

The Loss of the Middle Class

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Introduction

Between 2000 and 2013, the number of middle-income households in the United States increased by 2.18 percent, while the total number of households increased by 4.92 percent. As a result, the share of middle-income households dropped from 49.20 percent to 45.60 percent, a decrease of 3.60 percentage points. In Georgia, the share of middle-income households fell from 48.98 percent in 2000 to 44.38 percent in 2013, a decrease of 4.60 percentage points.

According to the Pew Charitable Trusts, in every state, the relative size of the middle class fell between 2001 and 2013 (Henderson 2016). “Middle class” is defined as having a household income between 67 and 200 percent of the state’s median household income. (Note that we are defining class solely by income and not by other factors.) Figure 1 shows the change in the share of households classified as middle class in each state and in the District of Columbia. We calculated this change as the difference in the percentage of households who were middle class in 2013 and that percentage in 2000.¹ As seen in Figure 1, the loss of the middle class varied across states, from -0.60 in Wyoming to -5.69 in Wisconsin. Georgia had the 11th largest decrease in middle-income share.

Clearly, if the share of middle-class households falls, then the share of households that are not middle class must increase. In the next section, we explore the extent to which the loss of the middle class is associated with an increase in the share of low-income households and of high-income households. In the third section, we examine possible explanations for interstate differences in the decrease in the middle class.

¹ For this report, we did not rely on Pew’s calculations, which adjusted income to account for differences in household size. We calculated the share of middle-income households using data from the U.S. Census Bureau and included the District of Columbia. Our share values are very similar but not identical to those reported by Pew.

Georgia ranked 33rd among states in 2000 and 44th in 2013 for its share of households in the middle class. The state ranked 21st in 2000 and 15th in 2013 for its share of households classified as low income, and 12th in 2000 and 6th in 2013 in its share of households in the high-income category.

Relationship Between Changes in Low-, Middle- and High-Income Shares

The shrinking of the middle class would not be of much concern if the previously middle-class households moved into the high-income category. Unfortunately, that is not the case. Columns 1-3 of Table 1 show the change in the share of all three income categories. (Note that the sum of shares equals one and the sum of the changes in shares equals zero.) In all but three states (Alabama, Hawaii and Wyoming), the share of low-income households increased. At the same time, the share of high-income households increased in all 50 states and the District of Columbia. The percentage point change in the high-income class was larger than the percentage point change in the low-income class in all but five states.

Because of the differences in the initial shares, we also calculated the percentage change in the shares rather than the percentage point change. (In 2000, 33.26 percent of households in the United States were low income and 17.54 percent were high income. Thus, a two percentage point change reflects a much smaller percentage change for low-income households than high-income households.) These percentage changes are shown in columns 4-6 of Table 1. In all states, other than the District of Columbia, the percentage change in the share of low-income households was smaller than the percentage change in the share of high-income households.

We also examined what percentages of the households that left the middle class wound up in the low-income class and in the high-income class. This calculation is complicated by the fact that the total number of households changed over the period, meaning that the number of households in any of the income classes could

have increased independent of a shift from the middle class. We handled this by assuming that the increase in the total number of households had the same income distribution as the existing households in 2000. First, we adjusted for the change in each state in the number of households by “inflating” the number of households in 2000 in each of the three income classes by the percentage change in the total number of households between 2000 and 2013. Thus, the adjusted total number of households for 2000 equals the actual total number of households for 2013. We then calculated for each state the change in the number of households in each income class by subtracting the adjusted number of household in 2000 from the actual number in 2013. We divided the change in the number of households in the low-income and the high-income classes by the change in the number of household in the middle-income class. The results are the percentages of the number of middle-income households that shifted to each of the other two income classes. (Note that the two percentages sum to one.) These percentages are reported in columns 7 and 8 of Table 1. (The three states that had a decrease in the share of low-income households have a negative percentage in column 7.) In all but four states, more than 50 percent of the households that left the middle class moved to the high-income class.

Factors Associated with the Loss of the Middle Class

This section explores factors associated with interstate differences in this phenomenon of a shrinking middle class. First, the magnitude of the loss of the middle class varied by U.S. region. The decrease in the size of the middle-income category was larger for states in the Midwest, where the share of the middle class fell by 4.16 percentage points. The decrease in Northeastern states was 3.89 percentage points, while the decrease was 3.28 percentage points in Western states and 3.11 percentage points in the South. On the other hand, the Midwest had the largest increase in the share of the high-income category, although the differences across regions were not large.

We also note that states with larger populations had smaller decreases in their middle-income share of households. The correlation coefficient between the percentage point change in the middle-income share and the state population in 2000 was -0.07. However, if we exclude the four largest states, which are outliers, the correlation was -0.28, which is statistically significant.²

While several factors may be working together to create a shrinking middle class, we considered factors that we thought were the most plausible explanations. We were exploring changes in the distribution, not changes in the level of income. Thus, factors that raise all incomes would not necessarily help to explain changes in the distribution of income. Table 2 shows the factors we explored along with their correlation coefficients. Most of the correlation coefficients are not statistically significantly different from zero, meaning that they do not explain the change in the share of that income category.

OCCUPATIONAL AND INDUSTRIAL COMPOSITION

The changes in the household shares by income class could be associated with changes in occupations. Prior research has found a hollowing out of the earnings distribution (Katz and Autor 1999). In other words, the share of middle-wage jobs has decreased, with a corresponding increase in low-wage and high-wage jobs. This relative loss of middle-wage jobs is thought to be due to changes in technology and international trade, and more recently to the Great Recession. To the extent that this dynamic differs across states, it could explain the interstate differences in the change in shares of the three classes.

To explore this possibility, we considered three variables: changes in the percentages of management jobs, production jobs, and manufacturing sector jobs. The decrease in middle-income share does not appear to be related to the change in management jobs, but it is related to the other two variables. Thus, the larger the decrease in

production and manufacturing sector jobs, the larger the decrease in the middle-income share. The statistically significant correlation coefficients are 0.26 for the change in production jobs and 0.23 for the change in manufacturing jobs.

Employment in the manufacturing industry generally decreased in most states from 2000 to 2013, a trend especially attributable to the Great Recession. On average, manufacturing jobs pay higher wages than the average for all jobs, and that premium has increased over time (Sjoquist 2016). Thus, consistent with the hollowing-out hypothesis, the drop in manufacturing jobs has reduced employment in middle-income jobs.

SHARE OF MIDDLE-INCOME HOUSEHOLDS IN 2000

We expected that states that had a large share of middle-income households in 2000 would lose more of their middle class than states with a smaller share in 2000. If the size of the middle class declined by a given percentage, then that percentage would mean a larger percentage point change for states with a larger middle class. The correlation coefficient for these two variables is 0.22, which is consistent with our expectation and is very close to being statistically significant.

OTHER VARIABLES

We considered several additional variables. However, none of the correlation coefficients are statistically significant, suggesting that none of these factors helps to explain the decrease in the middle class. These variables and our expectations are listed below.

- **Population Growth.** States that experience an increase in population are likely to have stronger economies and pay higher wages. Likewise, households that move between states are likely to have higher-than-average incomes. Thus, we expected that states whose populations grew would also experience a larger increase (or smaller decrease) in their middle-class share. States that are losing population should experience the opposite effect.

² A negative correlation coefficient implies that a larger population is associated with smaller increases (i.e., larger decreases) in the middle-class share.

- **Age Distribution.** We expected that an increase in the proportion of the population age 17 and under, who generally have lower income, would be associated with a reduction (smaller increase) in the middle-income share. By similar logic, an increase in the proportion of those age 64 and over, whose average income is generally lower, should also lead to a loss in the middle-class share.
- **Marriage Rate.** Marriage is often linked to higher household financial status, due to higher educational outcomes and skills and multiple earners. Thus, if the percentage of married households in the population increases, we would expect an increase in the size of the middle-income category.
- **Education Level.** Prior research on the effect of education on income has found a positive return to education, although magnitudes of the effect vary across studies (Card 1999). We expected that an increase in the proportion of residents with some college would result in a smaller decrease in the size of the middle-income class. Similarly, an increase in the population with less than a high school diploma would likely depress incomes, leading to a larger drop in the middle-class share.
- **Urban Population.** Incomes tend to be higher in urban areas. Thus, we expected that states with an increasing urban population would have smaller decreases in the middle-income share.
- **Health Status.** We expected that healthier states would experience smaller decreases in the share of middle-income households because healthier individuals would be more productive.³

References

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³ The health variable was constructed based on data from www.americashealthrankings.org. Each state is ranked for various health categories and is assigned an overall ranking. We used the value corresponding to each overall ranking. The value (or index) which we use as our health variable is the "weighted sum of the number of standard deviations each core measure is from the national average."

Figure 1. Change in Middle Class Share of Households

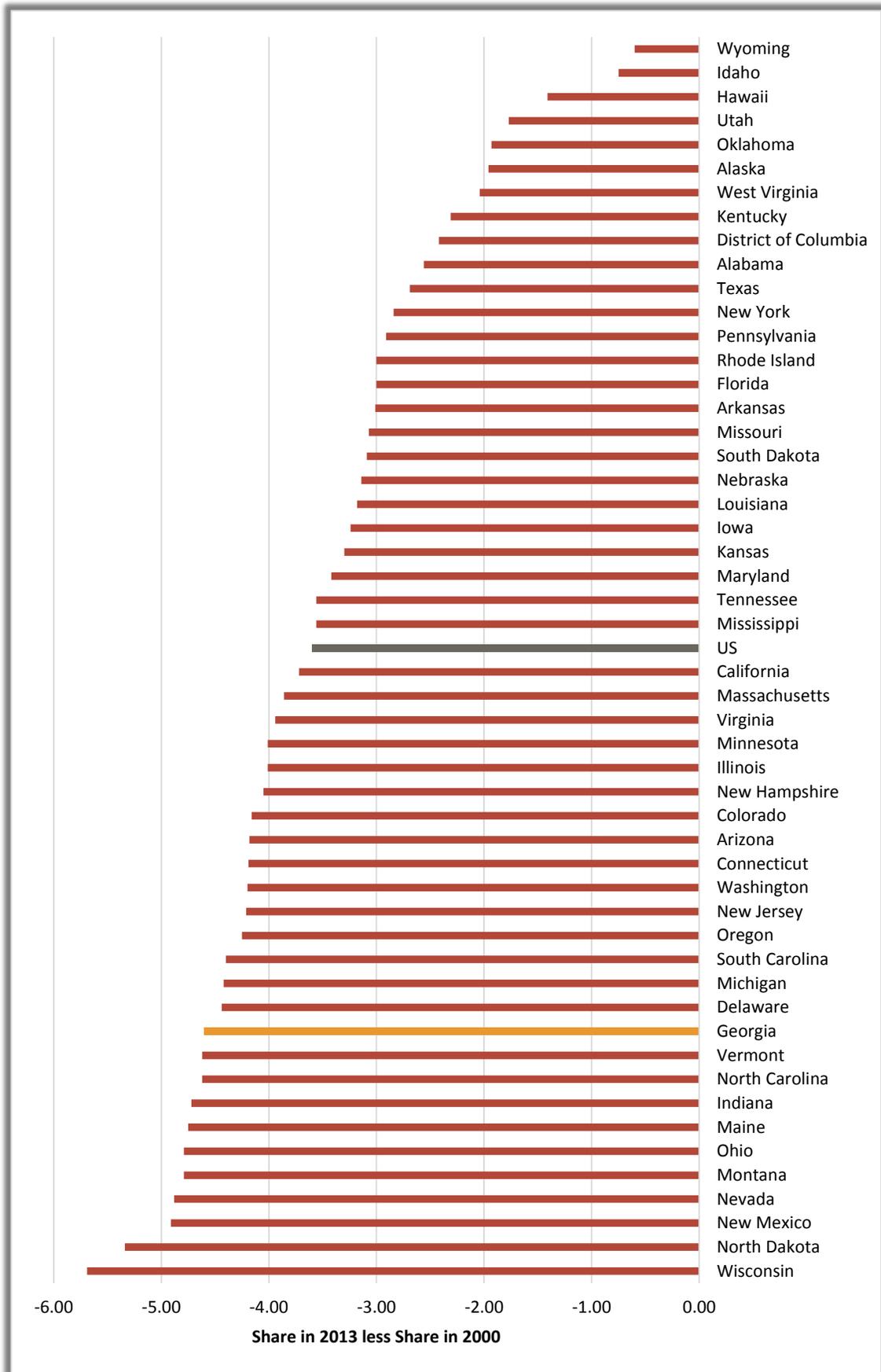


Table 1. Change in Share

STATE	CHANGE IN SHARE			PERCENT CHANGE IN SHARE			PERCENT OF MIDDLE CLASS TO	
	(1) LOW INCOME	(2) MIDDLE INCOME	(3) HIGH INCOME	(4) LOW INCOME	(5) MIDDLE INCOME	(6) HIGH INCOME	(7) LOW INCOME	(8) HIGH INCOME
Alabama	-0.05	-2.56	2.61	-	-5.49%	13.98%	-1.80%	101.80%
Alaska	0.72	-1.96	1.25	2.26%	-3.66%	8.54%	36.25%	63.75%
Arizona	1.77	-4.18	2.40	5.45%	-8.36%	13.71%	42.52%	57.48%
Arkansas	0.26	-3.01	2.76	0.78%	-6.16%	15.62%	8.50%	91.50%
California	1.77	-3.72	1.96	5.24%	-7.97%	10.03%	47.48%	52.52%
Colorado	1.61	-4.16	2.54	4.99%	-8.11%	15.42%	38.98%	61.02%
Connecticut	0.84	-4.19	3.36	2.51%	-8.57%	19.12%	19.89%	80.11%
Delaware	1.50	-4.44	2.94	4.75%	-8.50%	18.14%	33.80%	66.20%
District of Columbia	2.05	-2.42	0.38	5.84%	-5.78%	1.65%	84.64%	15.36%
Florida	0.82	-3.00	2.18	2.48%	-6.15%	12.04%	27.40%	72.60%
Georgia	1.26	-4.60	3.34	3.80%	-9.39%	18.74%	27.34%	72.66%
Hawaii	-0.16	-1.41	1.57	-	-2.83%	9.44%	-	111.51%
Idaho	0.33	-0.75	0.41	1.04%	-1.42%	2.63%	45.18%	54.82%
Illinois	0.76	-4.01	3.25	2.28%	-8.06%	19.25%	18.80%	81.20%
Indiana	1.44	-4.72	3.29	4.48%	-8.91%	22.14%	30.37%	69.63%
Iowa	0.68	-3.24	2.55	2.12%	-5.99%	18.39%	21.02%	78.98%
Kansas	0.27	-3.30	3.03	0.82%	-6.37%	19.61%	8.32%	91.68%
Kentucky	0.29	-2.31	2.02	0.85%	-4.91%	10.83%	12.37%	87.63%
Louisiana	0.47	-3.18	2.71	1.34%	-7.07%	13.56%	14.93%	85.07%
Maine	0.99	-4.75	3.76	3.03%	-9.20%	24.01%	20.95%	79.05%
Maryland	1.12	-3.42	2.3	3.48%	-6.63%	14.17%	32.74%	67.26%
Massachusetts	0.94	-3.86	2.93	2.74%	-7.95%	17.13%	24.25%	75.75%
Michigan	1.38	-4.42	3.05	4.23%	-8.74%	18.21%	31.06%	68.94%
Minnesota	1.48	-4.01	2.54	4.59%	-7.59%	17.09%	36.78%	63.22%
Mississippi	1.05	-3.56	2.51	3.02%	-7.70%	13.25%	29.40%	70.60%
Missouri	1.12	-3.07	1.95	3.43%	-6.12%	11.35%	36.50%	63.50%
Montana	2.26	-4.79	2.52	6.95%	-9.35%	15.53%	47.28%	52.72%
Nebraska	0.56	-3.14	2.58	1.73%	-6.01%	16.80%	17.81%	82.19%
Nevada	2.23	-4.88	2.66	7.15%	-9.10%	17.55%	45.57%	54.43%
New Hampshire	1.75	-4.05	2.31	5.56%	-7.51%	15.85%	43.09%	56.91%
New Jersey	1.34	-4.21	2.87	3.99%	-8.62%	16.31%	31.93%	68.07%
New Mexico	2.76	-4.91	2.15	8.32%	-10.22%	11.44%	56.09%	43.91%
New York	1.06	-2.84	1.77	3.04%	-6.30%	8.83%	37.51%	62.49%
North Carolina	1.27	-4.62	3.36	3.83%	-9.19%	20.35%	27.37%	72.63%
North Dakota	2.92	-5.34	2.42	9.09%	-10.16%	15.82%	54.67%	45.33%
Ohio	1.12	-4.79	3.67	3.41%	-9.41%	22.65%	23.33%	76.67%
Oklahoma	0.45	-1.93	1.49	1.35%	-3.95%	8.39%	23.16%	76.84%
Oregon	1.41	-4.25	2.83	4.37%	-8.27%	17.32%	33.39%	66.61%
Pennsylvania	0.15	-2.91	2.77	0.45%	-5.90%	16.22%	4.94%	95.06%
Rhode Island	0.51	-3.00	2.50	1.48%	-6.23%	14.37%	17.07%	82.93%
South Carolina	0.81	-4.40	3.59	2.45%	-8.81%	21.13%	18.52%	81.48%
South Dakota	1.76	-3.09	1.33	5.47%	-5.88%	8.72%	57.07%	42.93%
Tennessee	0.93	-3.56	2.63	2.80%	-7.23%	15.00%	26.15%	73.85%

STATE	CHANGE IN SHARE			PERCENT CHANGE IN SHARE			PERCENT OF MIDDLE CLASS TO	
	(1) LOW INCOME	(2) MIDDLE INCOME	(3) HIGH INCOME	(4) LOW INCOME	(5) MIDDLE INCOME	(6) HIGH INCOME	(7) LOW INCOME	(8) HIGH INCOME
Texas	0.52	-2.69	2.17	1.56%	-5.63%	11.54%	19.51%	80.49%
Utah	0.39	-1.77	1.38	1.26%	-3.22%	9.79%	21.84%	78.16%
Vermont	1.31	-4.62	3.31	3.97%	-8.82%	22.73%	28.29%	71.71%
Virginia	1.03	-3.94	2.91	3.16%	-7.96%	16.30%	26.22%	73.78%
Washington	0.83	-4.20	3.36	2.56%	-8.13%	21.19%	19.96%	80.04%
West Virginia	0.93	-2.04	1.11	2.73%	-4.37%	5.78%	45.50%	54.50%
Wisconsin	1.95	-5.69	3.75	6.17%	-10.43%	27.19%	34.14%	65.86%
Wyoming	-0.11	-0.60	0.70	-	-1.17%	4.61%	-	118.65%
US	1.04	-3.60	2.56	3.12%	-7.3%	14.62%	28.80%	71.20%

Source: Authors' calculation using U.S. Census Bureau data

Table 2. Correlation Coefficients with Percentage Point Change in Share of Middle-Income Households

VARIABLE	CORRELATION COEFFICIENT
Change in Percent of Management Jobs	0.03
Change in Percent of Production Jobs	0.26
Percentage Change in Manufacturing Jobs	0.23
Share of Middle Income Households in 2000	-0.22
Percent Change in Population	0.08
Change in Percent Population 17 and Under	0.18
Change in Percent Population 64 and Over	0.18
Change in Percent Married Households	0.15
Change in Percent with at Least Some College	0.14
Change in Percent with Less Than a High School Diploma	-0.09
Change in Percent Urban Population	-0.07
Health Status	0.01

About the Authors

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