U.S. INDUSTRIAL TRANSITION AND ITS EFFECT ON METRO AREAS AND COMMUNITY BANKS

OVERVIEW

Ongoing changes in technology, production patterns, and demand present challenges for many industries and their local economies. This study examines U.S. industrial transitions, such as significant disruptions to primary metal and textile manufacturing, over five decades. We create a novel metric to measure industrial transition, use this metric to determine which areas were most affected by industrial transition, and compare the economic and banking performance of affected areas to areas with lower levels of transition. The study may provide insight into the future economic and demographic challenges of areas that could be affected by shifts in industrial practices. For example, as alternative forms of energy and lower carbon technologies emerge to address changing consumer and business preferences and new emissions restrictions are put in place in some jurisdictions, the findings in this analysis may be relevant to areas with concentrations in industries more exposed to these changes and to community banks that serve those areas.

BACKGROUND

The five-decade span from 1970 to 2019 brought a variety of changes that led to notable transitions in the economies of Metropolitan Statistical Areas (metros) across the country.[1] The national economy shifted away from the manufacturing sector, in which employment declined nearly 30 percent over this period. U.S. industries such as steel and textiles were hollowed out by the forces of automation and globalization, leading to even more dramatic employment declines. The nation moved to a more services-based economy, with the technology sector rising in importance. These shifts hamstrung metro areas dependent on manufacturing while benefiting areas with skilled workforces and diverse job opportunities.

[1] The terms "metro areas" and "metros" are used interchangeably in this study and refer to the 383 Metropolitan Statistical Areas (MSAs) as delineated in the 2018 Office of Management and Budget (OMB) Bulletin 18-3 using 2010 OMB standards for delineation of Census Bureau data.

Demographic trends over the past 50 years also led to significant changes among metro areas. National population growth slowed from post-World War II highs and consistently decelerated beginning in the early 1990s. Slowing population growth and longer lifespans contributed to an aging population and shifting demand for products and services. Population also shifted between different regions of the country during the period from 1970 to 2019, as people moved from the North and Midwest to the South and West. This movement led to rapid economic development in regions with large population inflows but slowed economic growth in areas of the country with population outflows.

METHODOLOGY

The goal of this study is to determine which U.S. metros incurred the most substantial transition between industries over about five decades and how such transitions affected community banks.[2] This study examines 383 U.S. metro areas using available economic data from 1970 through 2019 and banking data from 1984 through 2019.[3] The term "industrial transition" is defined in this study as a metro area's movement between industries—often from an area's dominant industry to other industries (or, in some cases, to a reduced workforce size).

The following methodology was used to measure each metro area's industrial transition:

1. Private industries that lost jobs nationally between 1970 and 2019 were identified using the North American Industry Classification System at the three-digit level.[4]

2. The ratio of each industry's average wage to the national average wage was determined to give greater weight to higher-wage industries, based on the earliest industry wage data available (1975). This ratio is defined as the "industry wage ratio." Higher wages, indicated by a higher industry wage ratio, have spillover effects on a metro's economy: a greater share of workers employed in higher-wage industries may contribute more money to local businesses, bolstering the local economy.

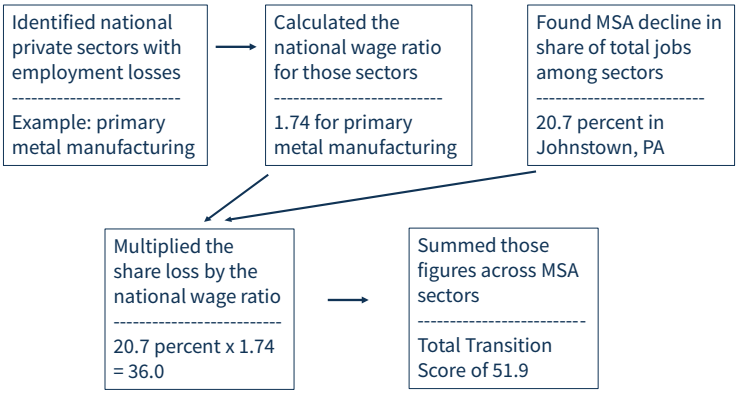
[2] "Community bank" is defined in Chapter 1 of the 2012 FDIC Community Banking Study, https://www.fdic.gov/resources/community-banking/report/2012/2012-cbi-study-1.pdf.
[3] This long-term analysis of industrial employment trends concludes with 2019 data because the pandemic that began in 2020 rendered economic data unsuitable for measuring long-term transition effects. The banking data series begins in 1984, the earliest year that data from bank Consolidated Reports of Condition and Income (Call Reports) are broadly available.
[4] The study also evaluates discrete five-year blocks from 1970 to 2019, and the results were generally consistent with the overall five-decade analysis. However, the results and usefulness of this additional analysis were muted due to the shorter periods.

3. The performance of the identified private sector industries across 383 metro areas nationally was analyzed. Within each metro, the change in the share of each industry's employment to the metro's total employment from 1970 to 2019 was determined. The change in each industry's share of metro area jobs was then multiplied by the respective industry wage ratio to give greater weight to industries that paid higher wages. Industries that increased employment share in each metro area were excluded from the calculation because the focus of this study is on how communities responded to declining industry sectors.[5]

4. To further this analysis, the study created a single metric, called the Transition Score, to measure the impact of industrial transition on each metro area. To determine each metro area's Transition Score, the previously calculated weighted change in industry share was aggregated across the industries in the area. For example, as shown in Chart 1, the Transition Score for Johnstown, Pennsylvania, heavily reflected losses in the metro's primary metal manufacturing sector. The Transition Score also factored in the metro's shift away from other industrial sectors. In Johnstown's case, the employment share of primary metal manufacturing, which has an industry wage ratio of 1.74, declined by 20.7 percent between 1970 and 2019, contributing 36.0 points to its Transition Score.[6] Other industry employment shifts contributed an additional 15.9 points to its score, resulting in an overall Transition Score of 51.9. For a more detailed example of this calculation, refer to the Appendix.

Chart 1

Transition Score Methodology Incorporates Metro Data on Employment Share and Wages



Sources: Bureau of Labor Statistics, Moody's Analytics, and FDIC.
Note: Figures are rounded to one decimal point. Multiplication products are derived from unrounded figures. MSA is Metropolitan Statistical Area.

[5] Although this study focuses on declining industry sectors, the analysis also investigates the successes of Charlotte, North Carolina, and San Jose, California, in transitioning from manufacturing to service-based industries.

[6] While figures are rounded to 1 decimal point, the multiplication products are derived from unrounded figures.

The Transition Score is an insightful way to summarize each metro area's experience with nationally declining industries, adjusted for wages, over the study period. The higher a metro area's Transition Score, the more that metro area was affected by industrial transition from dominant industries. In fact, higher Transition Scores typically reflect a decline in higher-wage industries over the study period. In this study, Transition Scores range from a low of 1.3 (Idaho Falls, Idaho) to a high of 52.1 (Youngstown, Ohio).

To better understand the local effects of national industrial transition, the study analyzed metros with high Transition Scores. The study identified 64 metros with Transition Scores above 25.[7] Of these, 54 metro areas underperformed the nation's 112.5 percent overall employment growth between 1970 and 2019. These 54 metros—referred to as the "study group" or "high-transition metros" throughout the rest of this study—were also aggregated and analyzed against the remaining 329 metros for factors such as output, population, and incomes. The metro areas with the four highest Transition Scores were further assessed for factors that may have contributed to difficulty transitioning. Two large metros with high Transition Scores and employment growth that outpaced national employment growth were also evaluated for dynamics that contributed to their effective transitions.

KEY ECONOMIC FINDINGS

Contracting industries were primarily concentrated in manufacturing, which often paid high wages. Many of the industries that lost jobs over the study period were manufacturing industries with wages well above the national average (Table 1). For example, the average wage for primary metal manufacturing was 1.7 times the national average, and this sector lost 57 percent of its jobs nationally between 1970 and 2019. Some other manufacturing subsectors, such as machinery manufacturing and transportation equipment manufacturing, were common drivers in many metros with high Transition Scores and had wages well above the national average. Metros transitioning from these manufacturing sectors were concentrated in the Northeast and Upper Midwest.

[7] The "high" Transition Score threshold of 25 provided a suitable group of metros that constituted 17 percent of the overall number of metros studied, roughly the top one-sixth of Transition Scores.

Although most of the industries that contracted during the study period had a high industry wage relative to the national average, the study identified a number of industries that lost a considerable share of jobs and had relatively low wages. For example, over the study period, apparel manufacturing jobs in the United States declined more than 90 percent and textile mill jobs declined more than 80 percent. These percentage declines in employment were larger than in any other sector. However, these declines received smaller weights in the calculation of Transition Scores because of the lower wages paid by these sectors. Metros transitioning from lower-wage sectors such as textile mills were concentrated in the Southeast.

Table 1

Many Industries Lost Jobs Nationally Between 1970 and 2019

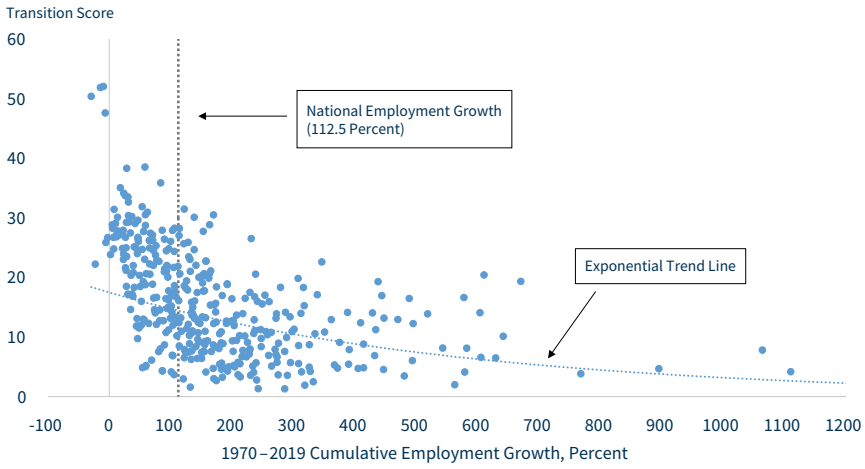
National Sectors With Higher Wages	Percent Change in Employment 1970–2019	Wages 1975, US$	Wages Relative to Total National Average
Rail transportation	-71.8	13,545	1.3
Primary metal manufacturing	-57.0	18,266	1.7
Paper manufacturing	-44.5	11,665	1.1
Mining (except oil and gas)	-39.5	13,674	1.3
Computer and electronic product manufacturing	-38.4	12,609	1.2
Petroleum and coal products manufacturing	-37.9	15,289	1.5
Printing and related support activities	-31.6	10,848	1.0
Nonmetallic mineral product manufacturing	-27.4	11,044	1.1
Chemical manufacturing	-18.2	13,132	1.2
Machinery manufacturing	-17.5	12,661	1.2
Water transportation	-13.3	15,217	1.4
Fabricated metal product manufacturing	-10.8	11,224	1.1
Transportation equipment manufacturing	-9.3	12,796	1.2
Telecommunications	-7.7	15,357	1.5
Oil and gas extraction	-6.6	18,593	1.8
National Sectors With Lower Wages	**Percent Change in Employment 1970–2019**	**Wages 1975, US$**	**Wages Relative to Total National Average**
Apparel manufacturing	-91.3	6,012	0.6
Leather and allied product manufacturing	-90.1	6,918	0.7
Textile mills	-83.2	8,642	0.8
Textile product mills	-64.1	7,568	0.7
Electrical equipment, appliance, and component manufacturing	-37.6	9,283	0.9
Furniture and related product manufacturing	-24.7	8,843	0.8
Miscellaneous manufacturing	-4.5	9,354	0.9

Sources: Bureau of Labor Statistics and Moody's Analytics.
Note: Data are annual figures through 2019 for private industries. Industries are sorted by percent change in employment over the study period 1970 to 2019. Sector wage data are not available before 1975.

The rate of employment growth reflected transition from primary industrial sectors, particularly in high-transition metros. Metros with high Transition Scores typically lagged the nation in employment growth from 1970 to 2019 (Chart 2). This relationship was particularly pronounced among metros with the highest Transition Scores, as none of the 12 metros with a Transition Score greater than 32 outperformed national employment growth. Cumulative employment declined between 1970 and 2019 in the metros with the top four Transition Scores (all greater than 47). Only three other metro areas had declining employment over the study period, and two of them were also in the 54-metro area study group (Elmira, New York, and Binghamton, New York).[8] Metros with extremely low Transition Scores (under 5) significantly outperformed national employment growth with average employment growth of 341.8 percent, more than three times the 112.5 percent national growth rate, between 1970 and 2019.

Chart 2

Metros With Higher Transition Scores Typically Had Slower Employment Growth During the Study Period



Sources: Moody's Analytics and FDIC.
Note: The Transition Score summarizes a metro's local employment share losses in nationally declining industries, adjusted for wages, between 1970 and 2019. St. George, Utah (Transition Score of 3.8, employment growth of 1832 percent) is not shown.

[8] The other metro with declining employment, Danville, Illinois, narrowly missed the cut-off threshold of 25 for the study group with its Transition Score of 22.2.

Metros with high Transition Scores were mostly small to medium in population size and located in the Northeast and Upper Midwest. Overall, 64 metro areas had Transition Scores above 25, reflecting large changes in their primary industrial sectors over the study period. Of these 64 metros, 54, or 84 percent, experienced lower employment growth than the nation over the study period; these 54 metros were used as a study group because of their combination of high industrial transition and overall lagging employment momentum. The remaining ten metros that exceeded national employment growth are highlighted in Table 2. Additionally, 57 of these 64 metros, or 89 percent, had fewer than 1 million people at the beginning of the study period in 1970.

Table 2

Metros With High Transition Scores Generally Underperformed National Employment Growth

MSA	Transition Score	Total Employment Rank, 1970	Total Employment Rank, 2019	Percent Change Total Empl 1970–2019	Sector Losing Most Weighted Share of Jobs in MSA
Youngstown, OH	52.1	55	112	-9.5	Primary Metal Manufacturing
Johnstown, PA	51.9	144	305	-14.4	Primary Metal Manufacturing
Weirton, WV	50.4	155	356	-29.5	Primary Metal Manufacturing
Flint, MI	47.6	70	160	-6.6	Transport Equip Manufacturing
Allentown, PA	38.5	54	68	58.2	Primary Metal Manufacturing
Muskegon, MI	38.3	174	269	28.4	Primary Metal Manufacturing
Burlington, NC	35.9	237	270	83.7	Textile Mills
Saginaw, MI	35.1	130	218	18.1	Primary Metal Manufacturing
Canton, OH	34.1	78	135	23.5	Primary Metal Manufacturing
Williamsport, PA	33.7	203	307	26.2	Primary Metal Manufacturing
Erie, PA	33.5	104	169	30.4	Transport Equip Manufacturing
Parkersburg, WV	32.7	267	363	31.2	Chemical Manufacturing
Bloomsburg, PA	31.9	275	345	53.5	Transport Equip Manufacturing
Spartanburg, SC	31.5	129	138	122.2	Textile Mills
Muncie, IN	31.4	184	319	8.0	Transport Equip Manufacturing
Janesville, WI	30.9	198	251	62.2	Machinery Manufacturing
Hickory, NC	30.5	105	148	59.0	Furniture and Related Product Manufacturing
San Jose, CA	30.5	27	26	169.9	Computer and Electronic Product Manufacturing
New Haven, CT	30.4	43	67	31.1	Fabricated Metal Product Manufacturing
Rockford, IL	30.2	95	151	36.7	Transport Equip Manufacturing
Pittsfield, MA	30.1	158	276	13.5	Elec Equip Appliance Component Manufacturing
Morristown, TN	30.1	324	331	138.2	Furniture and Related Product Manufacturing
Lebanon, PA	29.6	229	306	46.7	Primary Metal Manufacturing
Rochester, NY	29.3	29	52	32.3	Machinery Manufacturing
Battle Creek, MI	29.2	193	294	28.0	Machinery Manufacturing
Racine, WI	29.1	161	236	42.2	Machinery Manufacturing
Wheeling, WV	29.0	152	265	10.1	Mining (Except Oil and Gas)
Mansfield, OH	28.8	175	314	4.8	Elec Equip Appliance Component Manufacturing

MSA	Transition Score	Total Employment Rank, 1970	Total Employment Rank, 2019	Percent Change Total Empl 1970–2019	Sector Losing Most Weighted Share of Jobs in MSA
Cleveland, TN	28.8	335	326	163.4	Chemical Manufacturing
Worcester, MA	28.7	50	61	58.9	Fabricated Metal Product Manufacturing
Chattanooga, TN	28.3	83	96	106.4	Non-Metallic Mineral Product Manufacturing
Niles, MI	28.3	149	275	5.4	Primary Metal Manufacturing
Joplin, MO	28.2	219	228	114.3	Machinery Manufacturing
Cleveland, OH	27.9	12	32	22.6	Primary Metal Manufacturing
Columbus, IN	27.9	271	309	86.2	Machinery Manufacturing
Florence, SC	27.9	189	214	103.0	Textile Mills
Buffalo, NY	27.8	23	50	13.7	Primary Metal Manufacturing
Greenville, SC	27.7	67	58	153.2	Textile Mills
Beaumont, TX	27.7	98	139	55.9	Chemical Manufacturing
Scranton, PA	27.5	62	98	34.7	Computer and Electronic Product Manufacturing
Rome, GA	27.4	292	348	66.9	Textile Mills
Michigan City, IN	27.3	226	350	12.4	Machinery Manufacturing
Lima, OH	27.3	197	311	21.4	Transport Equip Manufacturing
Peoria, IL	27.2	75	137	17.4	Machinery Manufacturing
Kingsport, TN	27.1	135	180	70.7	Chemical Manufacturing
Lancaster, PA	27.0	89	99	113.8	Primary Metal Manufacturing
Utica, NY	26.8	92	168	12.0	Machinery Manufacturing
Bridgeport, CT	26.7	41	57	46.7	Computer and Electronic Product Manufacturing
Pittsburgh, PA	26.7	9	25	26.5	Primary Metal Manufacturing
Kokomo, IN	26.7	224	358	6.9	Transport Equip Manufacturing
Binghamton, NY	26.7	97	200	-2.5	Computer and Electronic Product Manufacturing
Charlotte, NC	26.5	32	23	231.2	Textile Mills
Providence, RI	26.5	22	40	46.7	Miscellaneous Manufacturing
Lynchburg, VA	26.4	157	197	89.8	Furniture and Related Product Manufacturing
York, PA	26.2	93	122	65.2	Machinery Manufacturing
Kalamazoo, MI	26.2	117	149	71.0	Paper Manufacturing
Monroe, MI	26.0	319	352	100.1	Transport Equip Manufacturing
Reading, PA	26.0	87	127	47.5	Primary Metal Manufacturing
Indianapolis, IN	25.9	25	31	128.5	Transport Equip Manufacturing
Elmira, NY	25.9	213	368	-5.7	Computer and Electronic Product Manufacturing
Johnson City, TN	25.7	227	226	121.2	Chemical Manufacturing
Florence, AL	25.3	247	295	76.2	Primary Metal Manufacturing
Hartford, CT	25.1	26	46	40.6	Transport Equip Manufacturing
Huntington, WV	25.0	108	163	43.2	Primary Metal Manufacturing

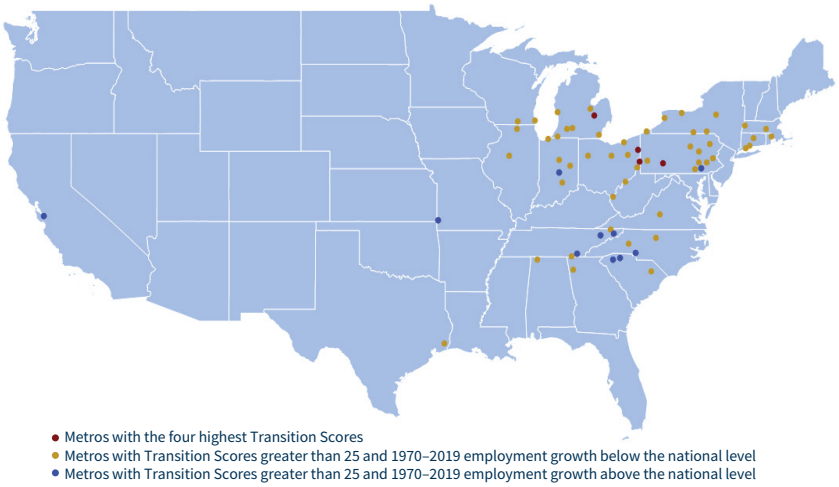
Sources: Bureau of Labor Statistics, Moody's Analytics, and FDIC.
Note: National employment grew 112.5 percent between 1970 and 2019. Highlighted metros outperformed the nation between 1970 and 2019. MSA is Metropolitan Statistical Area. The Transition Score summarizes a metro's local employment share losses in nationally declining industries, adjusted for wages, between 1970 and 2019.

Metros in the Northeast and Upper Midwest comprised the majority of the 54 high-transition metros that had employment growth slower than the national pace (Map 1). More than three-fourths of those metros (41 of the 54) were in the Northeast and Midwest states of Pennsylvania, Michigan, New York, Ohio, Indiana, Connecticut, Illinois, Massachusetts, Wisconsin, and Rhode Island. Pennsylvania led this group with ten metros. The remaining 13 metros were in the South.

The ten metros with high Transition Scores that exceeded national employment growth were less geographically concentrated in the Northeast and Midwest, with only one metro each in Indiana, Missouri, and Pennsylvania. Six of these metros were in the South, and just one was in the West (San Jose, California).

Map 1

Metros With High Transition Scores Were Most Concentrated in the Northeast



Sources: Moody's Analytics and FDIC.
Note: The Transition Score summarizes a metro's local employment share losses in nationally declining industries, adjusted for wages, between 1970 and 2019. Although not shown, Alaska and Hawaii did not have metros with Transition Scores greater than 25.

Among metros with high Transition Scores, larger metros were generally more industrially diversified than smaller metros. Of the 30 largest metro areas by 1970 employment, eight, or about a quarter, had Transition Scores above the 25 Transition Score threshold (Table 3). Less than one-sixth of the remaining 353 metros had such scores. However, the group of larger metros with high Transition Scores had a far higher median industrial diversity index value at the beginning of the study than the group of smaller metros with high Transition Scores.[9] This higher level of diversification allowed job losses in key industries to cause less disruption among larger metros, resulting in relatively lower Transition Scores.

The industrial diversity index values of most of the 30 largest metros in 1970 indicated greater diversification than smaller metro areas.[10] Greater industrial diversity in larger metros diluted job losses in nationally declining industries, helping to insulate many large metros from the effects of contraction in the industries that lost the most jobs during the study period. Moreover, a larger proportion of the eight large metros with high Transition Scores outperformed the nation in job growth over the study period, compared with the remaining smaller metros with high Transition Scores.

For example, among the group of large metros, San Jose had the highest Transition Score, 30.5, and yet its total employment growth from 1970 to 2019 was higher than the national average. San Jose also roughly held its overall employment rank among metros over the study period. Computer and electronic manufacturing was the biggest industry in San Jose at the beginning of the study period, making up almost a quarter of local jobs; by 2019 that industry had been eclipsed by other high-paying industries such as professional, scientific, and technical services.[11]

[9] The Moody's Analytics industrial diversity index ranges from zero to 1.00, with the national level of industrial diversity set to 1.00 and lower values representing increasingly lower relative levels of industrial diversity. The index is derived by comparing the national share of employment at the four-digit NAICS level to the metro's share of employment. The median industrial diversity index value of the eight large metros out of the 64 was 0.47 in 1971, the first year of data available. The median industrial diversity index value of the 56 smaller metros out of the 64 was 0.18 in 1971.

[10] A handful of large metros, such as Rochester, New York, and San Jose, California, had lower levels of industrial diversity than other large metros.

[11] Pittsburgh and Detroit were two other large metros that had industrial transition during the study period. Pittsburgh shed a large number of metal manufacturing jobs in the 1970s and 1980s; as a result, the metro grew its job base at less than a quarter of the national rate and fell 16 spots in the employment rankings in the study period. Pittsburgh's employment ranking dropped more than Detroit's because it lost a greater share of jobs in its dominant sector, primary metal manufacturing, which also paid higher wages than Detroit's dominant sector, transportation equipment manufacturing. Nevertheless, Detroit grew its job base much less than the national rate and dropped eight spots in the total employment rank between 1970 and 2019.

Table 3

San Jose and Rochester Had the Highest Transition Scores Among Large Metros

MSA	Transition Score	Total Employment Rank, 1970	Total Employment Rank, 2019	Percent Change Total Empl 1970–2019	Sector Losing Most Weighted Share of Jobs in MSA
San Jose, CA	30.5	27	26	169.9	Computer and Electronic Product Manufacturing
Rochester, NY	29.3	29	52	32.3	Machinery Manufacturing
Cleveland, OH	27.9	12	32	22.6	Primary Metal Manufacturing
Buffalo, NY	27.8	23	50	13.7	Primary Metal Manufacturing
Pittsburgh, PA	26.7	9	25	26.5	Primary Metal Manufacturing
Providence, RI	26.5	22	40	46.7	Miscellaneous Manufacturing
Indianapolis, IN	25.9	25	31	128.5	Transport Equip Manufacturing
Hartford, CT	25.1	26	46	40.6	Transport Equip Manufacturing
Milwaukee, WI	24.7	20	37	53.9	Machinery Manufacturing
Chicago, IL	24.0	3	3	45.6	Primary Metal Manufacturing
Philadelphia, PA	23.0	4	7	57.5	Chemical Manufacturing
Baltimore, MD	22.9	15	19	77.4	Primary Metal Manufacturing
Cincinnati, OH	21.4	19	27	90.2	Machinery Manufacturing
Los Angeles, CA	20.9	2	2	89.6	Transport Equip Manufacturing
St. Louis, MO	20.6	13	20	66.3	Transport Equip Manufacturing
New York, NY	19.3	1	1	55.2	Telecommunications
Detroit, MI	18.3	6	14	40.7	Transport Equip Manufacturing
Dallas, TX	18.3	10	4	316.4	Transport Equip Manufacturing
Columbus, OH	17.9	24	29	127.7	Textile Mills
Seattle, WA	17.0	18	13	253.6	Transport Equip Manufacturing
Boston, MA	16.6	5	9	77.2	Computer and Electronic Product Manufacturing
Houston, TX	15.5	11	6	249.1	Chemical Manufacturing
Kansas City, MO	14.2	21	30	102.0	Telecommunications
San Diego, CA	14.2	30	18	287.1	Transport Equip Manufacturing
Atlanta, GA	13.2	16	8	271.5	Transport Equip Manufacturing
Minneapolis, MN	12.3	14	15	147.7	Computer and Electronic Product Manufacturing
Miami, FL	11.3	17	10	301.1	Transport Equip Manufacturing
Denver, CO	10.8	28	17	263.8	Fabricated Metal Product Manufacturing
San Francisco, CA	10.2	8	11	110.2	Telecommunications
Washington, DC	2.7	7	5	174.5	Telecommunications

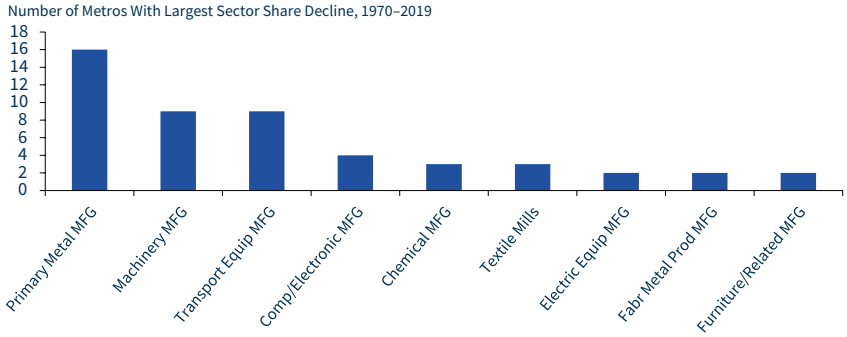
Sources: Bureau of Labor Statistics, Moody's Analytics, and FDIC.
Note: National employment grew 112.5 percent between 1970 and 2019. Highlighted metros outperformed the nation between 1970 and 2019. MSA is Metropolitan Statistical Area. The Transition Score summarizes a metro's local employment share losses in nationally declining industries, adjusted for wages, between 1970 and 2019.

Most metros with high Transition Scores shifted away from manufacturing industries, particularly primary metal manufacturing. While employment in the primary metal manufacturing sector declined the second-most among high-paying sectors (trailing only the rail transportation sector), the primary metal manufacturing sector's larger size and higher wages made it the leading sector contributing to high Transition Scores among the 54-metro study group (Chart 3). Table 2 shows that among the ten metros with the highest Transition Scores, eight metros lost the largest weighted share of jobs in primary metal manufacturing.

The machinery and transportation equipment manufacturing sectors were also notable contributors to a number of metro areas' high Transition Scores. Both sectors paid above-average wages in 1975, and the large workforces required by factories in these sectors made metros vulnerable to factory cutbacks or closures. Notably, while a number of sectors outside of manufacturing contracted during the study period, all of the sectors that contributed most to high Transition Scores were in manufacturing, except for the mining sector in Wheeling, West Virginia.

Chart 3

Primary Metal Manufacturing Declines Dominated Among Metros in Transition

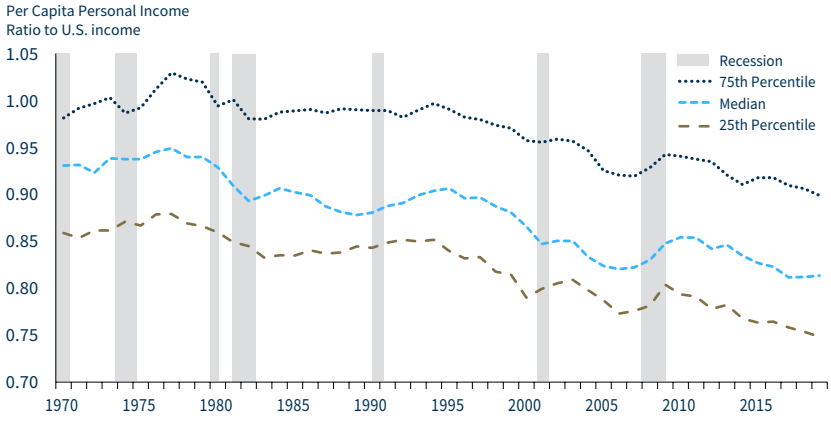


Source: Moody's Analytics.
Note: Metro counts from the 54 metros with Transition Scores above 25 and below national employment growth from 1970 to 2019. Sectors with dominant decline in only one of the 54 metros are not shown. MFG is manufacturing. The Transition Score summarizes a metro's local employment share losses in nationally declining industries, adjusted for wages, between 1970 and 2019.

High-transition metros had notably slower income growth than the nation. Per capita personal incomes in high-transition metros declined relative to the nation during the study period across the 25th, 50th, and 75th percentile distributions, suggesting that even areas with relatively high incomes or lower Transition Scores were negatively affected by industrial transition (Chart 4). In relation to national wages, incomes in high-transition metros peaked in the late 1970s before falling to a trough in 2007, followed by a short-lived recovery and then further decline. All three distributions declined notably from 1970 to 2019, but the decline at the 75th percentile was slightly smaller than in the other two distributions. Large metros in the study group were clustered around and above the 75th percentile in 1970 and maintained this distribution in 2019, reflecting higher incomes in the largest metros that lifted the national average.[12]

Chart 4

Incomes Slipped Relative to the Nation Across All Distributions of the Study Group



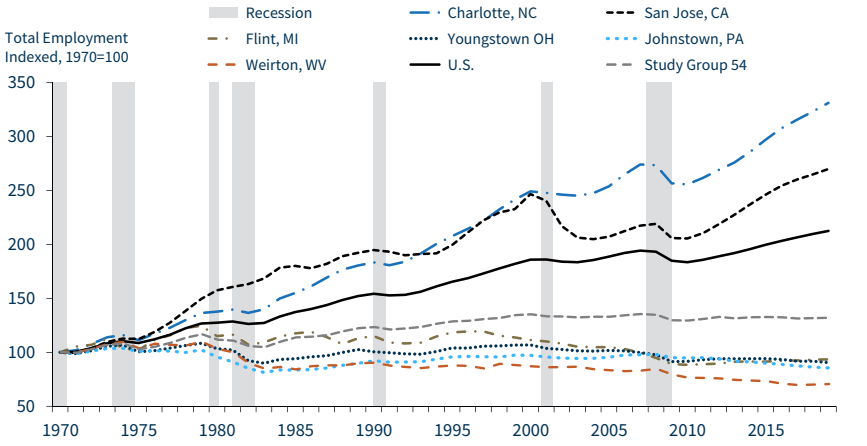
Source: Bureau of Economic Analysis (Haver Analytics).
Note: Personal income data for study group are annual figures through 2019. Recession shading is monthly. The Transition Score summarizes a metro's local employment share losses in nationally declining industries, adjusted for wages, between 1970 and 2019. The study group is composed of the 54 metros that have Transition Scores above 25 and slower employment growth than the nation between 1970 and 2019.

[12] Of the 48 small metros in the study group, nearly 90 percent had lower per capita personal incomes than the nation in 1970, and this share increased slightly by 2019.

Several metros were negative outliers because of high Transition Scores and outright employment losses, while a few stood out for resilience. Four metros—Youngstown, Ohio; Johnstown, Pennsylvania; Weirton, West Virginia; and Flint, Michigan—had the highest Transition Scores, outpacing other metro areas by a wide margin. These four metros lost employment over the study period, while most other metros in the study group had slow employment growth (Chart 5).[13] The primary metal manufacturing sector contributed the most to the Transition Score of three of the four metros, with the transportation equipment sector contributing the most in Flint, Michigan. Two large metros—San Jose, California, and Charlotte, North Carolina—had Transition Scores above 25 yet had employment growth well above the nation over the study period. Industrial transition in these metros was not driven by the same sectors as in the other four, as San Jose's primary contributor was the computer and electronic product manufacturing sector, while Charlotte's was the textile mill sector. San Jose successfully transitioned its economy to other technology-related sectors, while Charlotte successfully transitioned to a service-based economy.

Chart 5

Some High-Transition Metros Had Wide Variation in Employment Growth During the Past Several Decades



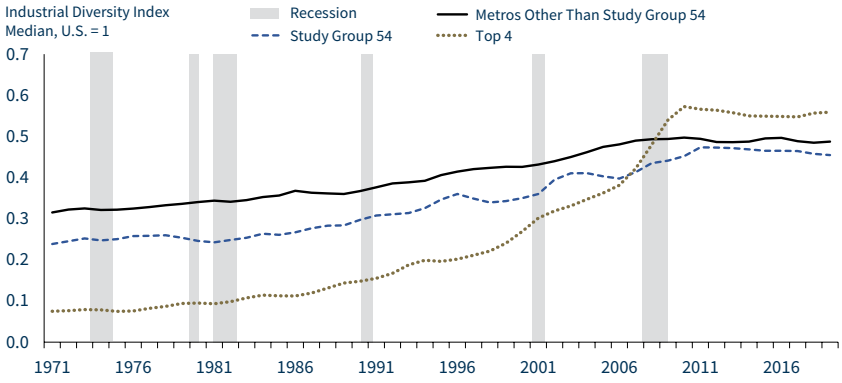
Sources: Bureau of Labor Statistics, Moody's Analytics, and National Bureau of Economic Research.
Note: Employment data are annual figures through 2019. Recession shading is monthly. The study group reflects the median for the group.

[13] These four metro areas also had larger employment losses than the other two metros in the study group that lost employment during this period (Elmira and Binghamton, New York).

High-transition metros overall, and especially the four metros with the highest Transition Scores, were also much more industrially concentrated than the nation at the beginning of the study period (Chart 6). However, due to severe losses in dominant industries, the four metros with the highest Transition Scores ended the study period with smaller concentrations and more relative industrial diversification than the rest of the study group. The study group remained more industrially concentrated than metros outside the study group, but the difference between the study group and the remaining metros shrank over the study period, particularly during and immediately after the Great Recession.

Chart 6

High-Transition Metros Have Become More Industrially Diverse as Highly Concentrated Industries Contracted



Source: Moody's Analytics.
Note: Industrial diversity data are annual figures through 2019. Recession shading is monthly. The metros with the top four Transition Scores are Youngstown, Ohio; Johnstown, Pennsylvania; Weirton, West Virginia; and Flint, Michigan. The Transition Score summarizes a metro's local employment share losses in nationally declining industries, adjusted for wages, between 1970 and 2019. High-transition metros are metros that have Transition Scores above 25.

Among the six outlier metros, the four with the highest Transition Scores struggled with transition, while San Jose and Charlotte performed well in spite of high Transition Scores. In the four metro areas hardest hit by transition—Youngstown, Ohio; Johnstown, Pennsylvania; Flint, Michigan; and Weirton, West Virginia—dominant industries (primarily manufacturing) eroded, total employment declined, populations declined and aged, and per capita income and GDP struggled. These metros were also hampered in their industrial transitions by factors such as weak demographic trends, natural disasters such as flooding, stressed municipal finances, and a lack of amenities such as major universities and favorable weather (see inset box for metro details).

YOUNGSTOWN, OHIO

Industry, Most Negative Transition in MSA	Primary Metal Manufacturing
1970 MSA Employment Share	23.3 percent
2019 MSA Employment Share	3.3 percent
1970–2019 Total MSA Employment Change	–9.5 percent
1970–2019 Total MSA Population Change	–19.3 percent

Note: Between 1970 and 2019, U.S. employment grew 112.5 percent and population grew 61.2 percent.

Primary metal manufacturing employment peaked in 1974 but declined in the following decades, bottoming out in 2009. The metro's share of primary metal manufacturing employment declined from more than 23 percent in 1970 to about 3 percent by 2019. The machinery manufacturing industry also declined sharply. A lack of local amenities may have hampered Youngstown's ability to attract new industries. Low educational attainment levels and an aging population also may have held back new industries and led to slower per capita personal income growth.

JOHNSTOWN, PENNSYLVANIA

Industry, Most Negative Transition in MSA	Primary Metal Manufacturing
1970 MSA Employment Share	21.5 percent
2019 MSA Employment Share	0.8 percent
1970–2019 Total MSA Employment Change	–14.4 percent
1970–2019 Total MSA Population Change	–30.3 percent

Note: Between 1970 and 2019, U.S. employment grew 112.5 percent and population grew 61.2 percent.

By the early 1980s, the majority of the primary metal manufacturing jobs had left Johnstown, and no dominant replacement industries emerged in the metro. The share of primary metal manufacturing employment in the metro declined from more than 20 percent in 1970 to less than 1 percent by 2019. The metro suffered from a history of flooding, and a 1977 flood from a dam failure contributed to the deterioration of the area's economic prospects when metal manufacturing was already in decline. A lack of local amenities and reputational damage from repeated flooding may have hampered Johnstown's ability to attract new industries.

WEIRTON, WEST VIRGINIA

Industry, Most Negative Transition in MSA	Primary Metal Manufacturing
1970 MSA Employment Share	28.8 percent
2019 MSA Employment Share	4.6 percent
1970–2019 Total MSA Employment Change	–29.5 percent
1970–2019 Total MSA Population Change	–30.3 percent

Note: Between 1970 and 2019, U.S. employment grew 112.5 percent and population grew 61.2 percent.

By the early 1980s, primary metal manufacturing employment in Weirton began sharply dropping as the U.S. steel industry declined. The share of primary metal manufacturing employment in the metro declined from nearly 29 percent in 1970 to less than 5 percent by 2019. Efforts to create employee ownership of the local operations of National Steel contributed to the area retaining some employment, but the employee-owned operation filed for bankruptcy in 2002. A lack of local amenities may have hindered Weirton's ability to attract industries to replace lost steel jobs.

FLINT, MICHIGAN

Industry, Most Negative Transition in MSA	Transportation Equipment Manufacturing
1970 MSA Employment Share	39.4 percent
2019 MSA Employment Share	4.2 percent
1970–2019 Total MSA Employment Change	–6.6 percent
1970–2019 Total MSA Population Change	–8.7 percent

Note: Between 1970 and 2019, U.S. employment grew 112.5 percent and population grew 61.2 percent.

Transportation equipment manufacturing jobs peaked in 1978 and declined in subsequent decades, bottoming out in 2009. The share of transportation equipment manufacturing employment in the metro declined from nearly 40 percent in 1970 to about 4 percent by 2019. A lack of amenities may have hampered Flint's ability to attract new industries, contributing to economic contraction and slower per capita personal income growth. The metro also suffered reputational damage from strained municipal finances and contaminated water between 2014 and 2016.

SAN JOSE, CALIFORNIA

Industry, Most Negative Transition in MSA	Computer and Electronic Manufacturing
1970 MSA Employment Share	23.8 percent
2019 MSA Employment Share	10.4 percent
1970–2019 Total MSA Employment Change	169.9 percent
1970–2019 Total MSA Population Change	83.3 percent

Note: Between 1970 and 2019, U.S. employment grew 112.5 percent and population grew 61.2 percent.

Computer and electronic manufacturing employment trended down from a mid-1980s peak and plunged after the "dot com" crash. The share of employment in this industry in the metro declined from more than 23 percent in 1970 to about 10 percent in 2019. However, professional, scientific, and technical services grew steadily during much of the past five decades, far surpassing computer and electronic manufacturing and now forming the metro's leading industry, aiding strong per capita income growth. Proximity to major universities may have helped supply research and employees for growth; other amenities such as favorable weather and coastal access also may have contributed to expansion.

CHARLOTTE, NORTH CAROLINA

Industry, Most Negative Transition in MSA	Textile Mills
1970 MSA Employment Share	19.9 percent
2019 MSA Employment Share	0.5 percent
1970–2019 Total MSA Employment Change	231.2 percent
1970–2019 Total MSA Population Change	256.2 percent

Note: Between 1970 and 2019, U.S. employment grew 112.5 percent and population grew 61.2 percent.

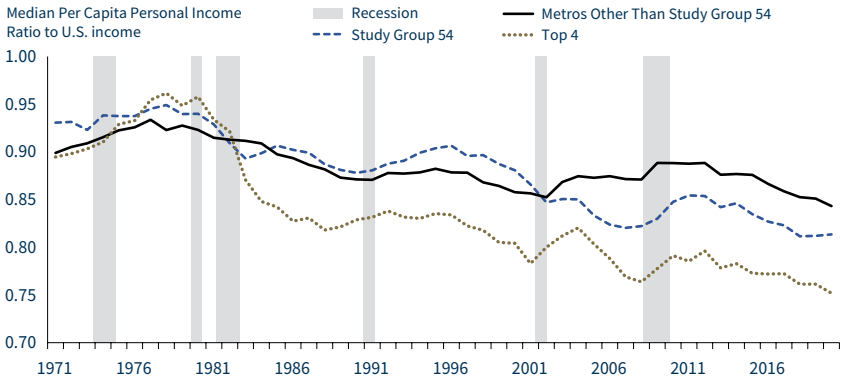
The share of textile mill employment in the metro declined from nearly 20 percent in 1970 to less than 1 percent by 2019. Charlotte transitioned to a service-based economy as new industries expanded to fill the void, aided in part by favorable business regulations that encouraged corporate relocations. Amenities include historical housing affordability, strong universities within the state, and favorable weather. Stronger economic growth led to faster per capita personal income growth than in the nation.

Compared to the four metro areas with the highest Transition Scores and negative employment growth, San Jose and Charlotte had strong employment, population, and income trends despite sizable transitions from formerly dominant industries (computer manufacturing in San Jose and textile manufacturing in Charlotte). Factors such as growth in professional, scientific, and technical services employment, proximity to major universities, and strong in-migration benefited these metros. In Charlotte, comparative housing affordability relative to the national average for much of the study period also may have contributed to business expansion.

Growth in per capita personal income among high-transition metros lagged national growth. The study group of 54 metros began the period with a median per capita personal income above the median of remaining metros, likely due to the study group's concentration of high-paying manufacturing jobs (Chart 7). Both the study group and the four metros with the highest Transition Scores held this advantage at the end of the 1970s. However, as the manufacturing sector began to contract in the 1980s, both groups lost their advantage over other metros, with the four highest-transition metros weakening the most. The study group regained an income advantage in the 1990s before falling below other metros after the early 2000s recession that particularly harmed the manufacturing sector. Per capita personal income of both groups remained below other metros through 2019.

Chart 7

High-Transition Metros Experienced Slower Per Capita Personal Income Growth

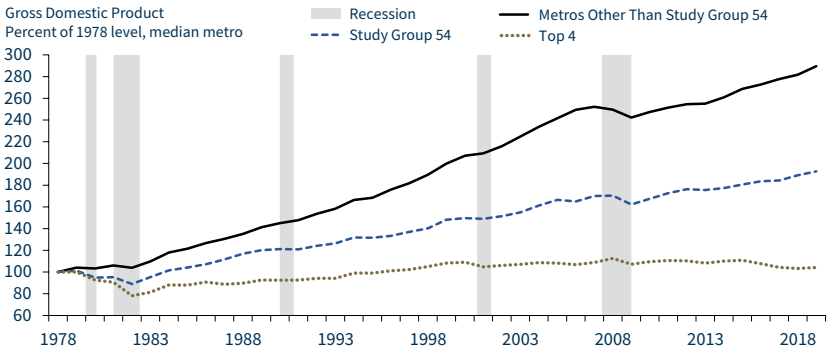


Source: Bureau of Economic Analysis (Haver Analytics).
Note: Personal income data are annual figures through 2019. Recession shading is monthly. The metros with the top four Transition Scores are Youngstown, Ohio; Johnstown, Pennsylvania; Weirton, West Virginia; and Flint, Michigan. The Transition Score summarizes a metro's local employment share losses in nationally declining industries, adjusted for wages, between 1970 and 2019. The study group is composed of the 54 metros that have Transition Scores above 25 and slower employment growth than the nation between 1970 and 2019. High-transition metros are metros that have Transition Scores above 25.

Output grew at a slower pace in high-transition metros. From 1978 to 2019, the median GDP of the 54-metro-area study group was consistently lower and grew less quickly than the median GDP of the remaining metros (Chart 8). The four metros with the highest Transition Scores saw especially muted GDP growth. These results are in line with employment growth trends discussed earlier.

Chart 8

Output Growth Trends of the Study Group Notably Underperformed Trends of Other Metros



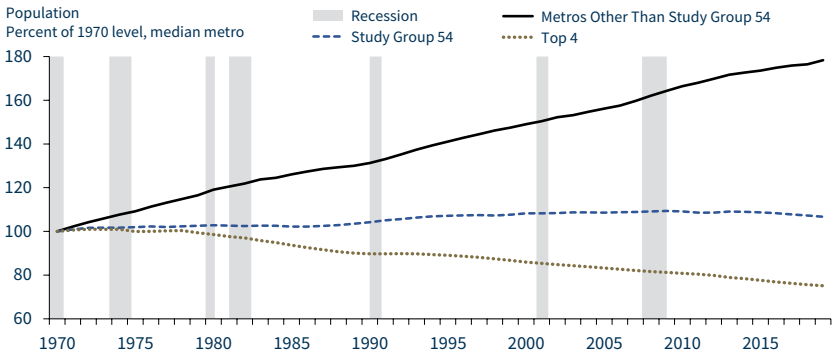
Sources: Census Bureau, Moody's Analytics, and National Bureau of Economic Research.
Note: Gross Domestic Product data are annual figures through 2019 and chained to 2012 U.S. dollars. Recession shading is monthly. The metros with the top four Transition Scores are Youngstown, Ohio; Johnstown, Pennsylvania; Weirton, West Virginia; and Flint, Michigan. The Transition Score summarizes a metro's local employment share losses in nationally declining industries, adjusted for wages, between 1970 and 2019. The study group is composed of the 54 metros that have Transition Scores above 25 and slower employment growth than the nation between 1970 and 2019.

Population trends in high-transition metros also sharply lagged performance in other metros. From 1970 to 2019, the overall population of the metros in the study group increased only marginally, growing just 4.9 percent in aggregate (Chart 9).[14] By contrast, the population of the remaining metros grew 78 percent in aggregate over the study period, more than 15 times the growth of the study group. Population in the four metros with the highest Transition Scores sharply declined over the study period. Areas with stronger employment prospects appeared to attract residents and increase population levels at the expense of study group metros.

[14] The median population growth of the study group metros was 6.7 percent from 1970 to 2019.

Chart 9

Study Group Population Growth Trends Notably Underperformed Trends of Other Metros

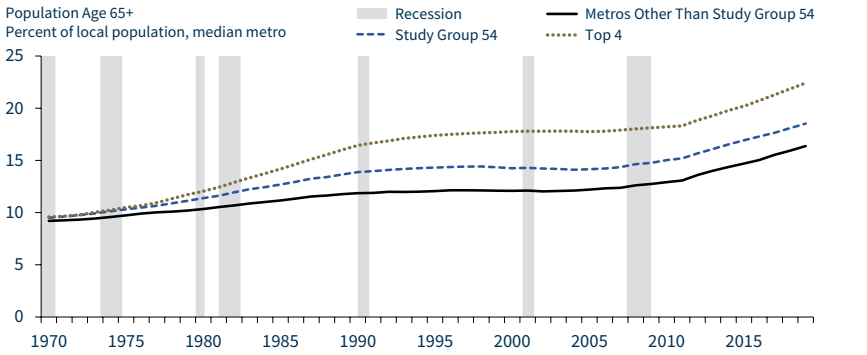


Sources: Census Bureau, Moody's Analytics, and National Bureau of Economic Research.
Note: Population data are annual figures through 2019. Recession shading is monthly. The metros with the top four Transition Scores are Youngstown, Ohio; Johnstown, Pennsylvania; Weirton, West Virginia; and Flint, Michigan. The Transition Score summarizes a metro's local employment share losses in nationally declining industries, adjusted for wages, between 1970 and 2019. The study group is composed of the 54 metros that have Transition Scores above 25 and slower employment growth than the nation between 1970 and 2019.

The population of high-transition metros also had more extreme aging trends than other metros. From 1970 to 2019, the study group's share of population over age 65 increased more than in the remaining metros (Chart 10). The share of the U.S. population 65 and older increased because of longer life expectancies and lower birth rates. But the share of the population aged 65 and over increased more in the 54-metro-area study group than in the remaining metros during the 1970s and 1980s, a trend that continued in later decades. Among the four metros with the highest Transition Scores, the share of population age 65 and older grew even more quickly. One possible cause is that those with dependent children may have been more inclined to move to areas with better employment options, accelerating the population aging trends in the study group. Across metro areas, national trends are also visible, notably the large segment of the U.S. population that began aging into the 65 and over category in the latter years of the study.

Chart 10

Population Aging Trends of the Study Group Notably Outpaced Trends of Other Metros



Sources: Census Bureau, Moody's Analytics, and National Bureau of Economic Research.
Note: Population data are annual figures through 2019. Recession shading is monthly. The metros with the top four Transition Scores are Youngstown, Ohio; Johnstown, Pennsylvania; Weirton, West Virginia; and Flint, Michigan. The Transition Score summarizes a metro's local employment share losses in nationally declining industries, adjusted for wages, between 1970 and 2019. The study group is composed of the 54 metros that have Transition Scores above 25 and slower employment growth than the nation between 1970 and 2019.

KEY BANKING FINDINGS

High-transition metros suffered through several painful decades of economic and demographic transition. These challenges were reflected in the financial performance and growth of community banks headquartered in those areas. But those banks also were resilient over the study period. Among the key themes that emerged from the banking analysis are that (1) community banks headquartered in high-transition metros seem to have been adversely affected by employment and demographic challenges in their communities, but (2) overall the differences between their performance and that of community banks in other areas were not as striking as the economic analysis would have suggested. In addition, community banks in high-transition metros performed better than other community banks during periods of significant economic stress.

This portion of the study compares two groups of banks: community banks headquartered in the previously defined group of 54 metro areas with high Transition Scores (referred to in this study as "high-transition banks") and community banks headquartered in the remaining 329 metro areas (referred to as "other metro banks"). The study analyzes community banks rather than the entire set of banks because community banks tend to be more economically tied to their headquarters area than noncommunity banks.[15] The period of study for the banking analysis spans 35 years, from first quarter 1984, the earliest

[15] This analysis excludes community banks headquartered outside metro areas and all noncommunity banks.

date that Call Report data are broadly available, through fourth quarter 2019, to match the endpoint of the study's economic analysis. Specific comparisons between high-transition banks and other metro banks are categorized into two broad areas: structural changes and bank financial performance.

STRUCTURAL CHANGES

Consolidation was common across the banking industry over the study period but slightly more prevalent in high-transition metros. The overall consolidation of the banking industry since 1984 is well chronicled. Systemic changes, such as relaxation of interstate banking rules and technological advances like electronic banking, affected banking organizations across the country. During the 35-year banking study period, the aggregate count of community banks in high-transition metros declined 75 percent, from 862 in first quarter 1984 to 218 at the end of 2019. The number of community banks in other metros declined 73 percent, from 7,921 to 2,162. As a result of these consolidation patterns, 31.5 percent of high-transition metros were left with one or no community banks in 2019; this was also the case in 27.5 percent of other metros.

High-transition metros had a lower rate of new bank activity than other metros. For example, during the banking study period, high-transition metros added new charters at an average of 1.5 percent of existing banks per year, compared to 2.6 percent for other metros. In addition, banks relocated to high-transition metros at half the rate of other metros. Together, these factors point to substantially less new bank activity in high-transition metros.

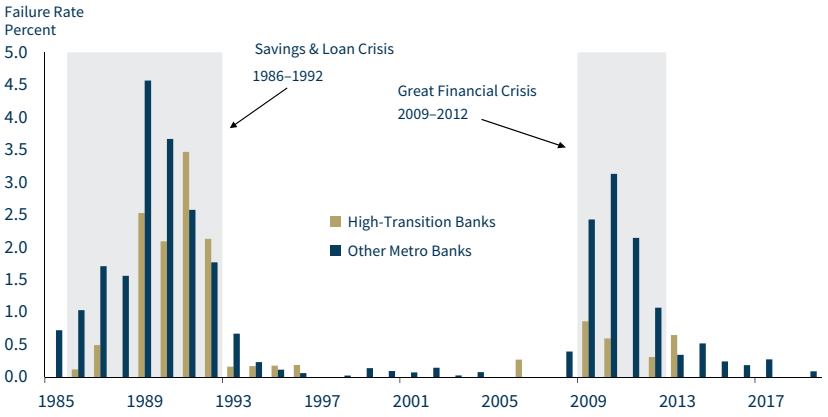
Bank failure rates were lower in high-transition metros than other metros, particularly during two periods of elevated economic stress. During the banking study period, banks in high-transition metros failed on average at half the rate of banks in other metros. A closer look at failure rates reveals two periods in which annual failure rates exceeded 1 percent for either group: 1986 to 1992, during the savings and loan crisis (S&L crisis), and 2009 to 2012, during and in the immediate aftermath of the Great Financial Crisis (GFC).[16] During these two periods of banking stress, failure rates of banks in high-transition metros were lower than failure rates in other metros in all but two years (Chart 11). During the S&L crisis from 1986 to 1992, 15.0 percent of other metro banks failed, compared to just 9.1 percent of high-transition

[16] FDIC, *History of the Eighties*, https://www.fdic.gov/bank/historical/history/3_85.pdf; and FDIC, *Crisis and Response: An FDIC History, 2008–2013*, https://www.fdic.gov/bank/historical/crisis/overview.pdf. Annual failure rates were less than 1 percent between 1984 and 2019, with the exception of the periods of significant economic stress.

banks. This disparity was even greater during the GFC period from 2009 to 2012, when 8.4 percent of other metro banks failed, compared to just 1.7 percent of high-transition banks. This topic is explored further in the Bank Financial Performance section.

Chart 11

High-Transition Banks Had Substantially Lower Failure Rates During Times of Economic Stress



Source: FDIC.
Note: Data are quarterly from first quarter 1984 through fourth quarter 2019. High-transition banks are those community banks headquartered in any of the 54 high-transition metros.

Banks in high-transition metros had weaker branch and deposit activity than banks in other metro areas. High-transition banks lost 15 percent of their branches between 1987 and 2019, contrasting sharply with a 6 percent increase in branches in other metros (Table 4).[17] High-transition banks had aggregate deposit growth over this period at less than half the rate of other metro banks, 155 percent compared with 375 percent. This disparity contributed to a difference in the percentage increase in the ratio of deposits per branch between the two metro groups, as deposits per branch rose 201 percent at high-transition banks and increased 349 percent at other metro banks.

Table 4

Community Banks in High-Transition Metros Had Weaker Branch and Deposit Growth

	1987			2019			Percent Change		
	Number of Branches	Total Deposits (Mil)	Deposits/ Branch	Number of Branches	Total Deposits (Mil)	Deposits/ Branch	Number of Branches	Total Deposits	Deposits/ Branch
High-Transition Banks	7,777	$266,315	$34,244	6,603	$679,887	$102,966	-15%	155%	201%
Other Metro Banks	57,576	$2,343,782	$40,708	60,988	$11,137,172	$182,613	6%	375%	349%

Source: FDIC Summary of Deposits.
Note: High-transition banks are those community banks headquartered in any of the 54 high-transition metros.

[17] Summary of Deposits data begin in 1987 and measure deposit data at the branch level, rather than the bank charter level.

BANK FINANCIAL PERFORMANCE

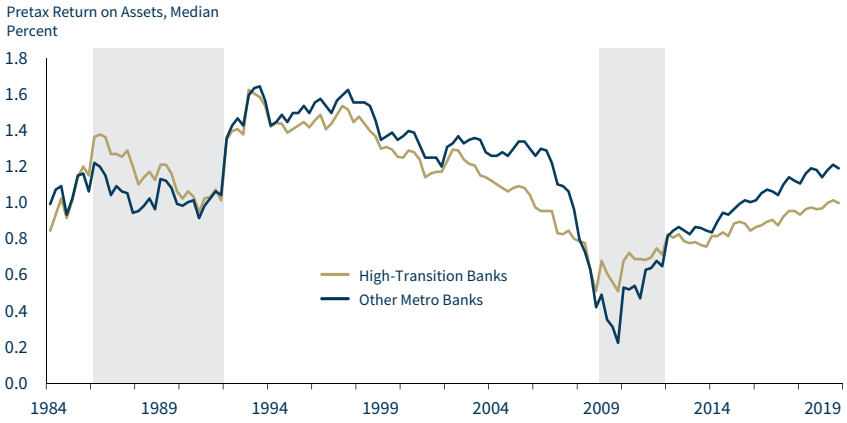
Except for during the S&L crisis and GFC, high-transition banks had overall weaker financial performance than other metro banks during the banking study period.[18] Differences in the financial performance between the two groups were analyzed based on profitability, asset quality, and loan growth. Although financial performance trends followed similar paths, high-transition banks were generally less profitable, had higher past-due loan ratios, and had weaker loan growth than other community banks throughout most of the banking study period. However, in the periods surrounding the S&L crisis and the GFC, high-transition banks tended to outperform other metro banks; weaker financial performance trends resumed following the crises.

The disparity in profitability between bank types is partly because high-transition banks had lower median net interest margins than other banks throughout the entire study period. This disparity ranged from a high of 71 basis points to a low of just 5 basis points during the GFC, before widening again in the latter years of the study. Throughout the study period, high-transition banks were less profitable despite reporting lower noninterest and provision expenses and maintaining lower loan loss reserves in relation to gross loans. During the S&L crisis and the GFC, other metro banks increased provision expenses substantially. As a result, the divergence between median provision expense ratios of the two groups more than quadrupled, indicating considerably greater financial stress for other metro banks. Lower provision expenses among high-transition banks helped offset the stronger net interest margins of the other metro banks during these stress periods. Overall, lower net interest margins largely explain why the high-transition group generated lower pretax return on assets (ROA) outside periods of financial stress, while lower provision expenses help explain why they had stronger earnings during periods of financial stress (Chart 12).

[18] Financial performance comparisons are based on median ratios and do not take into account significant transformations in the financial services industry related to regulatory change, technological innovations, migration patterns, and survivor bias.

Chart 12

High-Transition Banks Had Higher Profitability During Times of Severe Economic Stress

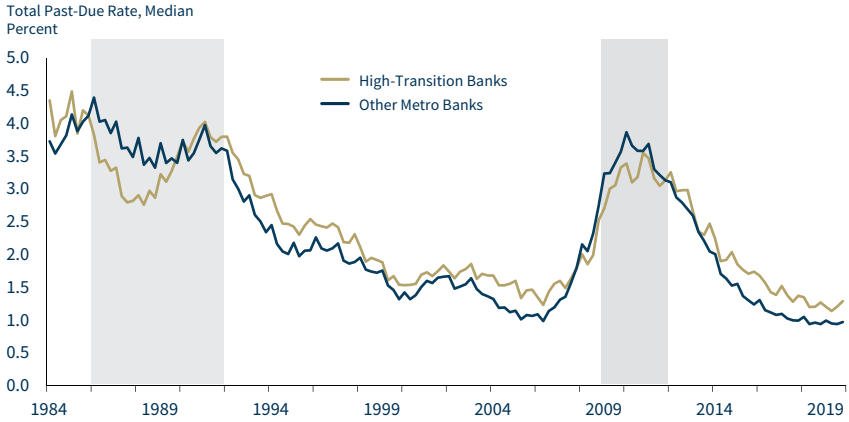


Source: FDIC.
Note: Data are quarterly from first quarter 1984 through fourth quarter 2019. High-transition banks are those community banks headquartered in any of the 54 high-transition metros. The left shaded area represents the savings and loan crisis, and the right shaded area represents the Great Financial Crisis.

Except for in periods of banking stress, asset quality and loan growth were somewhat weaker among high-transition banks. For the vast majority of the 35-year banking study period, high-transition banks had higher delinquency rates (both 30–89 days past due and noncurrent loan rates), higher loan loss rates, and lower allowance coverage of noncurrent loans. High-transition banks outperformed other metro banks in these asset quality metrics primarily during or immediately after the two periods of economic stress (Chart 13).

Chart 13

High-Transition Banks Reported Lower Delinquency Rates During Times of Severe Economic Stress

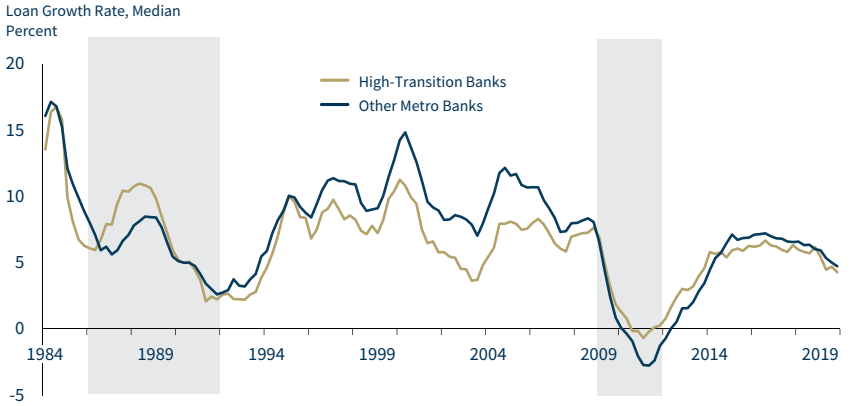


Source: FDIC.
Note: Data are quarterly from first quarter 1984 through fourth quarter 2019. High-transition banks are those community banks headquartered in any of the 54 high-transition metros. The left shaded area represents the savings and loan crisis, and the right shaded area represents the Great Financial Crisis.

This pattern was similar for loan growth. High-transition banks reported a loan growth rate 167 basis points lower than that of other banks in non-stress periods, but a growth rate 99 basis points higher than that of other metro banks during the two periods of stress (Chart 14). This pattern occurred across most loan segments, especially in the immediate aftermath of the GFC.

Chart 14

Loan Growth for High-Transition Banks Was Weaker, Except During Periods of Economic Stress



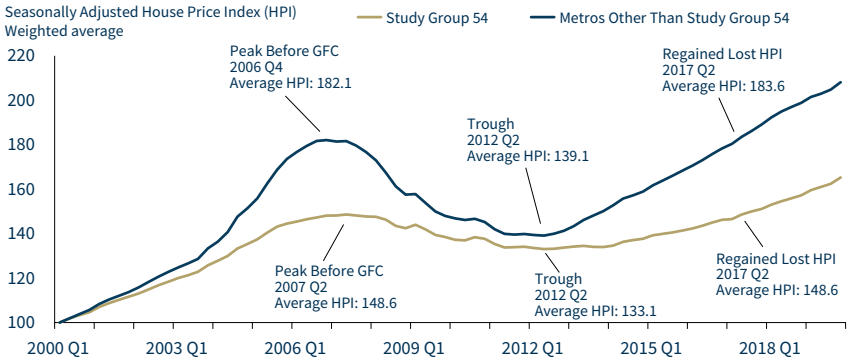
Source: FDIC.
Note: Data are quarterly from first quarter 1984 through fourth quarter 2019. High-transition banks are those community banks headquartered in any of the 54 high-transition metros. The left shaded area represents the savings and loan crisis, and the right shaded area represents the Great Financial Crisis.

Banks in high-transition metros had lower exposure to loans typically associated with business activity and higher exposure to single-family residential (SFR) loans. Throughout the study period, SFR loans ranged between 40 and 56 percent of the median loan portfolio for high-transition banks, compared with 24 to 34 percent of the median loan portfolio for other metro banks. SFR was the only major loan category in which high-transition banks consistently reported a higher share of total loans than other metro banks. High-transition banks had generally lower exposure to nonfarm nonresidential real estate, commercial and industrial (C&I), and construction and development loans throughout the study period.

Because high-transition metros had slower economic growth and demographic challenges, house price appreciation did not occur at nearly the pace of other metros (Chart 15). This partially manifested itself in more shallow housing bubbles. For example, during the GFC, the average Federal Housing Finance Agency House Price Index for high-transition metros declined by about 10 percent, while the index for other metros declined by 24 percent. This likely helped high-transition banks weather the SFR loan losses that many other banks experienced. Still, after hitting a trough in house prices, the recovery in prices in high-transition metros was much less robust than in other metro areas. Despite their different paths, home prices in both high-transition metros and other metros both recovered from the GFC in second quarter 2017. But since then, home prices in high-transition metros have continued to rise at a slower trajectory, underscoring the challenges in their economies relative to that of other metros.

Chart 15

High-Transition Metro Home Values Underperformed Those in Other Metros



Sources: FHFA House Price Index (HPI) and Moody's Analytics.
Note: Quarterly HPI data are seasonally adjusted by Moody's, scaled to first quarter 2000, and weight-averaged by population. The Villages metro is excluded from the other metros group because its full-time series of data is not available. The Transition Score summarizes a metro's local employment share losses in nationally declining industries, adjusted for wages, between 1970 and 2019. The study group is composed of the 54 metros that have Transition Scores above 25 and slower employment growth than the nation between 1970 and 2019. High-transition metros are metros that have Transition Scores above 25. GFC is Great Financial Crisis.

While high-transition community banks as a group did not perform as well as their counterparts in other metros, some of these banks achieved better financial and structural performance. Of all high-transition banks, 32 banks (referred to here as "high-performing banks") ranked within the best-performing half of all 218 high-transition banks in terms of pretax ROA, total loan growth, and past-due rates.[19] These 32 banks were located throughout the footprint of high-transition metros, with no noticeable geographic clustering, and had no correlation with the metros with the highest economic Transition Scores.

A closer look at the performance of these 32 high-performing banks reveals better pretax earnings, stronger loan growth, and lower delinquency rates than the other 186 banks in high-transition metros. This subset of high-transition banks also had more favorable performance by these measures than the typical community bank located outside of a high-transition metro area for much of the banking study period. For example, high-performing banks had a higher median pretax ROA than that of other metro banks in 81 percent of the 144 quarters measured. Compared with community banks in other metros, these 32 high-performing banks also had a higher median loan growth rate nearly 78 percent of the time and a lower past-due rate more than 81 percent of the time. Finally, these 32 banks outperformed other metro banks in all three performance measures more than half the time.

High-performing banks in high-transition metros differed from underperforming banks in high-transition metros and other metro banks in several important ways in terms of balance sheet structure, asset size, and market strategy:

- **Loan Composition**: While high-transition banks had higher concentrations of SFR loans and a lower share of business-related loans, the 32 high-performing banks had a higher share of C&I and nonfarm nonresidential loans than both underperforming banks *and* other metro banks for most of the study period. These high-performing banks also had higher levels of construction lending than underperforming banks but not quite as much as other metro banks. Their emphasis on commercial lending increased over time as well.

[19] Additional criteria for high-performing banks in high-transition metros were that they were headquartered in these metros for more than half of the review period, or at least 18 years, and were operating at the conclusion of the analysis period in fourth quarter 2019.

- **Funding Growth and Type**: Stronger loan growth at high-performing banks was supported by more robust deposit growth and greater use of noncore funding. These 32 banks had higher median deposit growth than both underperforming banks and other metro banks in more than 80 percent of the banking study period, and they made greater use of noncore funding than underperforming banks, but especially in the last decade of the analysis between 2010 and 2019. High-performing banks made greater use of noncore funding than both underperforming and other metro banks most of the time.
- **Bank Size**: High-performing banks were generally much larger than underperforming and other metro banks, with median assets of more than $1 billion as of fourth quarter 2019, compared with median assets of $350 million among the 186 other high-transition banks and $291 million among the 2,162 other metro banks. Asset size may have played a role in supporting the business strategy of high-performing banks, as it allowed them to extend operations outside of high-transition metros.
- **Market Area**: High-performing banks had nearly a third of their branches outside their primary metro area and gathered a fifth of their deposits from these branch locations, a larger share than both underperforming banks in high-transition metros and other metro banks. Importantly, this relationship held when comparing only banks with assets between $1 billion and $10 billion for these three groups, suggesting that greater external exposure may have resulted from a strategy used by high-performing, high-transition banks rather than being just the result of bank size differences between the groups. While the FDIC does not have branch-level loan data, branches of high-performing banks outside high-transition metros may have contributed to the ability of high-performing banks to emphasize commercial lending more than their counterparts.

Although this small group of high-transition banks had effective strategies to combat their economic challenges, they are outliers in the study rather than the norm. While this analysis does not evaluate the risk-reward structure of these high-performing banks' strategies, their success despite their headquarter areas' demographic and economic challenges is notable. In contrast, the remaining high-transition banks (186 banks as of 2019) underperformed other metro banks throughout most of the study period. This group of high-transition banks had lower median pre-tax ROA in more than 80 percent of the study period and in every quarter outside the two periods of severe financial stress. This group similarly underperformed other metro banks in terms of median delinquency rates and loan growth.

CONCLUSION

The United States underwent significant economic transition between 1970 and 2019 when the manufacturing sector declined. While the national economy continued to grow, many metro areas that were particularly concentrated in contracting industries experienced substantial industrial transition that adversely affected economic and demographic conditions. These metros are primarily in the Northeast and Midwest, although some are in the South. The experience of this group of 54 metros may provide insight into future challenges for metros that rely on one or two key industries with potential for transition, particularly metro areas with concentrations in industries exposed to changing demand from alternative forms of energy and emerging lower carbon technologies. As shown in the analysis and review of outlier metros, higher industrial diversity, proximity to research universities, and strong in-migration may mitigate negative effects from industrial transition.

Community banks headquartered in high-transition metro areas were resilient, while the communities they serve experienced heightened industrial transition and performed reasonably well in relation to community banks in other areas. During the study period, community banks in affected areas failed at lower rates overall than community banks in other metro areas, especially during periods of great economic and banking stress, such as during the S&L crisis of the late 1980s and early 1990s and during the Great Financial Crisis of 2009 to 2012. Perhaps their financial performance, albeit generally weaker than other metro banks over the study period, was not as different as their areas' economic and demographic challenges would have implied.

While the significant industrial transition the U.S. has undergone since 1970 may provide insights into the economic and banking effects of a future industrial transition, this analysis is not intended to be dispositive or to predict how climate-related financial risks from transition would transpire. Rather, this analysis can be considered a starting point for further discussion and analysis of potential climate-related transition risks.

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APPENDIX: DETAILED CALCULATIONS OF TRANSITION SCORES FOR TWO SAMPLE METROS ARE SHOWN IN FIGURES A AND B.

Figure A:
Transition Score Calculation Example: Youngstown, Ohio

Accounts for multiplier effects

MSA	Dec–1970	PP Chg in Share of Total Empl 1970–2019	X Wage Ratio	= PP Chg Wtd Wage	MSA Sum
Youngstown, OH-PA Metropolitan Statistical Area					**52.1**
Total nonfarm payroll	239.82				
Apparel manufacturing	0.12	-0.04	0.57	0.02	
Chemical manufacturing	0.50	-0.10	1.25	0.13	
Computer and electronic product manufacturing	5.12	-1.87	1.20	2.25	
Electrical equipment; appliance; and component manufacturing	3.66	-1.27	0.88	1.13	
Fabricated metal product manufacturing	10.32	-1.93	1.07	2.06	
Furniture and related product manufacturing	2.25	-0.78	0.84	0.66	
Leather and allied product manufacturing	0.27	-0.10	0.66	0.07	
Machinery manufacturing	16.05	-5.32	1.20	6.41	
Mining (except oil and gas)	0.51	-0.17	1.30	0.22	
Miscellaneous manufacturing	1.05	-0.18	0.89	0.16	
Nonmetallic mineral product manufacturing	2.42	-0.70	1.05	0.74	
Oil and gas extraction	0.04	0.05	1.77	0.00	
Paper manufacturing	0.55	-0.06	1.11	0.06	
Petroleum and coal products manufacturing	0.10	0.02	1.45	0.00	
Primary metal manufacturing	55.88	-19.95	1.74	34.67	
Printing and related support activities	0.92	-0.25	1.03	0.26	
Rail transportation	0.29	-0.01	1.29	0.01	
Telecommunications	2.24	-0.72	1.46	1.05	
Textile mills	0.02	0.00	0.82	0.00	
Textile product mills	1.05	-0.28	0.72	0.20	
Transportation equipment manufacturing	6.08	-1.61	1.22	1.96	
Water transportation	0.05	0.00	1.45	0.00	

Note: MSA is Metropolitan Statistical Area. PP Chg is percentage point change. Empl is employment. Wtd is weighted.

Figure B:
Transition Score Calculation Example: Spartanburg, South Carolina

MSA	Dec–1970	PP Chg in Share of Total Empl 1970–2019	Wage Ratio	PP Chg Wtd Wage	MSA Sum
Spartanburg, SC Metropolitan Statistical Area					**31.5**
Total nonfarm payroll	74.28				
Apparel manufacturing	1.61	-2.12	0.57	1.21	
Chemical manufacturing	2.66	-1.95	1.25	2.43	
Computer and electronic product manufacturing	0.07	0.04	1.20	0.00	
Electrical equipment; appliance; and component manufacturing	0.33	0.38	0.88	0.00	
Fabricated metal product manufacturing	1.41	-0.37	1.07	0.40	
Furniture and related product manufacturing	0.07	-0.01	0.84	0.01	
Leather and allied product manufacturing	0.01	0.00	0.66	0.00	
Machinery manufacturing	1.06	-0.42	1.20	0.51	
Mining (except oil and gas)	0.08	-0.02	1.30	0.02	
Miscellaneous manufacturing	0.45	-0.33	0.89	0.30	
Nonmetallic mineral product manufacturing	0.31	-0.03	1.05	0.03	
Oil and gas extraction	0.00	0.00	1.77	0.00	
Paper manufacturing	0.81	-0.38	1.11	0.42	
Petroleum and coal products manufacturing	0.02	0.01	1.45	0.00	
Primary metal manufacturing	0.17	-0.10	1.74	0.18	
Printing and related support activities	0.56	-0.25	1.03	0.25	
Rail transportation	0.12	-0.10	1.29	0.13	
Telecommunications	0.31	-0.21	1.46	0.30	
Textile mills	21.76	-27.79	0.82	22.85	
Textile product mills	2.76	-3.35	0.72	2.41	
Transportation equipment manufacturing	0.52	9.24	1.22	0.00	
Water transportation	0.03	-0.01	1.45	0.01	

Growing sector not included in transition sum.

Note: MSA is Metropolitan Statistical Area. PP Chg is percentage point change. Empl is employment. Wtd is weighted.