

Adjusting Poverty Thresholds Based on Differences in Housing Cost: Application of American Community Survey

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How is Poverty Defined?

Resources



Money Income

Need



Thresholds (Orshansky)

Defining Resources: Income

Poverty status is calculated based on pre-tax money income, which includes earnings, government cash transfers, pensions, property income, child support and regular financial assistance

Does not include government noncash transfers (such as the value of subsidized housing, food stamps, or school lunches) or capital gains

Defining Need: Thresholds

Poverty Thresholds for 2007 by Size of Family and Number of Related Children Under 18 Years

Size of Family Unit	Related children under 18 years								
	None	One	Two	Three	Four	Five	Six	Seven	8 or more
One person (unrelated individual)									
Under 65 years	10,787								
65 years and over	9,944								
Two people									
Householder under 65 years	13,884	14,291							
Householder 65 years and over	12,533	14,237							
Three people	16,218	16,689	16,705						
Four people	21,386	21,736	21,027	21,100					
Five people	25,791	26,166	25,364	24,744	24,366				
Six people	29,664	29,782	29,168	28,579	27,705	27,187			
Seven people	34,132	34,345	33,610	33,098	32,144	31,031	29,810		
Eight people	38,174	38,511	37,818	37,210	36,348	35,255	34,116	33,827	
Nine people or more	45,921	46,143	45,529	45,014	44,168	43,004	41,952	41,691	40,085

Source: U.S. Census Bureau

Assessment of definition

- Poverty thresholds are based on narrow definition of family need
- Thresholds are applied as one size fits all, that is, they are not adjusted for geographic area cost of living differences

NAS Recommendations on Adjusting Poverty thresholds

- Poverty thresholds should be adjusted for differences in cost of housing across geographic areas using decennial census data
- Research should be conducted to determine methods to update the geographic housing cost component of the poverty thresholds between decennial censuses
- Research should be conducted to improve the estimation of geographic cost-of-living differences in housing as well as other components of the poverty budget

Data Sources

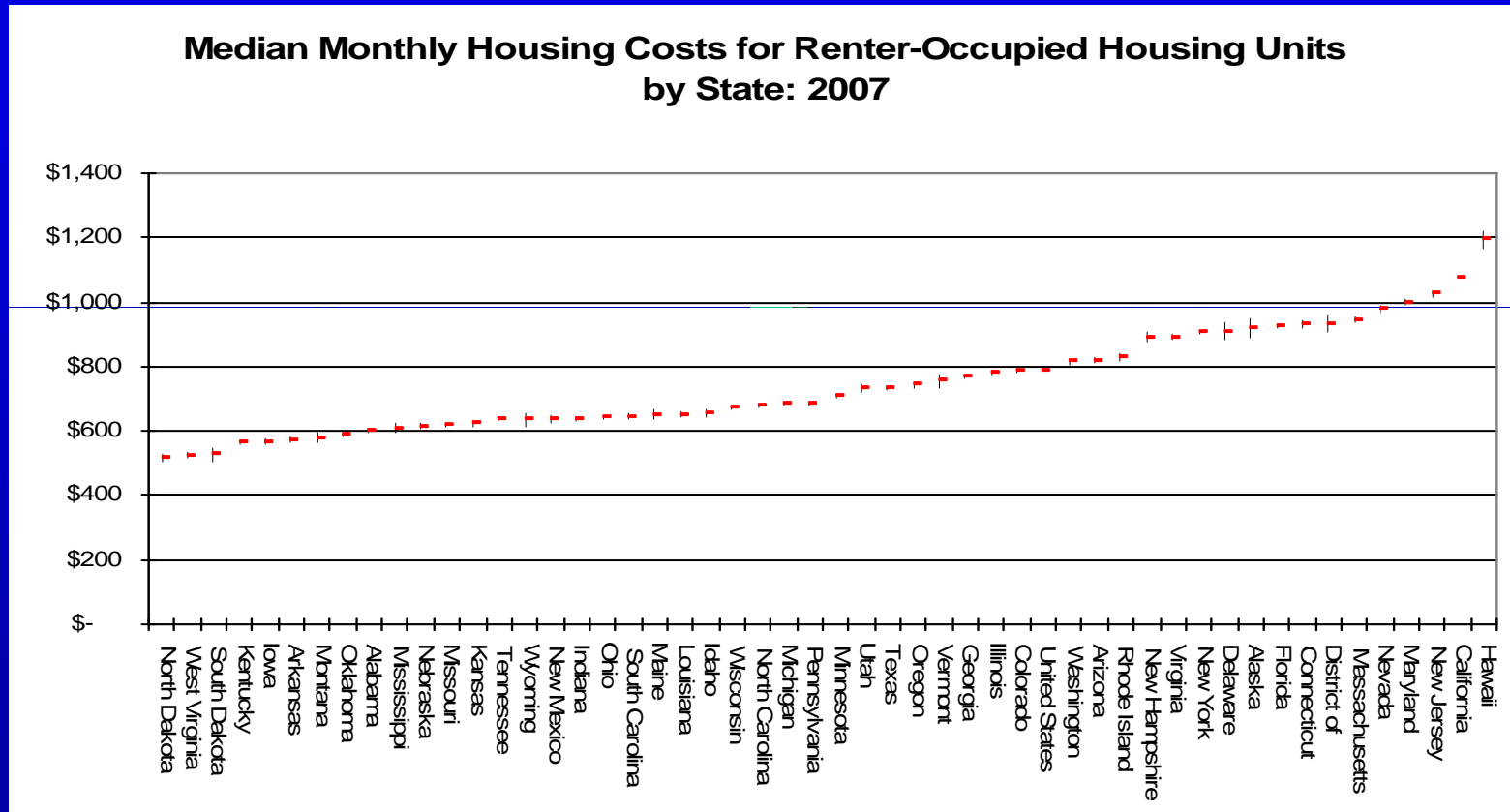
American Community Survey

- Conducted by the U.S. Census Bureau, initial sample of about 3 million addresses per year, collects data on various housing and population characteristics of the nation
- Serves as a source of poverty estimates for states and lower level of geography.
- Provides housing, person, and household data used to generate geographic price indexes and poverty estimates

HUD Fair Market Rents

- Developed by the U.S. Department of Housing and Urban Development for administration of rental housing subsidies
- Generated with a combination of housing data from decennial census, American Housing Survey (replaced by American Community Survey since FY 2008), and Random Digit Dialing (RDD)
- Fair Market Rents for metro areas and non-metro counties used to generate geographic price indexes

Illustration of Housing Costs Disparity by State



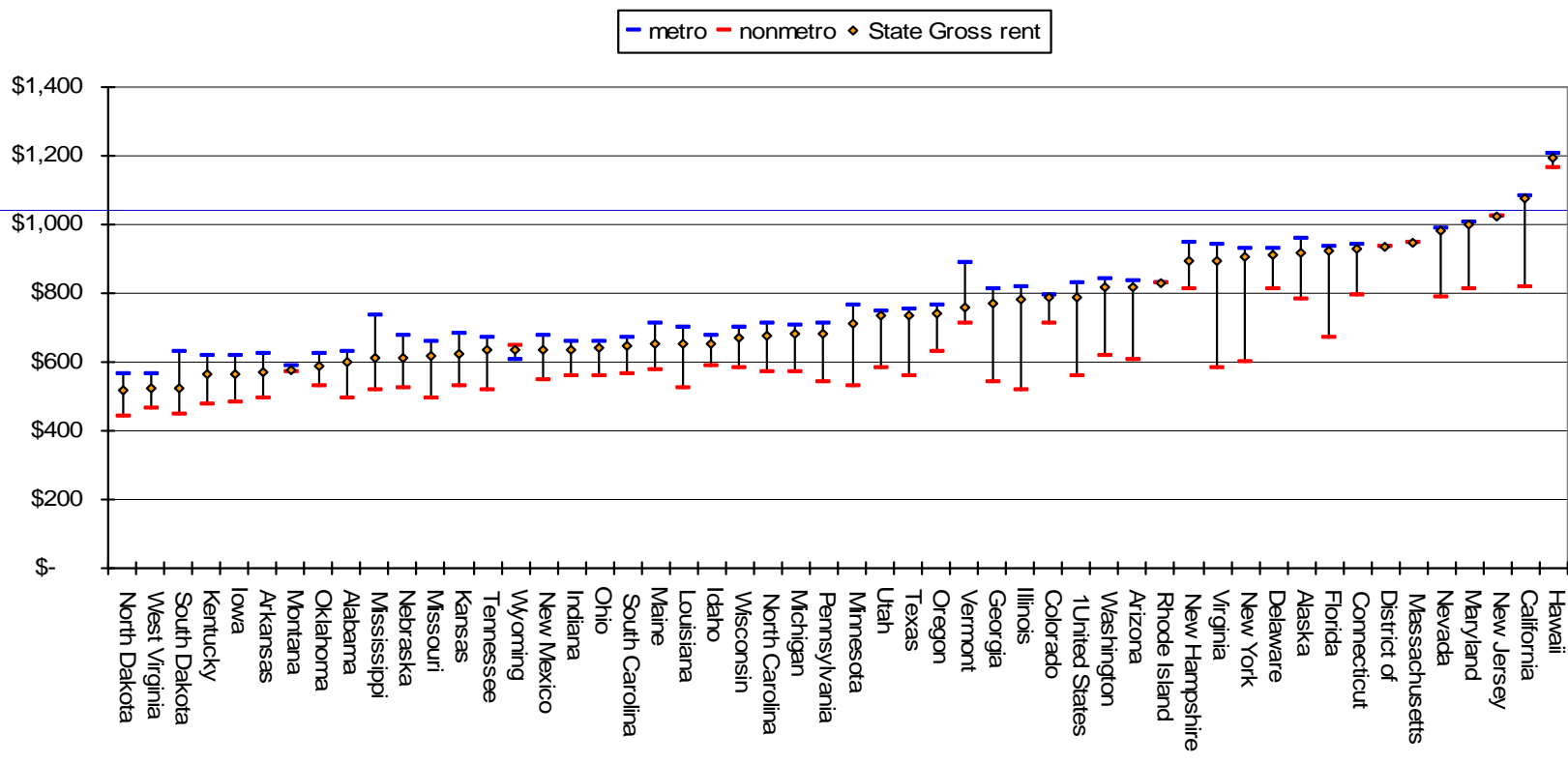
Comparison of Median Housing Cost Between Metropolitan and Non-metropolitan Areas by State

Comparison of Median Housing Cost (Dollars) Between Metropolitan and Nonmetropolitan Areas by State: 2007						
States	Metropolitan Areas		Non-metropolitan Areas		Difference	Margin of Error
	Median Housing Cost	Margin of Error	Median Housing Cost	Margin of Error		
United States	830	2	557	2	273 *	3
Alabama	629	7	493	11	136 *	13
Alaska	959	30	784	52	175 *	60
Arizona	833	9	608	21	225 *	23
Arkansas	625	10	495	9	130 *	13
California	1084	5	819	21	265 *	22
Colorado	797	10	710	30	87 *	32
Connecticut	942	13	794	36	148 *	38
Delaware	928	27	814	57	114 *	63
District of Columbia	934	27	-	-	-	38
Florida	936	5	672	27	264 *	27
Georgia	813	6	544	14	269 *	15
Hawaii	1206	33	1165	43	41	54
Idaho	675	13	591	23	84 *	26
Illinois	817	5	518	9	299 *	10
Indiana	656	7	559	13	97 *	15
Iowa	619	9	485	9	134 *	13
Kansas	684	12	530	13	154 *	18
Kentucky	616	9	475	10	141 *	13
Louisiana	699	12	522	15	177 *	19
Maine	709	19	579	22	130 *	29
Maryland	1008	11	814	49	194 *	50
Massachusetts	946	9	-	-	-	28
Michigan	704	7	568	13	136 *	15
Minnesota	764	9	532	10	232 *	13
Mississippi	737	17	520	11	217 *	20
Missouri	657	7	494	11	163 *	13
Montana	589	19	571	20	18	28
Nebraska	677	12	523	12	154 *	17
Nevada	991	14	788	44	203 *	46
New Hampshire	950	23	813	23	137 *	33
New Jersey	1026	8	-	-	-	28
New Mexico	676	12	547	23	129 *	26
New York	930	5	600	10	330 *	11
North Carolina	713	8	569	9	144 *	12
North Dakota	566	20	443	17	123 *	26
Ohio	660	5	556	9	104 *	10
Oklahoma	625	11	530	10	95 *	15
Oregon	766	9	632	17	134 *	19
Pennsylvania	712	6	540	10	172 *	12
Rhode Island	830	14	-	-	-	30
South Carolina	670	10	565	15	105 *	18
South Dakota	632	22	445	13	187 *	26
Tennessee	668	6	515	9	153 *	11
Texas	750	4	560	10	190 *	11
Utah	745	11	580	24	165 *	26
Vermont	890	45	712	19	178 *	49
Virginia	943	9	585	21	358 *	23
Washington	840	9	619	15	221 *	17
West Virginia	565	17	463	17	102 *	24
Wisconsin	698	7	583	9	115 *	11
Wyoming	607	39	649	22	-42	45

* Statistically different from zero at the 90-percent confidence level.
 Note: The District of Columbia, New Jersey, and Rhode Island have all their territories in Metropolitan areas. Sample

Illustration of Housing Costs Disparities Within States

Median Monthly Housing Cost for Renter-Occupied Housing Units for Metro, Nonmetro, and State



Methods Applied in Adjusting Poverty Thresholds

- Median gross rent data from 2007 ACS for all rental units
- HUD 2007 Fair Market Rent data for 2-bedroom units
- For each data source -
 - 99 simple ratios are calculated as local gross rent divided by national gross rent creating a raw index
 - “local” is defined within each state by metropolitan area status
- Indexes are normalized, so that the mean index value is 1
- These state level metro/non-metro indexes then are adjusted to the estimated fraction of the poverty budget accounted for by housing (including utilities), which is set to 44 percent

Index values for Metropolitan & Non-metropolitan Areas by State

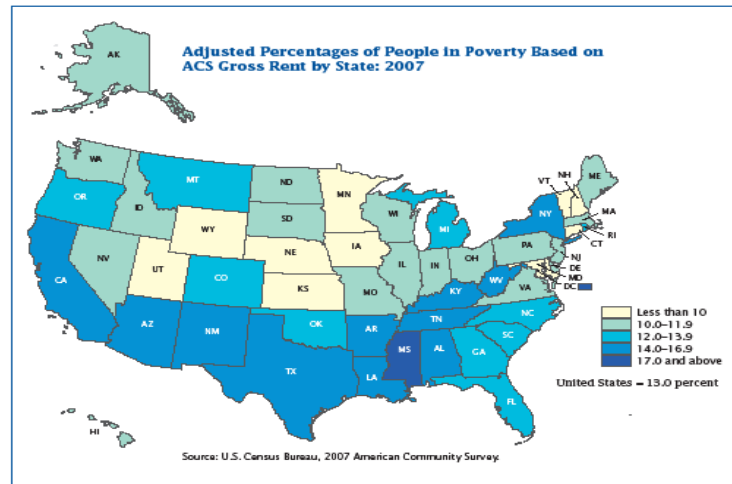
Comparison of Indexes based on ACS and Fair Market Rent for Metropolitan and Nonmetropolitan Areas by State: 2007				
States	ACS		Fair Market rent	
	Metro	Non-metro	Metro	Non-metro
Alabama	0.913	0.836	0.874	0.829
Alaska	1.100	0.995	1.055	1.080
Arizona	1.024	0.900	0.986	0.898
Arkansas	0.909	0.838	0.877	0.828
California	1.160	1.019	1.201	0.966
Colorado	1.007	0.958	1.033	0.984
Connecticut	1.085	1.006	1.154	1.030
Delaware	1.074	1.015	1.040	0.924
District of Columbia	1.080	X	1.264	X
Florida	1.084	0.931	1.023	0.881
Georgia	1.015	0.865	0.955	0.842
Hawaii	1.234	1.207	1.261	1.137
Idaho	0.937	0.892	0.919	0.882
Illinois	1.016	0.849	1.031	0.851
Indiana	0.928	0.872	0.922	0.869
Iowa	0.907	0.833	0.910	0.853
Kansas	0.942	0.859	0.920	0.852
Kentucky	0.906	0.827	0.890	0.824
Louisiana	0.952	0.853	0.966	0.819
Maine	0.957	0.883	0.996	0.897
Maryland	1.122	1.019	1.139	0.950
Massachusetts	1.090	1.778	1.194	1.254
Michigan	0.955	0.877	0.965	0.869
Minnesota	0.990	0.858	1.004	0.865
Mississippi	0.972	0.853	0.900	0.833
Missouri	0.928	0.837	0.917	0.835
Montana	0.890	0.881	0.895	0.879
Nebraska	0.941	0.852	0.922	0.855
Nevada	1.115	1.007	1.050	0.975
New Hampshire	1.094	1.012	1.128	0.985
New Jersey	1.132	X	1.159	X
New Mexico	0.939	0.867	0.952	0.845
New York	1.080	0.897	1.144	0.894
North Carolina	0.960	0.879	0.940	0.871
North Dakota	0.878	0.805	0.871	0.837
Ohio	0.930	0.871	0.920	0.861
Oklahoma	0.910	0.855	0.884	0.827
Oregon	0.987	0.914	0.955	0.903
Pennsylvania	0.958	0.861	0.989	0.871
Rhode Island	1.022	X	1.100	X
South Carolina	0.935	0.875	0.909	0.869
South Dakota	0.914	0.808	0.913	0.842
Tennessee	0.934	0.849	0.905	0.838
Texas	0.981	0.877	0.958	0.853
Utah	0.978	0.892	0.939	0.887
Vermont	1.055	0.956	1.099	0.945
Virginia	1.090	0.888	1.073	0.861
Washington	1.029	0.905	0.992	0.918
West Virginia	0.877	0.822	0.867	0.830
Wisconsin	0.951	0.886	0.936	0.871
Wyoming	0.897	0.925	0.879	0.869

Source: U. S. Census Bureau, 2007 American Community Survey, and U.S. HUD, 2007 Fair Market Rent.
 Note: The District of Columbia, New Jersey, and Rhode Island have all territories within Metropolitan areas.

Effect of Housing Cost Indexes on Percentages of People in Poverty

Comparison of Estimated Percentages of People in Poverty With and Without Adjustment: Official ACS Estimate and With Adjustment Based on ACS Gross Rent and Fair Market Rent by State					
	Population for whom Poverty Status is Determined	2007 ACS Official Estimate		Adjusted Percentage of People Below poverty Level Based on	
		Number	Percentage	ACS Percentage	Fair Market Rent Percentage
New Hampshire	1,274,795	90,204	7.1	7.9	8.0
Connecticut	3,387,524	268,880	7.9	8.7	9.5
Hawaii	1,254,854	100,051	8.0	10.5	10.5
Maryland	5,477,839	453,699	8.3	9.6	9.7
New Jersey	8,505,944	729,211	8.6	10.0	10.3
Wyoming	508,840	44,064	8.7	7.9	7.4
Alaska	666,618	59,625	8.9	11.2	11.1
Minnesota	5,066,767	481,947	9.5	9.1	9.3
Utah	2,601,491	251,084	9.7	9.3	8.7
Virginia	7,466,205	742,680	9.9	10.4	10.2
Massachusetts	6,244,824	621,286	9.9	11.0	12.1
Vermont	600,231	60,589	10.1	9.9	9.8
Delaware	838,497	87,956	10.5	11.4	10.9
Nevada	2,528,598	269,953	10.7	11.9	11.3
Wisconsin	5,447,306	588,287	10.8	10.0	9.7
Iowa	2,881,760	317,946	11.0	9.2	9.4
Kansas	2,688,942	300,210	11.2	9.9	9.7
Nebraska	1,719,387	192,822	11.2	9.9	9.8
Washington	6,337,707	725,172	11.4	11.8	11.4
Pennsylvania	11,998,834	1,393,026	11.6	11.1	11.4
Illinois	12,541,198	1,496,248	11.9	11.9	12.1
Colorado	4,756,244	569,386	12.0	12.0	12.4
Rhode Island	1,018,722	122,128	12.0	12.2	13.2
Maine	1,281,433	154,224	12.0	10.8	11.2
North Dakota	612,565	74,035	12.1	10.0	10.2
Florida	17,846,751	2,158,832	12.1	13.3	12.4
Idaho	1,464,460	177,806	12.1	10.9	10.5
Indiana	6,145,040	757,813	12.3	11.2	11.1
California	35,768,016	4,433,014	12.4	15.7	16.3
Oregon	3,670,490	474,189	12.9	12.6	12.2
United States	293,744,043	38,052,247	13.0	13.0	13.0
Missouri	5,708,785	742,486	13.0	11.3	11.2
South Dakota	768,499	100,699	13.1	10.6	10.9
Ohio	11,151,314	1,464,133	13.1	11.9	11.8
New York	18,775,329	2,570,014	13.7	14.9	15.8
Michigan	9,832,533	1,376,658	14.0	13.2	13.3
Montana	933,264	131,790	14.1	12.0	11.9
Arizona	6,225,486	881,257	14.2	14.3	13.8
Georgia	9,286,158	1,323,828	14.3	13.9	13.0
North Carolina	8,793,290	1,258,988	14.3	13.1	12.8
South Carolina	4,270,155	641,758	15.0	13.6	13.2
Tennessee	5,996,979	953,865	15.9	14.0	13.6
Oklahoma	3,498,298	557,030	15.9	13.5	13.0
Texas	23,284,143	3,791,183	16.3	15.6	15.1
District of Columbia	559,557	91,934	16.4	17.4	21.1
Alabama	4,506,549	759,835	16.9	14.5	14.0
West Virginia	1,763,476	298,172	16.9	14.0	13.9
Kentucky	4,120,513	714,080	17.3	14.5	14.4
Arkansas	2,753,919	492,052	17.9	14.8	14.4
New Mexico	1,925,509	349,159	18.1	16.3	16.3
Louisiana	4,166,756	775,425	18.6	16.9	16.8
Mississippi	2,821,649	581,534	20.6	18.4	17.5

Adjusted Percentages of People in Poverty Based on ACS by State: 2007



Summary

- The differences in median gross rent between states and between metro and non-metro areas validates what other studies and the NAS panel found about the disparities in costs of housing
- Comparing housing cost indexes for metro areas, both methods (the ACS and HUD FMR) have produced similar “ranking” order among the states
- For most states with lower median state housing costs, ACS exhibited higher metro index values than the FMR method
- On the contrary, FMR produced higher metro indexes than the ACS method for most states with higher median state housing costs.
- States with lower metro housing cost indexes have lower adjusted percentages of people in poverty than the official rate, in contrast to the states with higher metro housing cost indexes
- The ACS method has shown less disparity in estimated poverty rates among the states as compared to the official estimate.

Select References on Related Poverty Research

- Citro, Constance F and Robert T. Michael (eds), *Measuring poverty: A New Approach*, Washington, DC National Academy Press, 1995.
- Short, Kathleen, Thesia Garner, David Johnson, and Patricia Doyle, *Experimental Poverty Measures, 1990 to 1997, U.S. Census Bureau, Current Population Reports, Consumer Income, P60-205, Washington, DC, 1999.*
- Short, Kathleen, *Experimental Poverty Measures: 1999, U.S. Census Bureau, Current Population Reports, Consumer Income, P60-216, Washington, DC 2001.*
- Short, Kathleen, *Where We Live, Geographic Differences in Poverty Thresholds*, U.S. Census Bureau, 2001.
- Nelson, Charles, and Kathleen Short, *The Distributional Implications of Geographic Adjustment of Poverty Thresholds*, Bureau of Census, 2003.

For More Information

History of the Poverty Measure

<http://www.census.gov/hhes/www/poverty/histofpovmeas.html>

Poverty measurement research

<http://www.census.gov/hhes/www/povmeas/povmeas.html>

Poverty Thresholds

<http://www.census.gov/hhes/www/poverty/threshld.html>

American Community Survey

<http://www.census.gov/acs/www/>

Other Sources on Poverty

<http://www.census.gov/hhes/www/poverty/relatedsites.html>

Department of Housing and Urban Development, Fair Market Rents
(FMR)

<http://www.huduser.org/datasets/fmr.html>

Further Questions

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