over half for eleven years.

The largest single movement out of the top decile is after the first year, with 28.7% of taxpayers in the top decile in 1997 moving to a lower decile in 1998. In later years, the fraction who have fallen out of the top 10% increases by an average of 2% per year.

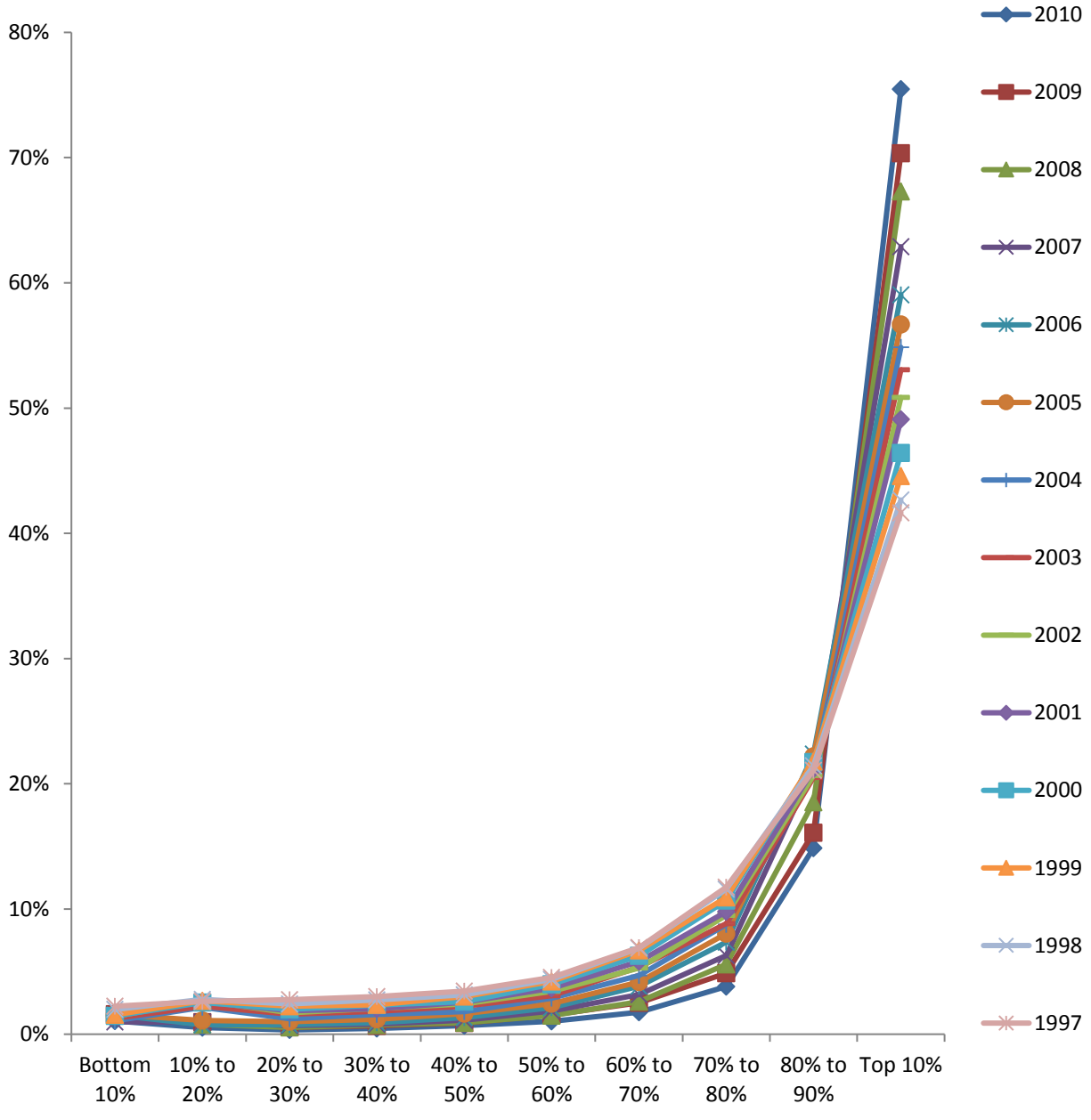
Taxpayers who fall out of the top decile are most likely to move down to one of the next two highest deciles or move all the way to the bottom decile.

2011 Top 10%

Seventy percent of taxpayers in the top decile of taxable income in 2011 had a matching return in each of the previous years. The graph and table on the next page show the distribution of these taxpayers across decile groups in each of the earlier years.

10% of Taxpayers with Highest 2011 Taxable Incomes

Distribution in Previous Years



Share of Returns from 2011 Top 10% by Year and Income Group

	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999	1998	1997
Top 10%	75.5%	70.3%	67.3%	62.9%	59.0%	56.7%	54.9%	53.1%	50.8%	49.1%	46.4%	44.6%	42.7%	41.6%
80% to 90%	14.9%	16.1%	18.5%	21.2%	22.4%	22.2%	21.0%	20.5%	20.7%	21.2%	21.7%	21.8%	21.4%	21.1%
70% to 80%	3.8%	4.9%	5.6%	6.3%	7.3%	8.0%	8.8%	8.8%	9.5%	9.8%	10.7%	10.9%	11.6%	11.8%
60% to 70%	1.8%	2.5%	2.6%	3.2%	3.8%	4.2%	4.7%	5.3%	5.3%	5.8%	6.3%	6.7%	6.9%	6.9%
50% to 60%	1.0%	1.5%	1.5%	1.9%	2.1%	2.4%	2.9%	3.1%	3.4%	3.7%	4.0%	4.2%	4.4%	4.5%
40% to 50%	0.7%	0.9%	0.9%	1.1%	1.3%	1.6%	1.8%	2.2%	2.4%	2.5%	2.6%	3.0%	3.1%	3.4%
30% to 40%	0.5%	0.7%	0.7%	0.8%	0.9%	1.2%	1.6%	1.8%	2.1%	2.0%	2.3%	2.3%	2.7%	3.0%
20% to 30%	0.3%	0.5%	0.5%	0.7%	0.8%	1.0%	1.2%	1.6%	1.7%	1.9%	2.0%	2.2%	2.4%	2.8%
10% to 20%	0.5%	1.0%	0.8%	1.0%	0.8%	1.1%	2.1%	2.2%	2.7%	2.6%	2.5%	2.7%	2.8%	2.6%
Bottom 10%	1.1%	1.6%	1.5%	1.0%	1.5%	1.6%	1.1%	1.3%	1.4%	1.5%	1.5%	1.5%	2.0%	2.2%

About three-fourths of taxpayers who were in the top decile in 2011 were also in the top decile the year before. The percentage in the top decile is lower in earlier years, but is over 50% for nine years.

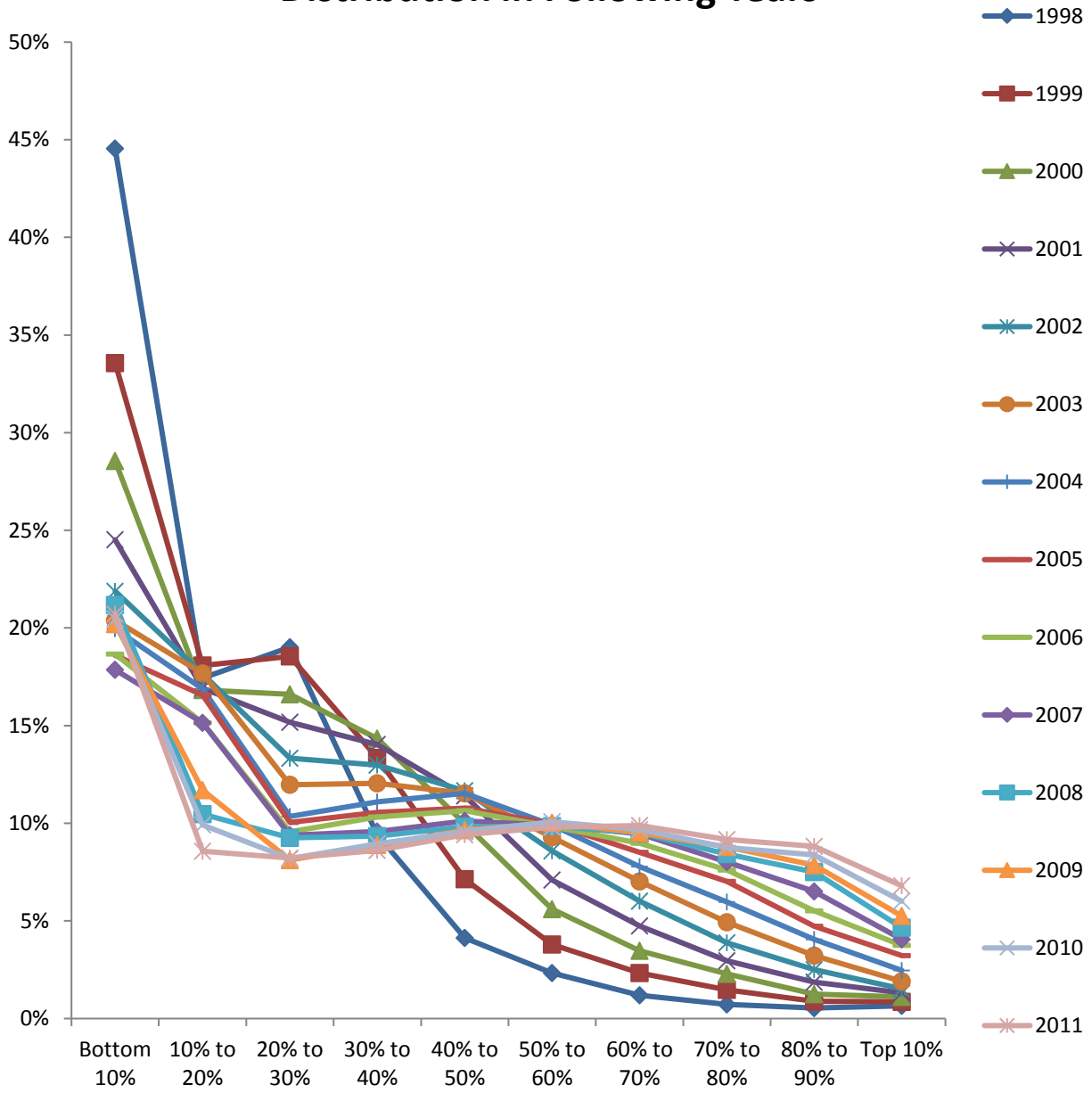
Almost all of the taxpayers in the top decile in 2011 were in the top half of the income distribution in earlier years. Only 3.1% were in the bottom half of the income distribution in 2010. The percentage is higher for earlier years, but is only 14.1% for 1997.

The fraction of taxpayers in the top decile who were in the bottom decile is higher than the fraction in each of the next five deciles for 2010 and 2009, but not for earlier years. For 2004 and earlier years, the fraction who were in the bottom decile is smaller than the fraction who were in any other decile.

1997 Bottom 10%

Seventy-eight percent of taxpayers who were in the bottom decile in 1997 filed an income tax return every year through 2011. The graph and table on the next page show the distribution of these taxpayers across decile groups in each of the later years.

10% of Taxpayers with Lowest 1997 Taxable Incomes Distribution in Following Years



Share of Returns from 1997 Bottom 10% by Year and Income Group

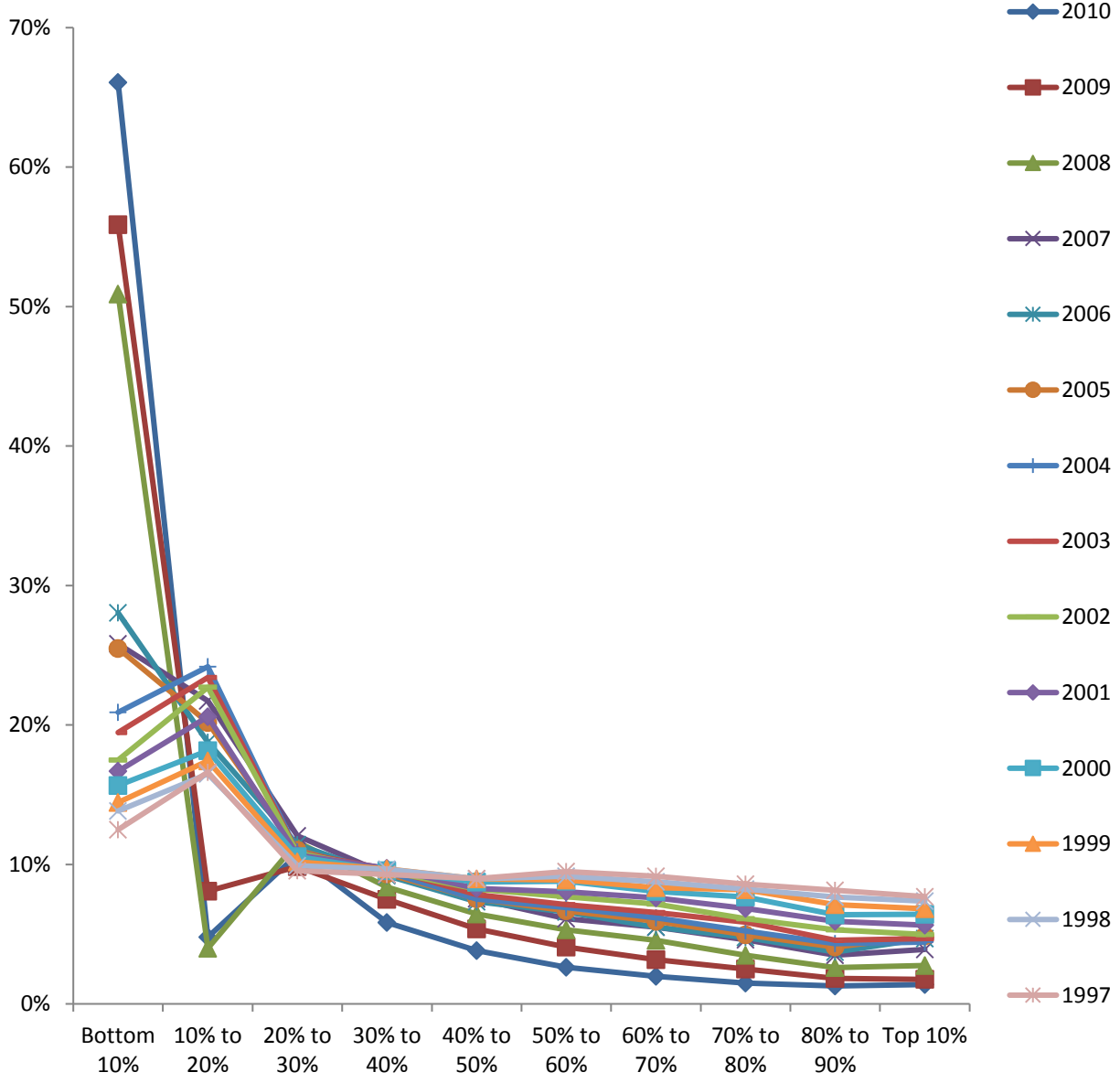
	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Top 10%	0.7%	0.9%	1.1%	1.3%	1.5%	1.9%	2.5%	3.2%	3.7%	4.1%	4.7%	5.3%	6.0%	6.8%
80% to 90%	0.5%	0.9%	1.3%	1.9%	2.5%	3.2%	4.1%	4.7%	5.5%	6.5%	7.5%	7.8%	8.4%	8.8%
70% to 80%	0.7%	1.5%	2.3%	3.0%	3.9%	4.9%	6.0%	7.0%	7.6%	8.0%	8.4%	8.8%	8.8%	9.2%
60% to 70%	1.2%	2.3%	3.5%	4.7%	6.0%	7.0%	7.8%	8.5%	9.0%	9.5%	9.5%	9.5%	9.7%	9.9%
50% to 60%	2.3%	3.8%	5.6%	7.1%	8.6%	9.3%	9.9%	10.0%	9.8%	9.9%	9.9%	10.0%	10.1%	9.8%
40% to 50%	4.1%	7.1%	10.0%	11.4%	11.7%	11.5%	11.5%	10.8%	10.6%	10.1%	9.8%	9.6%	9.6%	9.4%
30% to 40%	9.4%	13.3%	14.3%	14.0%	13.0%	12.0%	11.1%	10.6%	10.3%	9.6%	9.3%	8.9%	8.9%	8.6%
20% to 30%	19.0%	18.6%	16.6%	15.2%	13.3%	12.0%	10.3%	10.1%	9.6%	9.4%	9.2%	8.1%	8.2%	8.2%
10% to 20%	17.4%	18.1%	16.8%	16.9%	17.6%	17.7%	16.9%	16.6%	15.1%	15.1%	10.5%	11.7%	9.9%	8.6%
Bottom 10%	44.5%	33.6%	28.6%	24.5%	21.9%	20.4%	20.0%	18.6%	18.7%	17.9%	21.2%	20.2%	20.5%	20.7%

Less than half of taxpayers in the bottom decile in 1997 stayed there, even one year later. Over time, the distribution of these taxpayers flattens. However, a significant fraction stayed in the bottom decile, with this percentage declining to about 20% after five years but then staying there. The fraction in the top decile increases slowly over time but stays well below the fraction in the other deciles. The fractions in the second through ninth deciles are all close to each other in 2011.

2011 Bottom 10%

Sixty-seven percent of taxpayers who were in the bottom decile in 2011 had filed returns each year since 1997. The much smaller percentage of matches for taxpayers in the bottom decile looking backward than looking forward probably reflects the fact that teenagers and young adults with part time jobs probably represent a significant part of the bottom decile. Someone in their teens or early twenties in 2011 almost certainly would not have been earning income and filing a tax return in 1997. On the other hand, someone in their teens or early twenties who filed a tax return in 1997 is very likely to still be earning income in 2011. The main reason that someone in this group would not have matching returns is that they moved out of state.

10% of Taxpayers with Lowest 2011 Taxable Incomes Distribution in Previous Years



	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999	1998	1997
Top 10%	1.4%	1.8%	2.7%	3.9%	4.7%	4.9%	4.4%	4.7%	5.0%	5.6%	6.4%	6.8%	7.4%	7.7%
80% to 90%	1.3%	1.8%	2.6%	3.5%	3.7%	4.1%	4.3%	4.6%	5.3%	5.9%	6.4%	7.1%	7.7%	8.1%
70% to 80%	1.5%	2.5%	3.5%	4.6%	4.8%	5.0%	5.2%	5.9%	6.1%	6.8%	7.7%	8.2%	8.2%	8.6%
60% to 70%	2.0%	3.2%	4.6%	5.5%	5.5%	5.9%	6.2%	6.5%	7.2%	7.6%	8.1%	8.3%	8.7%	9.2%
50% to 60%	2.6%	4.1%	5.3%	6.1%	6.6%	6.7%	6.9%	7.1%	7.7%	8.0%	8.8%	8.9%	9.2%	9.5%
40% to 50%	3.8%	5.4%	6.4%	7.5%	7.3%	7.5%	7.5%	7.8%	8.2%	8.3%	8.7%	9.0%	9.0%	9.0%
30% to 40%	5.8%	7.5%	8.4%	9.3%	9.2%	9.3%	9.5%	9.7%	9.5%	9.7%	9.6%	9.7%	9.7%	9.3%
20% to 30%	10.7%	9.8%	11.6%	12.0%	11.4%	11.0%	10.9%	10.9%	10.8%	10.7%	10.6%	10.2%	9.9%	9.6%
10% to 20%	4.8%	8.1%	4.0%	21.7%	18.8%	20.2%	24.2%	23.4%	22.7%	20.6%	18.2%	17.4%	16.5%	16.6%
Bottom 10%	66.1%	55.9%	50.9%	25.8%	28.0%	25.5%	20.9%	19.5%	17.5%	16.7%	15.7%	14.4%	13.8%	12.5%

Two thirds of taxpayers in the bottom decile in 2011 had been there in 2010, and more than half had been in the bottom decile in 2008 and 2009. The share coming from the bottom decile drops to 25.8% for 2007 and then decreases slowly from there.

The shares coming from the higher deciles increase slowly and the distribution flattens over time. However, taxpayers in the bottom decile in 2011 are more likely to have been in the bottom half of the distribution every earlier year. This percentage drops steadily from 91.2% for 2010 to 56.9% for 1997.

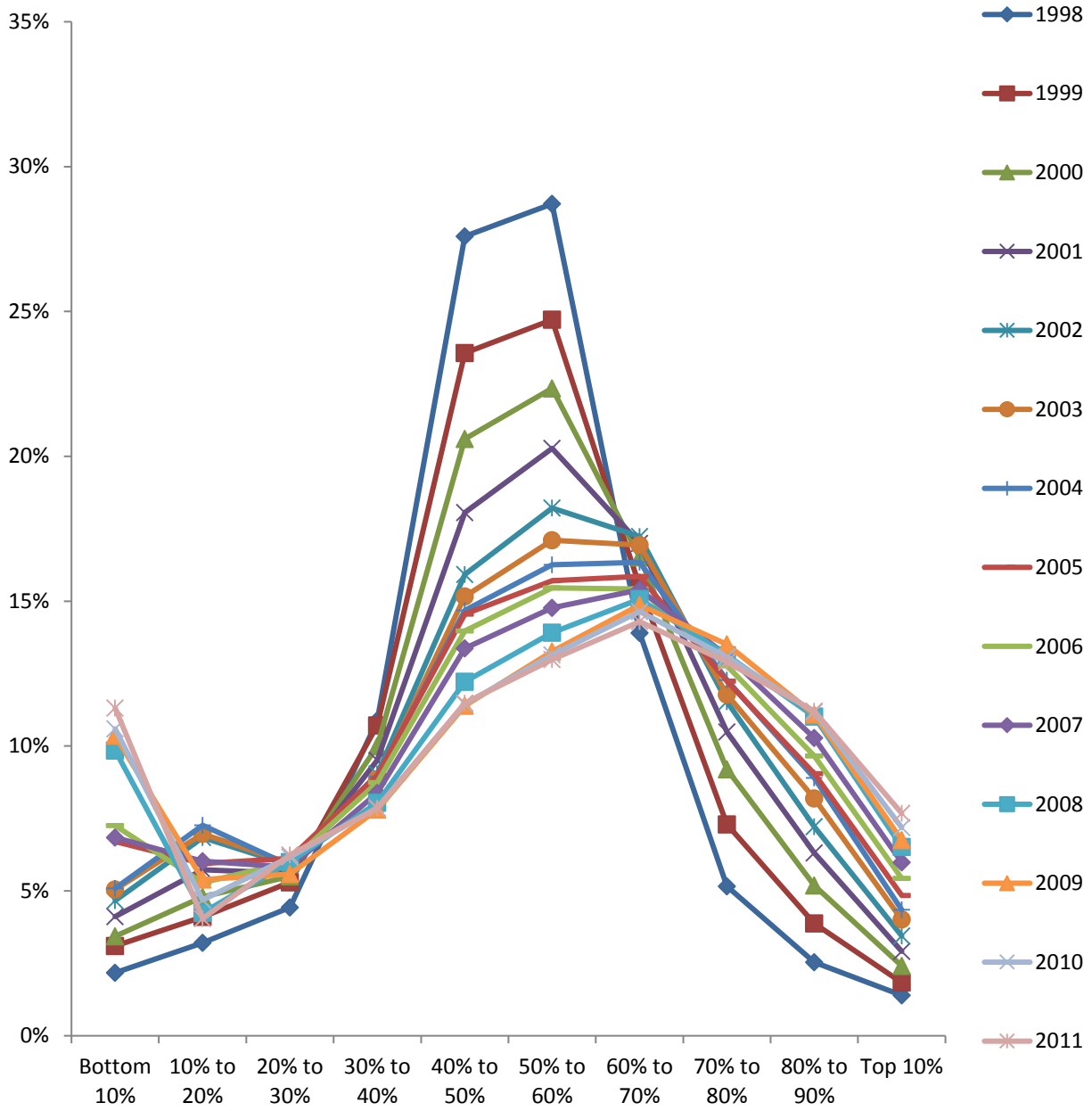
Before 2005, taxpayers in the bottom decile in 2011 were most likely to have been in the second decile. From 2005 on, they are most likely to have been in the bottom decile. The percent in the second decile generally increases from 1997 to 2004. It decreases a little in 2005 and then drops dramatically in 2008. The percent in the first decile also increases over time, passing the percent in the second decile in 2005, and increasing dramatically in 2008.

This population appears to have had a major change from 2007 to 2008. This could be related to the start of the recession. It also could be that the probability of staying in the bottom decile drops dramatically after three years. This could be the case if a large part of the bottom decile is people in part-time or entry level jobs who move to full-time work or move up the career ladder.

1997 Middle 20%

Taxpayers in the middle 20% of the income distribution are less likely to have 14 years of matching returns than taxpayers in either the top 10% or the bottom 10%. Sixty-two percent of taxpayers in the middle 20% in 1997, 61.5% filed returns every year through 2011.

Taxpayers in Middle 20% of 1997 Distribution of Taxable Income Distribution in Following Years



	Share of Returns from 1997 Middle 20% by Year and Income Group													
	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Top 10%	1.4%	1.8%	2.4%	2.9%	3.4%	4.0%	4.3%	4.8%	5.4%	6.0%	6.5%	6.8%	7.2%	7.7%
80% to 90%	2.5%	3.9%	5.2%	6.3%	7.2%	8.2%	8.9%	9.1%	9.7%	10.3%	11.0%	11.1%	11.2%	11.2%
70% to 80%	5.2%	7.3%	9.2%	10.5%	11.5%	11.8%	12.3%	12.2%	12.8%	13.1%	13.1%	13.5%	13.1%	12.9%
60% to 70%	13.9%	15.5%	16.5%	17.0%	17.2%	16.9%	16.3%	15.9%	15.4%	15.4%	15.1%	14.9%	14.6%	14.3%
50% to 60%	28.7%	24.7%	22.3%	20.3%	18.2%	17.1%	16.3%	15.7%	15.5%	14.8%	13.9%	13.3%	13.1%	13.0%
40% to 50%	27.6%	23.6%	20.6%	18.1%	15.9%	15.2%	14.7%	14.6%	14.0%	13.4%	12.2%	11.4%	11.4%	11.5%
30% to 40%	10.9%	10.7%	10.0%	9.5%	9.0%	8.9%	9.0%	9.0%	8.7%	8.4%	8.0%	7.8%	7.9%	7.9%
20% to 30%	4.4%	5.3%	5.5%	5.6%	5.9%	5.9%	5.9%	6.1%	6.0%	5.8%	6.0%	5.6%	6.2%	6.2%
10% to 20%	3.2%	4.1%	4.8%	5.7%	6.8%	7.0%	7.3%	5.9%	5.3%	6.0%	4.2%	5.4%	4.7%	4.0%
Bottom 10%	2.2%	3.1%	3.4%	4.1%	4.7%	5.1%	5.1%	6.7%	7.3%	6.8%	9.8%	10.4%	10.6%	11.3%

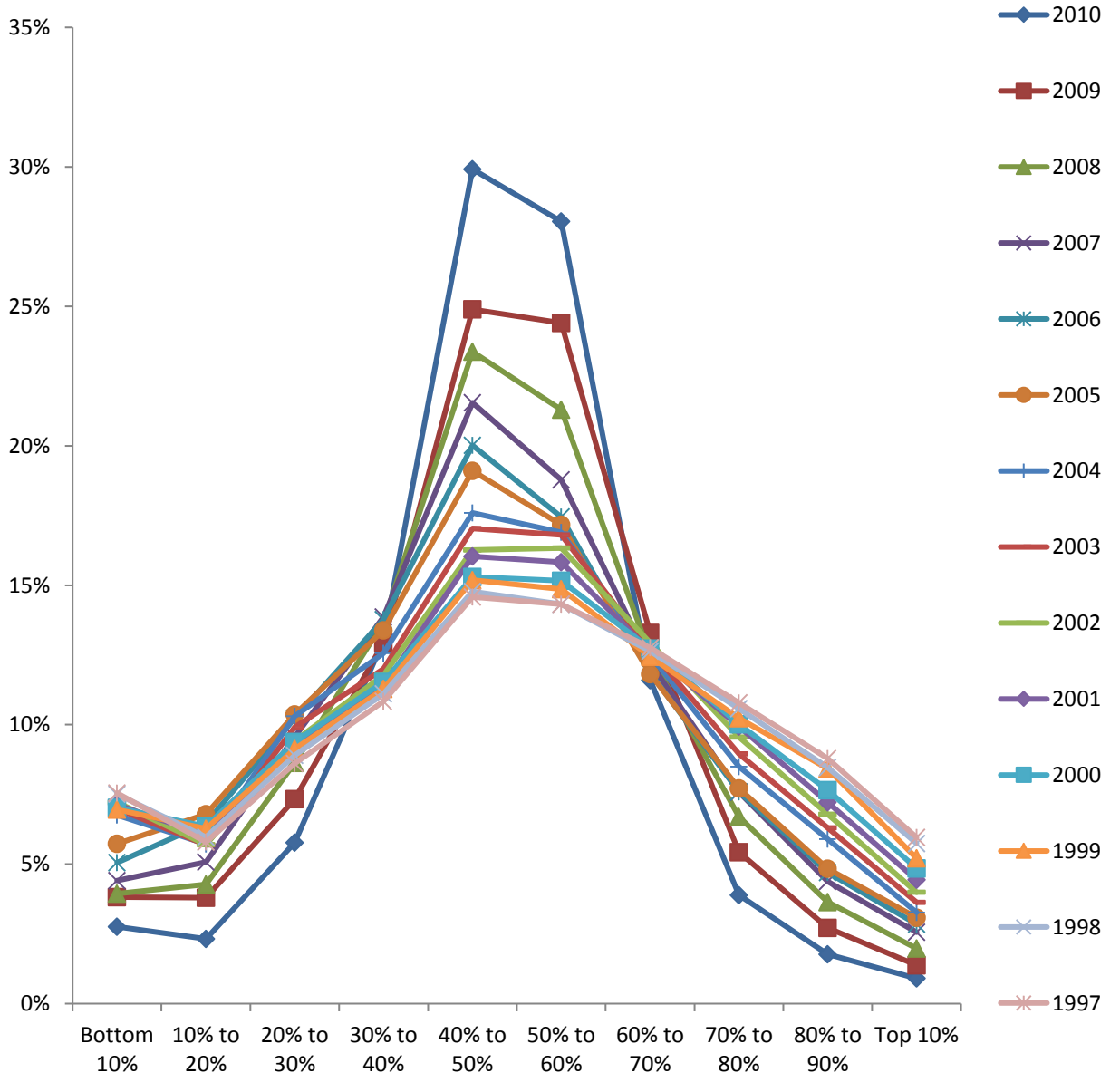
In the short run, taxpayers in the middle 20% are more likely to stay there than to either move up or move down. 56.3% are in the middle 20% the next year, and 48.3% are in the middle 20% after two years.

Taxpayers in the middle 20% are more likely to move up to the top 40% than move down to the bottom 40%, and the difference generally increases over time. After one year, 23.0% moved up and 20.7% moved down. After 14 years, 46.1% had moved up and 29.5% had moved down. Taxpayers who move up in the income distribution typically do not move far. The largest share of taxpayers who move up is in the 60% to 70% range in all years, though the shares of the higher deciles grow over time. The share of taxpayers who moved more than one decile group is larger among taxpayers who moved down than among those who moved up. After 2008, the share who moved to the bottom decile is larger than the share who moved to the 30% to 40% range

2011 Middle 20%

Only 44.2% of taxpayers in the middle 20% in 2011 had filed a return every year since 1997.

Taxpayers in Middle 20% of 2011 Distribution of Taxable Income Distribution in Previous Years



Share of Returns from 2011 Middle 20% by Year and Income Group

	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999	1998	1997
Top 10%	0.9%	1.4%	2.0%	2.6%	2.9%	3.1%	3.3%	3.6%	4.0%	4.4%	4.9%	5.2%	5.7%	6.0%
80% to 90%	1.8%	2.7%	3.6%	4.4%	4.7%	4.8%	5.9%	6.3%	6.8%	7.2%	7.7%	8.4%	8.5%	8.8%
70% to 80%	3.9%	5.4%	6.7%	7.6%	7.6%	7.7%	8.5%	9.0%	9.6%	9.9%	10.0%	10.2%	10.6%	10.8%
60% to 70%	11.6%	13.3%	12.5%	12.2%	11.9%	11.8%	12.5%	12.7%	12.9%	12.6%	12.7%	12.4%	12.6%	12.8%
50% to 60%	28.0%	24.4%	21.3%	18.8%	17.5%	17.2%	16.9%	16.8%	16.3%	15.8%	15.2%	14.9%	14.3%	14.3%
40% to 50%	29.9%	24.9%	23.4%	21.5%	20.0%	19.1%	17.6%	17.0%	16.3%	16.0%	15.3%	15.2%	14.8%	14.6%
30% to 40%	13.0%	12.9%	13.7%	13.9%	13.8%	13.4%	12.6%	12.0%	11.8%	11.4%	11.5%	11.3%	11.1%	10.8%
20% to 30%	5.8%	7.3%	8.6%	9.6%	10.2%	10.4%	10.3%	9.9%	9.4%	9.4%	9.4%	9.1%	8.9%	8.6%
10% to 20%	2.3%	3.8%	4.3%	5.1%	6.5%	6.8%	5.7%	5.7%	5.7%	6.0%	6.4%	6.3%	6.0%	5.8%
Bottom 10%	2.8%	3.8%	3.9%	4.4%	5.1%	5.7%	6.8%	7.0%	7.2%	7.1%	7.0%	7.0%	7.5%	7.5%

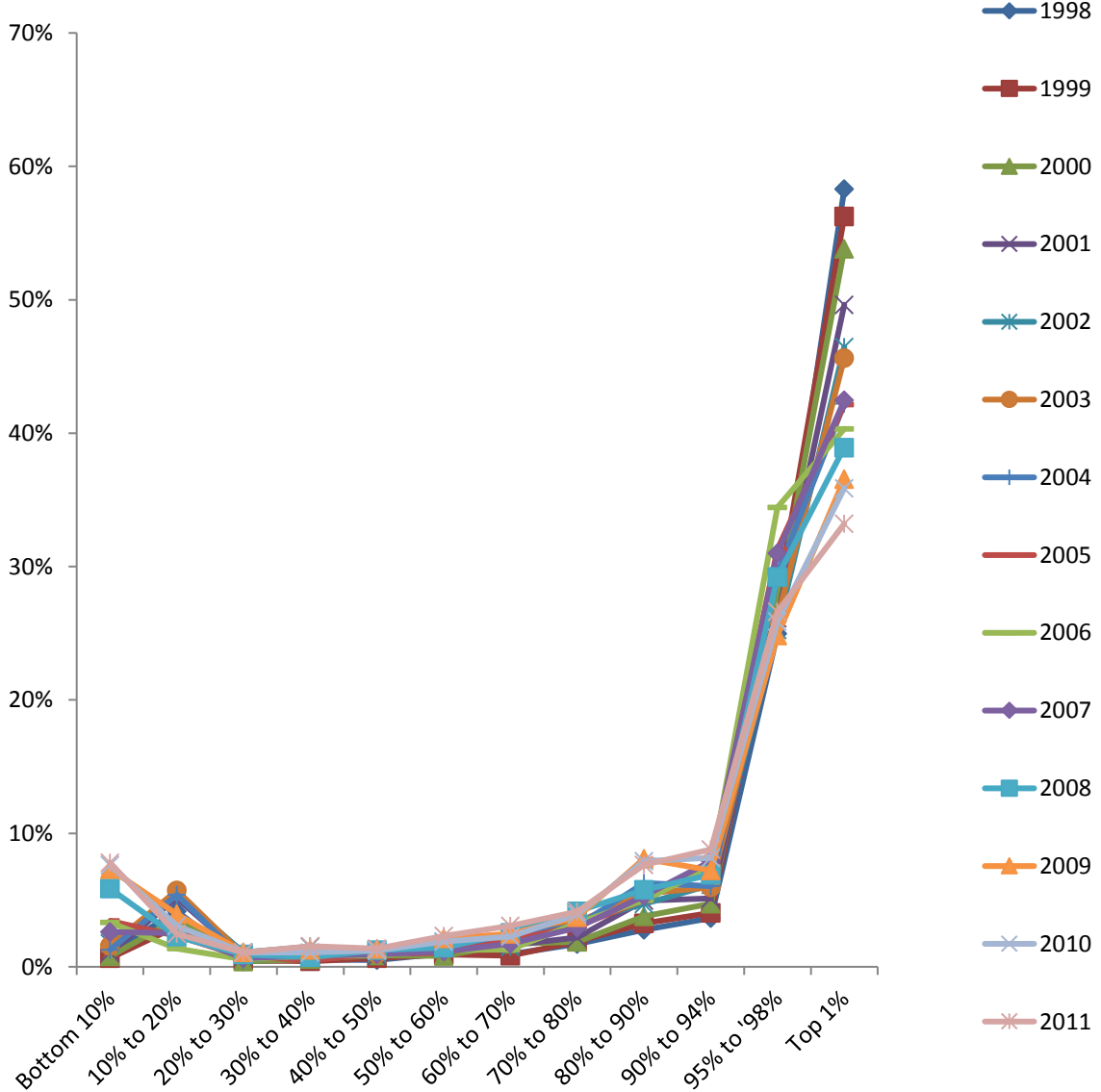
Taxpayers who were in the middle 20% of the income distribution are most likely to have been in the middle 20% in previous years, both in the short run and in the longer run. However, looking farther back, the distribution becomes flatter. In the short run, taxpayers in the middle 20% are more likely to have moved up from the lower 40% of the income distribution than to have moved down from the upper 40%. Looking back one year, 23.9% had moved up, and 18.2% had moved down. Over the longer term, this difference decreases and eventually disappears. Looking back 14 years, 34.3% had moved up and 35.2% had moved down. Looking back 13 years, 33.9% had moved up and 34.2% had moved down.

1997 Top 1%

Seventy-three percent of taxpayers in the top 1% of the income distribution in 1997 filed a return every year through 2011.

1% of Taxpayers with Highest 1997 Taxable Incomes

Distribution in Following Years



Share of Returns from 1997 Top 10% by Year and Income Group

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Top 1%	58.3%	56.3%	53.8%	49.6%	46.5%	45.6%	42.2%	42.1%	40.3%	42.5%	38.9%	36.6%	35.9%	33.2%
95% to '98%	25.0%	27.6%	27.1%	26.1%	25.2%	26.1%	29.5%	31.3%	34.4%	31.0%	29.2%	24.8%	25.9%	26.6%
90% to 94%	3.7%	4.0%	4.7%	5.1%	6.2%	6.0%	6.0%	7.6%	7.5%	7.9%	6.9%	7.2%	8.2%	8.8%
80% to 90%	2.8%	3.3%	3.8%	5.0%	4.7%	5.5%	6.3%	5.0%	5.0%	5.3%	5.8%	8.1%	7.9%	7.6%
70% to 80%	1.7%	1.9%	1.9%	2.2%	3.4%	3.3%	3.1%	3.1%	3.3%	2.9%	4.2%	3.7%	3.9%	4.1%
60% to 70%	0.9%	0.8%	1.7%	1.6%	1.5%	2.2%	2.3%	2.0%	1.3%	1.7%	2.5%	2.5%	2.3%	3.1%
50% to 60%	1.0%	0.9%	0.8%	1.6%	1.8%	1.3%	1.5%	1.0%	1.3%	1.1%	1.4%	2.1%	1.9%	2.3%
40% to 50%	0.5%	0.7%	0.8%	0.8%	1.0%	1.0%	1.1%	1.0%	0.9%	0.9%	1.3%	1.3%	1.2%	1.4%
30% to 40%	0.5%	0.4%	0.6%	0.9%	1.5%	0.7%	0.8%	0.5%	0.8%	0.8%	0.7%	1.3%	1.1%	1.6%
20% to 30%	0.4%	0.5%	0.4%	0.8%	1.1%	0.9%	0.5%	0.8%	0.6%	0.7%	0.9%	1.1%	1.1%	1.1%
10% to 20%	4.2%	3.0%	3.6%	5.2%	5.4%	5.7%	5.4%	2.3%	1.4%	2.5%	2.3%	3.9%	3.1%	2.5%
Bottom 10%	1.1%	0.7%	0.8%	1.1%	1.8%	1.6%	1.3%	3.4%	3.3%	2.6%	5.9%	7.3%	7.6%	7.8%

Taxpayers with the highest incomes in 1997 are likely to have high incomes in each of the following years. The share who stay in the top 1% is 58.3% after one year, and it is still 33.2% after 14 years. The share who stay in the top 10% is 86.9% after one year, and it is still 68.6% after 14 years.

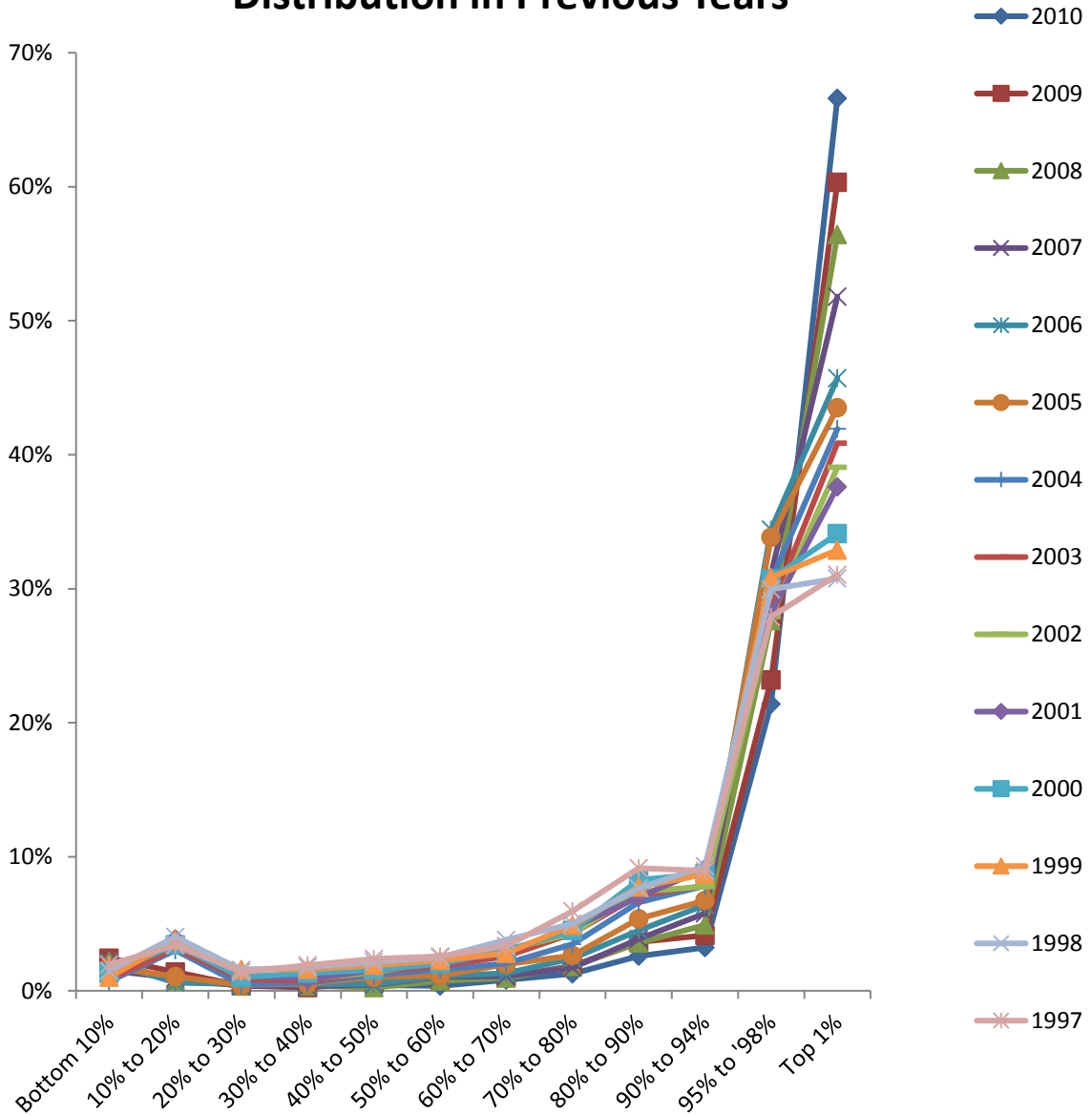
Taxpayers in the top 1% in 1997 who fall out of the top 10% are most likely to move to the next highest decile or to the bottom 20%. The share who fall into the bottom decile shows a large increase from 2007 to 2009, which may be related to the recession.

2011 Top 1%

Seventy percent of taxpayers in the top 1% of the income distribution in 2011 had filed a return every year since 1997.

1% of Taxpayers with Highest 2011 Taxable Incomes

Distribution in Previous Years



Share of Returns from 2011 Top 10% by Year and Income Group

	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999	1998	1997
Top 1%	66.6%	60.3%	56.4%	51.8%	45.7%	43.5%	41.9%	40.9%	39.1%	37.6%	34.1%	32.9%	30.8%	31.0%
95% to '98%	21.4%	23.2%	27.6%	31.1%	34.4%	33.9%	30.6%	28.5%	27.9%	28.2%	30.7%	30.8%	30.0%	27.9%
90% to 94%	3.2%	4.1%	4.9%	5.8%	6.4%	6.7%	7.8%	7.8%	7.8%	9.1%	8.7%	8.7%	9.3%	9.0%
80% to 90%	2.6%	3.6%	3.6%	3.9%	4.5%	5.4%	6.6%	7.1%	7.4%	7.0%	8.3%	7.7%	7.7%	9.2%
70% to 80%	1.3%	1.8%	1.8%	1.7%	2.4%	2.6%	3.5%	4.3%	4.3%	4.7%	4.5%	4.9%	5.0%	5.9%
60% to 70%	0.8%	1.0%	0.9%	1.1%	1.3%	2.0%	2.0%	2.6%	3.0%	2.8%	3.0%	2.8%	3.8%	3.4%
50% to 60%	0.4%	0.8%	0.7%	1.0%	1.1%	1.1%	1.6%	1.8%	2.2%	2.0%	2.0%	2.3%	2.5%	2.6%
40% to 50%	0.4%	0.6%	0.2%	0.4%	0.5%	1.0%	1.2%	1.4%	1.4%	1.5%	1.6%	1.9%	2.2%	2.4%
30% to 40%	0.4%	0.2%	0.4%	0.3%	0.5%	0.5%	0.6%	0.7%	0.9%	0.9%	1.3%	1.6%	1.8%	1.9%
20% to 30%	0.4%	0.4%	0.4%	0.4%	0.5%	0.4%	0.5%	0.9%	1.2%	1.1%	1.0%	1.6%	1.6%	1.4%
10% to 20%	0.9%	1.4%	0.8%	1.0%	0.6%	1.1%	3.0%	3.2%	3.7%	3.9%	3.4%	3.8%	4.0%	3.4%
Bottom 10%	1.6%	2.4%	2.2%	1.5%	2.1%	1.8%	0.7%	0.9%	1.2%	1.1%	1.3%	1.0%	1.5%	1.9%

Taxpayers with the highest incomes in 2011 are overwhelmingly likely to have had high incomes in previous years. One year earlier, 66.6% had been in the top 1% and 91.2% had been in the top 10%. Fourteen years earlier, 31.0% had been in the top 1% and 67.9% had been in the top 10%.

The share that moved up from lower in the income distribution increases over time but never becomes large. Only 4.9% of taxpayers in the top 1% in 2011 had been below the 70th percentile in 2010, and only 15% had been below the 70th percentile in 1997. Only 2.5% had been in the bottom 20% in 2010, and this share never is more than 5.5%.

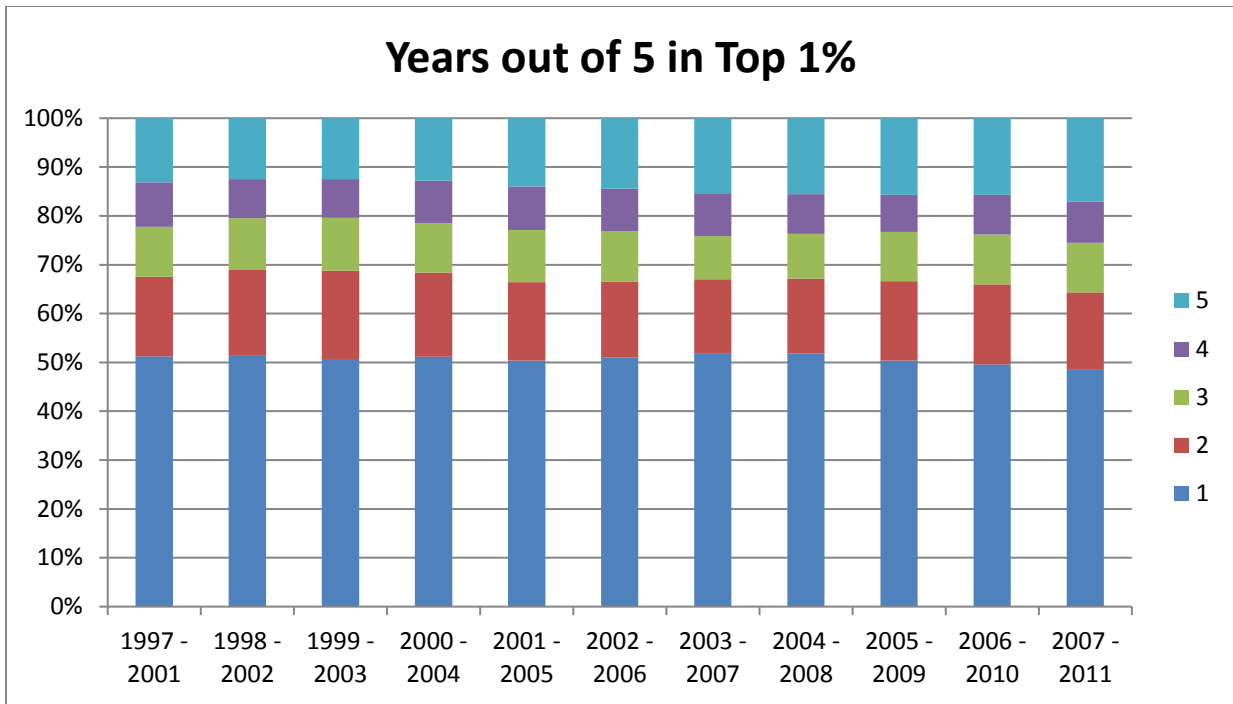
There appears to be an asymmetry in income changes over time for taxpayers with the highest incomes. Taxpayers with incomes in the top 1% have a non-negligible probability of falling into the bottom 10% in the future but have a very small probability of having been in the bottom 10% in the past. Taxpayers in the bottom 10% have zero taxable income every year. This means that their adjusted gross income is either negative or less than the taxpayer’s deductions and exemptions. For a business owner or someone in a high-paying profession, a year with zero taxable income is likely to be either a bad year reflecting business losses or possibly a business failure or a year during the start-up of a business or professional practice that is not profitable yet. The probability that someone in the top 1% will have a bad year is low but increases over time, reaching about 1 in 13 after 14 years. The probability that someone in the top 1% had either a bad year or a business start-up in the recent past is low and stays low.

Years Taxpayers Stay in an Income Group

The preceding graphs and tables show the share of taxpayers in one income group in a base year who are in another income group in a second year. They do not show how these aggregate movements are made up of movements of individual taxpayers. For example, if 5% of taxpayers who were in income group A in the base year are in income group B in every later year, it could be because 5% of taxpayers in group A moved to group B and stayed there or because a different 5% of the taxpayers initially in group A are in group B in each later year.

On average, 2.8% of taxpayers had incomes in the top 1% during a five year period. For taxpayers whose incomes were in the top 1% at least one year in five, the following table and graph show the fractions that were in the top 1% one year, two years, three years, four years, and five years.

Years out of 5 in Top 1% - Taxpayers in Top 1% at Least One Year												
	1997 - 2001	1998 - 2002	1999 - 2003	2000 - 2004	2001 - 2005	2002 - 2006	2003 - 2007	2004 - 2008	2005 - 2009	2006 - 2010	2007 - 2011	average
1	51.25%	51.51%	50.74%	51.14%	50.39%	51.05%	51.74%	51.81%	50.36%	49.57%	48.47%	50.75%
2	16.28%	17.42%	18.06%	17.24%	16.03%	15.49%	15.26%	15.36%	16.29%	16.39%	15.89%	16.36%
3	10.23%	10.60%	10.78%	10.17%	10.72%	10.29%	8.87%	9.16%	10.05%	10.26%	10.15%	10.13%
4	9.11%	8.01%	7.92%	8.68%	8.86%	8.76%	8.77%	8.09%	7.63%	8.09%	8.45%	8.40%
5	13.14%	12.45%	12.50%	12.77%	14.00%	14.41%	15.36%	15.57%	15.67%	15.69%	17.04%	14.36%

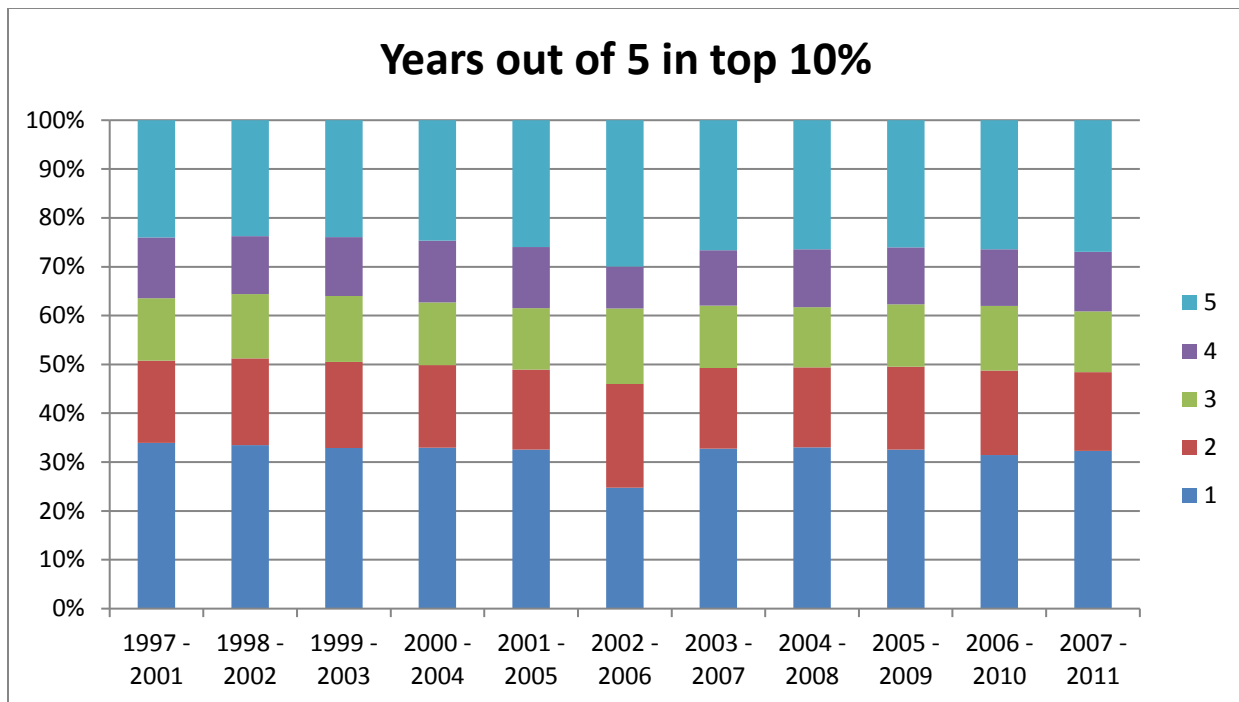


Only about half of taxpayers who have incomes in the top 1% during a five year period are in the top 1% more than once. However, this distribution has been changing over time, with the share who are in the top 1% all five years increasing and the other shares generally decreasing.

On average, 22.5% of taxpayers had incomes in the top 10% at least once in a five year period.

Years out of 5 in Top 10% - Taxpayers in Top 10% at Least One Year

	1997 - 2001	1998 - 2002	1999 - 2003	2000 - 2004	2001 - 2005	2002 - 2006	2003 - 2007	2004 - 2008	2005 - 2009	2006 - 2010	2007 - 2011	average
1	33.96%	33.48%	32.89%	32.97%	32.56%	24.77%	32.77%	33.03%	32.53%	31.46%	32.32%	32.12%
2	16.84%	17.76%	17.63%	16.89%	16.40%	21.25%	16.49%	16.40%	17.02%	17.27%	16.12%	17.26%
3	12.74%	13.15%	13.51%	12.85%	12.58%	15.46%	12.78%	12.27%	12.76%	13.28%	12.44%	13.06%
4	12.47%	11.88%	12.03%	12.62%	12.52%	8.58%	11.35%	11.85%	11.68%	11.55%	12.16%	11.72%
5	24.00%	23.72%	23.94%	24.67%	25.94%	29.94%	26.62%	26.45%	26.02%	26.45%	26.96%	25.83%

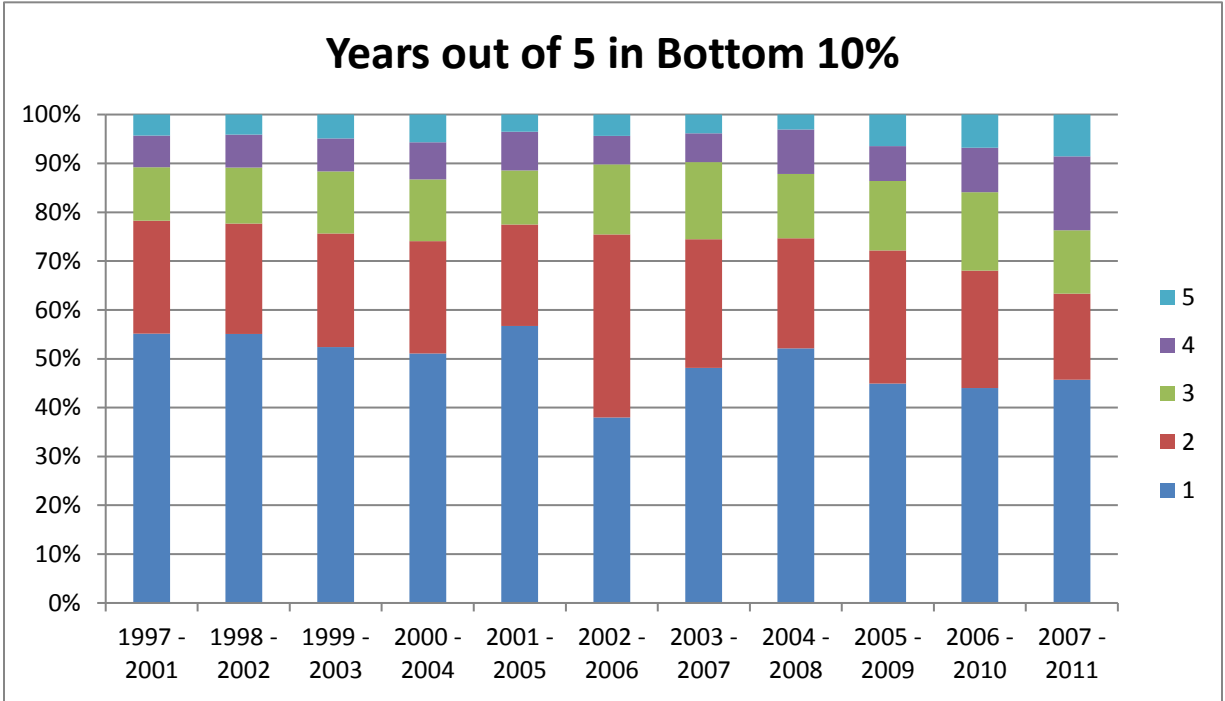


Over two-thirds of taxpayers who had incomes in the top 10% at least once in a five year period were in the top 10% more than one year, and over one-fourth were in the top 10% all five years. Taxpayers appear to have been more likely to be in the top 10% multiple years in the 2002 – 2006 period than in other periods. In the other periods, there appears to be a slight trend toward taxpayers spending more years in the top 10%.

On average, 19.0% of taxpayers had incomes in the bottom 10% at least one year in a five year period.

Years out of 5 in Bottom 10% - Taxpayers in Bottom 10% at Least One Year

	1997 - 2001	1998 - 2002	1999 - 2003	2000 - 2004	2001 - 2005	2002 - 2006	2003 - 2007	2004 - 2008	2005 - 2009	2006 - 2010	2007 - 2011	average
1	55.16%	55.07%	52.41%	51.06%	56.72%	37.97%	48.16%	52.12%	44.92%	43.99%	45.69%	49.17%
2	23.09%	22.58%	23.21%	23.01%	20.76%	37.47%	26.30%	22.56%	27.26%	24.06%	17.63%	24.34%
3	10.98%	11.47%	12.74%	12.68%	11.10%	14.33%	15.78%	13.16%	14.23%	16.08%	12.99%	13.32%
4	6.45%	6.75%	6.75%	7.54%	7.89%	5.83%	5.94%	9.12%	7.14%	9.05%	15.14%	8.07%
5	4.31%	4.12%	4.89%	5.70%	3.53%	4.39%	3.82%	3.05%	6.44%	6.82%	8.56%	5.09%

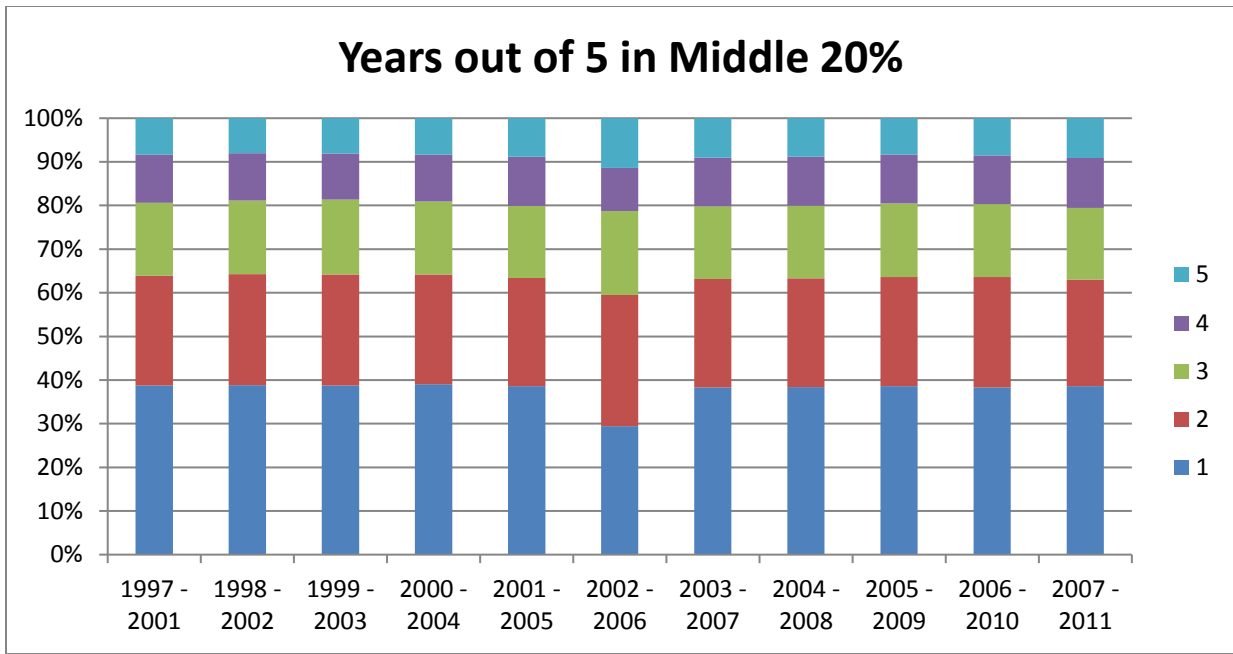


The proportion of taxpayers in the bottom 10% multiple years is higher in the 2002-2006 period and also in the last three periods, which would include the recent recession.

On average, 44.8% of taxpayers had incomes that were in the middle 20% of the income distribution at least once in a five year period.

Years out of 5 in Middle 20% - Taxpayers in Middle 20% at Least One Year

	1997 - 2001	1998 - 2002	1999 - 2003	2000 - 2004	2001 - 2005	2002 - 2006	2003 - 2007	2004 - 2008	2005 - 2009	2006 - 2010	2007 - 2011	average
1	38.74%	38.83%	38.74%	39.08%	38.63%	29.48%	38.33%	38.41%	38.63%	38.30%	38.59%	37.85%
2	25.14%	25.43%	25.47%	25.14%	24.79%	30.05%	24.86%	24.90%	24.99%	25.28%	24.46%	25.47%
3	16.73%	16.84%	17.14%	16.66%	16.44%	19.16%	16.66%	16.63%	16.86%	16.78%	16.43%	16.92%
4	10.99%	10.85%	10.53%	10.78%	11.30%	9.92%	11.14%	11.23%	11.19%	11.14%	11.42%	10.96%
5	8.41%	8.05%	8.12%	8.35%	8.85%	11.39%	9.01%	8.83%	8.33%	8.50%	9.11%	8.79%



As with the top and bottom deciles, the shares of taxpayers in the middle 20% multiple years is higher for the period 2002-2006, but there does not appear to be a general trend.

There is considerable movement of taxpayers up and down the income distribution. This is consistent with both life-cycle effects on incomes and random or cyclic variations. Without knowing taxpayers' ages, it is not possible to separate out these possible effects. The severe national recession of 2008 and the following slow recovery appear to have made it more likely for taxpayers to stay in the bottom decile for multiple years. Possible reasons for the decreased movement between income groups in the 2002-2006 period are unclear.

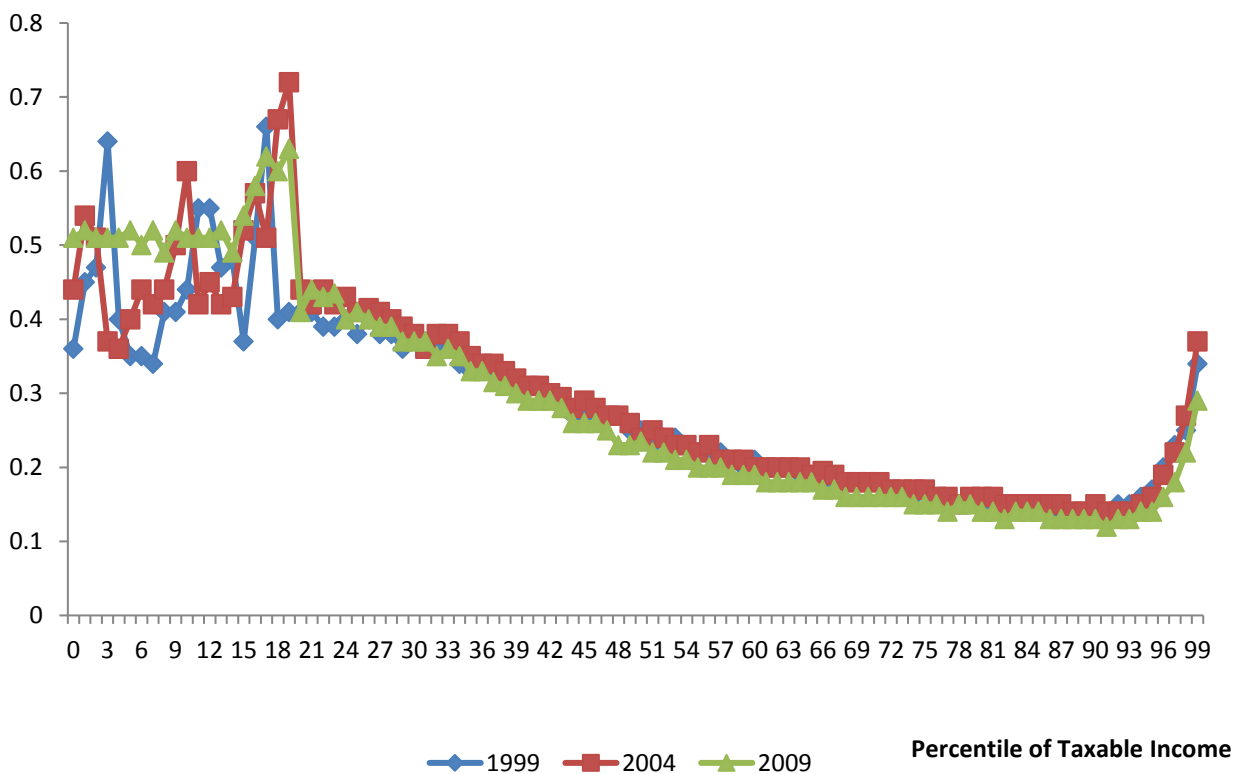
Volatility of Individual Incomes

This section examines whether there are patterns in the variability of individual incomes. Are incomes more variable at the top or bottom of the income distribution, or in the middle? How is the variability of individual incomes related to the types of incomes people receive? For example, do people who get a larger percentage of their income from capital gains have more variable incomes? To what extent are people in the top and bottom of the income distribution in a year there because they have a good or bad year?

Tax returns were divided into three five-year periods, 1997 to 2001, 2002 to 2006, and 2007 to 2011. Taxpayers who filed a return in all five years were selected for each period. The coefficient of variation (CV) of the five observations of total income was calculated for each taxpayer². The distributions of individual CVs were then compared across percentiles of taxable income. The following graph shows the median CV of total income for each percentile group for the three time periods. The median is shown instead of the mean because, as will be seen below, the distribution within each percentile is very skewed, and the median gives a better indication of the typical value for a skewed distribution.

² The coefficient of variation (CV) is a useful measure of relative variability. The CV is the standard deviation of a group of numbers divided by their mean. It has no units, and can therefore be used to compare the relative variability of different populations.

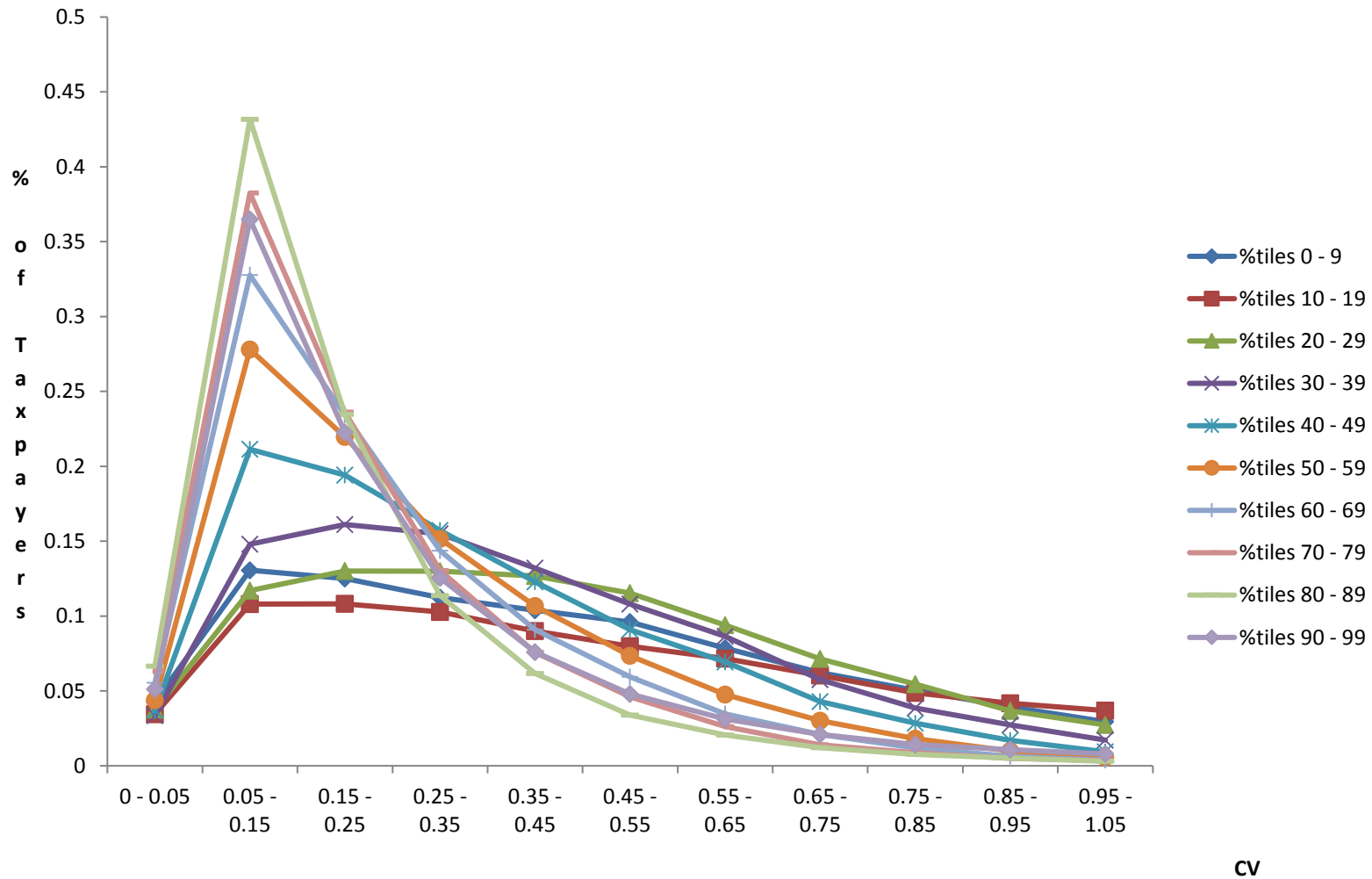
Coefficient of Variation of Five Years of Individual Total Income Median for Percentiles of Taxable Income in Third Year



The graphs for the three time periods are very similar. The greatest variability of individual incomes is at the bottom of the income distribution. The median CV is generally higher for the bottom fifth of the income distribution than for higher percentiles, and the median CV bounces around quite a bit. From about the 20th percentile to the 90th, the CV declines steadily and smoothly, and the median CV for the 90th to 95th percentiles is about a third of the median CV for the 20th through 25th percentiles. The median CV rises again for the highest incomes, so that the top 1% has a median CV in the same range as the 30th to 40th percentiles.

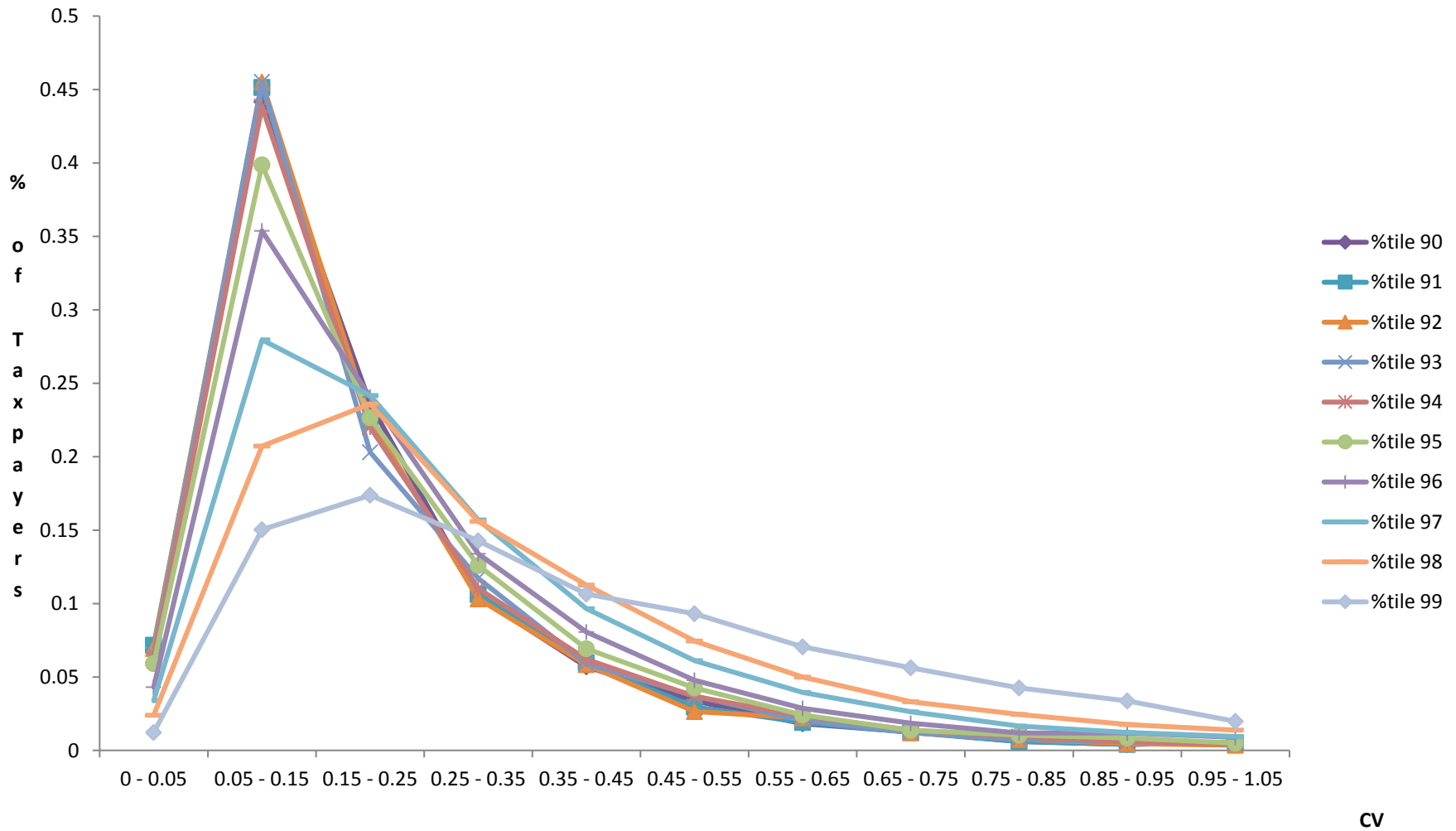
The next three graphs show the distribution of individual CVs of income within income groups, for the 2002 to 2006 period. Each line shows the percent of taxpayers in each group whose CV falls in one of the ranges shown on the horizontal axis. For example, the first graph shows that 13% of taxpayers in the bottom decile had a CV between 0.05 and 0.15, and 36% of taxpayers in the top decile had a CV in the same range. The first graph shows this information for each decile group. The second shows it for the 90th through 99th percentile groups. The third shows it for the two bottom deciles, the two middle deciles, the 90th percentile, and the two top percentiles.

Distributions of Coefficient of Variation of Individual Incomes, 2002 - 2006 Deciles of 2004 Taxable Income



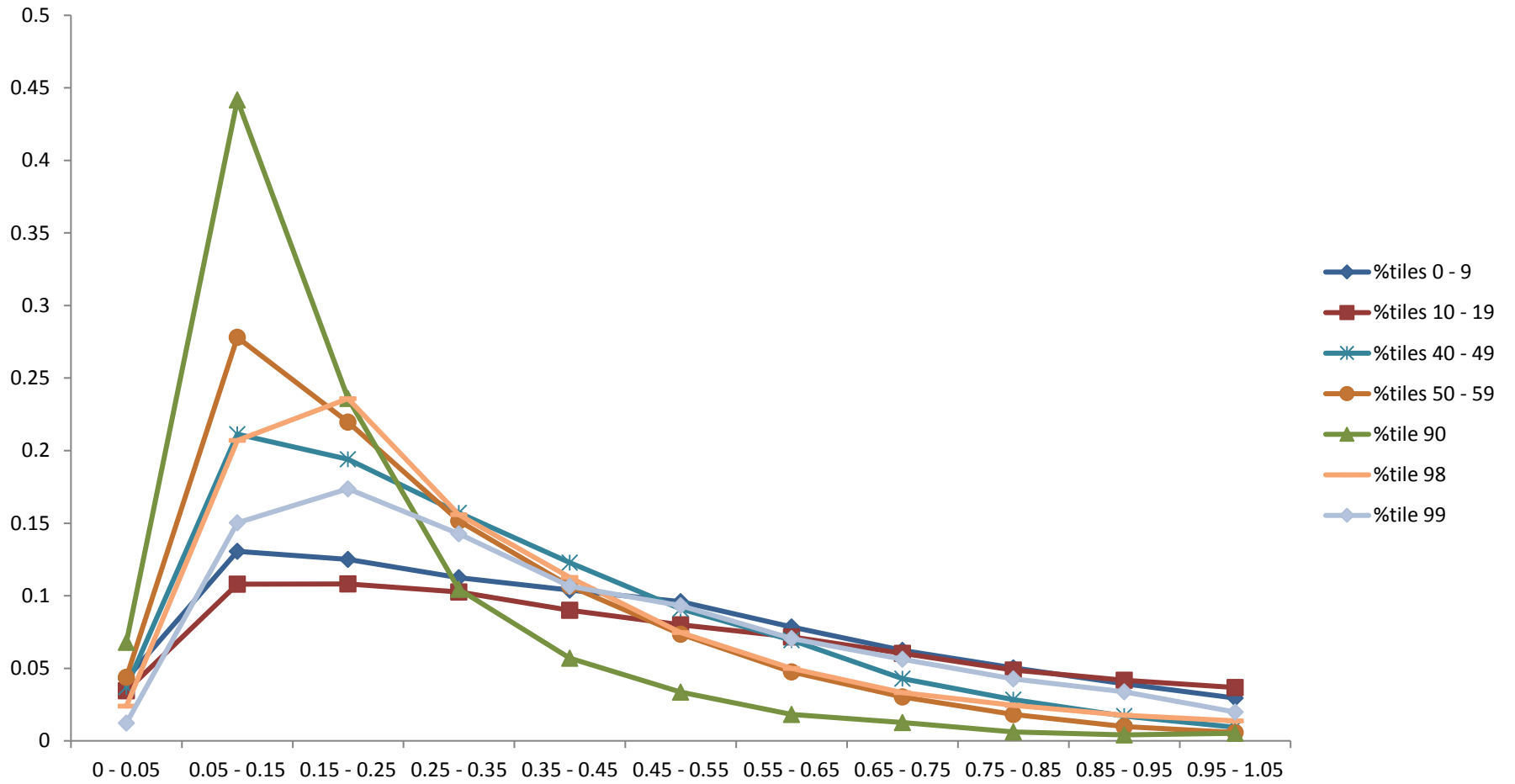
Distributions of Coefficient of Variation of Individual Income, 2002 - 2006

Percentiles of Taxable Income



Distributions of Coefficient of Variation of Individual Incomes, 2002 - 2006

Grouped by Taxable Income



For eight decile groups, the distribution peaks in the 0.05 to 0.15 range, and for the other two it peaks in the 0.15 to 0.25 range. All of the distributions have long right tails. The graph stops at 1.05, but the distributions continue far to the right, with a small number of taxpayers having very high CVs.

The shape of the distributions varies consistently between decile groups. The four lowest decile groups have the flattest distributions. The distributions become more peaked, moving up to the second highest decile. The highest decile has a high peak, but its peak is slightly below the peaks of the next two lower deciles.

In general, taxpayers in the higher income groups are more likely to have relatively stable incomes, as indicated by a low CV and are less likely to have very volatile incomes as indicated by a high CV.

Within the top decile, the opposite pattern holds. The distributions of the 90th through 94th percentiles are essentially the same, with a high peak in the 0.05 to 0.15 range and few taxpayers in the right tail. The 95th through 99th percentiles have progressively lower peaks, with the 98th and 99th percentiles having peaks in the 0.15 to 0.25 range, and larger right tails.

As the third graph shows, taxpayers in the bottom 20% of the income distribution are least likely to have stable incomes and most likely to have very volatile incomes. Taxpayers in the top 1% of the income distribution are less likely to have stable incomes and more likely to have very volatile incomes than taxpayers in the middle 20% of the income distribution, but taxpayers in the second highest 1% have income volatility that is not that different from the middle 20%'s. Taxpayers in the 90th percentile are the most likely to have stable incomes, and are much more likely to have stable incomes than taxpayers in the bottom, middle, or very top of the income distribution.

Individual Income Volatility and the Types of Income People Earn

Taxpayers can have income from a variety of sources, including wages and salaries, passive investment earnings, income (or loss) from active involvement in a business, gains (or losses) on asset sales, and retirement income. Taxpayers differ in the share of income from each possible source, and different types of income may be more or less volatile. This section shows how the types of income taxpayers receive differs across income levels and examines how the types of income taxpayers receive is correlated with income volatility.

Current Montana income tax returns have fifteen lines for reporting different types of income. They are

- wages and salaries,
- interest,
- dividends,
- federally taxable refunds of state income taxes,
- alimony,
- net income or loss from a sole-proprietor non-farm business,
- gains or losses from asset sales treated as capital gains,
- gains or losses from asset sales treated as ordinary income,
- IRA distributions,
- pension and annuity income,
- income or loss from pass-through entities, rental real estate, and royalties,
- income or loss from sole-proprietor farm operations,
- unemployment compensation,
- social security benefits, and
- other income or loss.

One of the most important items included in the other income or loss line is net operating losses carried forward or backward from another tax year when the taxpayer had losses that were more than other income.

Most commercial farms are organized as C-corporations or pass-through entities, and income from these farms shows up either as dividends or pass-through income. Most of what is reported on the line for income or loss from sole-proprietor farm operations would be better described as hobby farm losses.

Montana law ties to the federal definition of adjusted gross income, and the income lines on the Montana return are the same as on the federal income tax return. Montana does not tax refunds of state income taxes or unemployment benefits, and these are subtracted from federal adjusted gross income in calculating Montana adjusted gross income.

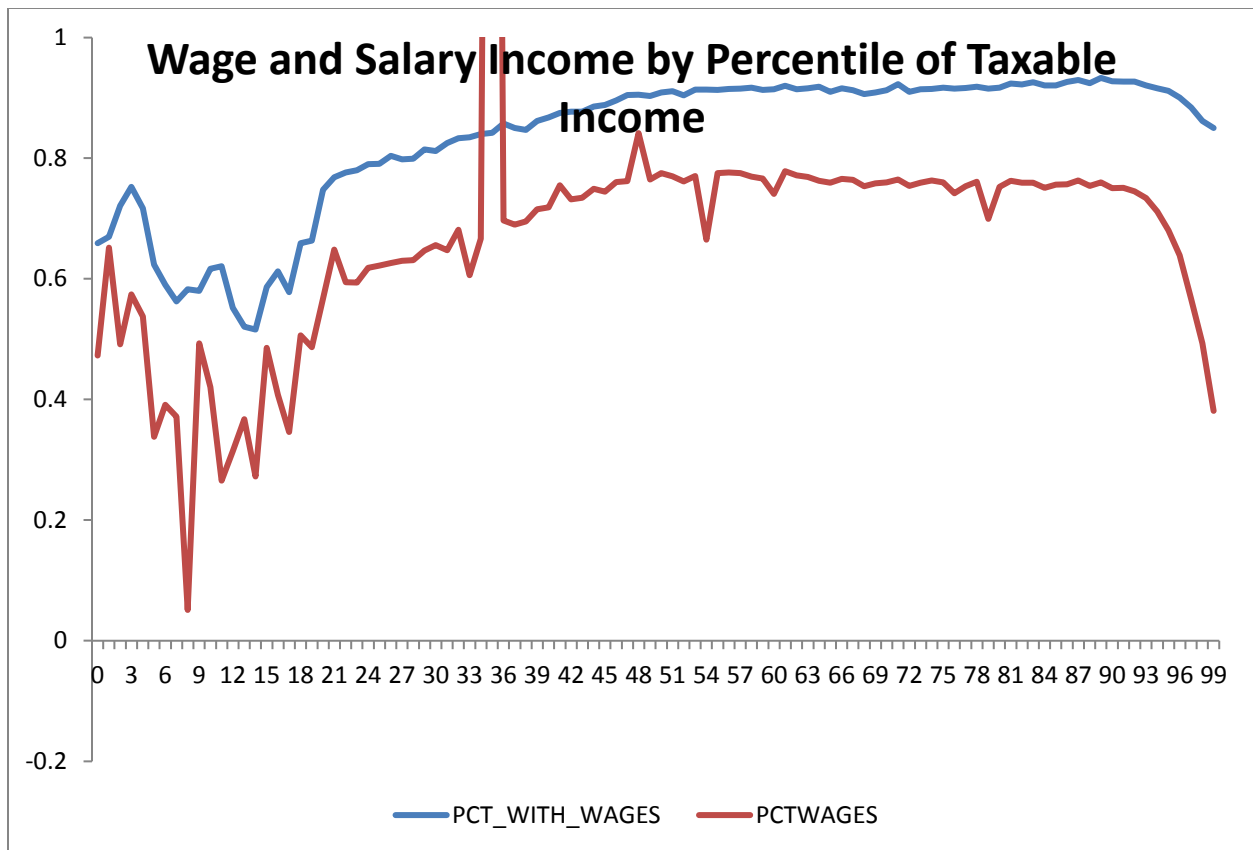
Before 2005, several line items, including refunds of state taxes, alimony, and unemployment compensation, were combined with the other income line. Therefore, it is not possible to track these items separately before 2005. Some of the line items that can be tracked since 1997 can be combined into broader categories, such as passive investment income, income or loss from active involvement in a

business, and retirement income. The income line items therefore were combined into the following six categories

- wages and salaries
- passive investment income
 - = interest + dividends,
- active business income or loss
 - = net income or loss from a sole-proprietor non-farm business
 - + income or loss from pass-through entities, rental real estate, and royalties
- gain or loss from asset sales
 - = gains or losses from asset sales treated as capital gains
 - + gains or losses from asset sales treated as ordinary income
- retirement income
 - = IRA distributions
 - + pension and annuity income
 - + social security benefits
- Other
 - = alimony
 - + income or loss from sole-proprietor farm operations
 - + federally taxable refunds of state income taxes
 - + unemployment compensation
 - + other income or loss.

The following graphs show the fraction of taxpayers reporting income from each category and the fraction of total income from each category for each percentile of taxable income over the period 1997 to 2011.

The first shows wage and salary income. The blue line shows the fraction of taxpayers in each percentile with wage and salary income, and the red line shows the fraction of total income reported by taxpayers in each percentile that is from wages and salaries.



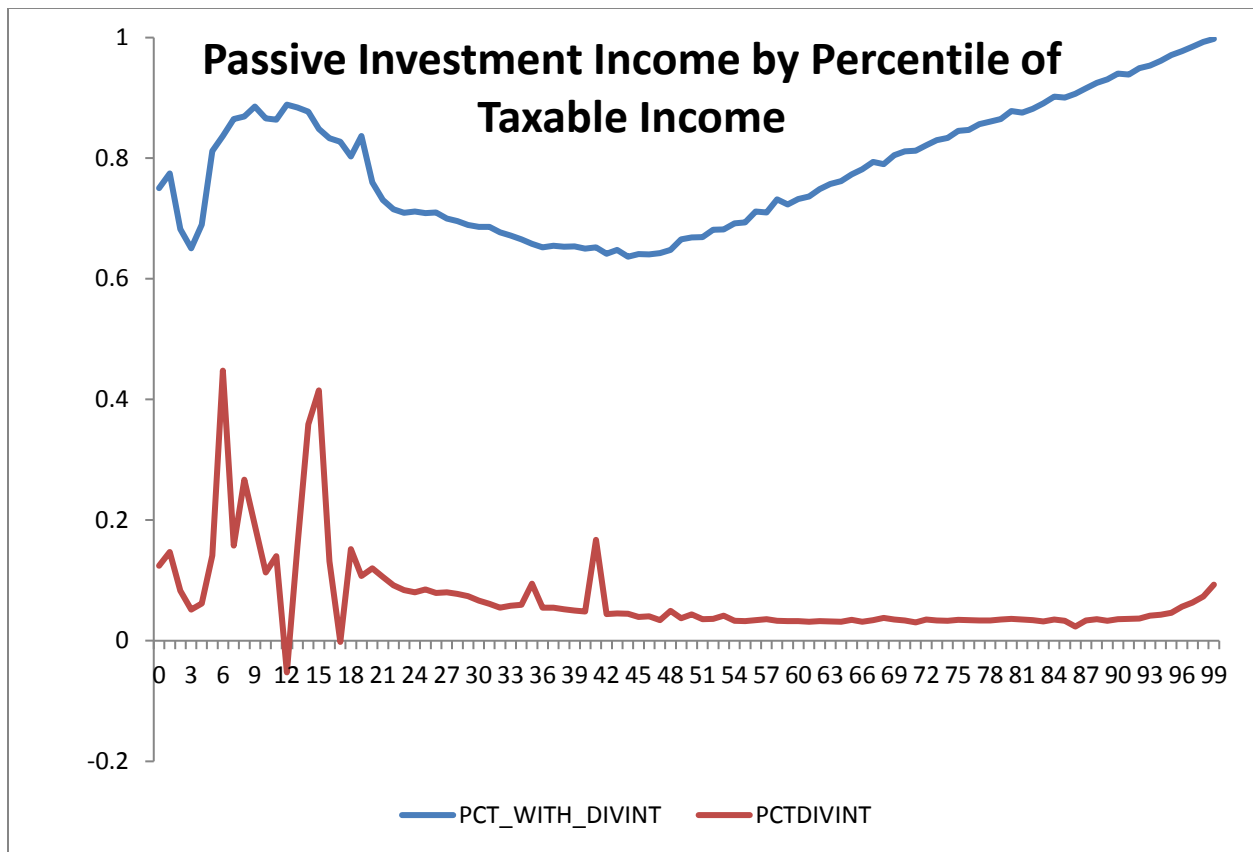
The fraction of taxpayers with wage and salary income and the fraction of income from wages and salaries is lower and more variable for the bottom 20 percentiles than for the rest of the income distribution.

The fraction of taxpayers with wage and salary income generally increases from about the 20th percentile to the 50th. Then it is steady at about 91% up to about the 90th percentile, and then decreases slightly. In the top percentile, 85% of taxpayers reported wage and salary income.

The fraction of income from wages and salaries generally increases from the 20th percentile to the 50th. Then it is relatively steady at about 76% up to the 90th percentile. In the top 10%, the share of income from wages and salaries drops off, and is only 38% in the top percentile.

The distribution of the fraction of income from wages and salaries has a number of spikes and troughs. This is primarily because some income line items can be negative, but the sum of line items must add up to 100% of the total. For example, the share of income from wages and salaries is more than 100% for the 35th percentile. This is because this percentile happens to contain an unusually large number of taxpayers with losses that offset part of their income.

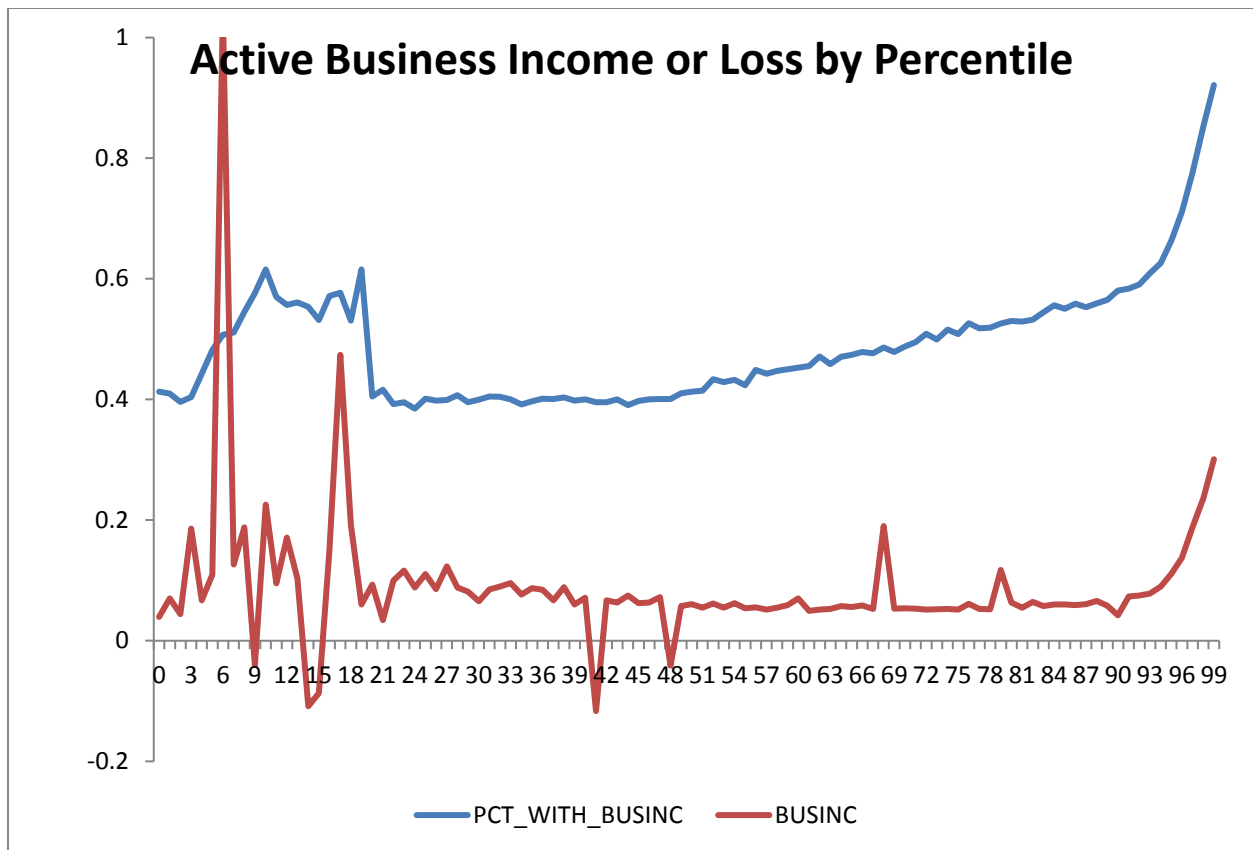
The next graph shows passive investment income, dividends and interest.



The fraction of taxpayers with passive investment income is high, but variable in the bottom 20% of the income distribution. It drops slightly, to 64% for the 45th percentile and then increases steadily to 99.8% for the top percentile. This category includes interest on bank accounts as well as stock dividends and interest on corporate bonds, so it is not surprising that most taxpayer receive some passive investment income.

The fraction of income from passive investments is generally highest, but quite variable, in the bottom 20% of the income distribution. From 12% for the 20th percentile, the fraction generally falls to about the 50th percentile, and then stays in the 2% to 3% range from the 50th percentile to the 90th. The fraction increases in the top 10% of the distribution, but is only 9% for the top percentile.

The next graph shows gain or loss from active involvement in a business.

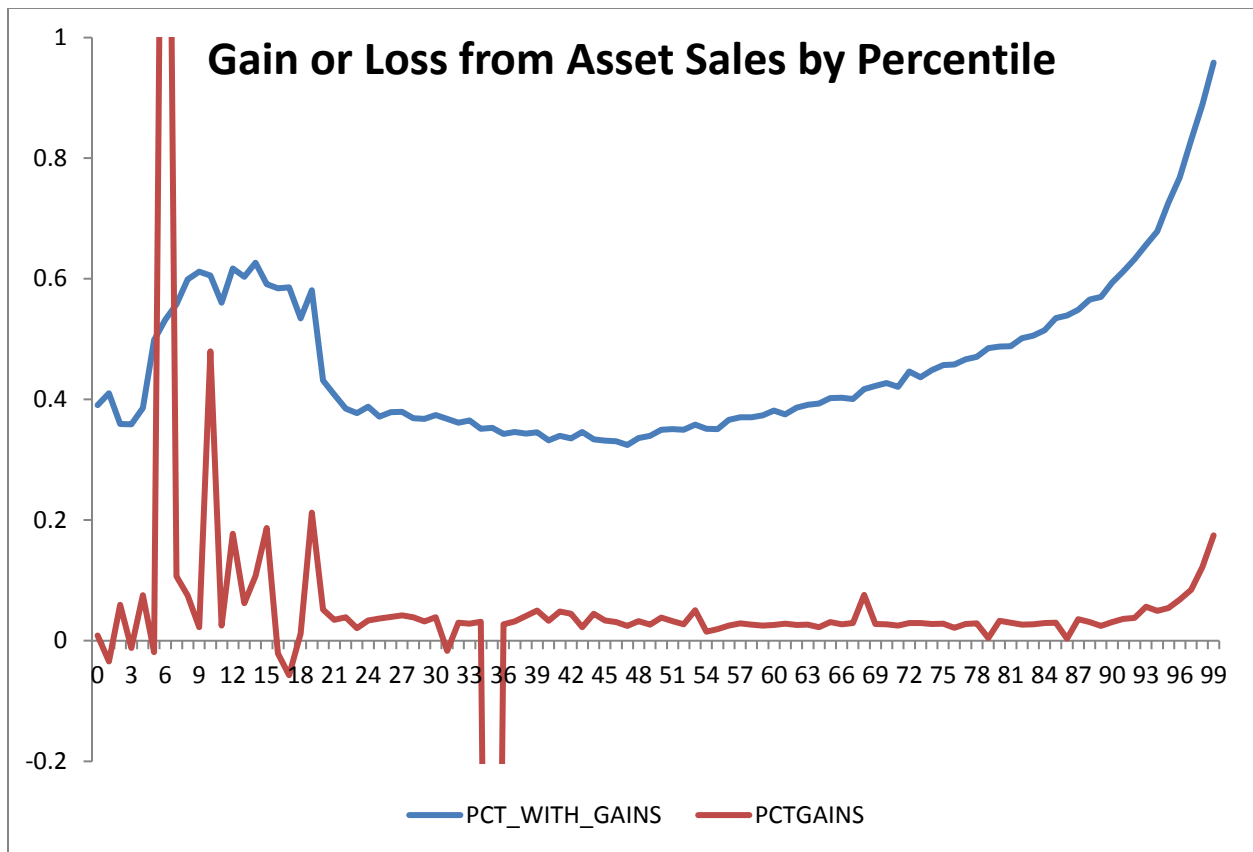


The fraction of taxpayers with active business incomes or losses is about 40% at both the bottom of the income distribution and the 20th percentile, and higher in between. The fraction of income from active involvement in business is highly variable in this range. Taxpayers in this range of incomes with part of their income from a business are probably a mix of people with start-ups, with established businesses having a bad year, and with part-time sideline businesses.

The fraction of taxpayers with active business income or loss is about 40% from the 20th to the 50th percentiles. From the 50th to the 90th percentiles, the fraction with income from active business increases steadily to about 60% and then increases more rapidly in the top 10% of the income distribution. In the top percentile, 91% of taxpayers have income from active involvement in a business.

The fraction of income from active business generally falls slightly from the low 20th percentiles, where it is in the 11% to 12% range to about the 50th percentile. From the 50th percentile to about the 90th, it is in the range of 5% to 6%. It increases in the top 10%, and is 30% for the top percentile.

The next graph show gain or loss from asset sales.

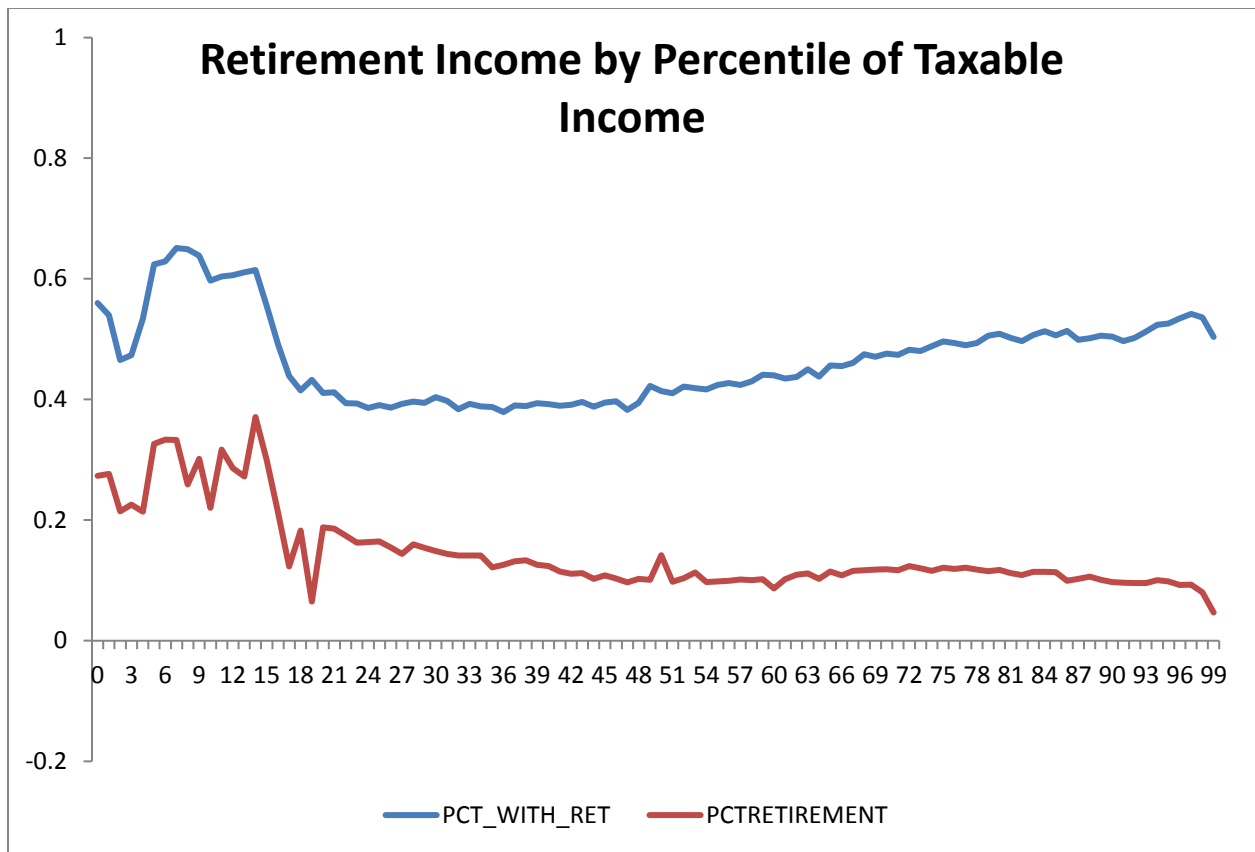


The fraction of taxpayers with gains or losses from asset sales is about 40% for the lowest percentile and the 20th percentile and is higher in between. The fraction of income from gains or losses is extremely variable in this range, ranging from more than 100% to less than zero. Taxpayers in this part of the income distribution have very low or negative total income. Some have losses on asset sales that contribute to their negative income. Other may have large gains on asset sales that are offset by other types of losses.

Between the 20th and 50th percentiles, the fraction of taxpayers with gains or losses from asset sales generally decreases from about 40% to about 33%. In the top half of the income distribution, the fraction increases at an increasing rate and reaches 96% for the top percentile.

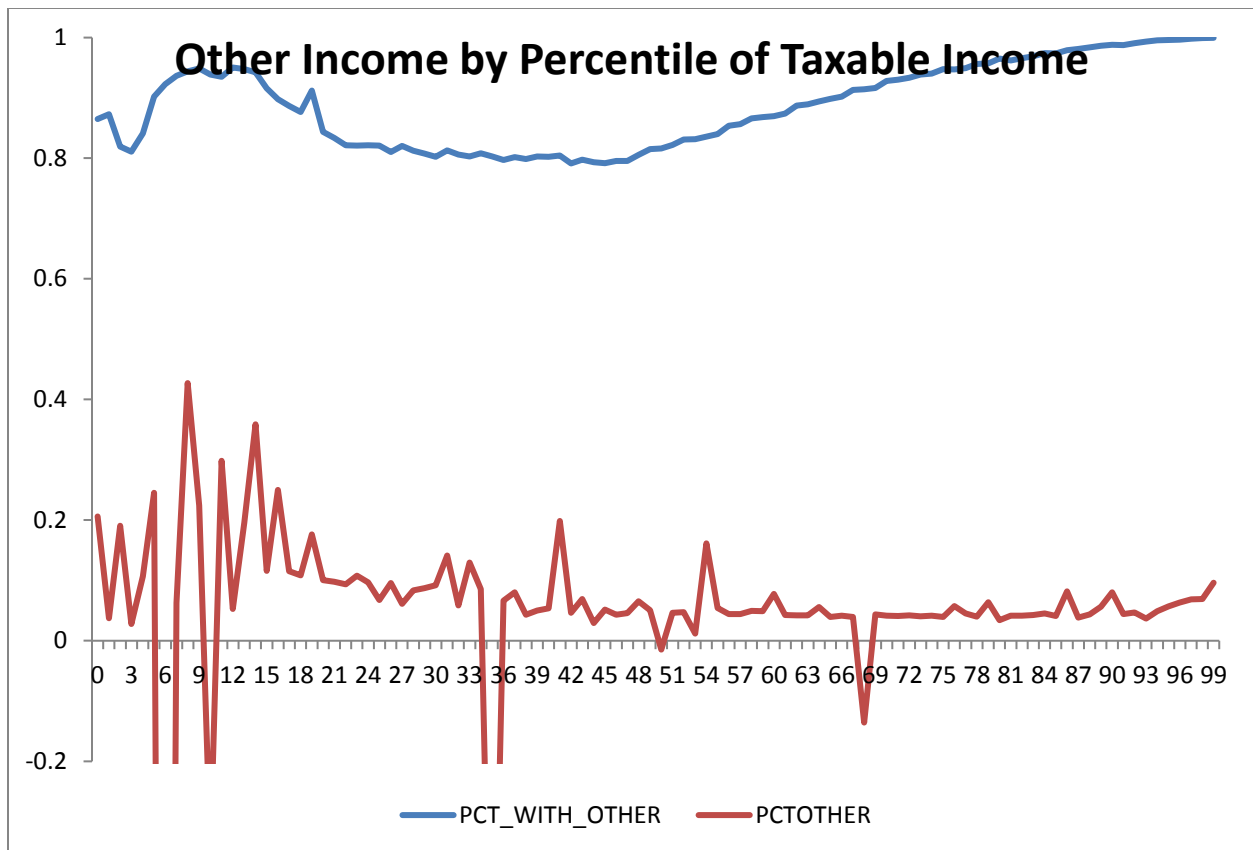
Between about the 20th and 90th percentiles, the fraction of income from gains on asset sales is about 3%, with a few exceptions. In particular, as pointed out above, the 35th percentile happens to contain an unusual number of taxpayers with large losses. Above the 90th percentile, the fraction of income from gains on asset sales increases, but only to 17% for the top percentile.

The next graph shows retirement income from IRAs, pensions, annuities, and Social Security.



Both the fraction of taxpayers with retirement income and the fraction of total income from retirement sources are highest in the bottom 20% of the income distribution. The fraction of taxpayers with retirement income generally is a little less than 40% between the 20th and 50th percentiles and then generally increases, hitting 54% at the 97th percentile. The fraction of income from retirement sources generally decreases from about the 20th percentile to the 50th, from a little less than 20% to a little less than 20%. It is slightly higher, 10% to 12%, between the 65th and 85th percentiles, and falls off at the highest incomes. It is 5% for the top percentile

The final graph shows income from the sources lumped together in the other category.



The fraction of taxpayers with at least one type of income or loss in the other category is high, over 80% at all income levels. It is higher at lower and higher incomes, and is essentially 100% at the top of the income distribution. The fraction of income from sources in the other category is low and variable, particularly at low incomes. The other category includes net operating losses carried forward or back from other years, which probably explains the percentiles where other income is a negative share of total income. The other category also includes unemployment, which could explain both the higher fraction of taxpayers with other income and the generally high fraction of income from the sources at lower incomes.

To test whether the volatility of individual incomes is related to the types of incomes individuals receive, individual coefficients of variation (CVs) of five years of income were regressed on the shares of income from the income categories. To calculate the CVs, three data sets were constructed and then merged. The first was made up of taxpayers who filed a return each year in the period 1997 through 2001. The second was made up of taxpayers who filed a return each year in 2002 through 2006, and the third filed returns each year in 2007 through 2011.

Taxpayers were assigned to income groups based on their position in the distribution of taxable income in the middle year of each period. Groups 0 through 8 are the first nine deciles. Since there appear to be a number of differences within the top decile, it was separated into percentiles. These are labeled Groups 90 through 99. A separate regression was run for each income group.

Since the sum of the proportions of income coming from the categories is 100% by definition, it is necessary to leave one of the income shares out of the regression. The coefficients of the other income

shares show the differences in the effect on volatility between the income shares in the regression and the baseline. Wage and salary income was chosen as the baseline.

To account for the possibility that income volatility may have changed over time, dummy variables were estimated for the second and third periods.

Estimated coefficients are shown in the appendix. The following matrix shows the signs of coefficients that are statistically significantly different from zero.

SIGNS OF COEFFICIENTS SIGNIFICANTLY DIFFERENT FROM ZERO

	Group 0	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7	Group 8	Group 90	Group 91	Group 92	Group 93	Group 94	Group 95	Group 96	Group 97	Group 98	Group 99
PCT PASSIVE INVESTMENT INCOME	+	+	+	-		+			-	-		-	-		-		+		
PCT ACTIVE BUSINESS INCOME						+	+	+	+		+	+		+	+		+		
PCT GAINS & LOSSES ON ASSET SALES	+			-		+	+			+		+	+	+	+	+		+	+
PCT RETIREMENT INCOME			-			+				+	+	+	+	+	+				
PCT OTHER INCOME			-	+		+	+			+		+	+		+		-		
DUM2004				-		+				+			+	+	+	+		+	+
DUM2009	+			-		-										+			+

A higher share of income from passive investments tends to be associated with less income volatility, particularly at higher income. Interest, and to a lesser extent dividends, are relatively stable income sources. Taxpayers who want more stable incomes may structure their finances to receive more of their income in these forms.

Higher shares of the other types of income tend to be associated with more variable incomes at higher income levels. Except for retirement, all of these types of income are more volatile than wages and salaries, and higher income taxpayers who receive more of their income in these forms would tend to have more volatile incomes. Pensions, annuities, and social security are not volatile, but since taxpayers can choose how much to withdraw from an IRA each year, IRA income may be. Taxpayers may be making uneven withdrawals from IRAs to finance discrete purchases, such as a new car or a trip. It is also possible that taxpayers with volatile incomes from other may make larger IRA withdrawals in years when their income from other sources is low.

Higher shares of the other types of income tend to be associated with less variable incomes between the 20th and 40th percentiles. One possible explanation for this is that this part of the income distribution contains a significant number of younger and older taxpayers who may work part-time or seasonally and who may move into and out of the labor force. These taxpayers would have relatively volatile incomes from wages, and having income from other sources might reduce the volatility of their incomes.

Incomes in the top of the distribution appear to have been more volatile in 2002 through 2006 than in 1997 through 2001, but the differences in the rest of the income distribution and in 2007 through 2011 look likely to be random.

Summary of Findings

Taxpayers in the top 10% of the income distribution are likely to have been there in previous years and are likely to stay there in future years. Few taxpayers who have moved up to the top decile started in the bottom half of the income distribution.

Taxpayers in the bottom 10% of the income distribution are likely to have been there in previous years. Most taxpayers in the bottom decile move up in the income distribution over time, but about one fifth stay there long-term.

Taxpayers in the middle 20% of the income distribution are most likely to have been in the middle 20% in the past and to stay there in the future. Taxpayers who have moved to the middle 20% are equally likely to have moved up and to have moved down in the income distribution. Taxpayers who move out of the middle 20% are somewhat more likely to move up in the income distribution than to move down.

Taxpayers in the top 1% of the income distribution are very likely to have been in the top 10% in previous years and to stay in the top 10% in the future. More than half of taxpayers in the top 1% stay in the top 1% the next year, and two-thirds of taxpayers in the top 1% were in the top 1% the previous year. Of the taxpayers in the top 1% in any year, at least 30% will be in the top 1% in any other earlier or later year.

There is an asymmetry in movements into and out of the top 1%. Taxpayers who are in the top 1% have a non-negligible probability of falling to the bottom 10% of the income distribution in a later year but are extremely unlikely to have been in the bottom decile in a previous year. Some taxpayers with a very successful business or professional career have losses or a business failure later but very few have had a year with losses or a business failure in the past.

Individual incomes are most volatile at the bottom of the income distribution. Higher incomes generally are less volatile up to about the 90th percentile of the income distribution. In the top decile, higher incomes are more volatile, but incomes in the top 1% are less volatile than the incomes of the bottom 30% of the income distribution.

More volatile income sources, such as income or losses from active participation in a business or sale of assets, account for a larger share of total income for taxpayers in the top 5% and bottom 20% of the income distribution.

Appendix: Regression Parameter Estimates

Group 0

Variable	DF	Parameter Estimates			Heteroscedasticity Consistent			
		Parameter Estimate	Standard Error	t Value	Pr > t	Standard Error	t Value	Pr > t
Intercept	1	0.70702	0.09636	7.34	<.0001	0.31369	2.25	0.0242
PCTDIVINT	1	1.46264	0.01784	81.98	<.0001	0.16742	8.74	<.0001
PCTBUSINC	1	0.25024	0.00732	34.17	<.0001	0.66162	0.38	0.7053
PCTGAINS	1	1.16822	0.01315	88.85	<.0001	0.4519	2.59	0.0097
PCTRETIREMENT	1	-0.46157	0.02441	-18.91	<.0001	0.68336	-0.68	0.4994
PCTOTHER	1	0.0015	0.00798	0.19	0.8512	0.45066	0	0.9973
DUM2004	1	0.09604	0.12995	0.74	0.4599	0.10081	0.95	0.3407
DUM2009	1	0.47393	0.11847	4	<.0001	0.09734	4.87	<.0001

Group 1

Variable	DF	Parameter Estimates			Heteroscedasticity Consistent			
		Parameter Estimate	Standard Error	t Value	Pr > t	Standard Error	t Value	Pr > t
Intercept	1	1.64114	0.20009	8.2	<.0001	0.3582	4.58	<.0001
PCTDIVINT	1	0.65775	0.01322	49.76	<.0001	0.32069	2.05	0.0403
PCTBUSINC	1	0.65485	0.02298	28.49	<.0001	0.55999	1.17	0.2422
PCTGAINS	1	1.00446	0.02467	40.72	<.0001	0.60408	1.66	0.0964
PCTRETIREMENT	1	0.27865	0.03637	7.66	<.0001	0.75074	0.37	0.7105
PCTOTHER	1	-0.64201	0.02136	-30.06	<.0001	0.49517	-1.3	0.1948
DUM2004	1	-0.10219	0.2744	-0.37	0.7096	0.25877	-0.39	0.6929
DUM2009	1	-0.27518	0.28012	-0.98	0.3259	0.22933	-1.2	0.2302

Group 2

Variable	DF	Parameter Estimates			Heteroscedasticity Consistent			
		Parameter Estimate	Standard Error	t Value	Pr > t	Standard Error	t Value	Pr > t
Intercept	1	0.81285	0.0165	49.27	<.0001	0.11103	7.32	<.0001
PCTDIVINT	1	1.96625	0.03168	62.06	<.0001	0.88591	2.22	0.0265
PCTBUSINC	1	-0.22157	0.00557	-39.75	<.0001	0.24409	-0.91	0.364
PCTGAINS	1	-1.17778	0.02207	-53.38	<.0001	0.76697	-1.54	0.1246
PCTRETIREMENT	1	-1.34376	0.01725	-77.9	<.0001	0.40137	-3.35	0.0008
PCTOTHER	1	-2.07808	0.00901	-230.7	<.0001	0.45994	-4.52	<.0001
DUM2004	1	0.01238	0.02181	0.57	0.5703	0.0434	0.29	0.7755
DUM2009	1	-0.01007	0.02156	-0.47	0.6403	0.05205	-0.19	0.8465

Group 3

Variable	DF	Parameter Estimates			Heteroscedasticity Consistent			
		Parameter Estimate	Standard Error	t Value	Pr > t	Standard Error	t Value	Pr > t
Intercept	1	0.66544	0.02515	26.46	<.0001	0.20704	3.21	0.0013
PCTDIVINT	1	-3.09539	0.06145	-50.37	<.0001	1.02442	-3.02	0.0025
PCTBUSINC	1	0.25035	0.0177	14.14	<.0001	1.10273	0.23	0.8204
PCTGAINS	1	-2.07455	0.00252	-824.49	<.0001	0.13248	-15.66	<.0001
PCTRETIREMENT	1	0.31085	0.02848	10.91	<.0001	0.55569	0.56	0.5759
PCTOTHER	1	1.40494	0.00643	218.5	<.0001	0.30586	4.59	<.0001
DUM2004	1	-0.16489	0.03384	-4.87	<.0001	0.06076	-2.71	0.0067
DUM2009	1	-0.20382	0.03296	-6.18	<.0001	0.06604	-3.09	0.002

Group 4

Variable	DF	Parameter Estimates			Heteroscedasticity Consistent			
		Parameter Estimate	Standard Error	t Value	Pr > t	Standard Error	t Value	Pr > t
Intercept	1	0.049	-0.2161	-0.1149	-0.2565	-0.1258	-0.6887	-0.7097
PCTDIVINT	0.049	1	-0.3471	-0.8798	0.074	-0.9059	-0.011	-0.011
PCTBUSINC	-0.2161	-0.3471	1	0.6086	0.594	0.6825	0.0126	0.0143
PCTGAINS	-0.1149	-0.8798	0.6086	1	0.1387	0.8965	0.0119	0.015
PCTRETIREMENT	-0.2565	0.074	0.594	0.1387	1	0.1812	0.0058	0.006
PCTOTHER	-0.1258	-0.9059	0.6825	0.8965	0.1812	1	0.0146	0.014
DUM2004	-0.6887	-0.011	0.0126	0.0119	0.0058	0.0146	1	0.5236
DUM2009	-0.7097	-0.011	0.0143	0.015	0.006	0.014	0.5236	1

Group 5

Variable	DF	Parameter Estimates			Heteroscedasticity Consistent			
		Parameter Estimate	Standard Error	t Value	Pr > t	Standard Error	t Value	Pr > t
Intercept	1	-0.25041	0.00774	-32.36	<.0001	0.02468	-10.15	<.0001
PCTDIVINT	1	0.66416	0.02614	25.41	<.0001	0.28177	2.36	0.0184
PCTBUSINC	1	0.7211	0.01218	59.21	<.0001	0.22002	3.28	0.001
PCTGAINS	1	1.39561	0.00837	166.67	<.0001	0.17562	7.95	<.0001
PCTRETIREMENT	1	3.53561	0.00624	566.37	<.0001	0.18287	19.33	<.0001
PCTOTHER	1	1.83108	0.00157	1166.25	<.0001	0.04462	41.04	<.0001
DUM2004	1	0.04095	0.01066	3.84	0.0001	0.01271	3.22	0.0013
DUM2009	1	-0.02831	0.0104	-2.72	0.0065	0.01238	-2.29	0.0222

Group 6

Variable	DF	Parameter Estimates			Heteroscedasticity Consistent			
		Parameter Estimate	Standard Error	t Value	Pr > t	Standard Error	t Value	Pr > t
Intercept	1	0.07407	0.005	14.82	<.0001	0.03647	2.03	0.0423
PCTDIVINT	1	0.05941	0.02438	2.44	0.0148	0.54086	0.11	0.9125
PCTBUSINC	1	2.24081	0.00451	496.51	<.0001	0.14699	15.24	<.0001
PCTGAINS	1	1.30954	0.01322	99.03	<.0001	0.42911	3.05	0.0023
PCTRETIREMENT	1	-0.13849	0.00909	-15.23	<.0001	0.28122	-0.49	0.6224
PCTOTHER	1	0.51143	0.00402	127.23	<.0001	0.14686	3.48	0.0005
DUM2004	1	0.02045	0.00672	3.04	0.0023	0.01042	1.96	0.0496
DUM2009	1	0.02235	0.00657	3.4	0.0007	0.01642	1.36	0.1734

Group 7

Variable	DF	Parameter Estimates			Heteroscedasticity Consistent			
		Parameter Estimate	Standard Error	t Value	Pr > t	Standard Error	t Value	Pr > t
Intercept	1	0.03851	0.00457	8.42	<.0001	0.04205	0.92	0.3598
PCTDIVINT	1	-0.57504	0.02504	-22.97	<.0001	0.958	-0.6	0.5483
PCTBUSINC	1	2.10102	0.00353	595.35	<.0001	0.16482	12.75	<.0001
PCTGAINS	1	1.14397	0.0123	92.97	<.0001	0.88587	1.29	0.1966
PCTRETIREMENT	1	0.02282	0.0101	2.26	0.0238	0.0673	0.34	0.7346
PCTOTHER	1	1.24875	0.00858	145.46	<.0001	0.74708	1.67	0.0946
DUM2004	1	0.01453	0.0061	2.38	0.0173	0.00906	1.6	0.1086
DUM2009	1	0.01184	0.00598	1.98	0.0478	0.01056	1.12	0.2622

Group 8

Variable	DF	Parameter Estimates			Heteroscedasticity Consistent			
		Parameter Estimate	Standard Error	t Value	Pr > t	Standard Error	t Value	Pr > t
Intercept	1	0.20431	0.00334	61.19	<.0001	0.0271	7.54	<.0001
PCTDIVINT	1	-1.47115	0.01434	-102.62	<.0001	0.57719	-2.55	0.0108
PCTBUSINC	1	0.90621	0.00609	148.88	<.0001	0.44027	2.06	0.0396
PCTGAINS	1	-0.10202	0.0107	-9.54	<.0001	0.48102	-0.21	0.832
PCTRETIREMENT	1	0.11195	0.00776	14.43	<.0001	0.1323	0.85	0.3975
PCTOTHER	1	0.26254	0.00665	39.48	<.0001	0.31521	0.83	0.4049
DUM2004	1	-0.01832	0.00436	-4.2	<.0001	0.01603	-1.14	0.253
DUM2009	1	-0.03534	0.00429	-8.25	<.0001	0.01857	-1.9	0.057

Group 90

Variable	DF	Parameter Estimates			Heteroscedasticity Consistent		
		Parameter Estimate	Standard Error	t Value Pr > t	Standard Error	t Value Pr > t	Pr > t
Intercept	1	0.12357	0.00637	19.39 <.0001	0.01168	10.58 <.0001	
PCTDIVINT	1	-0.85161	0.0365	-23.33 <.0001	0.38953	-2.19 0.0288	
PCTBUSINC	1	0.11725	0.01444	8.12 <.0001	0.20815	0.56 0.5732	
PCTGAINS	1	1.48215	0.01886	78.58 <.0001	0.20734	7.15 <.0001	
PCTRETIREMENT	1	0.03564	0.01665	2.14 0.0324	0.03315	1.08 0.2823	
PCTOTHER	1	0.77963	0.01279	60.97 <.0001	0.16865	4.62 <.0001	
DUM2004	1	0.02511	0.00818	3.07 0.0022	0.01186	2.12 0.0342	
DUM2009	1	0.01171	0.00804	1.46 0.1451	0.00978	1.2 0.2313	

Group 91

Variable	DF	Parameter Estimates			Heteroscedasticity Consistent		
		Parameter Estimate	Standard Error	t Value Pr > t	Standard Error	t Value Pr > t	Pr > t
Intercept	1	0.14085	0.00495	28.46 <.0001	0.00553	25.48 <.0001	
PCTDIVINT	1	-0.34581	0.03857	-8.96 <.0001	0.44284	-0.78 0.4349	
PCTBUSINC	1	0.33016	0.01196	27.6 <.0001	0.15126	2.18 0.0291	
PCTGAINS	1	0.27461	0.02078	13.22 <.0001	0.32392	0.85 0.3966	
PCTRETIREMENT	1	0.08772	0.01287	6.81 <.0001	0.02053	4.27 <.0001	
PCTOTHER	1	0.72428	0.0234	30.95 <.0001	0.42346	1.71 0.0872	
DUM2004	1	0.01344	0.00633	2.12 0.0337	0.00823	1.63 0.1024	
DUM2009	1	-0.01144	0.00621	-1.84 0.0656	0.01077	-1.06 0.2882	

Group 92

Variable	DF	Parameter Estimates			Heteroscedasticity Consistent		
		Parameter Estimate	Standard Error	t Value Pr > t	Standard Error	t Value Pr > t	Pr > t
Intercept	1	0.14605	0.00461	31.68 <.0001	0.00572	25.53 <.0001	
PCTDIVINT	1	-0.65859	0.0339	-19.43 <.0001	0.26221	-2.51 0.012	
PCTBUSINC	1	0.20153	0.01124	17.93 <.0001	0.03626	5.56 <.0001	
PCTGAINS	1	0.61953	0.01864	33.23 <.0001	0.07563	8.19 <.0001	
PCTRETIREMENT	1	0.07996	0.01207	6.63 <.0001	0.01654	4.83 <.0001	
PCTOTHER	1	0.75381	0.01902	39.64 <.0001	0.22192	3.4 0.0007	
DUM2004	1	0.01327	0.00585	2.27 0.0234	0.00728	1.82 0.0681	
DUM2009	1	-0.0056	0.00575	-0.97 0.3305	0.00646	-0.87 0.3865	

Group 93

Variable	DF	Parameter Estimates			Heteroscedasticity Consistent		
		Parameter Estimate	Standard Error	t Value Pr > t	Standard Error	t Value Pr > t	
Intercept	1	0.13789	0.00476	28.94 <.0001	0.006	22.97 <.0001	
PCTDIVINT	1	-0.94907	0.02848	-33.33 <.0001	0.33575	-2.83 0.0047	
PCTBUSINC	1	-0.00331	0.01017	-0.33 0.7447	0.09304	-0.04 0.9716	
PCTGAINS	1	1.16226	0.01403	82.83 <.0001	0.2181	5.33 <.0001	
PCTRETIREMENT	1	0.09703	0.01256	7.73 <.0001	0.02606	3.72 0.0002	
PCTOTHER	1	0.85513	0.01264	67.63 <.0001	0.17237	4.96 <.0001	
DUM2004	1	0.02254	0.00603	3.74 0.0002	0.00608	3.71 0.0002	
DUM2009	1	0.00635	0.00591	1.07 0.2831	0.0063	1.01 0.3139	

Group 94

Variable	DF	Parameter Estimates			Heteroscedasticity Consistent		
		Parameter Estimate	Standard Error	t Value Pr > t	Standard Error	t Value Pr > t	
Intercept	1	0.13502	0.00368	36.71 <.0001	0.0034	39.73 <.0001	
PCTDIVINT	1	-0.0283	0.02464	-1.15 0.2507	0.12913	-0.22 0.8265	
PCTBUSINC	1	0.16058	0.00825	19.46 <.0001	0.02284	7.03 <.0001	
PCTGAINS	1	1.04054	0.01188	87.58 <.0001	0.07181	14.49 <.0001	
PCTRETIREMENT	1	0.08045	0.00934	8.61 <.0001	0.01594	5.05 <.0001	
PCTOTHER	1	-0.0014	0.01539	-0.09 0.9276	0.07687	-0.02 0.9855	
DUM2004	1	0.0168	0.00457	3.68 0.0002	0.00468	3.59 0.0003	
DUM2009	1	0.00796	0.0045	1.77 0.077	0.0047	1.69 0.0901	

Group 95

Variable	DF	Parameter Estimates			Heteroscedasticity Consistent		
		Parameter Estimate	Standard Error	t Value Pr > t	Standard Error	t Value Pr > t	
Intercept	1	0.13427	0.0054	24.86 <.0001	0.01779	7.55 <.0001	
PCTDIVINT	1	-0.55348	0.0295	-18.76 <.0001	0.2693	-2.06 0.0399	
PCTBUSINC	1	0.28978	0.00985	29.41 <.0001	0.11525	2.51 0.0119	
PCTGAINS	1	0.81831	0.01794	45.6 <.0001	0.10324	7.93 <.0001	
PCTRETIREMENT	1	0.10484	0.0137	7.65 <.0001	0.03042	3.45 0.0006	
PCTOTHER	1	0.54866	0.01681	32.64 <.0001	0.24306	2.26 0.024	
DUM2004	1	0.01841	0.00657	2.8 0.0051	0.00642	2.87 0.0041	
DUM2009	1	0.00484	0.00648	0.75 0.4547	0.00724	0.67 0.5038	

Group 96

Variable	DF	Parameter Estimates			Heteroscedasticity Consistent		
		Parameter Estimate	Standard Error	t Value Pr > t	Standard Error	t Value Pr > t	
Intercept	1	0.13462	0.00723	18.62 <.0001	0.00829	16.24 <.0001	
PCTDIVINT	1	0.07739	0.02434	3.18 0.0015	0.14833	0.52 0.6019	
PCTBUSINC	1	0.09108	0.01173	7.76 <.0001	0.13407	0.68 0.4969	
PCTGAINS	1	0.7559	0.01892	39.95 <.0001	0.24656	3.07 0.0022	
PCTRETIREMENT	1	0.05176	0.01871	2.77 0.0057	0.04357	1.19 0.2349	
PCTOTHER	1	0.50225	0.01781	28.2 <.0001	0.31291	1.61 0.1085	
DUM2004	1	0.03502	0.00848	4.13 <.0001	0.01116	3.14 0.0017	
DUM2009	1	0.02646	0.00838	3.16 0.0016	0.01268	2.09 0.0369	

Group 97

Variable	DF	Parameter Estimates			Heteroscedasticity Consistent		
		Parameter Estimate	Standard Error	t Value Pr > t	Standard Error	t Value Pr > t	
Intercept	1	0.17005	0.01387	12.26 <.0001	0.01759	9.67 <.0001	
PCTDIVINT	1	2.34995	0.03084	76.2 <.0001	0.78064	3.01 0.0026	
PCTBUSINC	1	0.40247	0.02081	19.34 <.0001	0.14442	2.79 0.0053	
PCTGAINS	1	-0.44376	0.02661	-16.68 <.0001	0.42455	-1.05 0.2959	
PCTRETIREMENT	1	0.11223	0.03452	3.25 0.0012	0.15426	0.73 0.4669	
PCTOTHER	1	-0.93753	0.02348	-39.93 <.0001	0.42511	-2.21 0.0274	
DUM2004	1	0.02345	0.01563	1.5 0.1337	0.01951	1.2 0.2296	
DUM2009	1	0.0018	0.01536	0.12 0.9065	0.02499	0.07 0.9425	

Group 98

Variable	DF	Parameter Estimates			Heteroscedasticity Consistent		
		Parameter Estimate	Standard Error	t Value Pr > t	Standard Error	t Value Pr > t	
Intercept	1	0.23488	0.00917	25.62 <.0001	0.0322	7.29 <.0001	
PCTDIVINT	1	0.34391	0.03476	9.89 <.0001	0.4491	0.77 0.4438	
PCTBUSINC	1	-0.02042	0.01215	-1.68 0.093	0.09048	-0.23 0.8215	
PCTGAINS	1	0.777	0.01727	44.99 <.0001	0.22712	3.42 0.0006	
PCTRETIREMENT	1	0.27724	0.02325	11.92 <.0001	0.13956	1.99 0.047	
PCTOTHER	1	-0.34122	0.01417	-24.09 <.0001	0.18403	-1.85 0.0638	
DUM2004	1	0.02481	0.00995	2.49 0.0126	0.01121	2.21 0.0269	
DUM2009	1	0.01721	0.00983	1.75 0.0801	0.01141	1.51 0.1314	

Group 99

Variable	DF	Parameter Estimates			Heteroscedasticity Consistent			
		Parameter Estimate	Standard Error	t Value	Pr > t	Standard Error	t Value	Pr > t
Intercept	1	0.20903	0.01427	14.64	<.0001	0.02397	8.72	<.0001
PCTDIVINT	1	0.33152	0.02317	14.31	<.0001	0.3835	0.86	0.3873
PCTBUSINC	1	-0.04884	0.01817	-2.69	0.0072	0.03822	-1.28	0.2013
PCTGAINS	1	0.58374	0.02156	27.07	<.0001	0.17867	3.27	0.0011
PCTRETIREMENT	1	0.02189	0.04757	0.46	0.6454	0.07139	0.31	0.7591
PCTOTHER	1	1.22297	0.02151	56.86	<.0001	0.3137	3.9	<.0001
DUM2004	1	0.05052	0.01406	3.59	0.0003	0.01589	3.18	0.0015
DUM2009	1	0.04857	0.01392	3.49	0.0005	0.01778	2.73	0.0063