

MOVING UP THE ECONOMIC LADDER

AN ANALYSIS OF ECONOMIC MOBILITY IN UTAH

HIGHLIGHTS

- While the amount of income inequality that exists in Utah seems to be fairly low, at least when compared with other states, data from both the Economic Policy Institute and the Utah State Tax Commission show Utah has been experiencing growing inequality since the 1980s.
- Although the distribution of income among individuals may be unequal in any given year, this does not necessarily mean it is unequal over their lifetimes. Income inequality is less of a concern in societies that have a high amount of economic mobility.
- Using a large sample of individual state income tax returns, the first measure of relative mobility used in this report found about 77% of taxpayers in the lowest quintile in 1994 had moved to a higher quintile by 2007.
- A different measure, which examines Utah's economic mobility in both relative and absolute terms, found almost one-third of Utah taxpayers are "Upwardly Mobile," or have both higher income and moved up one or more income quintiles. However, a slightly larger percent of taxpayers are simply "Riding the Tide," meaning they have higher incomes, but the increase in their incomes was not enough to move them into the next income quintile.

The mission of Utah Foundation is to promote a thriving economy, a well-prepared workforce, and a high quality of life for Utahns by performing thorough, well-supported research that helps policymakers, business and community leaders, and citizens better understand complex issues and providing practical, well-reasoned recommendations for policy change.

Douglas Matsumori, Chairman
M. Bruce Snyder, Vice Chairman
Stephen J. Kroes, President

10 West Broadway, Suite 307
Salt Lake City, UT 84101
(801) 355-1400 • www.utahfoundation.org

The growing gap between the “haves” and the “have-nots” is an issue of both concern and debate among U.S. economists and policy makers. While most social scientists believe income inequality is a problem for American society because it leads to reduced individual welfare, poor population health, and class tension, others argue it is a natural feature of any society that rewards workers’ skill level with income.¹ Because workers are able to increase their income and their relative economic position by increasing their skill level, it is believed that the problem of income inequality is mitigated by the opportunity for upward income mobility.

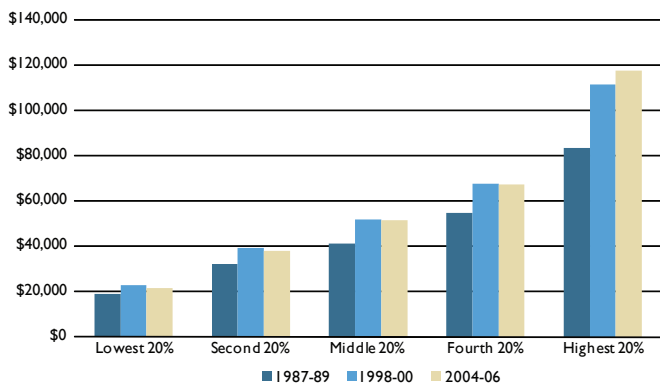
The opportunity for upward mobility as the result of individual effort is viewed as one of the defining characteristics of the U.S. economy.² However, income mobility, or the opportunity for lower-income individuals to move up the income distribution, is an important aspect of income inequality that receives less focus in the literature. Most income inequality studies simply present snapshots of the income distribution at points in time. While these snapshots of inequality are useful, they do not measure how each individual’s income changes over time.³ For example, an individual who is in the lowest-income bracket in one particular year may be in a much higher income bracket five years later due to changes in skill level, education, or work situation.

The purpose of this paper is to examine the income inequality and opportunity for upward mobility that exists in Utah. It uses state tax returns to show the economic mobility of Utah residents from 1994 to 2007. The analysis is based on the methodology used in the U.S. Treasury Department’s 2009 paper, “Income Mobility in the United States: New Evidence from Income Tax Data.” This includes using three measures of income mobility to illustrate different aspects of mobility and inequality in Utah.

GROWING INCOME INEQUALITY IN THE U.S. AND UTAH

Numerous studies written in the last couple of decades have documented the long-term trend of increasing income inequality in the U.S. economy. Census data, for example, show that the top fifth of households earned 44.1% of total income in 1980 and 50.4% in 2005.

Figure 1: Average Income of Utah Families (2005 Inflation-Adjusted Dollars)



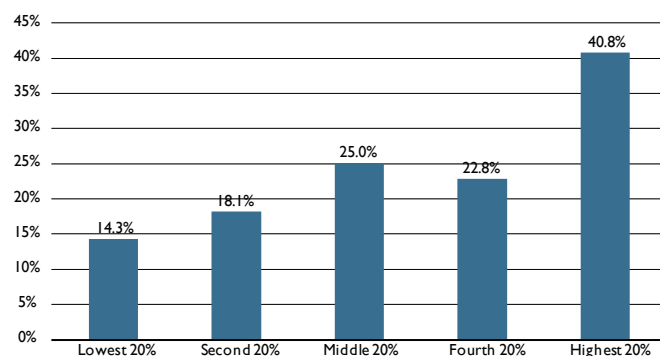
Source: Economic Policy Institute (EPI), Center on Budget and Policy Priorities' analysis of data from the U.S. Census Bureau's Current Population Survey.

The share of income received by the bottom fifth of households, however, decreased from 4.2% to 3.4% over this same period.⁴ A study published by professors at the University of Berkeley found similar results, with the share of income of the top 1% of taxpayers increasing from 8.4% in 1960 to 17.4% in 2005.⁵ Finally, a report published by the Organization for Economic Cooperation and Development (OECD) found that earnings inequality in the United States has increased by 20% since the mid-1980s and that only two of 30 OECD nations, Mexico and Turkey, have higher rates of income inequality than the United States.⁶

The studies mentioned above are only a sampling of the literature and data that show the widening gap between households with the lowest and highest incomes in the United States. Unfortunately, the income gap in Utah has not been exempt to this trend. Figure 1 shows the average income of Utah families broken into quintiles for select years over the past two decades. While inflation-adjusted income actually fell for the bottom four fifths of families in the first half of this decade (during a period of economic growth); it increased by more than \$6,000 for families in the top fifth.

Between the late 1980s and the mid-2000s, the average income of the poorest fifth of families increased from \$19,008 to \$21,721, an average increase of \$160 per year. This represents a 14.3% cumulative

Figure 2: Percent Change In Average Income of Utah Families Over the Last Two Decades (2005 Inflation-Adjusted Dollars)



Source: EPI.

increase over these 17 years (see Figure 2). The average income of the richest fifth of families however, increased from \$83,573 to \$117,662. This represents an average increase of \$2,005 per year or a 40.8% cumulative increase.⁷ The very richest families—those in the top 5% of all earners—had an average income of \$175,677 in 2006, which is 8.1 times as large as the poorest fifth of families. The overall income gap, which can be measured by dividing the average income of the top fifth of families by the average income of the bottom fifth of families grew from 4.4 in the late 1980s to 5.4 in 2006. Out of the fifty states and the District of Columbia, Utah's income gap change was 32nd highest in the nation (Figure 3), meaning Utah's gap widened less than most states.

Looking at these numbers alone, it is easy to conclude that Utah is becoming an increasingly bifurcated economy with the poor getting poorer and the rich getting richer, even if it is doing so slower than the rest of the nation. However, it is important to acknowledge that these numbers do not tell a complete story. First, the income inequality in Utah is relatively low compared to other states. For example, the gap between Utah's richest and poorest families was the smallest in the nation in 2004-2006 (see Figure 3).⁸ Second, although the distribution of income among individuals may be unequal in any given year, this does not necessarily mean it is unequal over their lifetimes.⁹

MOVING UP AND DOWN THE INCOME DISTRIBUTION

Several factors can cause individuals to move both up and down the income distribution. First is the typical lifetime pattern of income. Most working individuals experience fairly substantial income changes over the course of their working careers. Young workers start their careers in relatively low-paying jobs, but as they gain skills, work experience, and formal education they are able to move to new jobs that better match their skills and interests and are subsequently rewarded with increases in pay.¹⁰

Second is household membership. A household's total income changes as members enter and exit the workforce or change their hours of work. For instance, marriage can increase household income if both spouses are employed. However, if at some point the couple decides to have children, one of the spouses may leave the labor market or reduce the number of hours worked, thereby reducing the household's income. After the children are older, both spouses may return to working full time and the household's income will increase.¹¹ Death of a working household member and divorce also cause household income to decrease.

Third are economic trends. These trends include economic growth, inflation, technological change, international trade flows, and population growth. These trends are all aspects of an expanding economy, which leads to increases in the real incomes of individuals.¹² The authors of the U.S. Treasury's paper liken to this process to an escalator where the opportunity for mobility means that no matter which step a person starts on, he or she can move up. The authors state that like the economy, while one can get ahead faster by walking up the steps of the escalator, much of the movement is due to the escalator itself.¹³ Government economic policies, such as regulation, taxes, and welfare transfers, also affect income growth and mobility.¹⁴

In reality, there are an unlimited number of factors that can affect an individual's point-in-time position on the income distribution.

Figure 3: Income Gap Change by State From Late 1980s to Mid-2000s (2005 Inflation-Adjusted Dollars)

	1987-89 Avg Income Gap	2004-06 Avg Income Gap	Income Gap Change	Gap Change Rank
United States	5.96	7.29	1.34	
District of Columbia	8.82	13.46	4.63	1
Connecticut	4.57	8.01	3.44	2
Rhode Island	5.00	7.55	2.55	3
Massachusetts	5.77	8.20	2.43	4
Alabama	6.29	8.49	2.21	5
New York	6.75	8.66	1.91	6
Kentucky	5.83	7.71	1.88	7
Maryland	5.40	7.26	1.86	8
Kansas	4.99	6.80	1.81	9
New Jersey	5.74	7.52	1.79	10
Washington	5.12	6.86	1.74	11
Oregon	5.15	6.87	1.72	12
West Virginia	5.88	7.45	1.57	13
Tennessee	6.54	8.10	1.56	14
North Dakota	4.74	6.24	1.50	15
Nevada	4.78	6.28	1.50	16
Pennsylvania	5.45	6.91	1.46	17
Mississippi	6.81	8.27	1.46	18
California	6.48	7.94	1.45	19
Iowa	4.69	6.12	1.43	20
Indiana	5.33	6.70	1.36	21
North Carolina	5.89	7.20	1.31	22
New Mexico	6.72	8.02	1.30	23
Missouri	5.87	7.14	1.27	24
Wisconsin	4.75	6.00	1.25	25
Florida	6.28	7.50	1.22	26
Illinois	6.32	7.53	1.20	27
Virginia	6.44	7.56	1.12	28
Colorado	5.88	6.99	1.11	29
Wyoming	4.82	5.93	1.11	30
New Hampshire	4.53	5.58	1.05	31
Utah	4.40	5.42	1.02	32
Michigan	6.05	7.04	0.99	33
South Dakota	5.35	6.30	0.96	34
Oklahoma	6.38	7.31	0.93	35
Arizona	6.32	7.23	0.91	36
Delaware	4.80	5.70	0.90	37
Maine	5.44	6.32	0.89	38
Texas	6.99	7.87	0.89	39
Nebraska	4.95	5.83	0.88	40
Vermont	5.16	5.98	0.81	41
South Carolina	5.98	6.74	0.76	42
Minnesota	5.25	6.00	0.75	43
Ohio	5.62	6.24	0.61	44
Montana	5.23	5.75	0.52	45
Hawaii	5.30	5.81	0.51	46
Idaho	5.10	5.60	0.49	47
Arkansas	6.19	6.42	0.22	48
Georgia	6.49	6.69	0.20	49
Alaska	6.22	6.20	-0.02	50
Louisiana	7.90	7.30	-0.61	51

Source: EPI.

Unforeseen medical problems can cause an individual to lose paid time at work, leading to a decrease in income. Winning large windfalls of money can lead to a temporary, yet significant increase in income. One part of the country may have unusually bad weather causing local crops to fail, while another part of the country may enjoy ideal growing conditions.¹⁵ While random factors such as these can cause a number of households to experience unusually low or high incomes in any particular year, a change in actual wages

and earnings is the most important and consistent determinant of economic mobility.

Because of the effects these factors can have on the overall income distribution, it is just as important to understand the amount of mobility there is in an economy as it is to understand the distribution in any given year.¹⁶ This is because economic mobility determines the extent to which short-term inequality translates to long-term inequality. Point-in-time income inequality may be less worrisome in societies where there is a high amount of economic mobility. This is because individuals in these societies will receive a more equal share of income over the course of their lifetimes as they move up and down the economic ladder.¹⁷

Adversely, point-in-time income inequality is worrisome in societies with low levels of economic mobility. In these societies the differences in income persist over time; individuals with high incomes stay at the top of the income distribution, those with middle-class incomes stay in the middle, and those with low incomes stay in the bottom of the distribution.¹⁸ While their incomes may improve as a result of an expanding economy, individuals in this type of society experience no mobility relative to others. Furthermore, if inequality increases over time, households at the top will enjoy both large and growing advantages over those at the bottom and those at the bottom will be increasingly worse off and have no prospect of moving up.¹⁹

Data in Figure 1 illustrate that Utah has been experiencing growing inequality since the late 1980s. While this trend is alarming, the concern may be mitigated if Utah residents have the opportunity for a high amount of economic mobility.²⁰ To determine whether this inequality reflects short-term movements in the income distribution or long-term inequality in Utah, Utah Foundation, with assistance from Utah State Tax Commission Senior Economist Matthew Lund, has attempted to measure Utah's income mobility.

UTAH'S INCOME MOBILITY

This study examines Utah's income mobility over the period of 1994 to 2007 using a large panel sample of individual state income tax returns.²¹ Income is defined as Federal Adjusted Gross Income (FAGI), listed on the first line of Utah state tax returns. Tax returns from 1994 and 2007 were used in the analysis, as these were the earliest and latest years for which data were available. 2008 tax returns were available, but excluded from the sample because of the significant negative effect the economic recession has had on household income and economic mobility. Because the long-term effects of the recession are still unknown, it was decided to exclude this year from the sample as not to presumptively bias the data downward. Future studies, which examine data for a range of years before and after the recession will better indicate whether the effects of the recession on downward mobility were temporary or long term.

There are both advantages and disadvantages to using tax return data. The first advantage is that the data include capital income, an income source that is often underreported in survey data. The second advantage is that the sample includes a large number of high-income taxpayers. Survey data generally contain relatively few high-income households, meaning the income must be top coded (the upper bounds of the data are not known) in order to preserve the anonymity of people participating in the survey.²² The main disadvantage to using tax return data are that tax data only include

those who file returns. Non-filers, who are predominately very low income, are excluded from the data. Other disadvantages are that tax data contain very little demographic information, such as education and immigration status, some taxpayers are non-compliant and underreport their income, and that some income sources, such as realized capital gains, are reported on tax returns when realized, not when received by the taxpayer.²³

Other issues to be aware of with using tax return data are that: 1) adjustments have been made to FAGI over time and 2) FAGI includes only the taxable amount of IRA distributions, pensions and annuities, and social security. A total five adjustments were made to FAGI between 1994 and 2007. In 1997, FAGI was adjusted to include a health savings account deduction. In 1998, FAGI included a student loan interest deduction. In 2002, individuals could take deductions for educator expenses and tuition and fees. In 2004, certain business expenses could be deducted; and in 2005, domestic production activities could be deducted. These deductions result in reduced FAGI; in tax year 2007 FAGI was reduced on average by \$692 compared to 1994. Due to data limitations and because this amount is relatively small, the numbers were not adjusted for the deductions; however, it is important to note these changes as it may result in slightly downward-biased economic mobility. In terms of only including the taxable amount of IRA distributions, pensions and annuities, and social security, these sources of income are largest for retired taxpayers who are excluded from this sample as explained below.

Data

The sample used in this study only includes full-time residents and non-dependent filers. To remove the effects of inflation, income is adjusted to 2007 dollars using the Consumer Price Index Research Series Using Current Methods (CPI-U-RS).²⁴ Income is also adjusted for household size by dividing by the square root of the number of members of the household.²⁵ This methodology helps account for the differing needs of large and small households in a non-proportional way. It implies that a household of four persons has twice the needs, rather than four times of the needs, of a single person household. This is because of the economies of scale that exist in household consumption. For example, the costs associated with housing space, electricity, and other utilities can be shared across multiple household members and are therefore not priced as high on a per-person basis as they are for single person households.²⁶

Age Limits

Because income mobility is partly determined by factors related to the lifetime pattern of income, it is useful to impose age limits on the sample population. This limits the upward mobility that comes from the income growth of new entrants to the workforce (college graduates who obtain their first career job) and the downward mobility that comes from income declines of individuals exiting the workforce (those entering retirement).²⁷ To avoid counting these transitions, the analysis excludes taxpayers who were under age 25 in the beginning year (1994) and over age 62 in the ending year (2007). This is a common practice used in previous income mobility studies. Restricting the dataset to full-time resident, non-dependent filers ages 25-62 (who filed in both 1994 and 2007) leaves a sample size of 194,298

Utah tax returns. This panel provides a good representation of the entire tax-filing population.

Income Mobility: 1994-2007

In order to provide a complete picture of Utah's income mobility, this paper follows the methodology used in the U.S. Treasury Department's paper and shows three different measures of income mobility: two measures of relative mobility and one measure of absolute mobility.²⁸ Measures of relative income mobility demonstrate how household income changes over time relative to the incomes of other households. Absolute income mobility measures show how the real incomes of households have increased or decreased, regardless of their position relative to other households.

Within each measure of income mobility, taxpayers are grouped by income quintiles. This requires ranking all taxpayers in the sample from lowest to highest income. The first 20% of taxpayers form the lowest quintile, the second 20% form the second quintile, and so forth, with the last 20% forming the fifth, or highest quintile. Each quintile group contains roughly the same number of taxpayers.²⁹ Results for the top 1%, 5%, and 10% of income earners are also reported.

Relative Income Mobility

The following two measures of income mobility are illustrated using a transition matrix that shows the movement of taxpayers across the income quintiles and also into and out of the top income groups. It is important to emphasize that these charts illustrate the movement of actual taxpayers from one income group to another, not merely changes in averages or aggregate statistics. The first measure shows how the incomes of taxpayers in each income group in 1994 changed relative to the incomes of the total tax filing population in 2007 (Figure 4). This measure indicates there is a high degree of income mobility in Utah over this period. About 77% of taxpayers in the lowest quintile in 1994 had moved to a higher quintile by 2007. While 24% moved up to the second quintile, more than half moved up two or more quintiles and 11% moved from the lowest quintile to the highest quintile in this 13 year period (Figure 5). Middle income taxpayers also experienced a high amount of mobility, with almost two-thirds moving to a higher income quintile.

Almost two-thirds (65%) of the top 1% of taxpayers in 1994 dropped to a lower income group by 2007, although 87% remained in the

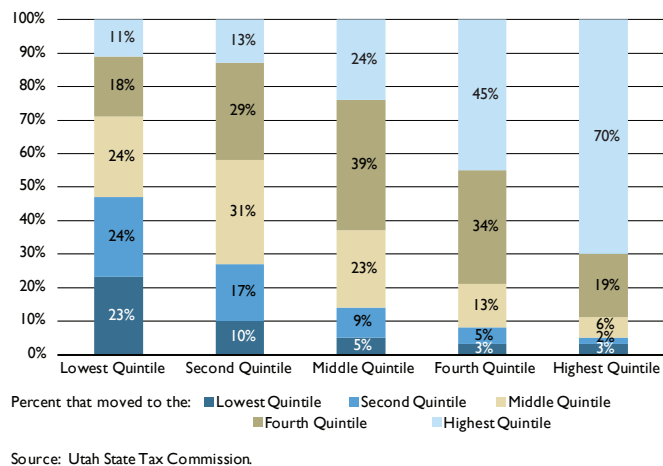
Figure 4: First Mobility Measure: Income Mobility Relative to the Total Population, 1994-2007

1994 Income Group	2007 Income Group					Total	Top 10%	Top 5%	Top 1%
	Lowest Quintile	Second Quintile	Middle Quintile	Fourth Quintile	Highest Quintile				
Lowest Quintile	23%	24%	24%	18%	11%	100%	5%	2%	0.3%
Second Quintile	10%	17%	31%	29%	13%	100%	5%	2%	0.2%
Middle Quintile	5%	9%	23%	39%	24%	100%	8%	3%	0.2%
Fourth Quintile	3%	5%	13%	34%	45%	100%	17%	5%	0.4%
Highest Quintile	3%	2%	6%	19%	70%	100%	45%	24%	3%
Top 10%	3%	2%	4%	12%	79%	100%	61%	39%	7%
Top 5%	3%	2%	3%	8%	84%	100%	83%	56%	12%
Top 1%	5%	2%	1%	5%	87%	100%	83%	77%	35%
All income Groups	7%	9%	18%	29%	37%	100%	18%	8%	1%

Notes: This table shows income mobility of 1994 filers relative to the total tax filing population in 2007. The table uses the tax returns of primary non-dependent taxpayers who were between the ages 25-49 in 1994 and filed for both 1994 and 2007. Income breaks for the quintiles and top percentiles are based on the full cross-sections of tax returns for each year. Income is defined as federal adjusted gross income divided by the square-root of the exemptions.

Source: Utah State Tax Commission.

Figure 5: Income Mobility Relative to the Total Population, 1994-2007

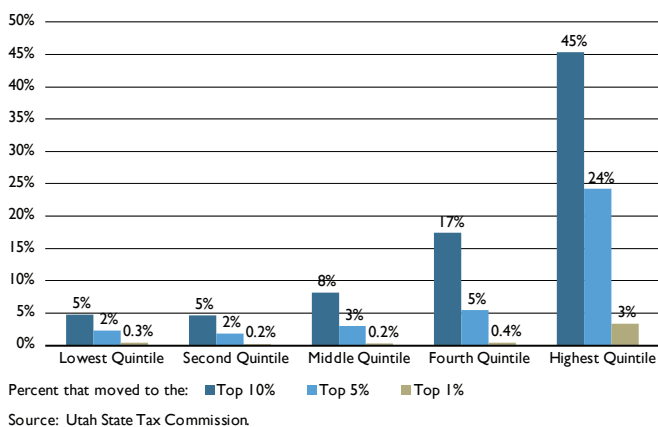


top quintile (see Figure 4). These statistics indicate that many of these taxpayers' incomes are only temporarily high and that it is not necessarily a fixed group of households receiving the largest share of income year to year.³⁰ However, Figure 6 shows how rare it is for households in lower income quintiles to move into the top 10%, 5%, and 1% of income earners.

The majority of taxpayers in the highest quintile remained in the highest quintile during this period, with just 30% moving to a lower quintile. However, this data show downward mobility is not the trend in Utah. Only 7% of taxpayers that filed returns in 1994 are in the bottom quintile of the total tax filing population in 2007 (see bottom row of Figure 3). Of the taxpayers that were in the lowest quintile in 2007, the majority (23%) started in the lowest quintile. Ten percent of those in the second quintile moved to the lowest quintile, with 5% from the middle, 3% from the fourth, and 3% from the highest quintile moving to the lowest quintile (Figure 7).

It is important to note that the upward movement represented in these tables and graphs may be influenced by new entrants into the population who have below average incomes (which increases the mobility of the sample taxpayers). New entrants are likely to be young taxpayers with low incomes whose earnings follow the lifetime pattern

Figure 6: Income Mobility Into Top Earner Levels Relative to the Total Population, 1994-2007



of income and increase more rapidly over time. New immigrants are also more likely to enter the population with low incomes.³¹ Because Utah has experienced rapid growth in its foreign-born population (increasing from 3.3% in the early 1990s to 8.3% in 2008), this second group is likely to have significant influence on the upward mobility presented in Figures 4 and 5.³²

Based on this theory, Paul Krugman, an economist and recipient of the Nobel Memorial Prize in Economics, argued that by comparing the sample population with the population of all taxpayers, rather than only with taxpayers in the panel, the study considers the normal tendency of earnings to rise relative to new entrants to be income mobility.³³ In other words, the taxpayer whose economic standing improves because an increasing share of the population earns less is considered upward mobile when this change in standing simply reflects the typical lifetime pattern of income. To correct for this problem, the second measure of income mobility shows how the incomes of taxpayers in each income quintile in 1994 changed relative to that same group of taxpayers in 2007. Since no new taxpayers enter the comparison population in this measure, it eliminates the potential for upward movement relative to newcomers in the population. Therefore taxpayers in the bottom quintile are less likely to move to a higher quintile because the only new entrants to the bottom quintile are those whose incomes have fallen.³⁴ Based on this theory, the measure likely shows a more accurate estimate of the potential for economic mobility in Utah. If taxpayers only move up the economic ladder because new entrants to the economy earn less money, their overall economic well-being may not have actually improved.

Using the second measure of relative mobility (Figures 8 and 9), 53% of taxpayers in the lowest income quintile in 1994 moved to a higher quintile by 2007, compared to the 77% from the first measure. While 26% moved up to the second quintile, 27% moved up two or more quintiles. Compared to the 11% in the first measure, only 5% moved from the lowest quintile to the highest quintile in this 13 year period (Figure 9). Middle income taxpayers also experienced a fair amount of mobility, with slightly more than one-third moving to a higher income quintile. However, roughly the same percent of taxpayers moved to a lower income quintile.

A larger proportion of taxpayers in the highest quintile in 1994 also moved down over this period; with 49% moving to a lower quintile

Figure 7: Relative Mobility Into the Bottom Quintile, 1994-2007 Starting Quintile of Persons Who Were in the Bottom Quintile 13 Years Later

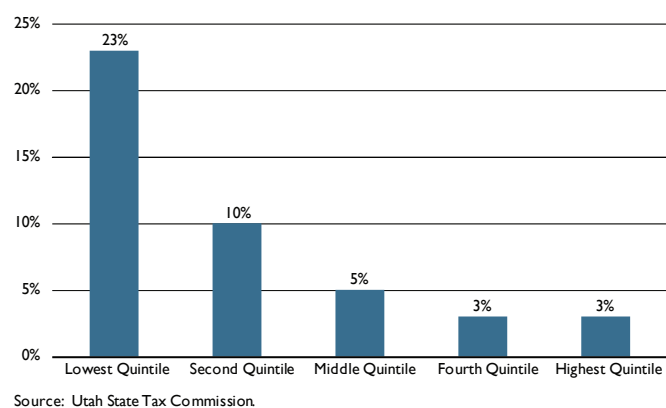


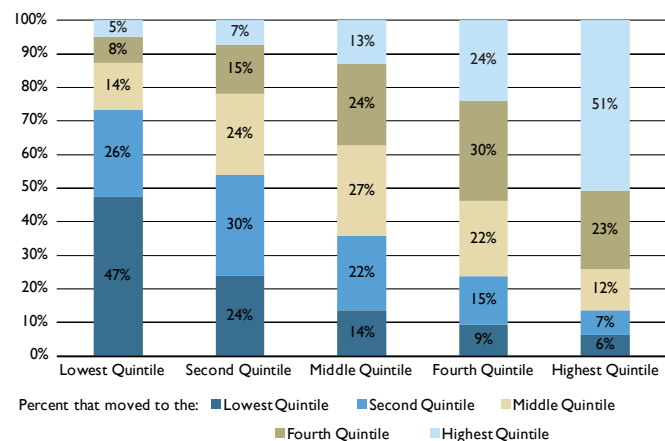
Figure 8: Second Mobility Measure: Income Mobility Relative to the Panel Population, 1994-2007

1994 Income Group	2007 Income Group					Total	Top 10%	Top 5%	Top 1%
	Lowest Quintile	Second Quintile	Middle Quintile	Fourth Quintile	Highest Quintile				
Lowest Quintile	47%	26%	14%	8%	5%	100%	2%	1%	0%
Second Quintile	24%	30%	24%	15%	7%	100%	3%	1%	0%
Middle Quintile	14%	22%	27%	24%	13%	100%	5%	2%	0%
Fourth Quintile	9%	15%	22%	30%	24%	100%	9%	3%	1%
Highest Quintile	6%	7%	12%	23%	51%	100%	31%	17%	4%
Top 10%	5%	5%	8%	17%	64%	100%	45%	27%	7%
Top 5%	6%	4%	6%	11%	73%	100%	59%	41%	11%
Top 1%	6%	2%	4%	5%	83%	100%	77%	68%	32%
All income Groups	20%	20%	20%	20%	20%	100%	10%	5%	1%

Notes: This table shows income mobility of 1994 filers relative to the panel members filing in 2007. The table uses the tax returns of primary non-dependent taxpayers who were between ages 25-49 in 1994 and filed for both 1994 and 2007. Income breaks for the quintiles and top percentiles are based only on the tax returns of the panel population. Income is defined as federal adjusted gross income divided by the square-root of exemptions.

Source: Utah State Tax Commission.

Figure 9: Income Mobility Relative to the Panel Population, 1994-2007



Source: Utah State Tax Commission.

compared to 30% from the first measure. Two-thirds (68%) of the top 1% of taxpayers in 1994 were in lower income group in 2007, but again most of these taxpayers remained in the top quintile. The percent that remained in the top 1% of income earners was relatively unchanged between these two measures, indicating that movement into this category is not influenced by new entrants into the population.

Absolute Income Mobility

The downfall to counting mobility as a taxpayer's crossing of a quintile dividing line means that some very small changes in income are considered to be mobility, such as when taxpayers right above or below the dividing line experience a small increase or decrease in income. In the same respect, the measure may miss large changes in income, such as when a taxpayer starts at the bottom of one quintile, but doesn't gain enough income to move up into the next quintile. Finally, the range between the upper and lower boundaries of each quintile can vary across quintiles and over time. Growing inequality pushes quintile boundaries farther apart (see Figure 13) making moving up or down a quintile more difficult in later years.³⁵

The third measure of income mobility addresses these criticisms by simply measuring the extent to which taxpayers' real income rose or fell. It shows the percent of taxpayers whose income increased or decreased between 1994 and 2007. Under this definition of mobility, anyone who moves across a fixed threshold is considered mobile regardless of his or her relative position within the distribution.³⁶

Figures 10 and 11 show the percent increases in real income were largest for taxpayers with the lowest incomes in 1994. Real incomes increased 100% or more for 70% of those in the lowest quintile. However, because these persons likely started with very low incomes, any increase in income would result in a high percent increase. Among those in the middle to highest quintiles, incomes also increased for the majority of taxpayers, although the number experiencing increases of 100% or more were not as large. As mentioned before, most of these increases likely reflect the lifetime pattern of income. The period between 1994 and 2007 was also a period of strong economic growth, where most people experienced rising incomes due to the expanding economy.

Not surprisingly, the group with the highest percent of taxpayers whose income decreased more than 50% was the top 1% of income earners. This supports the idea mentioned before—that the incomes of taxpayers at the highest income levels are very volatile. It is also important to note that 24% of those in the top 1% of income earners experienced increases in income of 100% or more. While this 24% likely represents a small number of taxpayers, such dramatic increases at this high level of income have a strong effect on income inequality.

Relative and absolute measures of income mobility provide information on changes in households' well-being over a period of time. As mentioned before, the measures may or may not provide a consistent picture of income mobility. For example, it is possible for persons to move down in the income distribution even though their real income increased—just not as much as other people's income.³⁷ Absolute measures of income mobility can also be deceiving because they are based on percent changes from a person's initial income. If the income is low, small dollar amount changes will result in large percent increases compared to those who experience the same dollar amount change, but started with a higher income. Also, factors such as economic growth and the natural tendency of incomes to increase with age can cause almost everyone's income to increase over time.

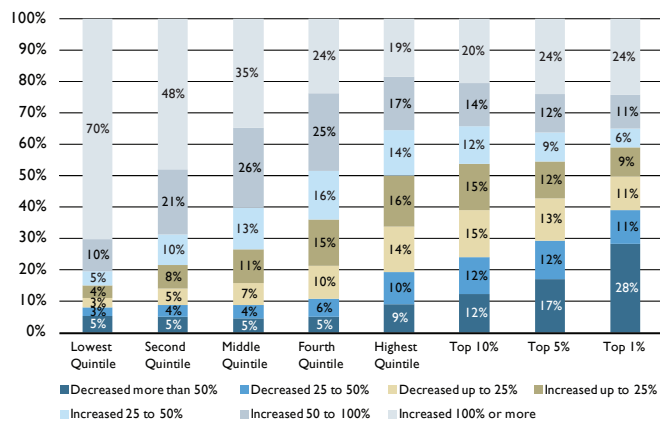
Figure 10: Third Mobility Measure: Absolute Income Mobility, 1994-2007

1994 Income Group	Distribution of Percentage Changes in Income from 1994 to 2007							Total
	Decreased more than 50%	Decreased 25 to 50%	Decreased up to 25%	Increased up to 25%	Increased 25 to 50%	Increased 50 to 100%	Increased 100% or more	
Lowest Quintile	5%	3%	3%	4%	5%	10%	70%	100%
Second Quintile	5%	4%	5%	8%	10%	21%	48%	100%
Middle Quintile	5%	4%	7%	11%	13%	26%	35%	100%
Fourth Quintile	5%	6%	10%	15%	16%	25%	24%	100%
Highest Quintile	9%	10%	14%	16%	14%	17%	19%	100%
Top 10%	12%	12%	15%	15%	12%	14%	20%	100%
Top 5%	17%	12%	13%	12%	9%	12%	24%	100%
Top 1%	28%	11%	11%	9%	6%	11%	24%	100%
All income Groups	6%	6%	9%	12%	13%	21%	34%	100%

Notes: The table uses the tax returns of primary non-dependant taxpayers who were between ages 25-49 in 1994. Income breaks for the quintiles are based on the full cross-section of tax returns for 1994. Income is defined as federal adjusted gross income divided by the square-root of exemptions.

Source: Utah State Tax Commission.

Figure 11: Absolute Income Mobility, 1994-2007



Source: Utah State Tax Commission.

Combined Relative and Absolute Income Mobility

Since many Americans think of the American Dream in terms of both gaining higher incomes and rising in society, Utah Foundation has created a fourth mobility measure based on the methodology used in “Getting Ahead or Losing Ground: Economic Mobility in America,” a study by the Brookings Institution and the Pew Charitable Trusts.³⁸ This measure examines the mobility of Utah’s taxpayers in both relative and absolute terms. It shows whether taxpayers are getting ahead in just absolute terms or if taxpayers are actually moving up the income distribution. Based on changes in taxpayers’ incomes between 1994 and 2007, the measure shows the percent of taxpayers from each income quintile that fall into the following four groups: 1) Upwardly Mobile, 2) Riding the Tide, 3) Falling Despite the Tide, and 4) Downwardly Mobile.

Figure 12 shows almost one-third of Utah taxpayers are “Upwardly Mobile,” or have both higher income and moved up one or more income quintiles between 1994 and 2007. However, a slightly larger percent of taxpayers are simply “Riding the Tide,” meaning they have higher incomes, but the increase in their incomes was not enough to move them into the next income quintile. Interestingly, 14% of taxpayers are “Falling Despite the Tide,” meaning that despite their income increasing in absolute terms between 1994 and 2007, they are in a lower relative economic standing than they were 13 years earlier. Finally, this measure shows that one-fifth of taxpayers are actually “Downwardly Mobile,” meaning they lost income during this period.

UTAH’S INCOME INEQUALITY

Based on the first three measures, Utah seems to have a considerable amount of economic mobility. Results from the fourth measure, which combines relative and absolute mobility, were slightly less promising. These results showed more than two-thirds of Utah’s taxpayers are either experiencing no change in their economic standing over time or their economic standing has decreased. However, because the measure is based on quintiles, some taxpayers have to move down simply by mathematical definition. From a different perspective, the measure shows 80% of the Utah’s taxpayers experienced increasing incomes over this period, even if the majority did not move up the economic ladder.

Figure 12: Fourth Mobility Measure: Relative and Absolute Income Mobility, 1994-2007

Mobility Category	Income Quintile in 1994					Total
	Lowest Quintile	Second Quintile	Middle Quintile	Fourth Quintile	Highest Quintile	
Upwardly Mobile Higher income and up 1 or more quintiles	53%	46%	37%	24%	N/A*	32%
Riding the Tide Higher income and same quintile	35%	30%	27%	30%	47%	34%
Falling Despite the Tide Higher income and down 1 quintile	N/A*	9%	18%	23%	18%	14%
Downwardly Mobile Lower income and lower or same quintile	12%	15%	18%	23%	35%	20%
Total	100%	100%	100%	100%	100%	100%

Notes: This table shows income mobility of 1994 filers relative to the panel members filing in 2007 in absolute terms. The table uses the tax returns of primary non-dependent taxpayers who were between ages 25-49 in 1994 and filed for both 1994 and 2007. Income breaks for the quintiles and top percentiles are based only on the tax returns of the panel population. Income is defined as federal adjusted gross income divided by the square-root of exemptions.

*Those in the top and bottom quintile cannot meet these definitions because there is no quintile above or below them respectively.

Source: Utah State Tax Commission.

Some of this limited mobility may be due to growing income inequality which makes it difficult for taxpayers to break into higher income quintiles, even if their income increases. For example, to be in the highest quintile in 1994 a taxpayer had to make at least \$64,000 (in 2007 inflation-adjusted dollars, see Figure 13). To be in the highest quintile in 2007 a taxpayer had to make at least \$78,000, an increase of about \$14,000 during this 13 year period.

Figure 13 shows the income breaks for income quintiles and select income percentiles of Utah’s taxpayers in 1994, 2000, and 2007 as well as the ratio of these income cutoffs to the median income in each year. Interestingly, the ratios of the income cutoffs for the 20th, 40th, 60th, and 80th percentiles were relatively unchanged during this period, meaning, that on average, taxpayer incomes in Utah were increasing at about the same rate. However, the ratios for the highest income classes significantly increased over this period—particularly the ratio for the top 1% of earners. To be in the top 1% of earners in 1994, a taxpayer had to make \$270,000 (in 2007 inflation-adjusted dollars). To be in the top 1% of earners in 2007, taxpayers had to make almost \$600,000, an increase of more than \$300,000. These

Figure 13: Income Class Cutoffs and Ratios to Median Incomes, 1994-2007 (2007 Inflation-Adjusted Dollars)

Percentile	Income Cutoffs			Ratio of Cutoffs to Median Income		
	1994	2000	2007	1994	2000	2007
20th	\$9,529	\$10,984	\$12,146	0.33	0.34	0.35
40th	\$21,537	\$24,147	\$26,116	0.74	0.75	0.75
Median	\$29,047	\$32,382	\$34,780	1.00	1.00	1.00
60th	\$38,420	\$42,677	\$45,820	1.32	1.32	1.32
80th	\$63,966	\$71,890	\$77,975	2.20	2.22	2.24
90th	\$87,107	\$100,068	\$110,749	3.00	3.09	3.18
95th	\$114,155	\$137,303	\$159,942	3.93	4.24	4.60
99th	\$269,649	\$390,373	\$598,712	9.28	12.06	17.21

Notes: The income breaks for the quintiles and top percentiles for each year are based on the income tax returns of all taxpayers in each year. Income is defined as federal adjusted gross income.

Source: Utah State Tax Commission.

wide ratios could have the effect of reducing the opportunity for upward income mobility into these top percentiles. As noted before, moving into the top percentile is fairly rare, but mobility out of the top percentile is high.

One common measure to characterize income inequality is the Gini coefficient, which is a numerical value that varies from 0 to 1. The Gini coefficient is a mathematical measure of the inequality of a region's income distribution. A coefficient of 0 indicates that income is evenly distributed among the population in the region (everyone has the same income); while a value of 1 indicates perfect income inequality (one individual has all the income).³⁹

Figure 14: Utah's Gini Coefficient, 1994-2008

Year	Gini Coefficient
1994	0.47
1995	0.48
1996	0.54
1997	0.55
1998	0.54
1999	0.58
2000	0.55
2001*	0.52
2002	0.52
2003	0.53
2004	0.54
2005	0.56
2006	0.57
2007	0.55
2008*	0.52

*Recession years.
Source: Utah State Tax Commission.

Figure 14 shows Utah's Gini coefficient from 1994 to 2007, calculated from the taxpayer dataset. The starred years indicate years the U.S. economy was in recession. As one can see from the table, Utah has experienced periods of growing inequality, particularly from 1994 to 1999 and from 2001 to 2006. Interestingly, both of these periods coincide with times of strong economic growth. Economic recessions also seem to reset this measure to a lower level of inequality.

CONCLUSION

There is no doubt that income inequality has been increasing in the United States over the past 25 years.⁴⁰ Some researchers suggest the decline in unionization and a falling real minimum wage are the primary causes of income inequality. Others argue that it is caused by rising returns to education and skill-biased technology change. Most analysts agree growing inequality is likely due to a combination of these factors.⁴¹

While the amount of inequality that exists in Utah seems to be fairly low, at least when compared with other states (see Figure 3); data from both the Economic Policy Institute and the Utah State Tax Commission show Utah has been experiencing growing inequality since the 1980s. However, because this growing inequality is coupled with a considerable amount of economic mobility in Utah, it may be considered short-term or point-in-time inequality. This means taxpayers in Utah tend to receive a more equal share of income over the course of their lifetimes as they move up and down the economic ladder.

This is not to say that all individuals in Utah will move up the economic ladder during their lifetimes. While the data showed a significant number of taxpayers moved up the income distribution during this 13 year period, it also showed that the lower a person starts on the income distribution, the harder it is to get to the top. Most upwardly mobile taxpayers only move into the next quintile. Very few people from the lower quintiles break into the highest quintile, and even fewer make it into the top 10%, 5%, and 1% of income earners. The rags-to-riches dream is only achieved a very small percent of the population in Utah.

This limited mobility may be due to the fact that some groups and individuals simply do not have the resources or the opportunities to be upwardly mobile. For instance, research has shown the groups that are most likely to be upwardly mobile in the income distribution are those with at least a college education.⁴² This is a significant change from the 1970s when income increases were more evenly distributed across educational levels. Today, education is the primary, consistent driver of upward mobility.⁴³ While factors such as work ethic are also important, participating in quality postsecondary education programs is the path with the most guarantee that an individual will increase his/her economic standing.

ENDNOTES

- 1 Rhonda Levine, *Social Class and Stratification* (Lanham, MD: Rowman & Littlefield, 1998).
- 2 U.S. Department of the Treasury, Office of Tax Analysis, "Income Mobility in the United States: New Evidence from Income Tax Data," *National Tax Journal* 62, No. 2 (June 2009): 301-328.
- 3 Ibid.
- 4 U.S. Census Bureau (2006).
- 5 Thomas Piketty and Emmanuel Saez, "Income Inequality in the United States," (New York: Oxford University Press, 2007). Available from <http://elsa.berkeley.edu/~saez/>.
- 6 Organization for Economic Cooperation and Development, "Growing Unequal? Income Distribution and Poverty in OECD Countries," OECD Publishing (October 2008).
- 7 Jared Bernstein et al., "Pulling Apart: A State by State Analysis of Income Trends," Center on Budget and Policy Priorities and Economic Policy Institute (April 2008).
- 8 Ibid.
- 9 Daniel McMurrer and Isabel Sawhill, "How Much Do Americans Move Up and Down the Economic Ladder?" *Opportunity in America, A Series on Economic and Social Mobility* No. 3, The Urban Institute (November 1996).
- 10 U.S. Department of the Treasury, Office of Tax Analysis, "Household Income Changes over Time: Some Basic Questions and Facts," *Tax Notes* 56 (August 24, 1992a): 1065-1074.
- 11 Ibid.
- 12 Ibid.
- 13 U.S. Department of the Treasury, Office of Tax Analysis, "Income Mobility in the United States: New Evidence from Income Tax Data."
- 14 Thomas L. Hungerford, "Income Inequality, Income Mobility, and Economic Policy: U.S. Trends in the 1980s and 1990s," CRS Report RL34434 (Washington, DC: Congressional Research Service, 2008).
- 15 Katharine Bradbury and Jane Katz, "Are Lifetime Incomes Growing More Unequal? Looking at New Evidence on Family Income Mobility," *Regional Review* Q4 (2002): 3-5.
- 16 Daniel McMurrer and Isabel Sawhill.
- 17 Ibid.
- 18 Katharine Bradbury and Jane Katz.
- 19 Ibid.
- 20 Gregory Acs and Seth Zimmerman, "U.S. Intragenerational Economic Mobility From 1984 to 2004: Trends and Implications," (Washington, DC: Economic Mobility Project, an Initiative of The Pew Charitable Trusts, 2008).
- 21 All state and federal rules were followed when accessing and analyzing state tax return data. Only a specially authorized tax commission employee was allowed to work with data from the individual tax returns. The information was aggregated in a form that protected taxpayer privacy before data were provided to Utah Foundation.
- 22 Robert Carroll et al., "Income Mobility: The Recent American Experience," Working Paper 07-18 (Atlanta, GA: Andrew Young School of Policy Studies, Georgia State University, 2007).

23 Ibid.

24 Bureau of Labor Statistics, CPI-U-RS.

25 This approach has been used in many studies, including those by the U.S. Congressional Budget Office (2009), and produces results similar to other commonly used adjustments. The most important effects are to improve income measurement in the cases of married individuals who later file separately and single individuals who are married in the ending year.

26 Organization for Economic Cooperation and Development, "What are Equivalence Scales?" http://www.oecd.org/LongAbstract/0,3425,en_2649_33933_35411112_1_1_1_1,00.html.

27 Gerald E. Auten and Geoffrey Gee, "Income Mobility in the U.S.: Evidence from Income Tax Returns for 1987 and 1996," OTA Paper 99 (Washington, DC: U.S. Department of the Treasury, Office of Tax Analysis, 2007).

28 U.S. Department of the Treasury, Office of Tax Analysis, "Income Mobility in the United States: New Evidence from Income Tax Data."

29 U.S. Department of the Treasury, Office of Tax Analysis, "Household Income Changes over Time: Some Basic Questions and Facts."

30 U.S. Department of the Treasury, Office of Tax Analysis, "Income Mobility in the United States: New Evidence from Income Tax Data."

31 Ibid.

32 Migration Policy Institute Data Hub, American Community Survey and Census Data on the Foreign Born by State (2008).

33 Paul R. Krugman, "The Right, the Rich, and the Facts: Deconstructing the Income Distribution Debate," The American Prospect Fall 11 (1992): 19-31.

34 U.S. Department of the Treasury, Office of Tax Analysis, "Income Mobility in the United States: New Evidence from Income Tax Data."

35 Katharine Bradbury and Jane Katz.

36 Daniel McMurrer and Isabel Sawhill.

37 Thomas L. Hungerford.

38 Julia B. Isaacs, Isabel V. Sawhill, and Ron Haskins. "Getting Ahead or Losing Ground: Economic Mobility in America," (Washington, DC: Economic Mobility Project, an Initiative of The Pew Charitable Trusts, 2008).

39 Thomas L. Hungerford.

40 Ibid.

41 Ibid.

42 Daniel McMurrer and Isabel Sawhill.

43 Gregory Acs and Seth Zimmerman.

This research report was written by Utah Foundation Research Analyst Laura Summers. Data were tabulated by Utah State Tax Commission Senior Economist Matthew Lund. Utah Foundation would like to thank the Utah State Tax Commission for providing Dr. Lund's time and allowing him to access the state tax records to produce the analysis for this study. Ms. Summers or Foundation President Stephen Kroes may be reached for comment at (801) 355-1400 or by email at: laura@utahfoundation.org or steve@utahfoundation.org.

MAJOR SUPPORTERS OF UTAH FOUNDATION

PLATINUM

Questar Gas
Rio Tinto
Rocky Mountain Power

GOLD

George S. and Dolores Doré Eccles Foundation
Intermountain Power Agency
Merit Medical Systems
Regence BlueCross BlueShield
Union Pacific

SILVER

American Express
Energy Solutions
Intermountain Healthcare
MountainStar Healthcare
Parsons
Parsons Brinkerhoff
Utah Transit Authority
Wells Fargo
Wheeler Machinery
Workers Compensation Fund

BRONZE

Brigham Young University
Deloitte
Central Utah Clinic
Garbett Homes

Granite Construction
HDR Engineering
Holme Roberts & Owen
Key Bank

Parsons Behle & Latimer
Ray Quinney & Nebeker
Sandy City
Staker & Parson Companies

Utah System of Higher Education
Utah Valley University
Zions Bancorporation

The mission of Utah Foundation is to promote a thriving economy, a well-prepared workforce, and a high quality of life for Utahns by performing thorough, well-supported research that helps policymakers, business and community leaders, and citizens better understand complex issues and providing practical, well-reasoned recommendations for policy change.

Douglas Matsumori, Chairman • M. Bruce Snyder, Vice Chairman • Stephen J. Kroes, President

(801) 355-1400 • www.utahfoundation.org
