Metropolitan Summary Sheet for "Education, Demand, and Unemployment in Metropolitan America"

This Brookings report measures how well the education of a typical worker matches the level of education required by a typical job for every metropolitan economy in the United States. Unemployment rates tend to be higher where the educational requirements of the typical job are not met by the average working-age adult. This reflects a long-run structural problem that afflicts slightly more than half of all metropolitan areas. This problem existed before the recession and was exacerbated by it, but for many areas, a more pressing concern is the short-run lack of aggregate demand in their industries. The national downturns in industries like construction and manufacturing hit some areas much harder than others, while continued growth in industries such as healthcare, education, the public sector, and professional services during the recession provided relief to areas with large concentrations of jobs in those industries.

This appendix classifies the 100 largest metropolitan areas according to where they fall on two major indexes described in the report: the education gap and predicted industry job growth. Using the median score on each indicator as a cutoff, this appendix classifies the metro areas into four groups. The top group scores well on both indexes, other metro areas score low on one index and high on the other, and a final group scores poorly on both measures. The boxes below describe the categories, and the table that follows lists how each large metro area in each category ranks on the various indicators.

Favorable Education Match and Industry Composition: These metropolitan areas do not have a long-run structural problem related to the matching of worker education to what available occupations require; nor do they have a short-run problem related to demand for their specific industries. The typical job in these areas requires less education than what is possessed by the typical worker. Likewise, these economies were more heavily concentrated in growing industries or relatively resilient industries during the worst of the recession, mitigating unemployment. As in all metropolitan areas, highly educated workers are more likely to be employed than less educated workers, but the difference between the two is not as severe as in metropolitan areas with a more pronounced education gap. These metro areas may be better positioned to recover as the national economy recovers.
Example MSAs: Washington DC, Boston, Syracuse, Albuquerque

Favorable Education Match; Unfavorable Industry Composition: These metropolitan areas have a short-run economic problem related to inadequate demand for workers in their most prevalent industries, but they do not have a long-run structural problem related to the matching of worker education to what available occupations require. The typical job in these areas requires less education than what the typical worker possesses. However, these economies were more heavily concentrated in declining or more vulnerable industries during the worst of the recession, resulting in significantly more layoffs than better positioned metros. As in all metropolitan areas, their more educated workers are more likely to be employed than their less educated workers, but the gap between the two is not as severe as

	in metropolitan areas with a more pronounced education gap. These metros are not well positioned to recover unless national demand for what their industries produce rebounds significantly, or they diversify into faster growing industries like healthcare, professional services, and clean energy. *Example MSAs: Salt Lake, San Jose, Atlanta, Charlotte*

	Unfavorable Education Match; Favorable Industry Composition: These metropolitan areas have a long-run structural problem related to a mismatch between worker education and occupational demand, but they have a relatively strong mix of jobs in resilient industries, which have provided ballast against what would otherwise be higher unemployment during the recession. The typical job in these metropolitan areas requires more education than what the typical worker possesses. Yet, these economies were more heavily concentrated in growing or slower-declining industries during the worst of the recession. As in all metropolitan areas, their more educated workers are more likely to be employed than their less educated workers, but the difference between the two is more severe because of the overall education gap. These metro areas may be well positioned for short-term rebound as the national economy recovers, but unemployment rates above the national average will tend to persist until they can either boost educational attainment or stimulate greater employer demand for less educated workers. *Example MSAs: Pittsburgh, Cleveland, New Orleans, Bakersfield*

	Unfavorable Education Match and Industry Composition: These metropolitan areas have a long-run structural problem related to a mismatch between worker education and occupational demand, and they have a short-term problem related to significant employment declines in their most prevalent industries. The typical job in these metro areas requires more education than what the typical worker possesses. Likewise, these economies were more heavily concentrated in declining industries or more vulnerable industries during the recession. Like all metropolitan areas, their more educated workers are more likely to be employed than their less educated workers, but the unemployment difference between the two groups is more severe because of the education gap. These metro areas are not well positioned to recover unless national demand for what their industries produce rebounds significantly, and they may have to diversify into faster growing industries like healthcare, professional services, and clean energy. Moreover, regardless of national industry demand, above average unemployment rates will tend to persist until they can either boost educational attainment or stimulate greater employer demand for less educated workers. *Example MSAs: Riverside, Phoenix, Louisville, Los Angeles*

Data Appendix. The 100 Largest Metropolitan Areas Sorted by Overall Rank of Education Matching and Predicted Industry Growth the Recession

Metropolitan Area	Overall Rank on Education Gap and Industry Mix	Rank Education Gap, 2009	Rank Predicted Industry Job Growth, 2007-2009	Education Gap, 2009 (Ratio of Demand to Supply-1)	Predicted Industry Job Growth, 2007-2009	Unemployment Rate, May 2011	Change in Unemployment Rate from Pre-recession to May 2011
Favorable Education Match and Industry Composition							
Washington-Arlington-Alexandria, DC-VA-MD-WV	1	3	5	-3.9%	-3.5%	5.7	2.7
Boston-Cambridge-Quincy, MA-NH	2	7	14	-3.0%	-3.9%	6.6	2.5
Madison, WI	2	1	20	-4.3%	-4.2%	5.3	1.9
Albany-Schenectady-Troy, NY	4	21	2	-1.4%	-2.9%	6.8	2.8
Honolulu, HI	5	22	4	-1.4%	-3.4%	4.9	2.5
Poughkeepsie-Newburgh-Middletown, NY	6	25	6	-1.2%	-3.5%	7.4	3.3
San Francisco-Oakland-Fremont, CA	7	5	27	-3.4%	-4.3%	9.3	5.1
Portland-South Portland-Biddeford, ME	8	11	23	-2.5%	-4.2%	6.2	2.7
Colorado Springs, CO	9	9	29	-2.9%	-4.4%	9.3	5.1
Bridgeport-Stamford-Norwalk, CT	10	2	38	-4.0%	-4.6%	8.5	4.5
Rochester, NY	11	35	11	-1.0%	-3.8%	7.1	2.5
New Haven-Milford, CT	12	37	12	-0.9%	-3.8%	9.5	4.9
Minneapolis-St. Paul-Bloomington, MN-WI	13	10	40	-2.6%	-4.6%	6.3	2.5
Worcester, MA	14	31	22	-1.0%	-4.2%	7.9	3.1
Baltimore-Towson, MD	14	36	17	-0.9%	-4.0%	7.3	3.5
Omaha-Council Bluffs, NE-IA	16	17	37	-1.6%	-4.6%	4.6	1.3
Syracuse, NY	17	40	15	-0.9%	-3.9%	7.7	3.2
New York-Northern New Jersey-Long Island, NY-NJ-PA	18	49	7	-0.4%	-3.7%	8.3	3.9
Columbia, SC	19	26	32	-1.2%	-4.5%	9	4.1
San Diego-Carlsbad-San Marcos, CA	20	23	36	-1.3%	-4.6%	9.6	5.6

Hartford-West Hartford-East Hartford, CT	21	28	33	-1.0%	-4.5%	9.1	4.5
Austin-Round Rock-San Marcos, TX	23	18	48	-1.6%	-4.8%	6.7	3.0
Columbus, OH	23	24	42	-1.3%	-4.6%	7.4	2.7
Des Moines-West Des Moines, IA	26	20	47	-1.4%	-4.8%	5.8	2.4
Virginia Beach-Norfolk-Newport News, VA-NC	27	47	21	-0.5%	-4.2%	6.6	3.4
Buffalo-Niagara Falls, NY	30	45	26	-0.6%	-4.3%	7.5	2.6
Albuquerque, NM	36	42	44	-0.6%	-4.7%	6.8	3.4
St. Louis, MO-IL	45	46	50	-0.5%	-4.8%	8.6	3.5
Group Average	**16**	**24**	**25**	**-1.7%**	**-4.2%**	**7.4**	**3.3**
Favorable Education Match; Unfavorable Industry Composition							
Provo-Orem, UT	22	6	57	-3.2%	-5.1%	7.5	5.0
Raleigh-Cary, NC	23	4	62	-3.6%	-5.2%	7.9	4.3
Kansas City, MO-KS	33	27	53	-1.1%	-4.9%	8.4	3.4
Denver-Aurora-Broomfield, CO	34	14	69	-2.1%	-5.3%	8.5	4.7
Charleston-North Charleston-Summerville, SC	36	19	67	-1.5%	-5.3%	8.7	4.3
Chicago-Joliet-Naperville, IL-IN-WI	38	29	59	-1.0%	-5.1%	9.5	5.0
Portland-Vancouver-Hillsboro, OR-WA	38	12	76	-2.4%	-5.4%	8.6	3.8
Ogden-Clearfield, UT	38	16	72	-1.9%	-5.3%	7.2	4.4
Milwaukee-Waukesha-West Allis, WI	43	32	60	-1.0%	-5.1%	8	3.1
San Jose-Sunnyvale-Santa Clara, CA	44	13	80	-2.2%	-5.5%	9.9	5.3
Oxnard-Thousand Oaks-Ventura, CA	45	38	58	-0.9%	-5.1%	9.5	5.2
Seattle-Tacoma-Bellevue, WA	47	8	89	-2.9%	-5.8%	8.5	4.4
North Port-Bradenton-Sarasota, FL	50	15	88	-1.9%	-5.7%	10.3	7.3
Nashville-Davidson--Murfreesboro--Franklin, TN	58	39	75	-0.9%	-5.4%	8.5	4.4
Akron, OH	58	50	64	-0.3%	-5.2%	8.2	3.0
Atlanta-Sandy Springs-Marietta, GA	60	41	74	-0.9%	-5.4%	9.7	5.1
Indianapolis-Carmel, IN	60	34	81	-1.0%	-5.5%	7.8	3.7
Knoxville, TN	67	43	77	-0.6%	-5.4%	7.7	3.9
Cape Coral-Fort Myers, FL	69	30	95	-1.0%	-6.3%	10.8	7.9
Charlotte-Gastonia-Rock Hill, NC-SC	71	33	93	-1.0%	-6.1%	10.4	5.6

Salt Lake City, UT	75	44	91	-0.6%	-5.8%	7.2	4.6
Grand Rapids-Wyoming, MI	80	48	97	-0.4%	-6.4%	8.3	2.5
Greenville-Mauldin-Easley, SC	84	51	98	-0.2%	-6.6%	8.8	3.8
Group Average	**51**	**28**	**75**	**-1.4%**	**-5.5%**	**8.7**	**4.6**
Unfavorable Education Match; Favorable Industry Composition							
Springfield, MA	27	65	3	0.4%	-3.2%	8.4	3.3
Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	29	53	16	-0.2%	-3.9%	8.4	4.1
Pittsburgh, PA	31	58	18	0.1%	-4.1%	6.9	2.6
Jackson, MS	32	70	8	0.5%	-3.7%	7.7	2.6
Harrisburg-Carlisle, PA	35	71	13	0.5%	-3.9%	6.9	3.3
Sacramento--Arden-Arcade--Roseville, CA	41	67	24	0.5%	-4.2%	11.7	7.0
Providence-New Bedford-Fall River, RI-MA	41	72	19	0.6%	-4.2%	11.1	5.8
Oklahoma City, OK	48	73	25	0.6%	-4.2%	4.9	1.2
McAllen-Edinburg-Mission, TX	49	100	1	9.8%	-2.7%	11.9	5.3
Fresno, CA	51	96	10	4.0%	-3.8%	16	8.0
Bakersfield-Delano, CA	52	99	9	6.1%	-3.7%	15	7.5
Cleveland-Elyria-Mentor, OH	53	61	49	0.3%	-4.8%	7.7	2.2
Richmond, VA	53	64	46	0.4%	-4.8%	6.7	3.6
Tucson, AZ	53	59	51	0.1%	-4.9%	7.8	4.2
Allentown-Bethlehem-Easton, PA-NJ	57	78	35	0.9%	-4.6%	8.4	4.1
Scranton--Wilkes-Barre, PA	60	84	31	1.2%	-4.5%	8.7	3.8
Little Rock-North Little Rock-Conway, AR	60	81	34	1.0%	-4.5%	7	2.5
New Orleans-Metairie-Kenner, LA	64	77	41	0.8%	-4.6%	8	4.5
San Antonio-New Braunfels, TX	66	91	28	2.1%	-4.4%	7.3	3.2
Dayton, OH	69	82	43	1.0%	-4.7%	9.3	3.6
Modesto, CA	72	97	30	5.0%	-4.4%	16.7	8.7
El Paso, TX	76	98	39	5.3%	-4.6%	10	4.1
Stockton, CA	77	95	45	4.0%	-4.7%	16.2	8.8
Group Average	**52**	**78**	**27**	**2.0%**	**-4.2%**	**9.7**	**4.5**
Unfavorable Education Match and Industry Composition							
Cincinnati-Middletown, OH-KY-IN	56	57	55	0.1%	-5.0%	8.5	3.5

Jacksonville, FL	64	52	66	-0.2%	-5.3%	9.7	6.5
Miami-Fort Lauderdale-Pompano Beach, FL	68	69	52	0.5%	-4.9%	11.4	7.8
Birmingham-Hoover, AL	73	68	63	0.5%	-5.2%	8.8	5.7
Baton Rouge, LA	74	79	54	0.9%	-4.9%	8.4	4.7
Orlando-Kissimmee-Sanford, FL	78	56	87	0.0%	-5.7%	9.9	6.8
Augusta-Richmond County, GA-SC	78	87	56	1.5%	-5.0%	8.7	3.2
Palm Bay-Melbourne-Titusville, FL	81	60	86	0.1%	-5.7%	10.8	7.6
Boise City-Nampa, ID	82	63	85	0.4%	-5.6%	8.8	6.2
Memphis, TN-MS-AR	82	83	65	1.1%	-5.2%	10.1	4.8
Tampa-St. Petersburg-Clearwater, FL	84	88	61	1.6%	-5.2%	10.5	7.1
Las Vegas-Paradise, NV	84	55	94	-0.1%	-6.2%	12.4	8.2
Louisville-Jefferson County, KY-IN	84	66	83	0.4%	-5.6%	9.5	4.2
Tulsa, OK	88	74	79	0.7%	-5.5%	6	2.3
Wichita, KS	88	54	99	-0.1%	-6.7%	7.6	3.5
Toledo, OH	88	85	68	1.4%	-5.3%	9.3	3.3
Detroit-Warren-Livonia, MI	91	75	82	0.8%	-5.5%	11.6	4.4
Los Angeles-Long Beach-Santa Ana, CA	91	86	71	1.5%	-5.3%	11.1	6.7
Phoenix-Mesa-Glendale, AZ	93	62	96	0.3%	-6.3%	8	4.7
Houston-Sugar Land-Baytown, TX	94	89	70	1.6%	-5.3%	8.2	3.9
Lakeland-Winter Haven, FL	95	92	73	2.7%	-5.3%	10.8	7.2
Dallas-Fort Worth-Arlington, TX	96	80	90	1.0%	-5.8%	7.9	3.6
Youngstown-Warren-Boardman, OH-PA	97	93	78	3.1%	-5.4%	9.1	3.1
Chattanooga, TN-GA	98	90	84	2.0%	-5.6%	8.4	4.2
Greensboro-High Point, NC	99	76	100	0.8%	-6.9%	10.2	5.4
Riverside-San Bernardino-Ontario, CA	100	94	92	3.3%	-5.9%	13.2	8.3
Group Average	**85**	**74**	**77**	**1.0%**	**-5.6%**	**9.6**	**5.3**
Average for 100 Largest Metropolitan Areas				**-0.1%**	**-4.9%**	**8.8**	**4.4**

Notes: Brookings analysis of data from the U.S. Bureau of Labor Statistics, the American Community Survey via the Integrated Public Use Microdata Series (IPUMS), and Moody's Analytics. Overall ranking includes the education gap and predicted industry job growth. Favorable rankings required a rank at or below 51 out of the 100 largest metros, where 1 is most favorable and 100 is least favorable. Change in unemployment rate is calculated by subtracting the May 2011 rate from the minimum annual rate from 2006 to 2010. Positive numbers indicate that the average job requires "X" percent more years of education than attained by the average worker. Negative numbers indicate that average job requires "X" percent less years of education than attained by the average worker.