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City Income Inequality

Lakshmi Pandey
David L. Sjoquist
Laura Wheeler



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Introduction

A recent report from the Brookings Institution (Berube 2014) explored the income inequality for 50 large cities.¹ Using 2012 household income, Brookings calculated for each city the “95/20 ratio”, which is the ratio of household income at the 95th percentile to that at the 20th percentile.² The larger this ratio, the greater is the degree of income inequality. Table 1 displays household incomes at the 95th and 20th percentile, the 95/20 ratios, and the city rank, all as reported by Brookings. As can be seen, there are substantial differences across cities in the 95/20 ratio. Of particular note is that the City of Atlanta had the highest ratio among the 50 cities, and thus ranked number one in terms of income inequality.³

The purpose of this report is to explore possible explanations for why income inequality is so high in the City of Atlanta relative to other cities. In section 2 we consider the ranking of the 95th and 20th percentile incomes in order to explore how each affects the ranking of the 95/20 ratio. In section 3 we compare the 95/20 ratio for the cities to the 95/20 ratio for the corresponding metropolitan areas, while in section 4 we consider how the size of the middle income class effects the 95/20 ratio. Finally, we explore the relationship between several characteristics of the cities and the 95/20 ratios.

Dissecting the Ratio

The value of the 95/20 ratio obviously depends on the value of income at the 95th percentile and at the 20th percentile. The 95/20 ratio will be larger the smaller the income at the 20th percentile and the larger the income at the 95th percentile. In Table 1 we show the rank for the two incomes, where the lowest 20th percentile income is ranked 1 and the highest 95th percentile income is ranked 1; we ranked them this way since a higher rank on either income percentile is associated with a higher 95/20 ratio. To see the relationship between the rank of the two incomes and the 95/20 ratio, we consider some specific cities.

Atlanta has the highest 95/20 ratio (18.8). Atlanta has a high 95th percentile income (ranked 3rd) and a relatively low 20th percentile income (ranked 10th). Thus, Atlanta’s high 95/20 ratio is due more to the

¹ Berube, Alan (2014). “All Cities Are Not Created Unequal.” Metropolitan Opportunity Series, Brookings Institution. Available at: <http://www.brookings.edu/research/papers/2014/02/cities-unequal-berube>, accessed February 4, 2014.

² The incomes at the 95th and 20th percentile are used so that the ratio is not driven by extremely high or low incomes. Note that the 95/20 ratio is not the same as the poverty rate.

³ The Census Bureau top codes the income at the 95th percentile at \$250,000, i.e., the Census Bureau reports an income of \$250,000 for any household with an income equal to or greater than \$250,000. Four of the cities in Table 1 had top coded 95th percentile incomes, including Atlanta. Thus Brookings had to estimate the household income at the 95th percentile for these four cities. To do that Brookings used individual household data from the public use micro sample. For this sample, the only geographic identifier is the PUMA, which is like a census tract, but much larger. While some PUMAs are contained entirely within the city, some PUMAs overlap city boundaries. Thus it was necessary to allocate only some of the households from these overlapping PUMAs to the city. The percentage of total households in the PUMA that are in the city is known, so Brookings drew a random sample of households from the PUMA totaling the estimated number of total households in the PUMA that are in the city. We repeated this process but drew 501 different random samples. The values of the income of the 95th percentile that we calculated range from \$249,349 (which implies a 95/20 ratio of 16.8) to \$294,980 (which implies a ratio of 19.9). However, the 95th percentile income with the highest mode was \$278,817 (which implies a ratio of 18.8, which corresponds to the ratio reported in the Brookings research).

Table 1. City 95/20 Ratio

CITY	-----CITY HOUSEHOLD INCOME, 2012-----				CITY RANK	CITY 95/20 RATIO
	20TH PERCENTILE	20 TH PERCENTILE RANK (LOWEST = 1)	95TH PERCENTILE	95 TH PERCENTILE RANK (HIGHEST = 1)		
Atlanta, Georgia	\$14,850	10	\$279,827	3	1	18.8
San Francisco, California	\$21,313	39	\$353,576	1	2	16.6
Miami, Florida	\$10,438	3	\$164,013	32	3	15.7
Boston, Massachusetts	\$14,604	9	\$223,838	9	4	15.3
Washington, DC	\$21,782	42	\$290,637	2	5	13.3
New York, New York	\$17,119	17	\$226,675	6	6	13.2
Oakland, California	\$17,646	22	\$223,965	8	7	12.7
Chicago, Illinois	\$16,078	12	\$201,460	15	8	12.5
Los Angeles, California	\$17,657	23	\$217,770	11	9	12.3
Baltimore, Maryland	\$13,522	7	\$164,995	30	10	12.2
Houston, Texas	\$17,344	19	\$205,490	14	11	11.8
Philadelphia, Pennsylvania	\$12,850	4	\$151,026	43	12	11.8
Dallas, Texas	\$17,811	25	\$200,367	16	13	11.2
Detroit, Michigan	\$9,083	1	\$101,620	49	14	11.2
Minneapolis, Minnesota	\$17,753	24	\$193,777	18	15	10.9
Memphis, Tennessee	\$13,520	6	\$145,015	46	16	10.7
Cleveland, Ohio	\$9,432	2	\$100,903	50	17	10.7
Tulsa, Oklahoma	\$17,359	20	\$183,407	22	18	10.6
Denver, Colorado	\$19,770	35	\$208,810	12	19	10.6
Fresno, California	\$15,665	11	\$160,360	35	20	10.2
Charlotte, North Carolina	\$21,998	43	\$219,126	10	21	10.0
Kansas City, Missouri	\$16,353	15	\$161,488	34	22	9.9
Long Beach, California	\$19,255	32	\$185,543	21	23	9.6
Austin, Texas	\$21,738	41	\$207,594	13	24	9.5
Portland, Oregon	\$20,152	36	\$191,492	19	25	9.5
Tucson, Arizona	\$13,798	8	\$130,327	47	26	9.4
Sacramento, California	\$17,901	26	\$168,858	26	27	9.4
Milwaukee, Wisconsin	\$13,328	5	\$125,363	48	28	9.4
El Paso, Texas	\$16,206	13	\$151,745	41	29	9.4
Indianapolis, Indiana	\$16,230	14	\$150,346	44	30	9.3
Seattle, Washington	\$26,156	48	\$239,549	5	31	9.2
Louisville, Kentucky	\$16,924	16	\$152,792	39	32	9.0
Albuquerque, New Mexico	\$18,646	29	\$168,121	27	33	9.0
Nashville, Tennessee	\$18,539	28	\$166,032	29	34	9.0

Table 1 concludes next page...

Table 1 (continued). City 95/20 Ratio

CITY	-----CITY HOUSEHOLD INCOME, 2012-----				CITY RANK	CITY 95/20 RATIO
	20TH PERCENTILE	20 TH PERCENTILE RANK (LOWEST = 1)	95TH PERCENTILE	95 TH PERCENTILE RANK (HIGHEST = 1)		
San Diego, California	\$25,126	47	\$224,814	7	35	8.9
San Jose, California	\$31,047	49	\$273,766	4	36	8.8
Jacksonville, Florida	\$17,411	21	\$152,329	40	37	8.7
Phoenix, Arizona	\$19,186	31	\$167,503	28	38	8.7
San Antonio, Texas	\$18,518	27	\$158,566	37	39	8.6
Columbus, Ohio	\$17,238	18	\$147,496	45	40	8.6
Oklahoma City, Oklahoma	\$18,835	30	\$160,125	36	41	8.5
Raleigh, North Carolina	\$24,113	45	\$199,911	17	42	8.3
Omaha, Nebraska	\$19,649	34	\$161,910	33	43	8.2
Fort Worth, Texas	\$20,992	37	\$168,989	25	44	8.1
Colorado Springs, Colorado	\$22,213	44	\$175,034	24	45	7.9
Wichita, Kansas	\$19,516	33	\$151,068	42	46	7.7
Las Vegas, Nevada	\$21,380	40	\$164,344	31	47	7.7
Mesa, Arizona	\$21,007	38	\$157,190	38	48	7.5
Arlington, Texas	\$24,169	46	\$175,759	23	49	7.3
Virginia Beach, Virginia	\$31,051	50	\$187,652	20	50	6.0

high 95th percentile income than its low 20th percentile income. If Atlanta's 20th percentile income was equal to the average for the 50 cities, Atlanta's 95/20 ratio would be 15.2, and would be ranked 5th, while if its 95th percentile income was equal to the average, Atlanta's 95/20 ratio would be 12.5, and would be ranked 8th.

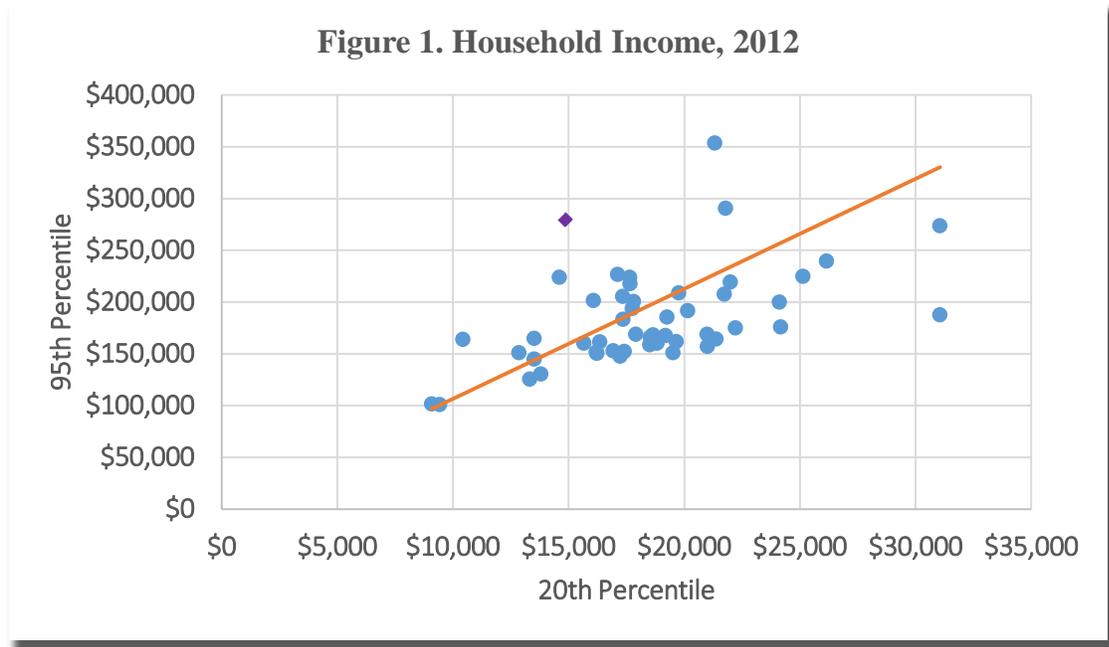
San Francisco has the 2rd highest 95/20 ratio (16.6). It has a very high 95th percentile income (ranked 1st) and a relatively high 20th percentile income (ranked 39th), and thus its rank is due mainly to its very high income at the 95th percentile. Miami has the 3rd highest ratio (15.7). But it has a very low 20th percentile income (ranked 3rd) and a fairly low 95th percentile income (ranked 32nd). Thus, its high rank is due to its very low income at the 20th percentile.

At the other end of the 95/20 ranking is Virginia Beach, with a ratio of 6.0. It has the highest 20th percentile income (ranked 50th) and a modest 95th percentile income (ranked 20th). In comparison, Arlington has a lower 20th percentile income than Virginia Beach and a slightly lower 95th percentile income, yielding a 95/20 ratio of 7.3 and a rank of 49th.

A more commonly used indicator of income inequality is the 90/10 ratio. However, the Census data used by Brookings does not report the household income at the 90th or 10th percentiles, and thus Brookings used the 95/20 ratio. We calculated the 80/20 ratio to see if the 95/20 ratio is being driven by very high

incomes at the top of the income distribution. The 80/20 ratios are much smaller than the 95/20 ratio; the average of the 80/20 ratio is about half the average of the 95/20 ratio. But the ratios are highly correlated, with a correlation of 0.95. Atlanta's rank falls from 1st to 3rd based on the 80/20 ratio.

Figure 1 is a plot of income at the 95th percentile against the income at the 20th percentile. These two series are positively correlated (correlation coefficient = 0.49). Atlanta is denoted by the purple diamond. The line in the figure represents combinations of the two incomes for which the 95/20 ratio is 9.4, which is the median 95/20 ratio; meaning that any combination of income on the line will have a 95/20 ratio of 9.4, points below (above) the line have a 95/20 ratio less than (greater than) the median value of 9.4. As can be seen from the figure there are cities with low 20th percentile incomes or with high 95th percentile incomes that have small 95/20 ratios.



Atlanta is denoted by the purple diamond.

For Atlanta to have a 95/20 ratio of 9.4 (and thus ranked 26th), either its 95th percentile income would have to fall from \$279,827 to \$139,590 or its 20th percentile income would have to increase from \$14,850 to \$29,769. Note that the average income for the 50 cities is \$184,847 for the 95th percentile income and \$18,485 for the 20th percentile income.

95/20 Ratio of the MSA

To determine whether the 95/20 ratios for the cities are reflective of the ratios for the entire metropolitan area, we calculated the 95/20 ratios for the metropolitan statistical area (MSA) in which the cities are located. The MSA 95/20 ratios and their rank are presented in Table 2.

Table 2. MSA 95/20 Ratio

CITY	CITY HOUSEHOLD -----INCOME, 2012-----		CITY RATIO	CITY RANK	MSA HOUSEHOLD -----INCOME, 2012-----		MSA RATIO	MSA RANK
	20TH PERCENTILE	95TH PERCENTILE			20TH PERCENTILE	95TH PERCENTILE		
Atlanta, Georgia	\$14,850	\$279,827	18.8	1	\$22,857	\$203,858	8.9	19
San Francisco, California	\$21,313	\$353,576	16.6	2	\$28,250	\$316,194	11.2	3
Miami, Florida	\$10,438	\$164,013	15.7	3	\$19,156	\$193,617	10.1	7
Boston, Massachusetts	\$14,604	\$223,838	15.3	4	\$26,486	\$272,755	10.3	4
Washington, DC	\$21,782	\$290,637	13.3	5	\$39,550	\$292,960	7.4	46
New York, New York	\$17,119	\$226,675	13.2	6	\$22,847	\$264,068	11.6	1
Oakland, California	\$17,646	\$223,965	12.7	7	\$28,250	\$316,194	11.2	2
Chicago, Illinois	\$16,078	\$201,460	12.5	8	\$23,380	\$215,197	9.2	15
Los Angeles, California	\$17,657	\$217,770	12.3	9	\$22,423	\$228,498	10.2	6
Baltimore, Maryland	\$13,522	\$164,995	12.2	10	\$26,523	\$227,345	8.6	23
Houston, Texas	\$17,344	\$205,490	11.8	11	\$23,481	\$220,296	9.4	13
Philadelphia, Pennsylvania	\$12,850	\$151,026	11.8	12	\$22,754	\$219,161	9.6	8
Dallas, Texas	\$17,811	\$200,367	11.2	13	\$24,350	\$203,378	8.4	29
Detroit, Michigan	\$9,083	\$101,620	11.2	14	\$19,701	\$182,637	9.3	14
Minneapolis, Minnesota	\$17,753	\$193,777	10.9	15	\$28,809	\$216,046	7.5	44
Memphis, Tennessee	\$13,520	\$145,015	10.7	16	\$17,946	\$169,314	9.4	12
Cleveland, Ohio	\$9,432	\$100,903	10.7	17	\$18,319	\$173,194	9.5	11
Tulsa, Oklahoma	\$17,359	\$183,407	10.6	18	\$20,472	\$166,584	8.1	34
Denver, Colorado	\$19,770	\$208,810	10.6	19	\$26,316	\$211,402	8.0	37
Fresno, California	\$15,665	\$160,360	10.2	20	\$17,182	\$164,558	9.6	10
Charlotte, North Carolina	\$21,998	\$219,126	10.0	21	\$22,584	\$203,930	9.0	17
Kansas City, Missouri	\$16,353	\$161,488	9.9	22	\$23,387	\$182,902	7.8	38
Long Beach, California	\$19,255	\$185,543	9.6	23	\$22,423	\$228,498	10.2	5
Austin, Texas	\$21,738	\$207,594	9.5	24	\$25,530	\$209,820	8.2	32
Portland, Oregon	\$20,152	\$191,492	9.5	25	\$24,406	\$188,198	7.7	41
Tucson, Arizona	\$13,798	\$130,327	9.4	26	\$18,471	\$161,424	8.7	22
Sacramento, California	\$17,901	\$168,858	9.4	27	\$23,089	\$193,360	8.4	26
Milwaukee, Wisconsin	\$13,328	\$125,363	9.4	28	\$20,794	\$181,940	8.7	21
El Paso, Texas	\$16,206	\$151,745	9.4	29	\$16,172	\$147,057	9.1	16
Indianapolis, Indiana	\$16,230	\$150,346	9.3	30	\$21,886	\$177,741	8.1	35
Seattle, Washington	\$26,156	\$239,549	9.2	31	\$28,570	\$218,801	7.7	42
Louisville, Kentucky	\$16,924	\$152,792	9.0	32	\$20,155	\$162,396	8.1	36
Albuquerque, New Mexico	\$18,646	\$168,121	9.0	33	\$18,886	\$168,531	8.9	18
Nashville, Tennessee	\$18,539	\$166,032	9.0	34	\$22,599	\$185,536	8.2	33

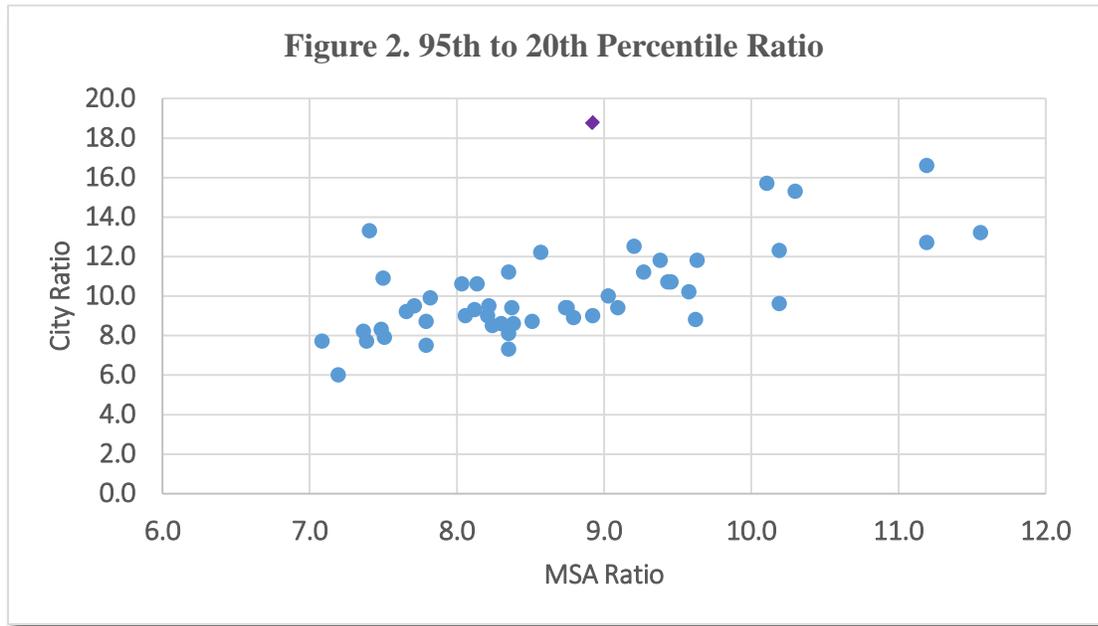
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Table 2 (continued). MSA 95/20 Ratio

CITY	CITY HOUSEHOLD -----INCOME, 2012-----		CITY RATIO	CITY RANK	MSA HOUSEHOLD -----INCOME, 2012-----		MSA RATIO	MSA RANK
	20TH PERCENTILE	95TH PERCENTILE			20TH PERCENTILE	95TH PERCENTILE		
San Diego, California	\$25,126	\$224,814	8.9	35	\$24,551	\$215,894	8.8	20
San Jose, California	\$31,047	\$273,766	8.8	36	\$34,542	\$332,358	9.6	9
Jacksonville, Florida	\$17,411	\$152,329	8.7	37	\$20,325	\$173,002	8.5	24
Phoenix, Arizona	\$19,186	\$167,503	8.7	38	\$22,583	\$175,969	7.8	40
San Antonio, Texas	\$18,518	\$158,566	8.6	39	\$21,497	\$178,467	8.3	30
Columbus, Ohio	\$17,238	\$147,496	8.6	40	\$22,320	\$187,143	8.4	25
Oklahoma City, Oklahoma	\$18,835	\$160,125	8.5	41	\$20,603	\$169,801	8.2	31
Raleigh, North Carolina	\$24,113	\$199,911	8.3	42	\$27,145	\$203,220	7.5	45
Omaha, Nebraska	\$19,649	\$161,910	8.2	43	\$23,636	\$174,109	7.4	48
Fort Worth, Texas	\$20,992	\$168,989	8.1	44	\$24,350	\$203,378	8.4	28
Colorado Springs, Colorado	\$22,213	\$175,034	7.9	45	\$24,285	\$182,322	7.5	43
Wichita, Kansas	\$19,516	\$151,068	7.7	46	\$21,656	\$153,422	7.1	50
Las Vegas, Nevada	\$21,380	\$164,344	7.7	47	\$22,655	\$167,357	7.4	47
Mesa, Arizona	\$21,007	\$157,190	7.5	48	\$22,583	\$175,969	7.8	39
Arlington, Texas	\$24,169	\$175,759	7.3	49	\$24,350	\$203,378	8.4	27
Virginia Beach, Virginia	\$31,051	\$187,652	6.0	50	\$25,102	\$180,600	7.2	49

The MSA 95/20 ratios are generally smaller than the ratios for the cities. The average of the ratios is 10.3 for cities and 8.7 for MSAs. The city ratio is smaller than the MSA ratio for only 6 of the 50 cities. Furthermore, the range of the ratios for the MSA is much smaller (7.1 to 11.6) than for the cities (6.0 to 18.8). However, the two ratios are correlated; the correlation coefficient is 0.61. Figure 2 plots the 95/20 ratio for the cities against the 95/20 ratio for the MSAs.

The 95/20 ratio for the Atlanta MSA is 8.9, which ranks it 19th. This implies that the income inequality in the City of Atlanta is not reflective of the income inequality in the MSA. Rather, the difference in the ratios for the City of Atlanta and for the Atlanta MSA is due to the fact that the 20th percentile income for the Atlanta MSA is higher than for the City (\$22,857 versus \$14,850), and that the 95th percentile income for the MSA is lower than for the City (\$203,858 versus \$279,827). In other words, the City of Atlanta population comprises a larger concentration of low-income and high-income households than does the MSA population.



Atlanta is denoted by the purple diamond.

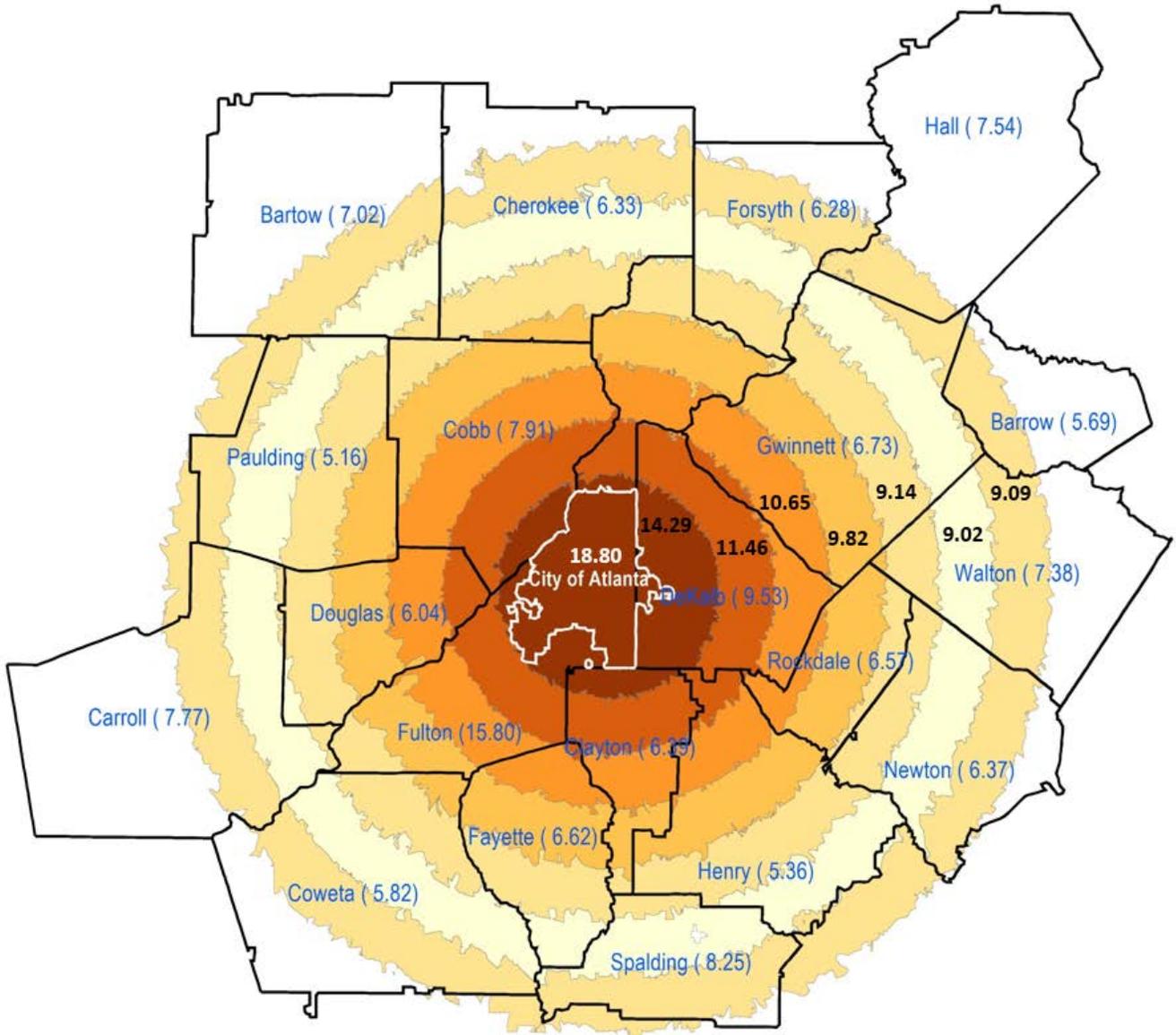
In addition to the 95/20 ratio for the MSA, we calculated the 95/20 ratio for each county in the Atlanta MSA (Table 3 and Map 1). These ratios range from 15.80 for Fulton County to 5.16 in Paulding County. In addition, Map 1 shows the ratio for areas defined by 7 circles of increasing radii drawn from the zero mile mark in downtown Atlanta. The first circle has a radius of 10 miles, the second has a radius of 15 miles, and each subsequent circle adds five mile to the radius, up to a maximum radius of 40 miles. The core, i.e., the area within a radius of 10 miles from the zero mile mark, has a ratio of 14.26. The ratio falls as the radius of the circle increases, with a ratio of 9.09 in the largest circle.

Map 2 shows those census tracts in the Atlanta MSA for which the income at 95th percentile is equal to or greater than \$250,000 (shaded in green) and those for which the income at the 20th percentile is \$14,850 (shaded in blue). There are six census tracts for which both income levels apply (shaded in red). The map thus shows where the households at the 95th and 20th percentiles reside. Note particularly that many census tracts on the north side of the City of Atlanta have 95th percentile income greater than \$250,000 and that many of the census tracts on the south side have 20th percentile income less than \$14,850. Furthermore, for the City of Atlanta a larger percentage of its census tracts are shaded than for the MSA, again indicating that the City of Atlanta population has larger concentrations of low-income and high-income households than does the MSA population.

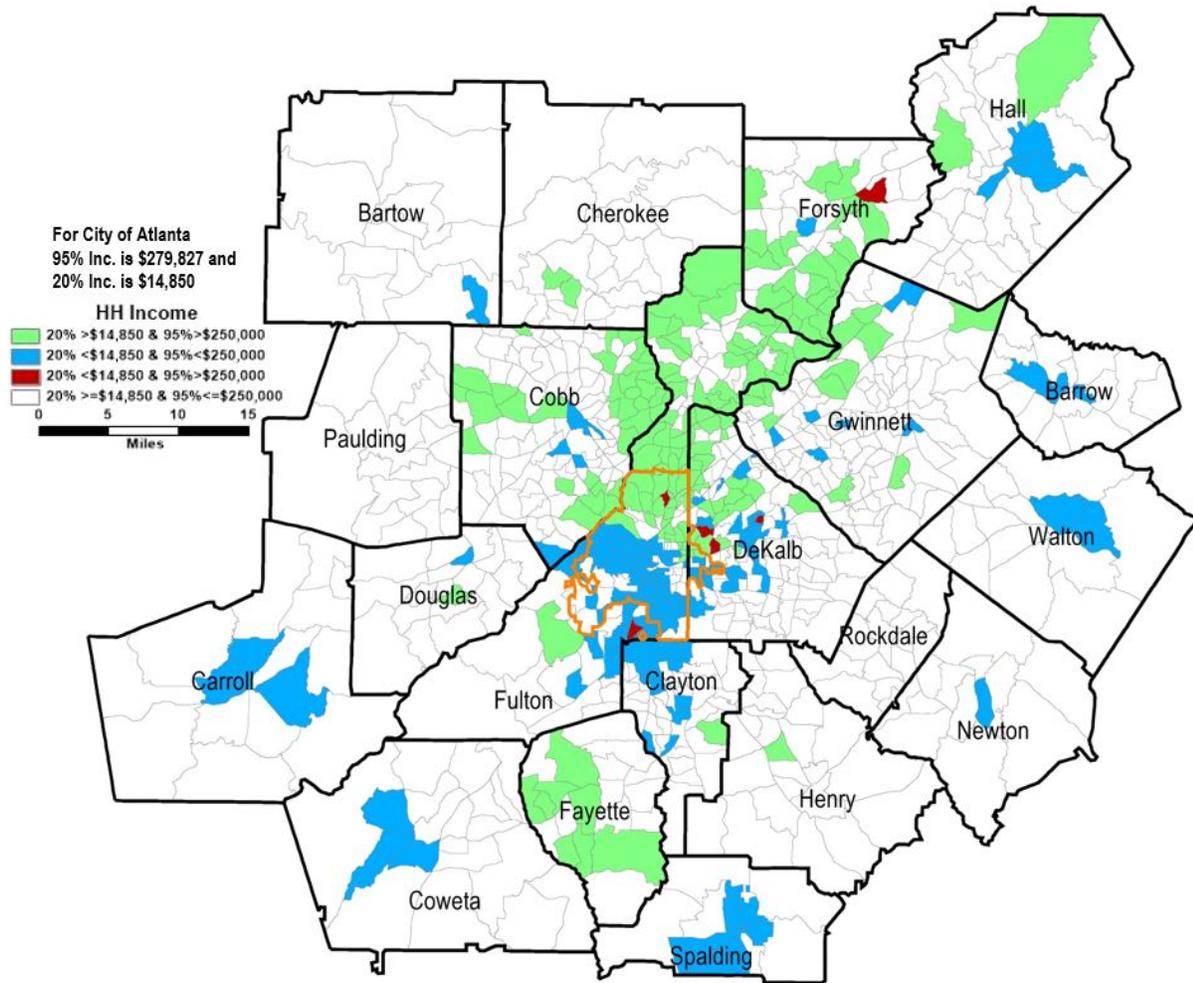
Table 3. County 95/20 Ratios

-----COUNTY HOUSEHOLD INCOME, 2012-----						
COUNTY	20 TH PERCENTILE	20 TH PERCENTILE RANK LOWEST=1	95 TH PERCENTILE	95 TH PERCENTILE RANK HIGHEST=1	COUNTY RANK	COUNTY RATIO
Fulton	\$20,922	5	\$330,563	1	1	15.80
DeKalb	\$21,227	7	\$202,227	6	2	9.53
Spalding	\$15,604	1	\$128,656	19	3	8.25
Cobb	\$28,579	15	\$225,931	4	4	7.91
Carroll	\$18,643	2	\$144,779	16	5	7.77
Hall	\$23,668	10	\$178,480	8	6	7.54
Walton	\$21,147	6	\$156,087	14	7	7.38
Bartow	\$20,762	4	\$145,665	15	8	7.02
Gwinnett	\$28,396	14	\$191,128	7	9	6.73
Fayette	\$36,515	19	\$241,786	3	10	6.62
Rockdale	\$24,971	11	\$163,991	10	11	6.57
Clayton	\$19,641	3	\$125,561	20	12	6.39
Newton	\$22,208	8	\$141,488	17	13	6.37
Cherokee	\$31,964	18	\$202,283	5	14	6.33
Forsyth	\$39,317	20	\$246,728	2	15	6.28
Douglas	\$26,794	12	\$161,759	12	16	6.04
Coweta	\$28,207	13	\$164,137	9	17	5.82
Barrow	\$23,575	9	\$134,087	18	18	5.69
Henry	\$30,229	16	\$161,979	11	19	5.36
Paulding	\$30,427	17	\$157,110	13	20	5.16

Map 1. 95/20 Ratio for Counties and Circles from the Zero Mile Marker

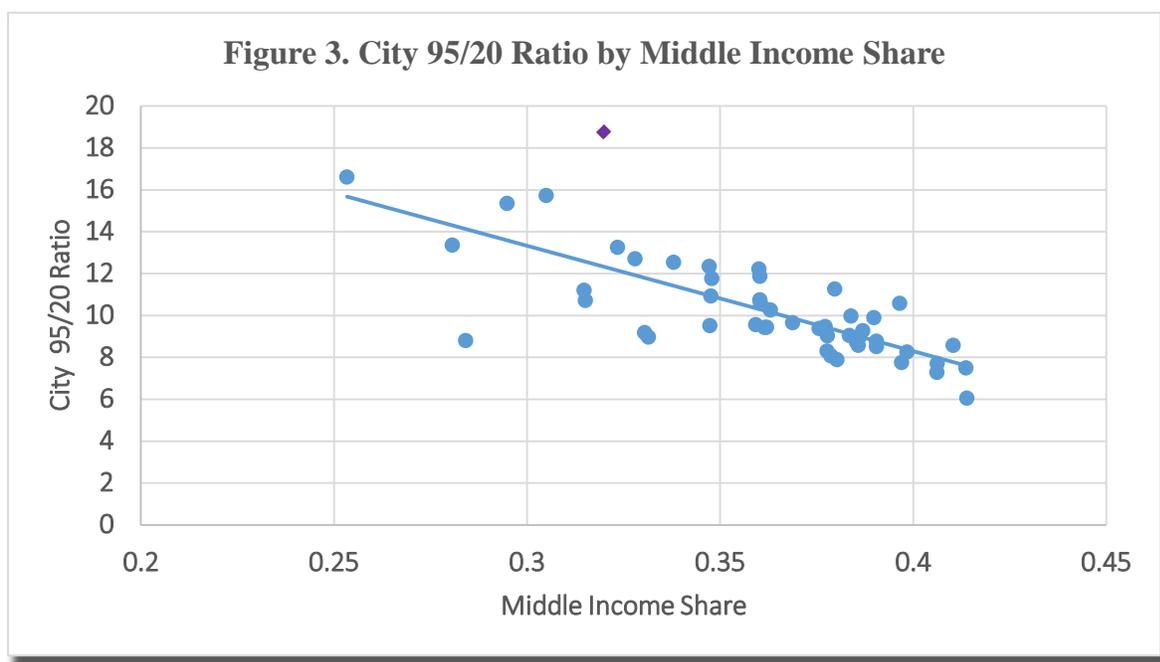


Map 2. Census Tracts by Income Categories



Effect of Middle Income Class Population on Income Equity

A city will have a low 20th percentile income or a high 95th percentile income if there is a large percentage of the households with low or high incomes, respectively. This would be the case if the percentage of households with middle income is small. We calculated the percentage of households with incomes between \$30,000 and \$75,000 and plotted that percentage against the 95/20 ratio for each city (Figure 3). The correlation between these two series is -0.74, indicating that as the percentage of households in a city with incomes between \$30,000 and \$75,000 decreases, the 95/20 ratio for the city increases.



Atlanta is denoted by the purple diamond.

For the U.S., 39.8 percent of households have incomes between \$30,000 and \$75,000, while only 32.0 percent of the City of Atlanta households have incomes within that range. While that is not the smallest middle income class amongst the 50 cities, there are only 6 other cities with smaller middle income classes, and with the exception of San Jose, they have high 95/20 ratios similar to Atlanta. And of course, with a smaller percentage in the middle income range, the City will have larger percentages of households at the two ends of the income distribution. So to understand the high City of Atlanta 95/20 ratio, it is necessary to understand why the City has larger percentages at the two ends of the income distribution and a small middle income class.

There is a long list of possible explanations for why the City of Atlanta has such a bifurcated income distribution. The principal reasons are likely associated with the availability of housing and employment. The City of Atlanta has a high concentration of low-rent housing and low-skill jobs, which accommodates low-income households. This is reinforced by the region's public transit system that makes it challenging to commute from the suburbs to lower skilled jobs located in the City. Furthermore, the housing patterns that arose from historic racial housing discrimination continue to result in low-income blacks living in the City. At the other end of the spectrum, high income households are attracted to the Buckhead area because of its high-end housing and shopping, as well as the access to high wage jobs.

If the size of the Atlanta middle income class increased, its 20th percentile income would increase and its 95th percentile income would fall, even if there was no change in the number of low-income and high-income households. There are several factors that might explain why Atlanta has a relatively small middle income class. First, there might be a lack of housing in the middle income price range, although such a lack of housing could be due to a lack of a market for this level housing. Second, it might be the absence of amenities desired by middle income households, or the dis-amenities of living in the City. But, there is a perception that the lack of a middle income class may be due in large part to the perceived lower quality of public education in the City. There are good public schools in the City, but lower middle income families cannot afford the housing located in the attendance zones of these higher performing public schools. Nor can they afford private schools. Thus, these families choose to live in more affordable suburban neighborhoods with stronger public school districts.

95/20 Ratios and City Characteristics

In this section we explore the correlations between the 95/20 ratios and selected characteristics of the cities. Table 4 reports the correlations between the characteristics and the 95/20 ratios, the 20th percentile income, and the 95th percentile income. We consider three sets of characteristics: economic, size, and population. Note that we are only reporting the degree to which each city characteristic is associated with the 95/20 ratio, we are not claiming that these factors cause the differences across the 95/20 ratios. (We estimated simple bivariate linear regressions. The Appendix table reports the coefficients as well as the means of the independent variables.)

First consider the economic factors. Not surprisingly, the correlation with the 20th (95th) percentile income is negatively (positively) correlated with the 95/20 ratio. But the correlations are not large.

Table 4. Correlation Coefficients

	95/20 RATIO	INCOME AT THE 20 TH PERCENTILE	INCOME AT THE 95 TH PERCENTILE
95/20 Ratio	1.00		
Income at the 20 th Percentile	-0.46	1.00	
Income at the 95 th Percentile	0.52	0.49	1.00
Percent Employed	-0.24	0.70	0.47
Percent of Housing with a Value Less than \$100,000	-0.13	-0.59	-0.69
Percent Housing with a Value Greater than \$250,000	0.39	0.45	0.82
City Population as a Share of MSA Population	-0.41	0.07	-0.27
Population Density	0.60	-0.15	0.45
Percent Less Than 18 years of Age	-0.59	-0.09	-0.65
Percent Foreign Born	0.40	0.12	0.46
Percent Living in the Same County in the Previous Year	-0.31	-0.16	-0.43
Percent Married	-0.64	0.63	-0.02
Percent White	-0.34	0.30	-0.04

The 95/20 ratio is positively correlated with the percent employed. We would expect that a higher employment rate will be associated with a higher 20th percentile income but only a somewhat higher 95th percentile income. That pattern results in a smaller 95/20 ratio as the percent employed increases. The percent employed for the City of Atlanta is 56.5 percent compared to the average for the 50 cities of 59.2 percent. This suggests that the percent employed has only a small role in explaining the value of the City of Atlanta's 95/20 ratio.

We considered two measures of house value, percentages of housing with a value less than \$100,000 and with a value greater than \$250,000. The former is negatively correlated with the 95/20 ratio as well as with the 20th and 95th percentile incomes, while the latter is positively correlated. The City of Atlanta has a slightly higher percentage of lower valued housing than the average city (27.4 percent compared to 24.4 percent), but a somewhat larger percentage of higher valued housing (40.1 percent compared to 34.6 percent). Housing values are certainly related to income levels in a city, so a higher percentage of higher valued housing is associated with a higher 95th percentile income (in fact the correlation between the two variables is 0.82.) So, the composition of the City's housing stock is very much associated with its high 95/20 ratio.

We expect that cities that comprise a larger share of the MSA will have smaller 95/20 ratios since these cities are more likely to represent the income distribution of their MSA. We find a negative correlation between the 95/20 ratio and the city's share of the MSA population, driven it appears from a smaller 95th percentile income in cities that are larger relative to their MSA. The City of Atlanta comprises only 8.2 percent of the MSA population, while on average the 50 cities comprise 33.2 percent of their MSA population. This implies that the City of Atlanta share of its MSA population is a significant factor in explaining the City's high 95/20 ratio.

Cities that are densely populated are associated with higher 95/20 ratios. This seems to be related to both denser cities having lower 20th percentile income and higher 95th percentile income. The City of Atlanta is much less dense than the other cities, on average, but Atlanta has a high 95/20 ratio, suggesting that density does not explain Atlanta's high 95/20 ratio.

Turning to characteristics of the population, first note that the larger the percentage of individuals less than 18 years of age, the smaller the 95/20 ratio for each city. It appears that this affect is due to the negative relationship between the percentage under 18 and the income at the 95th percentile. The City of Atlanta has a somewhat smaller share of residents who are under 18 than does the 50 cities on average (18.4 percent compared to 23.2 percent), suggesting that this factor could help explain the high 95/20 ratio.

The percent married is negatively correlated with the 95/20 ratio, with the effect being driven by its positive effect on income at 20th percentile. Residents of the City of Atlanta are much less likely to be married than in other cities (29.9 percent compared to 41.5 percent), suggesting that this factor could help explain the high 95/20 ratio.

The percentage of the population that is white is negatively correlated with the 95/20 ratio. This relationship seems to be driven by the fact that cities with a larger percentage white have a higher 20th percentile income. This is not surprising given that whites have on average higher incomes than non-whites. The City of Atlanta has a smaller white population share than other cities (39.1 percent compared to 57.9 percent on average for the 50 cities), suggesting that this factor could help explain the high 95/20 ratio.

The percentage of the population that is foreign born is positively correlated with the 95/20 ratio. But perhaps surprisingly this is due to the positive relationship of income at the 95th percentile. Many of the cities with high 95th percentile income have high percentages of foreign born residents, for example New York, Boston, San Francisco, San Jose, Chicago, and Oakland. Some of these large cities have both very wealthy residents and very low-income immigrant population, while others are high tech centers with substantial foreign born tech workers. The City of Atlanta has a relatively small share of foreign born residents (8.1 percent compared to 17.5 percent average for the 50 cities.)

Finally, consider the mobility of the population, as measured by the percentage of households that lived in the same county the year before. More residential stability is associated with a smaller 95/20 ratio. This seems to reflect the negative relationship between residential stability and income at the 95th percentile. There is essentially no difference between the measure of mobility for the City of Atlanta and the average of the other cities.

Summary

According to a recent Brookings Institute income inequality in the City of Atlanta is the highest among the 50 cities studied. We find that the level of inequality in the City of Atlanta is due more to the very high income at the 95th percentile than at the 20th percentile. Income inequality at the metropolitan level is less for most cities. This particularly true for Atlanta, for which the MSA 95/20 ratio is ranked 19th. We also find that the City's small middle income class is associated with the City's high inequality. Finally, we explored the relationship between characteristics of the cities and their 95/20 ratios and find that the City of Atlanta's 95/20 is associated with its small share of the Atlanta MSA population and that it has a smaller share of its population who are under 18 years of age, who are married, and who are white.

Appendix

Table 1. Regression Coefficients and Means

INDEPENDENT VARIABLES	REGRESSION COEFFICIENTS			MEANS	
	95/20 RATIO	95 th PERCENTILE INCOME	20 th PERCENTILE INCOME	CITY OF ATLANTA	ALL 50 CITIES
Percent Employed	-0.104**	3871.64***	557.50***	5.65	59.2
Percent of Housing with a Value Less than \$100,000	-0.017	-1701.71***	-141.24***	27.4	24.4
Percent of Housing with a Value Greater than \$250,000	0.036***	1384.11***	74.20***	40.1	34.6
City Population as a Share of MSA Population	-0.056***	-687.61**	16.26	8.2	33.3
Population Density	0.003***	0.044***	-0.001	3332.8	5355.5
Percent Less Than 18 years of Age	-0.454***	9295.47***	-128.66	18.4	23.2
Percent Foreign Born	0.094***	2038.14***	49.07	8.1	17.5
Percent Living in the Same County in the Previous Year	-0.300*	-7725.78***	-271.90	13.4	12.8
Percent Married	-0.240***	-109.98	430.90***	2.9	41.5
Percent White	-0.050**	-115.32	79.56**	39.2	57.9

Note: Coefficients are the coefficients on the independent variables in separate bivariate linear regressions. * means statistically significant at better than 10 percent; ** means statistically significant at better than 5 percent; *** means statistically significant at better than 1 percent.

About the Authors



Lakshmi Pandey is Senior Research Associate and Data Manager in the Center for State and Local Finance and Fiscal Research Center of the Andrew Young School of Policy Studies at Georgia State University. He holds B.S., M.S. and Ph.D. degrees in Physics from Banaras Hindu University, India, and has worked at Washington State University and State University of New York at Buffalo.



David L. Sjoquist is Professor of Economics, holder of the Dan E. Sweat Distinguished Scholar Chair in Educational and Community Policy at the Andrew Young School of Policy Studies at Georgia State University. He has published widely on topics related to state and local public finance and urban economics. He holds a Ph.D from the University of Minnesota.



Laura Wheeler is a Senior Research Associate in the Center for State and Local Finance and Fiscal Research Center of the Andrew Young School of Policy Studies at Georgia State University. She received her Ph.D. in economics from the Maxwell School at Syracuse University. Prior to coming to GSU, Laura worked for several years with the Joint Committee on Taxation for Congress and as an independent consultant on issues of tax policy. Her research includes state and local taxation, corporate taxation, and welfare policy.

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