



Trends in Income Growth and Inequality in the Rocky Mountain States

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This issue examines income trends both nationwide and in Colorado, New Mexico and Wyoming from 1980 to 2014, allowing for a historical perspective as well as highlighting the effects of the recent recession on annual income growth and the evolution of income inequality.

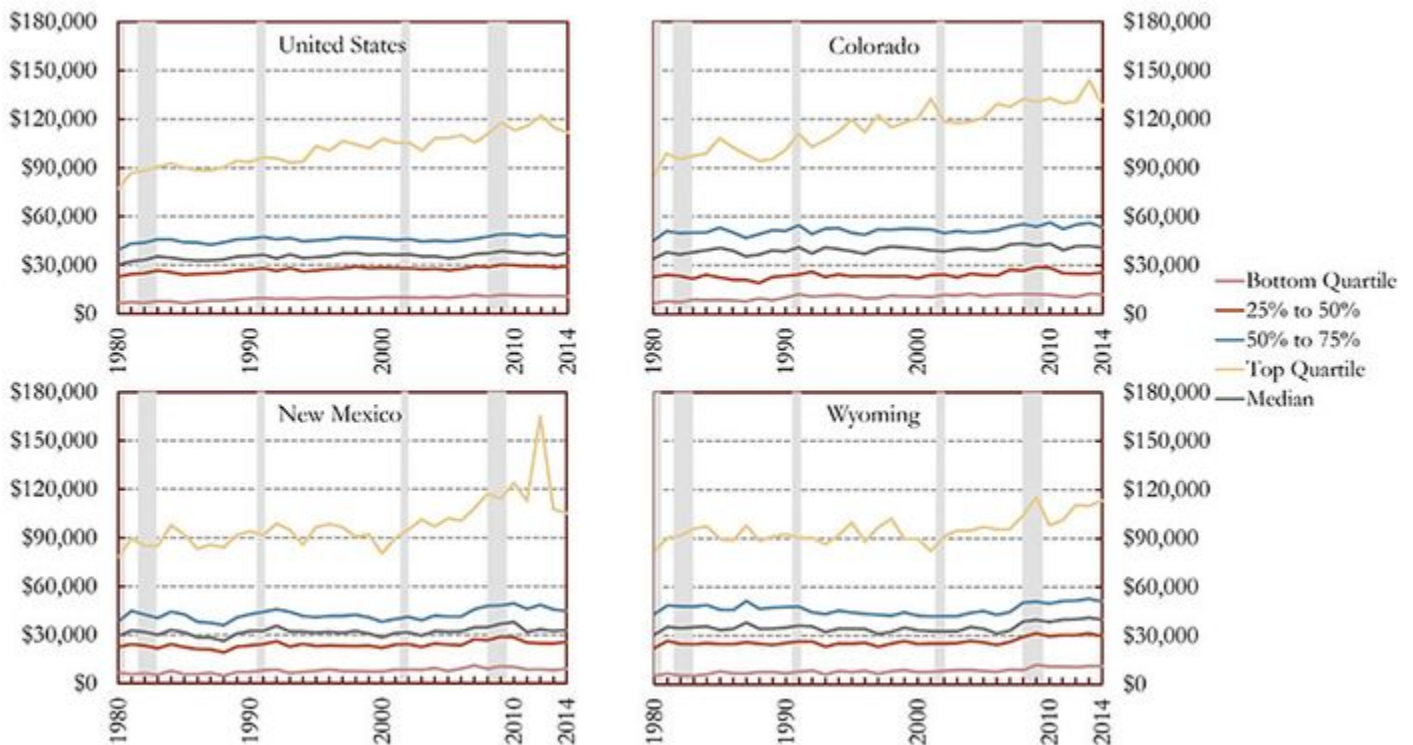
Unemployment rates near historical averages and employment above pre-recession levels across much of the nation have helped focus increased attention on wage and income growth. After declining during the recent recession, and despite some recent gains, real median income of workers in the United States remains below peak levels. This issue of *The Rocky Mountain Economist* examines income trends both nationwide and in Colorado, New Mexico and Wyoming from 1980 to 2014, allowing for a historical perspective as well as highlighting the effects of the recent recession on annual income growth and the evolution of income inequality.

Real Income Growth: 1980 to 2014

Although income growth has fluctuated over time, U.S. income since 1980 has trended up. The inflation-adjusted median income of the U.S. employed population was up 24.1 percent by 2014. More recently, however, real median income declined from 2009 to 2013, despite a small uptick in 2012, before rebounding somewhat in 2014. Even with recent gains, U.S. real median income in 2014 was 2.7 percent below its peak level of 2009.

Breaking down real income growth into quartiles allows for a more in-depth analysis of how income growth for individuals has varied across the income distribution. Chart 1 shows average real income for employed individuals ages 15 and older by quartile for the United States and the Rocky Mountain States from 1980 to 2014.^[i] Income growth has varied across the quartiles, but U.S. average real income increased in every quartile between 1980 and 2014.

Chart 1: United States and Rocky Mountain States Real Average Income by Quartile, 1980-2014, in 2014 Dollars



Note: Shaded areas indicate NBER-defined recessions.

Sources: U.S. Census Bureau, Bureau of Labor Statistics and Minnesota Population Center—IPUMS CPS.

Perhaps unsurprisingly, real income in the top quartile has experienced much higher absolute growth during this time, with U.S. real average income increasing from \$76,955 in 1980 to \$111,827 in 2014. Moreover, the difference between the average real income of the top quartile and the median real income in the United States grew from \$46,651 in 1980 to \$74,209 in 2014. However, comparing income growth across quartiles in percentages tells a slightly different story. Real average income increased the fastest for the bottom quartile between 1980 and 2014 at 65 percent, whereas the top quartile increased 45 percent. The middle quartiles experienced much slower growth, with real incomes increasing about 28 percent and 22 percent for both the second and third quartiles, respectively, at the national level.

Despite the steady growth in income over the last few decades for the United States, real income growth has been weak during the period following the 2007 recession. As of 2014, average real income in the top quartile was 5.8 percent more than 2007 levels and below peak levels from 2012. Similarly, the 2014 average real income for the second and third quartiles and the median real income were higher than 2007 incomes but below peak levels. The period since 2007 has been particularly difficult for those in the bottom income quartile; 2014 real average income in the bottom quartile was still 7.4 percent below 2007 levels.

Colorado's real income growth has followed many national trends. From 1980 to 2014, the difference between the average real income of the top quartile and median income grew from \$50,857 to \$86,963, and all income groups experienced a real increase in income between 1980 and 2014. However, in percentage terms, the bottom quartile experienced the fastest percentage growth at 83.1 percent, followed by the top quartile at 50.5 percent. An interesting trend in average real income of the top quartile of Colorado, which was not as stark for the other states or the nation, was a severe drop during the 2001 recession following the burst of the "tech" bubble. This drop points to Colorado's dependence on the technology sector relative to other Mountain States. Prior to the 2001 recession, and in line with the tech build up, real average income among the three highest-earning quartiles of Colorado grew faster than national income and income in New Mexico and Wyoming from 1990 to 2000.

Similar to Colorado, New Mexico also witnessed a widening of the gap between the average real income of the top quartile and median real income from \$48,751 in 1980 to \$72,158 in 2014. The bottom quartile experienced the fastest percentage growth, while the second quartile experienced the slowest growth. However, each of New Mexico's quartiles in 2014 had lower real income than Colorado, Wyoming and the nation, and income grew at a slower pace for all of New Mexico's income quartiles between 1980 and 2014 compared to the nation and the other Rocky Mountain States.^[ii]

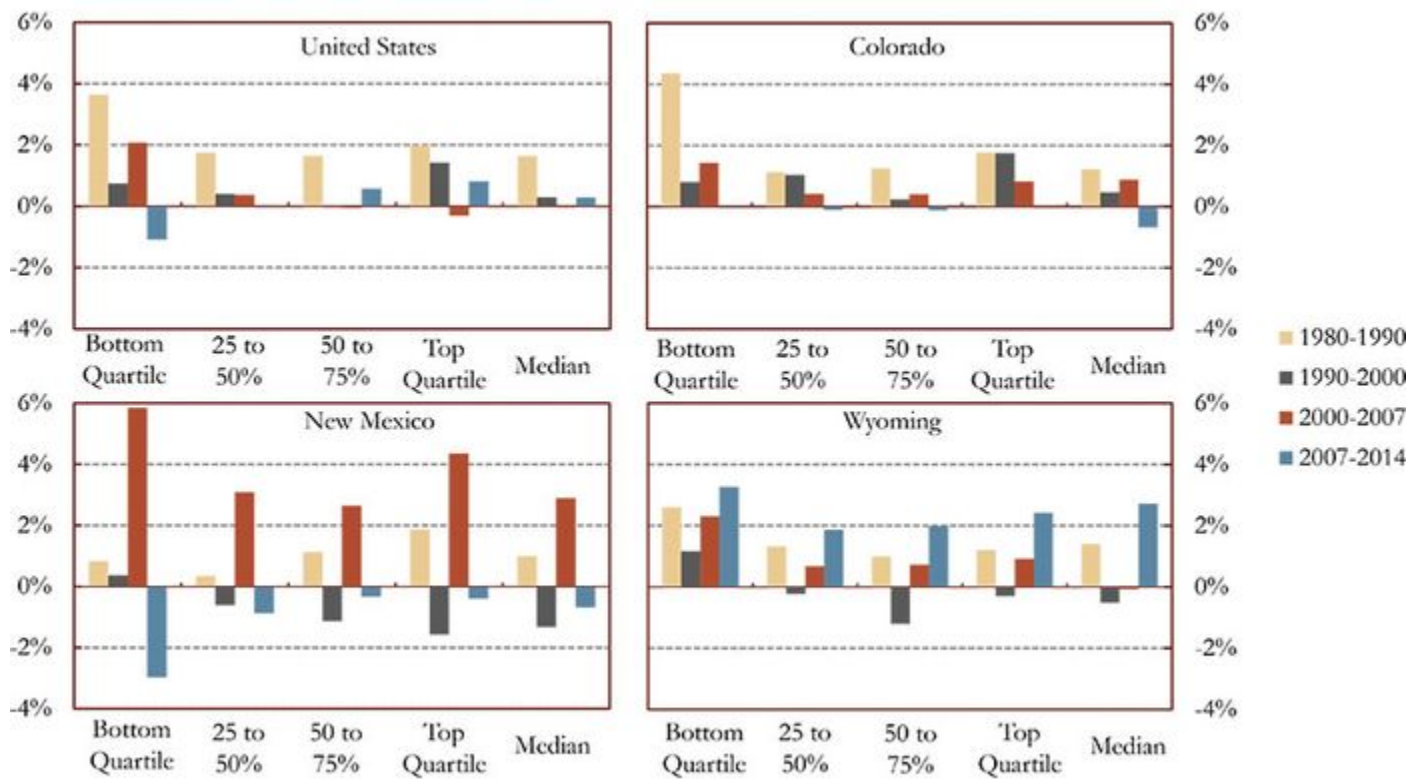
Among the Rocky Mountain States, Wyoming experienced the smallest increase in the disparity between the average real income of the top quartile and median real income from 1980 to 2014, as the difference grew from \$51,596 to \$73,233. Similar to the nation, all income quartiles in Wyoming experienced an increase in real incomes between 1980 and 2014, with the bottom quartile experiencing the fastest percentage growth at 114 percent. Moreover, and unlike the nation and other Rocky Mountain States, real average income increased for all quartiles in Wyoming between 2007 and 2014. The median income for Wyoming's employed population was \$40,001 in 2014, similar to Colorado, and above the national median of \$37,618.

While Chart 1 shows how real income has changed over time in dollars, Chart 2 shows the annualized percentage growth of average real income for each income quartile in four time periods: 1980-1990, 1990-2000, 2000-2007 and 2007-2013. This allows for a period-by-period comparison of percentage growth by income quartile as well as how income growth for the employed population evolved before and after the 2007 recession.

Chart 2 shows that disparities in annualized income growth by quartile exist across different regions and time periods. Overall, real income growth was strongest between 1980 and 1990 in Colorado and the nation. However, income growth was particularly strong between 2000 and 2007 in New Mexico; Wyoming experienced strong income growth between 2007 and 2014 as Colorado, New Mexico and the nation were experiencing weak income gains. A strong energy sector contributed to faster income growth in Wyoming between 2007 and 2014 although the recent sharp decline in oil prices is likely to weigh heavily on Wyoming income gains in the years ahead.

With the exception of Wyoming, annualized real income growth has been weak in the nation, Colorado and New Mexico between 2007 and 2014. The top three income quartiles for the nation were positive during this recent period, but income gains were slight. Real income in all of Colorado's income quartiles decreased from 2007 to 2014 with the exception of the top income quartile, which remained flat. Real income for the bottom quartile of the nation was the most negatively affected quartile and decreased 1.1 percent annually from 2007 and 2014.

Chart 2: Real Average Annual Income Growth by Time Period and Income Quartile

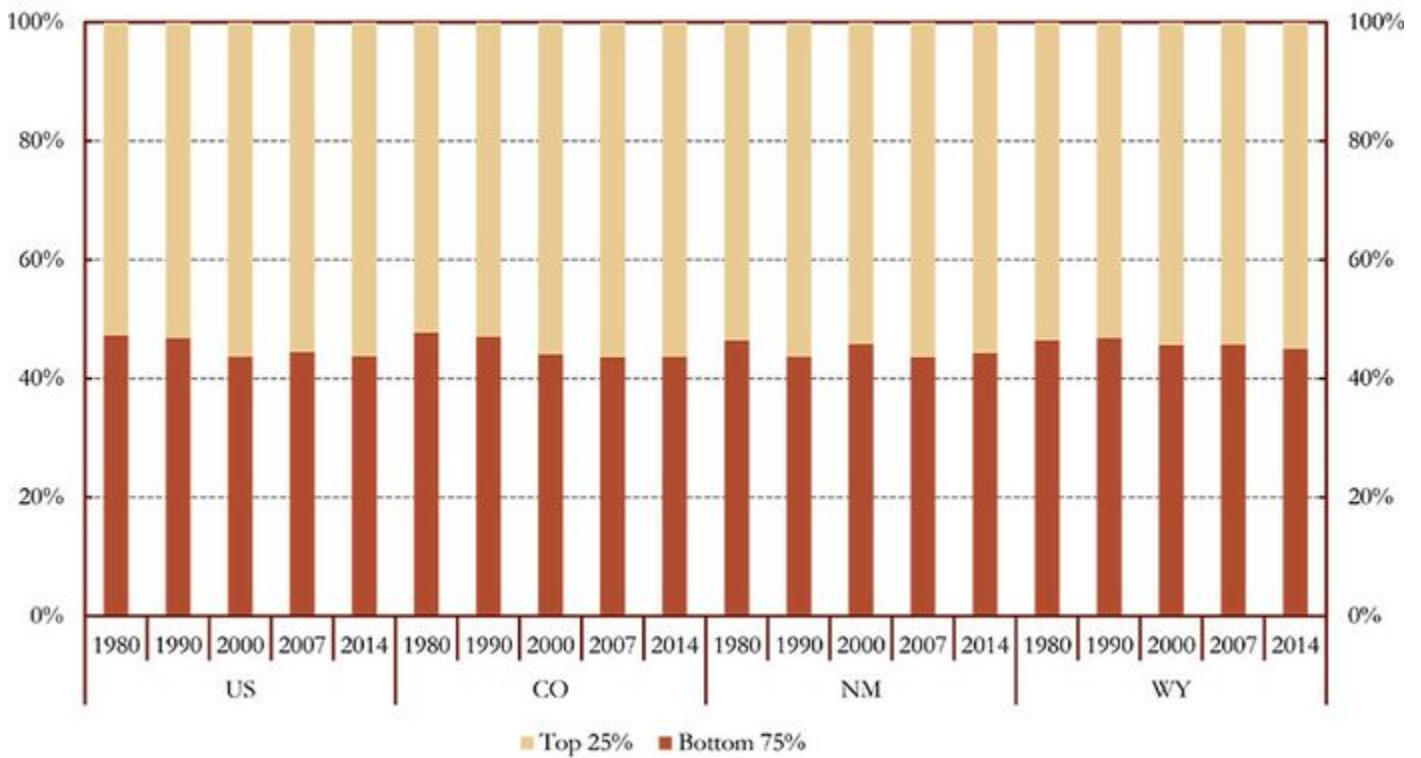


Sources: U.S. Census Bureau, Bureau of Labor Statistics and Minnesota Population Center—IPUMS-CPS.

Trends in Income Inequality

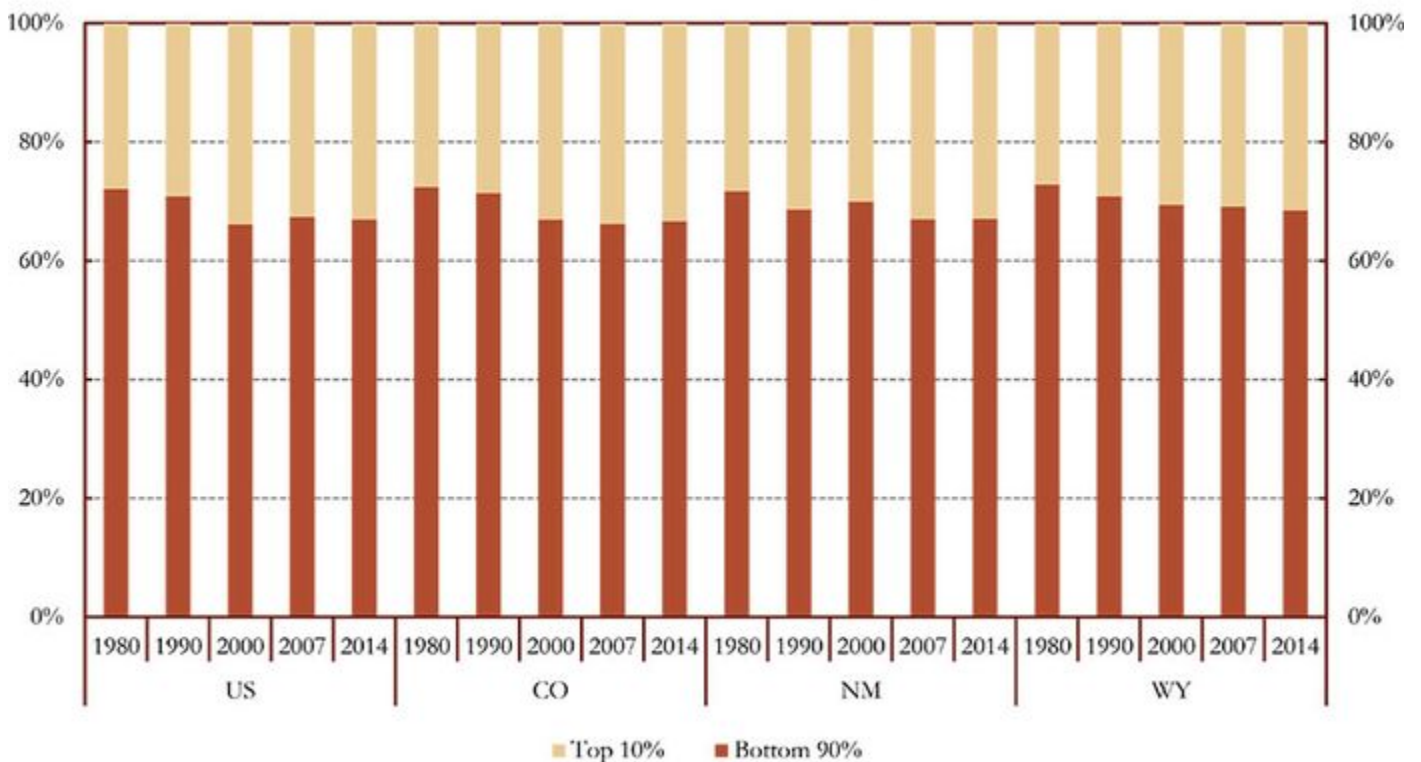
Even though real income in 2014 was higher than in 1980 for all income quartiles, there is increased concern about the concentration of income and trends in income inequality over time. Examining the share of total income concentrated among top earners is one way of looking at trends in income inequality. Chart 3 shows the share of income concentrated among the top 25 percent highest-income, employed individuals and the income share of the lowest-earning 75 percent. Chart 4 breaks down total income shares among the lowest-earning 90 percent and the highest-earning 10 percent.

Chart 3: Share of Total Income Concentrated Among the Top 25 Percent



Sources: U.S. Census Bureau, Bureau of Labor Statistics and Minnesota Population Center—IPUMS-CPS.

Chart 4: Share of Total Income Concentrated Among the Top 10 Percent



Sources: U.S. Census Bureau, Bureau of Labor Statistics and Minnesota Population Center—IPUMS-CPS.

In the nation and each of the Rocky Mountain States, the top 25 percent earned at least 50 percent of total income during each time period. In addition, the share of income held by the highest earning 25 percent in the United States increased from 53 percent in 1980 to 56 percent in 2014. The top 10 percent shows a similar pattern. In all regions and years, the top 10 percent earned at least 27 percent of total income, and the fraction of income going to the top 10 percent was higher in 2014 than in 1980. This data suggests that income inequality has increased in the last few decades in the United States and the Rocky Mountain States.

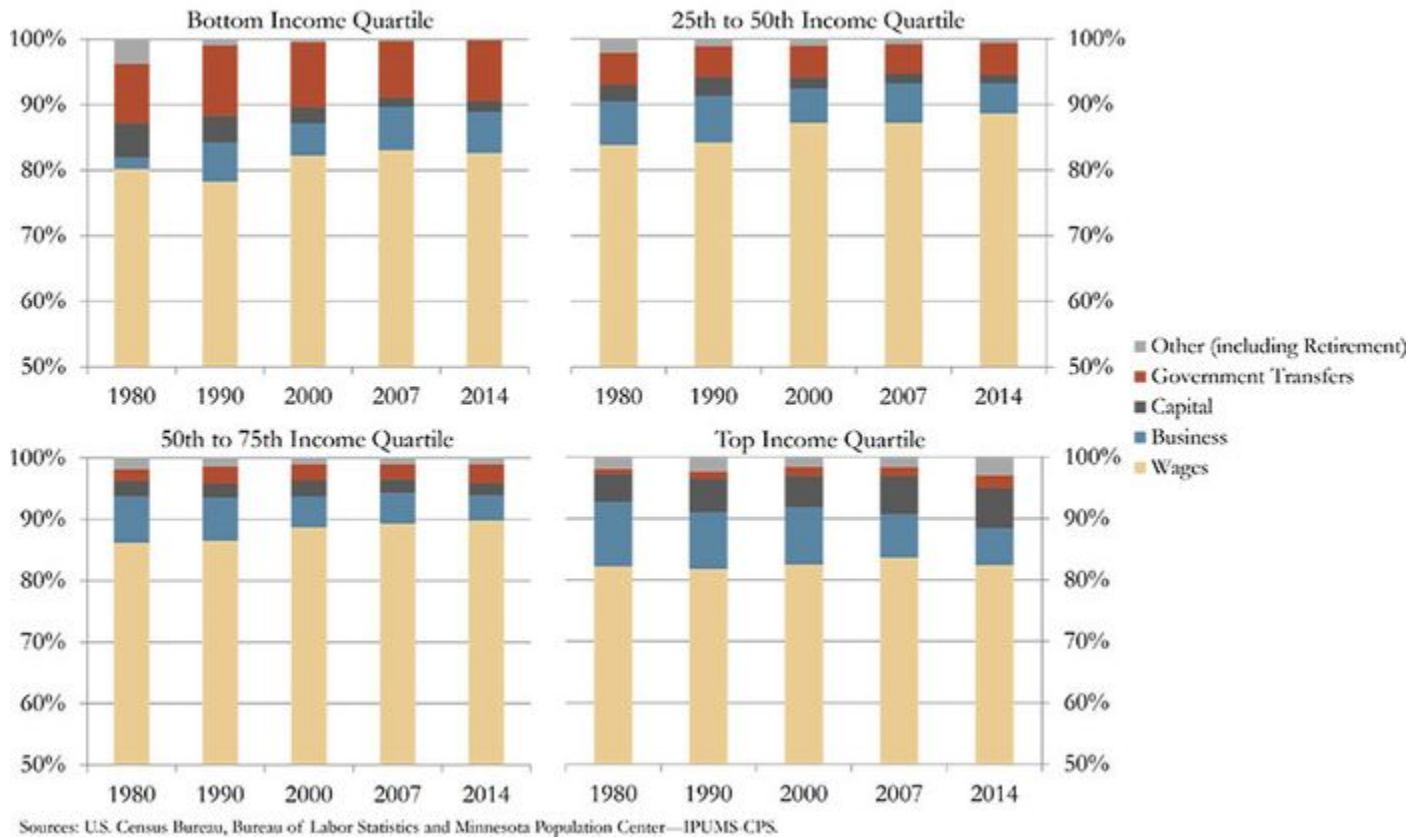
The concentration of income among the top 10 percent in the nation increased from 28 percent in 1980 to 33 percent in 2014. Colorado, New Mexico and Wyoming experienced similar increases in income shares among the top 10 percent, with shares rising from 28 percent to 33 percent in Colorado, 28 percent to 33 percent in New Mexico and 27 percent to 32 percent in Wyoming. The top 10 percent experienced the largest gains in income shares between 1990 and 2000 in the nation and in Colorado, and then stayed fairly constant since 2000. However, top earners in New Mexico saw their share rise between 1980 and 1990 and again between 2000 and 2007. In Wyoming, income shares gradually have increased for the top 10 percent in every time period.

Although this issue of *The Rocky Mountain Economist* examines the share of total income for the top 25 percent and 10 percent, there is an increasing amount of literature which examines the share of income held by individuals in the top one percent and above. Recent academic literature in this area indicates that the rate of growth for the top one percent and above increased much faster than the rest of the population and has been a primary driver of the divergence of income between the top percentile and bottom percentile of earners.^[iii]

Contribution to Total Income

Although the largest component of income is wages, other components include business income, interest income, dividends, rents and government transfers. Chart 5 displays the composition of total income over time for the United States by income quartile.^[iv] Further dissection of total income growth into its components will help shed light on the drivers of income growth over time.

Chart 5: U.S. Real Total Income by Component



As the largest component of income, wages make up at least 78 percent of total income in every income quartile and for all time periods. Government transfers are the second largest contributor to total income for the bottom quartile, comprising more than 9 percent of income in every time period. Business income has increased as a share of income for the bottom quartile, rising from 1.7 percent in 1980 to 6.3 percent of total income in 2014. Over the same period, income from interest, dividends and rent (labeled capital in Chart 5) has declined as a share of income for the bottom quartile, falling from 5.2 percent in 1980 to 1.7 percent in 2014.

In 2014, the top income quartile was the least reliant on income from wages and had the smallest share of total income from government transfers. Furthermore, the share of total income coming from interest, dividends and rent was much higher for the top quartile compared with the other income quartiles during all periods. And, whereas the contribution from interest, dividends and rent fell between 1980 and 2014 for the lowest three income quartiles, the share of income from these capital sources for the top income quartile increased from 4.6 percent in 1980 to 6.6 percent in 2014.

The composition of income in the Rocky Mountain States has been similar to the nation. Wages made up a larger share of total income for the middle two income quartiles when compared to the bottom and top income quartiles in each of the Rocky Mountain States. Income of the bottom and top income quartiles of the employed population was relatively more reliant on other sources, with the bottom quartile gaining a larger portion of income from government transfers and the top quartile

receiving more income from both business and capital.

Conclusion

Real income has increased across the entire income distribution since 1980, but the share of total income concentrated among the top 10 percent of workers has risen over time, suggesting that income inequality has increased. At the national level, the top 10 percent experienced the largest gain in their share of total income between 1990 and 2000. However, the years since the 2007 recession have been particularly difficult for those in the bottom income quartile, with real incomes still more than 7 percent below their levels in 2007.

End notes

[i] Total income is the sum of income from wages and salaries, business, as well as from government disbursements such as Social Security, disability, welfare and unemployment benefits and income from dividends, interest and rent. Moreover, income from farm ownership is included as well as miscellaneous income not included in other categories.

[ii] The data show a sharp rise in real average income for New Mexico's top quartile in 2012 when income increased more than \$52,000 from about \$113,000 in 2011 to \$165,000 in 2012. Most of this increase was due to a rise in wages and appears to have been temporary.

[iii] Atkinson, Anthony B., Thomas Piketty, and Emmanuel Saez. 2011. "Top Incomes in the Long Run of History." *Journal of Economic Literature*, 49(1): 3-71.

[iv] Income from wages exclusively includes money received as an employee. Income from business includes income from ownership of a business or farm. Income from interest, dividends and rent includes income strictly earned from interest, dividends and rents. Income from government transfers includes money received from the government in the form of welfare, unemployment compensation, Social Security, worker's compensation, disability and other government compensation programs. Finally, the other category includes all income unaccounted for by the other categories but also retirement earnings, such as a pension from a former employer or union excluding money received from Veteran's Administration or Social Security.

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Alison Felix is Senior Policy Advisor at the Federal Reserve Bank of Kansas City. In this role, she is responsible for briefing the Kansas City Fed's president—a member of the Federal Open Market Committee—on economic and business activity in the Tenth District. In addition, Felix conducts research on issues related to public finance, labor dynamics and regional growth trends. Felix recently served as Vice President and Denver Branch Executive where she conducted research and outreach related to the economies of Colorado, Wyoming and northern New Mexico. Felix used her time in this position to broaden her understanding of the Tenth District regional economies, as well as recruiting and working closely with the Branch's board of directors. Felix joined the Federal Reserve in 2007 as an economist in the Regional Affairs Department in Kansas City, and was promoted to Denver Branch Executive in 2012. She holds a Ph.D. and M.A. in economics from the University of Michigan and a B.A. in mathematics and economics from Kansas State University. Felix currently serves on the Advisory Council for Kansas State University's Department of Economics and on the Colorado Governor's Revenue Estimating Advisory Committee. She also participates on the Metropolitan State University's Community Cabinet, Mile High United Way's Community Impact Committee and is a member of the Denver Association of Business Economists.



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