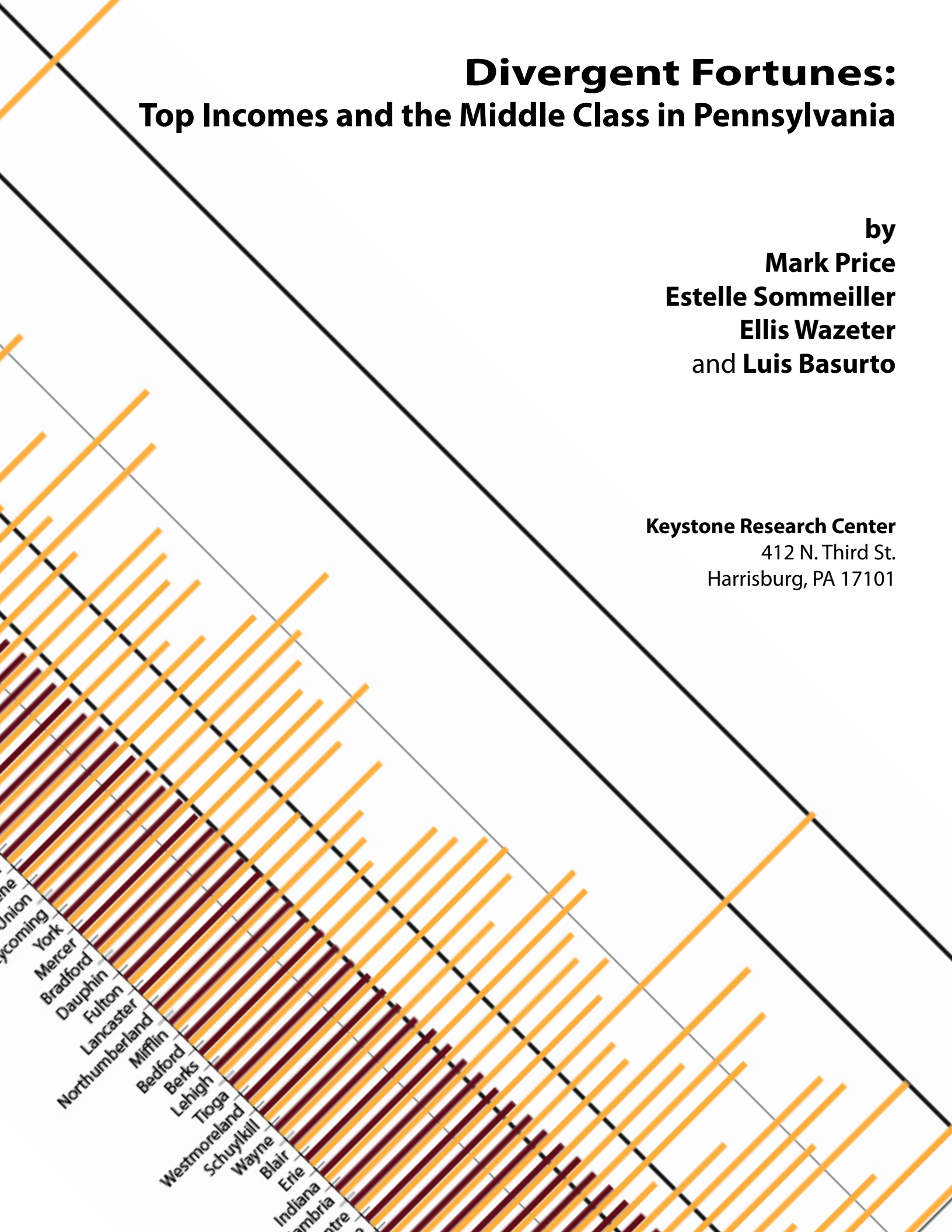


Divergent Fortunes: Top Incomes and the Middle Class in Pennsylvania

by
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Allegheny
Berks
Butte
Cameron
Carbon
Chester
Columbia
Crawford
Dauphin
Delaware
Erie
Franklin
Fulton
Greene
Harrisburg
Hempfield
Indiana
Lancaster
Lehigh
Lebanon
Luzerne
Lycoming
Mifflin
Monroe
Montgomery
Northampton
Northumberland
Perry
Pike
Schuylkill
Tioga
Union
York

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Executive Summary

Growing economic inequality remains one of the most pressing public policy issues in Pennsylvania today. This paper explores long term trends in inequality at the county level in Pennsylvania using two yardsticks for the degree of inequality within a community: the share of households earning middle-class incomes and the share of total income in the county earned by the top 1% of taxpayers. We find income inequality using both yardsticks has increased within every county (or county grouping) in Pennsylvania since the late 1970s. (Estimates on the income earned by the top 1% are available for each county; estimates of the size of the middle class are available for 16 individual counties, with Pennsylvania's other 51 counties divided into 11 multi-county groups.)

The Shrinking Middle Class

We defined the middle class in each county (or county grouping) as the percentage of households with incomes between two-thirds of the median household income in the county and twice the median county income. Our findings in brief follow.

The percentage of households with middle-class incomes has declined from 62.3% to 53% in Pennsylvania as a whole since the late 1970s. Examining data at the county level we find the middle class got smaller in **EVERY** county or county grouping in Pennsylvania.

The counties or county groups with the largest percent decline in the share of households with middle-class incomes were (in parenthesis is how much the middle class shrank – the percent decline in the size of the middle class – followed by the share of households in the middle class in 2010-12):

- Delaware (the middle class shrank by 20.9% -- more than a fifth – to 50.9% of the households in 2010-12), Philadelphia (middle-class shrinkage of a fifth to 43.1%), Columbia, Luzerne, Montour, & Northumberland (shrinkage of nearly a fifth to 53.3%), Bucks (down 17.6% to 56.8%), Erie (down 16.7% to 55.1%), Chester (down 15.9% to 54.8%), Westmoreland (down 15.8% to 55.6%), Allegheny (down 15.6% to 53.0%), Armstrong & Indiana (down 15.6% to 53.7%), Lebanon (down 15% to 58.2%), Centre (down 15% to 50.1%).

The counties or county groups with the smallest decline in the share of households with middle-class incomes (in parenthesis is the percent decline in the size of the middle followed by the middle-class share in 2010-12):

- Crawford & Warren (down 8.1% to 56.8%), Cameron, Clarion, Clearfield, Elk, Forest, Jefferson, McKean, Potter, & Venango (down 8.7% to 58.1%), Bedford, Blair, Cambria, Fulton, Huntingdon, & Somerset (down 9.2% to 58.0%), Cumberland & Perry (down 10.4% to 59.3%), Clinton, Juniata, Mifflin, Lycoming, Snyder, & Union (down 10.5% to 57.6%), Lancaster (down 11.3% to 58.0%), Schuylkill (down 11.4% to 58.6%), Fayette, Greene, & Washington (down 11.4% to 54.9%), Dauphin (down 13.2% to 55.3%), Adams, Franklin, & York (down 13.4% to 58.8%).

The counties or county groups in Pennsylvania with the largest middle class are (in parenthesis is the middle class share in 2010-12):

- Cumberland & Perry (59.3%), Adams, Franklin, & York (58.8%), Schuylkill (58.6%), Lebanon (58.2%), Butler (58.1%), Cameron, Clarion, Clearfield, Elk, Forest, Jefferson, McKean, Potter, &

Venango (58.1%), Bedford, Blair, Cambria, Fulton, Huntingdon, & Somerset (58%), Lancaster (58%), Clinton, Juniata, Mifflin, Lycoming, Snyder, & Union (57.6%), Crawford & Warren (56.8%)

The counties or county groups in Pennsylvania with smallest middle class are (in parenthesis is the middle class share in 2010-12):

- Philadelphia (43.1%), Centre (50.1%), Delaware (50.9%), Allegheny (53.0%), Columbia, Luzerne, Montour, & Northumberland (53.3%), Armstrong & Indiana (53.7%), Chester (54.8%), Fayette, Greene, & Washington (54.9%), Erie (55.1%), Dauphin (55.3%), Bradford, Carbon, Lackawanna, Lehigh, Monroe, Northampton, Pike, Sullivan, Susquehanna, Tioga, Wayne, Wyoming (55.3%)

Exploding Top Incomes

Our second yardstick for judging the degree of income inequality is the share of all pre-tax and transfer income (here after referred to as total income) captured by the highest 1% of earners. Building on analysis released in February¹ that tracked changes in top incomes by state between 1917 and 2011 this paper explores trends in income growth for the top 1% of taxpayers by county in Pennsylvania since 1978. (See the [online appendix](#) for top income levels and shares by county since 1973.)

Our main findings with respect to top incomes follow:

In 1978 the share of total income captured by the top 1% of taxpayers did not exceed 10% in any county in Pennsylvania. By 2011 the top 1% captured more than 10% of income in all but 6 Pennsylvania counties.

The rapid increase in the share of all income captured by the top 1% of taxpayers was driven by radically lopsided income growth between 1978 and 2011. In **NO** Pennsylvania county between 1978 and 2011 did the income growth of the bottom 99% exceed the income growth of the top 1%. Over this period, the real income of the bottom 99% of taxpayers grew in only 21 of 67 Pennsylvania counties.

The counties with the greatest income growth among the top 1% were (in parenthesis is the percent increase in real income between 1978 and 2011):

- Forest (757%), Bucks (278%), Chester (250%), McKean (245%), Greene (238%), Washington (211%), Bradford (208%), Potter (203%), Delaware (202%), Susquehanna (193%).

The counties that saw the least amount of income growth among the top 1% of taxpayers were:

- Clearfield (18%), Monroe (19%), Clarion (20%), Venango (22%), Perry (31%), Snyder (33%), Juniata (41%), Elk (43%), Huntingdon (46%), Mifflin (48%).

The 10 counties with the largest share of all income earned by the top 1% in 2011 ordered from most to least (in parenthesis is the income share) were:

- Forest (33.9%), McKean (25.2%), Somerset (21%), Montgomery (20.3%), Allegheny (20%), Delaware (18.7%), Philadelphia (18.1%), Potter (18%), Greene (17.9%), Chester (17.6%).

¹ See Estelle Sommeiller and Mark Price, The Increasingly Unequal States of America: Income Inequality by State, 1917 to 2011. <http://www.epi.org/publication/unequal-states/>

The 10 counties with the smallest share of all income earned by the top 1% in 2011 ordered from most to least (in parenthesis is the income share):

- Franklin (11.1%), Bedford (10.7%), Lebanon (10.3%), Fulton (10%), Huntingdon (9.9%), Carbon (9.9%), Monroe (9.6%), Snyder (9.5%), Juniata (9.1%), Perry (6.7%).

From Lake Erie in the northwest to the Delaware River in the east and southeast, from the three rivers that come together in Pittsburgh to the Pocono Mountains in the northeast, across rural, central city, and suburban areas, economic inequality is up in every part of Pennsylvania.

If current trends remain unchecked, in another generation (defined as another 33-year period – until about 2045) the middle class in even Central Pennsylvania² – the region today with the largest middle class – will be a minority. Unchecked the share of total income captured by the highest earning 1% in Central Pennsylvania will reach 18% (it is now 12%, it was 6% in 1978). In this respect Philadelphia and Allegheny Counties, home to the commonwealth's two largest cities, have already arrived where the rest of Pennsylvania is headed. Today the city of Philadelphia has the smallest middle class (42%) and Allegheny County the fourth-smallest middle class (53%). Similarly the share of total income captured by the highest earning top 1% of taxpayers is 18% in Philadelphia and 20% in Allegheny County.

The divergent fortunes of Pennsylvania's middle class and of its highest earners are the result of policy choices and business practices that have broken the link between rising productivity and wages for working families. Rising labor productivity generates income growth, but whether that income shows up in the paychecks of most workers or flows mostly to the top depends both on the effort policymakers put towards achieving full employment and on the rules that govern how the labor market operates. On both counts policymakers have fallen short and the result is the growth in income inequality in every part of Pennsylvania.

As a first modest step in checking this rise in inequality observed in this report we recommend that Pennsylvania policymakers raise the states minimum wage to at least \$10.10 per hour, index the minimum wage to inflation and apply the new minimum to tipped workers.³ This policy, most especially the inflation adjustment would stabilize the incomes of low-wage workers in Pennsylvania, a group of workers that despite being better educated and more productive earn less today than they did in 1979.

² Central Pennsylvania is defined here as Perry, Cumberland, Adams, Dauphin, Lancaster, Lebanon, Franklin, York

³ The last increase in the state minimum wage in Pennsylvania left the minimum wage for tipped workers at \$2.83 per hour.

Introduction

The pace of income growth since the 1970s has been slower for Pennsylvanians than in the 30 years following 1945. In addition to being slower, income growth since the 1970s has also been lopsided, with a small fraction of the highest-income households capturing most income growth in Pennsylvania.⁴

This report examines the extent to which these statewide trends since the 1970s manifest themselves in changes in the degree of income inequality within each county or county grouping. Specifically this report examines two yardsticks for the degree of inequality by county or county grouping:

- How the size of the middle class in each county or county grouping changed between 1979 and 2010-2012.
- How the share of total income captured by the top 1% of taxpayers changed in each county between 1978 and 2011.

See the *Methodological Appendix* at the end of this paper for a brief discussion of the construction of our databases on middle class and top incomes in Pennsylvania. See also the [online appendix](#) for additional tables and figures including the full time series of top incomes and top income shares by county since 1973.

Middle Class

We define the middle class as the percentage of households with incomes between 67% to 200% of median income in a region.⁵

By this definition, in 1979 62.3% of Pennsylvania households had a middle-class income, today the percentage of middle-class households has fallen to 53%, a decline of 15%.

Figure 1 presents the percent decline in the share of households earning middle-class incomes for every county or county group in Pennsylvania and illustrates that the shrinking middle class is a phenomena in every part of Pennsylvania. (See Table A1, Table A2, Table A3 and Table A4 in the [online appendix](#) for the share of households in each class and how it has changed over time by county/county group).

The counties or county groups with the largest percent decline in the share of households with middle-class incomes (in parenthesis is the percent decline followed by the middle class share in 2010-12):

- Delaware (down 20.9% to 50.9%), Philadelphia (down 20.2% to 43.1%), Columbia, Luzerne, Montour, & Northumberland (down 19.3% to 53.3%), Bucks (down 17.6% to 56.8%), Erie (down 16.7% to 55.1%), Chester (down 15.9% to 54.8%), Westmoreland (down 15.8% to 55.6%),

⁴ For a complete summary see Mark Price, *Increasingly Unequal in Pennsylvania: Income Inequality 1917 to 2011*, Keystone Research Center, February 19th available online at <http://goo.gl/zC6YjF>

⁵ Comparisons of household incomes over time are complicated by declines in the number of people living in each household. Holding income constant a smaller household implies more income available per person. In this paper we adjust for changes in household size by the following formula: adjusted household income = (household income / (number of people in the household)^{0.5}). Adjusting for household size the median household income in Pennsylvania in 2010-12 falls from \$61,200 to \$36,062. Similarly median household income in 1979 falls from \$58,965 to \$31,502. Table A5 and Table A6 in the [online appendix](#) list the household size adjusted median income for each county or county group.

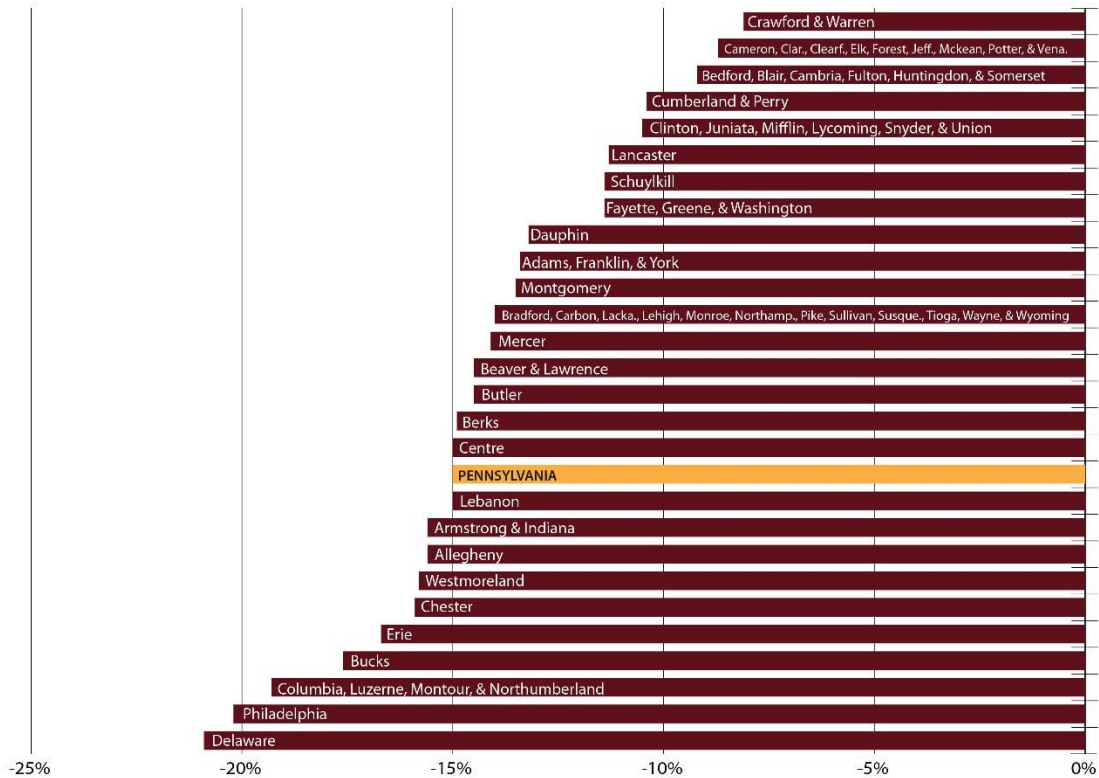
Allegheny (down 15.6% to 53.0%), Armstrong & Indiana (down 15.6% to 53.7%), Lebanon (down 15% to 58.2%), Centre (down 15% to 50.1%).

The counties or county groups with the smallest decline in the share of households with middle-class incomes (in parenthesis is the percent decline followed by the middle class share in 2010-12):

- Crawford & Warren (down 8.1% to 56.8%), Cameron, Clarion, Clearfield, Elk, Forest, Jefferson, McKean, Potter, & Venango (down 8.7% to 58.1%), Bedford, Blair, Cambria, Fulton, Huntingdon, & Somerset (down 9.2% to 58%), Cumberland & Perry (down 10.4% to 59.3%), Clinton, Juniata, Mifflin, Lycoming, Snyder, & Union (down 10.5% to 57.6%), Lancaster (down 11.3% to 58.0%), Schuylkill (down 11.4% to 58.6%), Fayette, Greene, & Washington (down 11.4% to 54.9%), Dauphin (down 13.2% to 55.3%), Adams, Franklin, & York (down 13.4% to 58.8%).

Figure 1. The middle class got smaller in every part of Pennsylvania

Percent change by county/county group in the share of households with middle class incomes 1979 to 2010-12



Source: Keystone Research Center based on U.S. Census and American Community Survey microdata provided by Steven Ruggles, J. Trent Alexander, Katie Genadek, Ronald Goeken, Matthew B. Schroeder, and Matthew Sobek. Integrated Public Use Microdata Series: Version 5.0

Over the same time period, both the lower- and upper-income group in Pennsylvania have expanded. In the most recent three-year period, the upper class (those earning more than 200% of median household income) represented 15.6% of the Pennsylvania households, up from 10.3% in 1979. Over the same time period the share of households with less than a middle-class income grew from 27.4% to 31.5% in 2010-12.

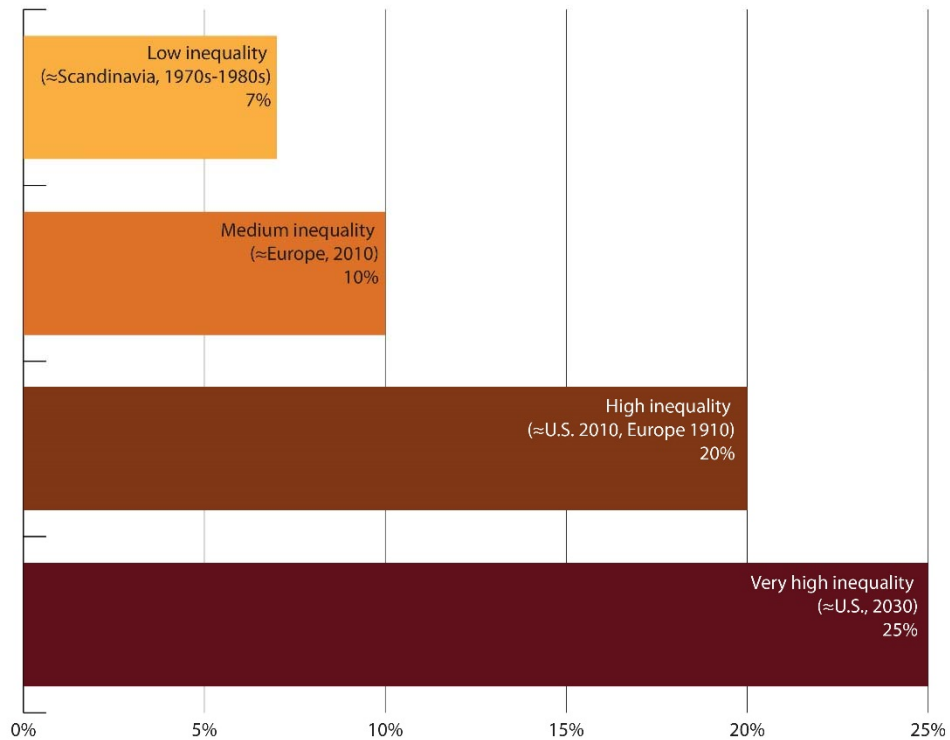
See Table A2 in the [online appendix](#) for a listing and ranking of the size of the middle class in each county or county group.

Top Incomes

In this section we examine trends in the growth of total pre-tax and transfer income (from here forward referred to as total income) for the top 1% of taxpayers by county in Pennsylvania.

Figure 2 defines four degrees of income inequality using labels from Thomas Piketty in his book *Capital In The Twenty-First Century*.⁶

Figure 2. Categorizing top income shares



Source: Keystone Research Center based upon Thomas Piketty, *Capital In The Twenty-First Century*, 2014 see Table 7.3 page 249.

Piketty defines *Low*

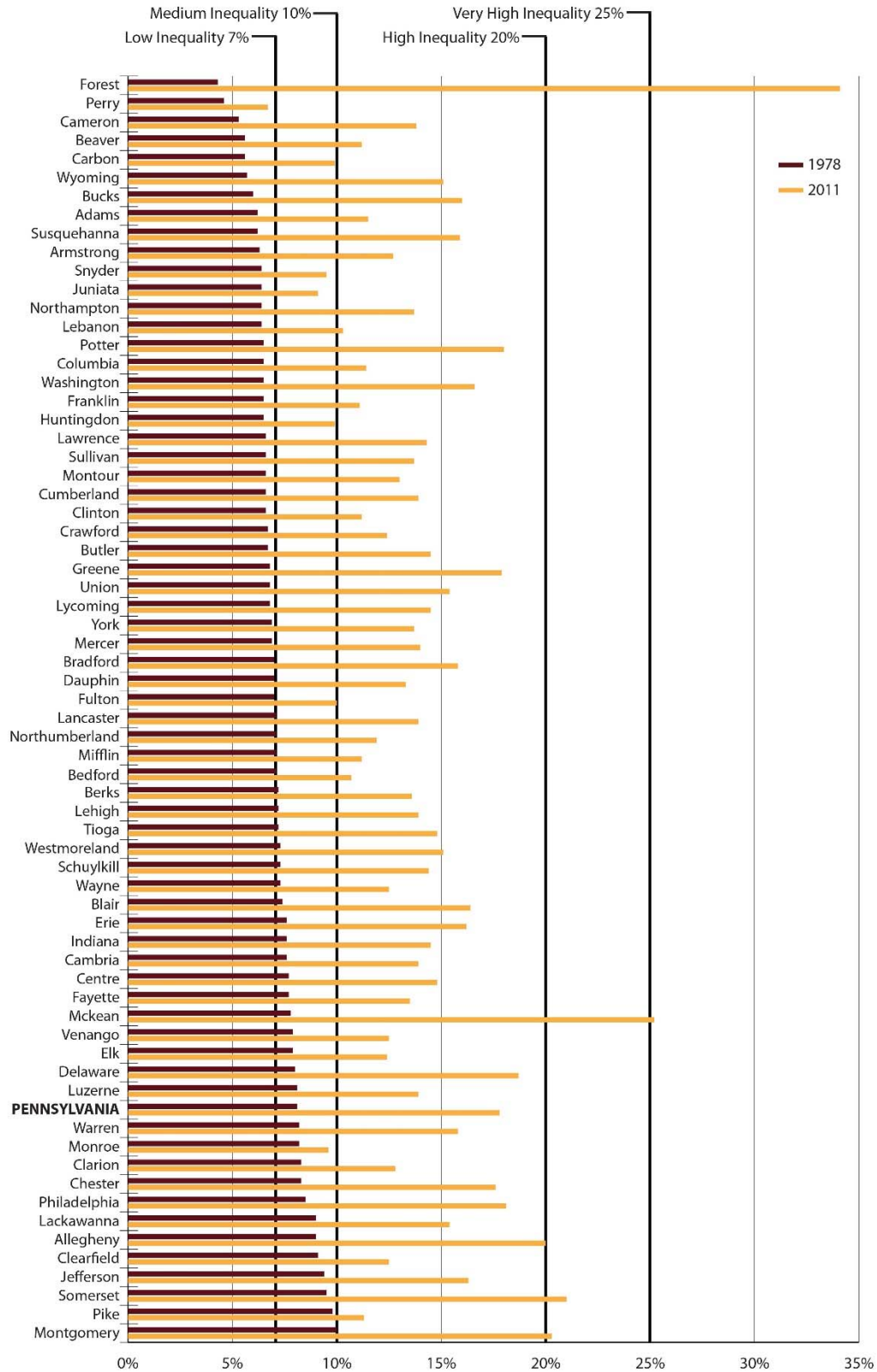
Inequality as share of total income of around 7% for the highest 1% of earners, characteristic of Scandinavian portions of Europe in the 1970s and 1980s. *Medium Inequality* is characterized by a top 1% share of income of around 10% which is typical of Europe today. *High Inequality* is an income share of around 20% for the highest 1% of earners, characteristic of Europe in 1910 and of the United States today. Finally Piketty identifies “very high inequality” as an income share of 25% for the highest earners a figure the United States as a whole might reach by 2030 if current trends in top income growth remain unchecked.

Figure 3 presents the share of total income in 1978 captured by the top 1% of taxpayers for each Pennsylvania county and plots those figures against Piketty’s four degrees of income inequality. In 1978 no county in Pennsylvania had an income share **GREATER** than 10% (*Medium Inequality*). In nearly half (32) of Pennsylvania counties the share of total income of the top 1% of taxpayers WAS LESS than 7% in 1978 (*Low Inequality* similar to Scandinavia at the same point in time).

The 33 years since 1978 have been characterized by dramatically unequal income growth with the average income of the top 1% of Pennsylvania taxpayers rising 163%, far outpacing the 7% real income growth for the remaining 99% of earners. This radically uneven pattern of income growth was repeated in every county in Pennsylvania (Table 1).

⁶ See Table 7.3 on Page 249

The share of total income earned by the top 1% in Pennsylvania, 1978 and 2011



Source: Keystone Research Center analysis of Pennsylvania Department of Revenue and Bureau of Economic Analysis data.

The counties with the greatest income growth among the top 1% of earners (with the percent change in real income in parenthesis) were Forest (757%), Bucks (278%), Chester (250%), McKean (245%), Greene (238%), Washington (211%), Bradford (208%), Potter (203%), Delaware (202%), and Susquehanna (193%). The counties that saw the least amount of real income growth among the top 1% of taxpayers were Clearfield (18%), Monroe (19%), Clarion (20%), Venango (22%), Perry (31%), Snyder (33%), Juniata (41%), Elk (43%), Huntingdon (46%), and Mifflin (48%). In only 21 of the 67 Pennsylvania counties did the bottom 99% of taxpayers experience income growth.

Highly unequal income growth statewide has been accompanied by radical increases in inequality in every part of Pennsylvania. Once again referring to Figure 3 on the previous page, in 2011 the highest 1% of earners share of total income exceeds 25% in Forest (33.9%)⁷ and McKean (25%)⁸ County, reaching *Very High Inequality*. Top 1% total income shares in Somerset (21%), Montgomery (20%) and Allegheny (20%) have reached *High Inequality*. While the top 1% of taxpayers' share of total income did not exceed 10% (*Medium Inequality*) in a single county in 1978, in 2011 the top 1% of taxpayers take home between 10% and 20% of all income in 56 counties.

See Table A11 in the [online appendix](#) for a listing and rank of the top 1% share of total income in each county in 1978 and 2011 (in the appendix see also the Top Income Shares Lookup Table for a listing of top income shares for every year available since 1973).

⁷ This high figure reflects a large increase in other taxable income in the highest income bracket in 2011 in Forest County. Other taxable income includes income rents, royalties, patents, copyrights, lottery/gambling winnings, gains or losses from the sale of property and estate and trust income. From 2005 to 2010 the share of all income earned by the top 1% in Forest County averaged 12.7%. Over the same period the share of all income earned by the top 1% in Pennsylvania averaged 17.3%.

⁸ This high figure reflects a large increase in other taxable income in the highest income bracket in 2011 in McKean County. Other taxable income includes income rents, royalties, patents, copyrights, lottery/gambling winnings, gains or losses from the sale of property and estate and trust income. From 2005 to 2010 the share of all income earned by the top 1% in McKean County averaged 15.4%. Over the same period the top 1% share in Pennsylvania averaged 17.3%.

Table 1.

Inflation adjusted growth in incomes for the 99% and 1% 1978 to 2011

County/state	Average real income growth			Share of total growth (or loss) captured by top 1%
	Overall	Top 1%	Bottom 99%	
Pennsylvania	20%	163%	7%	67%
Forest	9%	757%	-24%	₹
Bucks	41%	278%	26%	40%
Chester	66%	250%	50%	31%
Mckean	7%	245%	-13%	₹
Greene	28%	238%	13%	58%
Washington	23%	211%	9%	61%
Bradford	35%	208%	22%	41%
Potter	9%	203%	-5%	₹
Delaware	29%	202%	14%	55%
Susquehanna	14%	193%	2%	85%
Wyoming	10%	190%	-1%	₹
Montgomery	30%	165%	15%	54%
Butler	20%	162%	10%	53%
Sullivan	21%	151%	11%	48%
Allegheny	11%	146%	-2%	₹
Northampton	13%	143%	4%	72%
Cameron	-8%	139%	-16%	₹
Somerset	6%	136%	-8%	₹
Montour	15%	126%	7%	57%
Blair	-1%	121%	-10%	₹
Tioga	7%	120%	-1%	₹
Philadelphia	2%	116%	-9%	₹
Schuylkill	9%	115%	0%	97%
Union	-5%	114%	-14%	₹
Westmoreland	2%	113%	-6%	₹
York	7%	112%	-1%	₹
Centre	9%	110%	1%	90%
Lycoming	-1%	109%	-9%	₹
Dauphin	10%	108%	3%	76%
Cumberland	-3%	105%	-10%	₹
Lancaster	3%	102%	-5%	₹
Lehigh	4%	101%	-4%	₹
Adams	7%	98%	1%	89%

Table 1. (cont)

Inflation adjusted growth in incomes for the 99% and 1% 1978 to 2011

County/state	Average real income growth			Share of total growth (or loss) captured by top 1%
	Overall	Top 1%	Bottom 99%	
Erie	-7%	97%	-16%	∓
Berks	4%	97%	-3%	∓
Lackawanna	12%	92%	4%	68%
Lawrence	-12%	91%	-20%	∓
Luzerne	11%	90%	4%	67%
Beaver	-11%	77%	-16%	∓
Armstrong	-14%	73%	-20%	∓
Franklin	2%	73%	-3%	∓
Wayne	0%	70%	-6%	∓
Columbia	-4%	68%	-9%	∓
Northumberland	-1%	64%	-6%	∓
Carbon	-7%	64%	-11%	∓
Mercer	-19%	64%	-25%	∓
Cambria	-11%	63%	-17%	∓
Fayette	-7%	62%	-13%	∓
Indiana	-16%	59%	-23%	∓
Fulton	10%	57%	7%	39%
Clinton	-8%	55%	-13%	∓
Warren	-20%	55%	-27%	∓
Lebanon	-5%	54%	-9%	∓
Jefferson	-12%	53%	-19%	∓
Crawford	-18%	53%	-23%	∓
Bedford	0%	49%	-4%	∓
Pike	29%	49%	26%	17%
Mifflin	-6%	48%	-10%	∓
Huntingdon	-4%	46%	-7%	∓
Elk	-9%	43%	-13%	∓
Juniata	-2%	41%	-4%	∓
Snyder	-11%	33%	-14%	∓
Perry	-10%	31%	-12%	∓
Venango	-23%	22%	-27%	∓
Clarion	-22%	20%	-26%	∓
Monroe	2%	19%	1%	66%
Clearfield	-14%	18%	-18%	∓

∓ Only the incomes of the top 1% grew over this period.

Source. Keystone Research Center analysis of Pennsylvania Department of Revenue and Bureau of Economic Analysis data

Conclusion

The communities that make up Central Pennsylvania, the region in Pennsylvania with the largest middle class, are worlds apart from New York City where Wall Street titans claim billion-dollar salaries. Yet this report illustrates that rising inequality isn't just a story of Wall Street incomes rocketing away from the experience of the typical middle-class family in Central Pennsylvania. Compared to 1979, fewer of Central Pennsylvania's households earn enough income today to make it into the region's middle class. And much like trends in every other Pennsylvania county as well as every other state in America, the top 1% of earners in the region saw their incomes climb much faster than the incomes of everyone else.⁹ Unchecked over the next generation (defined as another 33-year period – until about 2045) the middle class even in Central Pennsylvania will become a minority and the top 1% of earners will take home 18 cents of every dollar of income in the region.

In short, Central Pennsylvania is headed where Philadelphia and Allegheny County have already arrived. And where are the Commonwealth's largest cities headed by about 2045 if we extrapolate trends since 1978? A middle class that encompasses between 42% and 38% of these counties' households and a share of total income of the top 1% of taxpayers approaching 29%, a level of inequality greater than that which characterized class-divided Europe in 1910.

What's driving the rise inequality?

The primary drivers of the rise inequality are changes in policy and business practices. Employers have become more aggressive in opposing union organizing.¹⁰ The enforcement of labor law has weakened and led to rise of employers engaged in wage theft.¹¹ For much of the last generation, macroeconomic policymakers at the Federal Reserve did not prioritize maintaining low unemployment thus depressing wage growth for most workers.¹² Low wage workers have lost ground as the purchasing power of the minimum wage has lost value against the rise in prices.¹³ The deregulation of the U.S. financial sector, poor corporate governance and changes in tax policy have allowed privileged economic agents (CEOs and top managers) to claim an increasing share of the income the economy is generating.¹⁴

A modest step towards checking the rise in inequality

A first and modest step in forestalling a more unequal future for Pennsylvania's communities that Pennsylvania policymakers can influence directly is the state's minimum wage. Increasing the minimum

⁹ For a summary of trends in top incomes by state see Sommeiller, Estelle, and Mark Price. 2014. The Increasingly Unequal States of America: Income Inequality by State, 1917 to 2011. Economic Analysis and Research Network (EARN) Report <http://www.epi.org/publication/unequal-states/>.

¹⁰ Schmitt, John and Ben Zipperer, 2009. "Dropping the Ax: Illegal Firings During Union Election Campaigns, 1951-2007." Center for Economic and Policy Research. Available at <http://www.cepr.net/documents/publications/dropping-the-ax-update-2009-03.pdf>.

¹¹ Meixell, Brady and Ross Eisenbrey. 2014. "An Epidemic of Wage Theft Is Costing Workers Hundreds of Millions of Dollars a Year." Economic Policy Institute. Available at <http://www.epi.org/files/2014/wage-theft.pdf>

¹² Bivens, Josh and Elise Gould, Lawrence Mishel, and Heidi Shierholz. 2014. "Raising America's Pay: Why It's Our Central Economic Policy Challenge." Economic Policy Institute. Available at <http://www.epi.org/files/2014/raising-americas-pay-report-final.pdf>.

¹³ Cooper, David and Doug Hall. 2013. "Raising the Federal Minimum Wage to \$10.10 Would Give Working Families, And the Overall Economy, A Much Needed Boost." Economic Policy Institute. Available at <http://www.epi.org/files/2013/IB354-Minimum-wage.pdf>

¹⁴ Bivens, Josh and Lawrence Mishel, 2013. "The Pay of Corporate Executives and Financial Professionals as Evidence of Rents in Top 1% Incomes. Journal of Economic Perspectives, vol. 27, no. 3, 57-78

wage to at least \$10.10 per hour, indexing the minimum wage to inflation and applying the new minimum to tipped workers would stabilize the incomes of low wage workers in Pennsylvania.

Methodological Appendix

Middle Class

To estimate the size of the middle class in Pennsylvania we analyze public use micro data from the 1980 Census and the 2010-12 American Community Survey.¹⁵ Households from sparsely populated counties in the 1980 Census¹⁶ and again in the 2010-12 American Community Survey¹⁷ were grouped, based on these grouping we are able to identify households from Pennsylvania 67 counties in one of 27 counties or groups of geographically contiguous counties.

To determine the size of the middle class we calculate the median household income for Pennsylvania as a whole and again for each of the 27 counties or county groups. Before calculating median household income we adjust each household income for the number of people in the household using the following adjustment: adjusted household income = (household Income / (number of people in the household)^{.5})¹⁸. Under this adjustment a household income of \$51,000 is converted to \$51,000 for a household of 1, to \$36,062 for a household of 2 and to \$25,500 for a household of 4 people and so on. Because household size has declined this adjustment lowers observed incomes in 1979 more than it does in 2010-12.¹⁹ We also adjust for inflation.²⁰

We define the middle class as the percentage of households with incomes between 67% to 200% of median income in each county or county group. By this definition a middle class household in 1979 (after adjusting for inflation and household size) made between \$21,106 and \$63,004 a year. In 2010-12, a household income ranging from \$24,162 to \$72,125 put a Pennsylvania family in the middle class. See Table A5 and Table A6 in the [online appendix](#) for the lower and upper bound incomes that define the middle class in each county or county group in Pennsylvania.

¹⁵ U.S. Census and American Community Survey data provided by Steven Ruggles, J. Trent Alexander, Katie Genadek, Ronald Goeken, Matthew B. Schroeder, and Matthew Sobek. Integrated Public Use Microdata Series: Version 5.0 [Machine-readable database]. Minneapolis: University of Minnesota, 2010

¹⁶ https://usa.ipums.org/usa-action/variables/CNTYGP98#description_section

¹⁷ https://usa.ipums.org/usa-action/variables/PUMA#description_section

¹⁸We make this adjustment following Warner Susan. 2014. "Philadelphia's Changing Middle Class: After Decades of Decline, Prospects for Growth" The Pew Charitable Trusts. Available at <http://goo.gl/ru39Of>.

¹⁹ In Pennsylvania as a whole before adjustment median household income grows by 3.8% between 1979 and 2010-12, after adjusting for household size median household income grows by 14.5%.

²⁰ Consumer Price Index Research Series Using Current Methods (CPI-U-RS)

Table A7.

Individual income and tax data for Forest County, Pennsylvania, by taxable income range, tax year 2011

Taxable income range	Number of Returns	Total taxable income (thousands)	Share of aggregate taxable income
TOTAL.....	2,264	94,443	100%
0.....	59	0	0.0%
1 - 999.....	258	77	0.1%
1000 - 2999....	189	371	0.4%
3000 - 4999....	127	501	0.5%
5000 - 6999....	119	711	0.8%
7000 - 8999....	81	643	0.7%
9000 - 10999...	87	866	0.9%
11000 - 12999..	73	865	0.9%
13000 - 14999..	76	1,061	1.1%
15000 - 16999..	59	945	1.0%
17000 - 18999..	52	947	1.0%
19000 - 21999..	82	1,683	1.8%
22000 - 24999..	87	2,047	2.2%
25000 - 29999..	104	2,851	3.0%
30000 - 34999..	95	3,063	3.2%
35000 - 39999..	91	3,422	3.6%
40000 - 49999..	165	7,420	7.9%
50000 - 74999..	271	16,456	17.4%
75000 - 99999..	99	8,434	8.9%
100000 - 149999	66	7,772	8.2%
150000 or more	24	34,308	36.3%

Note. Data for taxable income ranges 150000-245999 and 250000 or more were combined by the Pennsylvania Department of Revenue to prevent disclosure of individual tax return data.

Source. Keystone Research Center analysis of data from the Pennsylvania Department of Revenue, available from 2006 on at <http://goo.gl/Xjips7>

Top Incomes

We estimate the average income and total share of income earned by the top 1% of taxpayers by county in Pennsylvania using data on the amount of taxable income and number of taxpayers in different income ranges which has been published annually since 1973 by the Pennsylvania Department of Revenue. Table A7 presents this data for Forest County, Pennsylvania.

Knowing the amount of income and the number of taxpayers in each bracket, we can use the properties of a statistical distribution known as the Pareto distribution to extract estimates of incomes at specific points in the distribution of income, including the 90th, 95th, and 99th percentile. With these threshold values we then calculate the average income of taxpayers with incomes that lie between these ranges, such as the average income of taxpayers with incomes greater than the 99th percentile (i.e., the average income of the top 1%).

Calculating income earned by each group of taxpayers as well as the share of all income they earn requires county-level estimates in each year between 1978 and 2011 of the universe of potential taxpayers (hereafter called tax units) and the total amount of pre-tax pre-transfer income earned in each county. Piketty and Saez²¹ have national estimates of tax units and total income (including capital gains) which Sommeiller and Price²² allocate to the states and which we then allocate to each Pennsylvania county.²³

Calculating the 90th, 95th and 99th percentiles for Forest County Pennsylvania

Listed in Table A8 are the calculations we use to interpolate the 90th, 95th, and 99th percentile incomes for Forest County, Pennsylvania for 2011. Using data on the amount of income in each income bracket we estimate that the 99th percentile income in Forest County was \$136,328. With this basic information we are then able to calculate that the average income of the top 1% of taxpayers (Pareto coefficient * P99) was \$1,299,204 in that year.

²¹ Piketty, Thomas, and Emmanuel Saez. 2012. Downloaded Excel files with 2012 data updates to tables and figures in Piketty and Saez. 2003. "Income Inequality in the United States, 1913-1998." Quarterly Journal of Economics, vol. 118, no. 1.

²² See Estelle Sommeiller and Mark Price, The Increasingly Unequal States of America: Income Inequality by State, 1917 to 2011. <http://www.epi.org/publication/unequal-states/>

²³ We allocate total income in Pennsylvania to individual counties using each counties share of taxable income as reported by the Pennsylvania Department of Revenue. Similarly we use allocate Pennsylvania tax units to individual counties using U.S. Census bureau of estimates of the number households by county.

Table A8.

An example of Pareto interpolation for Forest County, Pennsylvania in 2011

Row #	Taxable income range	Lower bound (si)	Number of returns (Ni)	Cumulative # of returns (Ni*)	Total taxable income (Yi)	Cumulative total taxable income (Yi*)
1	0.....	0	59	2,264	0	94,443,000
2	1 - 999.....	1	258	2,205	77,000	94,443,000
3	1000 - 2999....	1000	189	1,947	371,000	94,366,000
15	30000 - 34999..	30000	95	811	3,063,000	80,875,000
16	35000 - 39999..	35000	91	716	3,422,000	77,812,000
17	40000 - 49999..	40000	165	625	7,420,000	74,390,000
18	50000 - 74999..	50000	271	460	16,456,000	66,970,000
19	75000 - 99999..	75000	99	189	8,434,000	50,514,000
20	100000 - 149999	100000	66	90	7,772,000	42,080,000
21	150000 or more	150000	24	24	34,308,000	34,308,000
22	Total		2,264		94,443,000	

Row #	(yi = Yi* / Ni*)	Pareto Coefficient (bi= yi / si)	ai = (bi / (bi-1))	pi % = Ni* / N*	ki = si * [pi power(1/ai)]
1	41,715				
2	42,831			82.57	
3	48,467	48.5	1.02	72.91	733.86
15	99,723	3.3	1.43	30.37	13039.45
16	108,676	3.1	1.48	26.81	14338.66
17	119,024	3.0	1.51	23.40	15251.58
18	145,587	2.9	1.52	17.23	15756.89
19	267,270	3.6	1.39	7.08	11160.44
20	467,556	4.7	1.27	3.37	6959.22
21	1,429,500	9.5	1.12	0.90	2210.29

Row #	Min [Abs(pi - 10)]	P90 = ki / [0.1 power 1/ai]	Min [Abs(pi - 5)]	P95 = ki / [0.05 power 1/ai]	Min [Abs(pi - 1)]	P99 = ki / [0.01 power 1/ai]
1						
2	72.57		77.6		81.57	
3	62.91		67.9		71.91	
15	20.37		25.4		29.37	
16	16.81		21.8		25.81	
17	13.40		18.4		22.40	
18	7.23		12.2		16.23	
19	2.92	\$58,488	2.1		6.08	
20	6.63		1.6	\$73,338	2.37	
21	9.10		4.1		0.10	\$136,328

Note. N* or tax units for Pennsylvania in 2011 is 2,670

Note 2. To economize on space taxable incomes from row 4 to 14 were suppressed. See the [online appendix](#) Table A8 for the full table.

Source. Keystone Research Center analysis of data from the Pennsylvania Department of Revenue, available since 2006 online at <http://goo.gl/Xiips7>

Three time series for top incomes in Pennsylvania

The top incomes summarized in this paper are estimates based on tables of taxable income published by the Pennsylvania Department of Revenue (DOR) since 1973. In a previous paper we summarized estimates of top incomes which were based on tables of taxable income published by the United States Internal Revenue Service (IRS) since 1917.²⁴ Beginning with the year 2000 the DOR has also published statistics on the average income of the top 1% of taxpayers. We present in Table A9 data on the average income of the top 1% of taxpayers and the total share of income of the top 1% of taxpayers from these three different sources (See Table A10 in the [online appendix](#) for all the data available since 1973). In brief the estimates of the average income of the top 1% of taxpayers summarized in this paper have averaged about 86% of the actual income level published by the DOR. Over the same period estimates of average incomes based on taxable income data published by the IRS averaged 87% of the actual average income published by the DOR. Thus far our estimation of top incomes from data published separately by DOR and the IRS slightly understate both the level and growth of top incomes.

Table A9.

Comparing projections of top incomes based on published tax tables with actual top incomes						
year	Projections of top incomes based upon				Actual top incomes	
	Tables published by the Pennsylvania Department of Revenue		Tables published by the Internal Revenue Service		Pennsylvania Department of Revenue	
	Average Income of the Top 1%	Income Share of the Top 1%	Average Income of the Top 1%	Income Share of the Top 1%	Average Income of the Top 1%	Income Share of the Top 1%
2000	\$938,691	16.6	\$988,702	17.5	\$1,112,708	19.6
2001	\$782,986	14.7	\$823,838	15.5	\$901,064	16.9
2002	\$717,799	14.0	\$751,226	14.7	\$847,263	16.6
2003	\$784,714	15.0	\$795,846	15.3	\$916,052	17.6
2004	\$855,892	15.8	\$876,640	16.0	\$1,033,381	18.9
2005	\$922,041	16.7	\$994,689	17.9	\$1,180,531	21.2
2006	\$973,695	17.2	\$1,042,094	18.3	\$1,238,940	21.8
2007	\$1,078,399	18.2	\$1,115,166	18.9	\$1,273,945	21.6
2008	\$961,406	17.5	\$918,147	16.9	\$1,086,298	19.9
2009	\$847,909	16.5	\$814,912	15.9	\$936,591	18.3
2010	\$953,410	18.0	\$905,113	17.4	\$1,052,402	20.1
2011	\$932,541	17.8	\$882,574	17.0	\$1,023,723	19.8

Source: Authors' analysis of state-level tax data from Sommeiller (2006) extended to 2011 using state level data from the Internal Revenue Service SOI Tax Stats (various years); and Piketty and Saez (2012) and the Pennsylvania Department of Revenue.

²⁴ See Estelle Sommeiller and Mark Price, The Increasingly Unequal States of America: Income Inequality by State, 1917 to 2011. <http://www.epi.org/publication/unequal-states/>