

**Adam Scavette** is a senior economic analyst at the Federal Reserve Bank of Philadelphia. The views expressed in this article are not necessarily those of the Federal Reserve.

# Evaluating Metro Unemployment Rates Throughout the Business Cycle

Not all unemployment is the same, especially when comparing RVs with MDs.

BY ADAM SCAVETTE

Over 80 percent of the world’s recreational vehicle (RV) production occurs in or near Elkhart, IN, so it’s no wonder that, for decades, Elkhart has been known as the RV capital of the world.<sup>1</sup> Thanks in part to RVs, Elkhart’s unemployment rate was comfortably below the national rate in 2007—but then RV sales plummeted two years in a row, a signal that American consumers could no longer afford high-ticket luxury goods.<sup>2</sup> By the depths of the Great Recession in mid-2009, nearly one-fifth of Elkhart’s labor force was unemployed. However, Elkhart’s labor market quickly recovered, with unemployment declining to 2.3 percent in 2018, far lower than the national rate. Elkhart is at the center of a cyclically sensitive regional economy: When the nation does well, Elkhart does even better, but when the nation struggles, Elkhart does even worse. Although other metro areas experience similar swings, most metro areas do not swing as intensely.

In any month, regional labor market conditions vary greatly across the nation. In April 2019, the U.S. unemployment rate fell to 3.6 percent, the lowest rate since December 1969, but among the 50 states in that same month, unemployment ranged from a low of 2.2 percent in Vermont to a high of 6.5 percent in Alaska. Of the 389 metropolitan statistical areas (MSAs) tracked by the Bureau of Labor Statistics (BLS), there is even more variation, from a low of 1.3 percent in Ames, IA, to a high of 16.2 percent in El Centro, CA (Figure 1).<sup>3</sup> Although slight differences in methodology partly account for these differences in unemployment rates, these rates accurately depict a multitude of labor markets, each shaped by local industry makeup,

labor skill supply, and the interaction of institutions in the marketplace for labor.<sup>4</sup>

By studying unemployment trends across metro areas, regional economists gain key insights about local conditions. However, regional economists don’t have access to the same information that macroeconomists use to study the nation’s overall economic health. For example, macroeconomists use quarterly GDP estimates, monthly inflation estimates, and industrial production data, but those numbers are absent or infrequent at the state and MSA levels. Therefore, economists who study local areas often rely on employment data to assess local economic activity.

This article explores metropolitan employment rates to understand why they differ and what makes them more or less sensitive across business cycles. With this knowledge, we can better understand both what to expect from local labor markets and how policymakers think about differences between these markets.

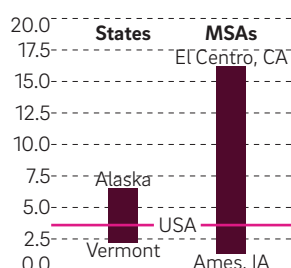
## What the Unemployment Rate Tells Us

The official unemployment rate<sup>5</sup> calculated by the BLS and quoted in the media is known as U-3,<sup>6</sup> or the total unemployed as a percent of the civilian labor force. Under U-3, unemployed persons are willing and able to work and have actively looked for employment within the past four weeks. Employed persons must have completed at least some work for pay during the week the BLS conducted its survey. This measure includes full-time, part-time, and temporary work. The labor force is the total number of employed and unemployed persons in an economy.<sup>7</sup>

Economists use the unemployment rate to gauge the strength of the labor market. Although economists typically seasonally adjust the rate to account for predicted dynamics throughout the year, such as an increase in hiring during certain holiday seasons, the unemployment rate is trendless, unlike variables such as payroll employment and gross domestic product. Economists also use the unemployment rate to assess business cycles. The National Bureau of Economic Research (NBER) notes that the

**FIGURE 1**  
**Unemployment Varies Widely by State & Metro**

Percent unemployment rate, April 2019



Source: Bureau of Labor Statistics.

unemployment rate often begins to rise before the peak of economic activity, signaling the end of an economic expansion, but continues to rise after economic activity has fallen to its trough, making it a lagging indicator of an economic recovery.<sup>8</sup> So the unemployment rate, even though it leads and then lags, reflects cyclical economic activity. Economic activity somewhat affects the labor force (the denominator of the unemployment rate), but so too do demographic trends unrelated to the business cycle.<sup>9</sup> For example, when population growth slows or the population ages, there will be downward pressure on the labor force, which increases the unemployment rate.<sup>10</sup>

Economists tend to categorize unemployed persons by their type of unemployment. Frictional unemployment typically occurs voluntarily and temporarily when individuals transition between jobs. Examples include seasonal employment, voluntary quitting, or during the transition from full-time education to a first-time job. Structural unemployment results from a mismatch between the skill levels of the unemployed and the jobs available (economists sometimes refer to this as a “skills gap”), perhaps due to changes in the jobs’ technological skill requirements or the changing industrial makeup of an economy. Cyclical unemployment occurs when economic output declines as a result of the fluctuating business cycle.

Because the first two categories persist through good economic times, economists generally refer to them as “natural unemployment.” It is cyclical unemployment that policymakers typically use to gauge the health of the labor market. According to policymakers, in the absence of economic shocks the U.S. economy can sustain a natural rate of unemployment between 3.75 and 4.5 percent.<sup>11</sup> However, estimates of the natural rate of unemployment are often imprecise and, because of demographic differences, vary by region.

Exploring these regional variations, Parker (2015) finds that states with a larger proportion of people aged 16 to 24 tend to have a higher natural rate of unemployment, and states with a higher average level of education have a lower natural rate of unemployment. While the causality of the relationship between

demographic factors and subnational unemployment rates is unclear, it is helpful to keep these and other unique demographic factors in mind when evaluating a region’s labor market conditions.

There is even more volatility in unemployment rates among metro areas. Although the middle 50 percent of metro areas closely tracked the U.S. unemployment rate during the past 30 years, there is considerable variation outside of that range, and the unemployment rates in certain MSAs differ greatly from the nation’s unemployment rate.

### Analyzing Cyclical Sensitivity

One way to analyze metro unemployment rates is to determine how cyclically sensitive they are compared with the nation’s unemployment rate—that is, how responsive a specific metro area’s unemployment rate is to the national business cycle. For example, if the national economy is in recession, then a cyclically sensitive metro area might have a higher unemployment rate than the nation overall. Similarly, during a boom in economic activity a cyclically sensitive metro area might have a lower unemployment rate. Conversely, a cyclically insensitive metro area would resist these national trends and swing less than the nation.

In order to quantify a metro area’s cyclical sensitivity, we use a formula that compares its unemployment rate to the nation’s across recessionary periods, which we refer to as “business cycle turning points.” A metro area with a cyclical sensitivity value close to 1 would be as sensitive to the business cycle as is the nation, while a metro area with a value

less than 1 would be less sensitive, and a metro area with a value greater than 1 would be more sensitive. We calculate these values across all MSAs over the last three turning points in the U.S. business cycle and report the mean of the three turning-point measures for each metro area. To define our turning points, we use the troughs and peaks of the U.S. unemployment rate instead of the official NBER recession dates (Figure 2).

Why are some metro areas more cyclically sensitive or volatile than others (Figure 3)? Domazlicky (1980) points out that regional cyclical amplitudes differ due to industrial structure and trade relations.<sup>12</sup> Regional industrial structure refers to the differences in the composition of output produced by an area. This is important because consumption output (for example, purchases of food and clothes) is typically more stable and less cyclically sensitive than investment output (for example, buying machinery and buildings), so the balance between these two categories of consumption should affect that region’s sensitivity. Regional trade relations refer to the extent and stability of regional ties through trade (self-sustaining vs. exported structure); trade refers to any exchange of goods and services outside of the metro area, not just international exchanges.

Interregional models of business cycles<sup>13</sup> show that regions with a relatively large proportion of investment or exportable goods in its output mix tend to lead national cycles and experience cycles of larger amplitude. Manufactured durable goods (like RVs) and construction are examples of investment goods that are sensitive to cyclical fluctuations. Peterson and Manson (1982) point out that durable

**FIGURE 2**  
**Business Cycle Turning Points**  
Percent U.S. unemployment rate, 1990–2019

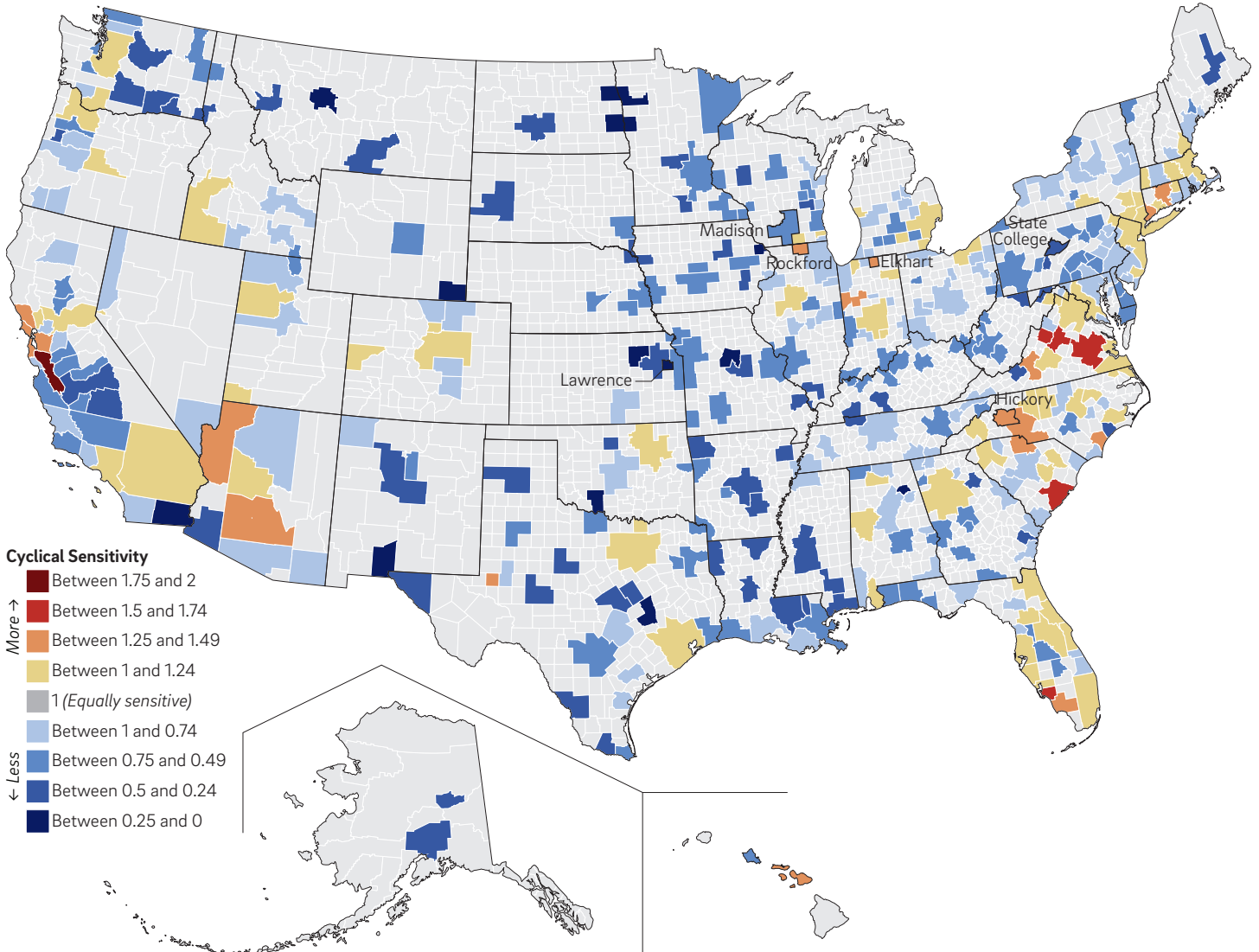


Source: Bureau of Labor Statistics.

FIGURE 3

### Cyclical Sensitivity Index

There is significant variation in the cyclical sensitivity of metro area unemployment rates across the nation. Average over three business cycle turning points from 1990–2019; see Figure 2

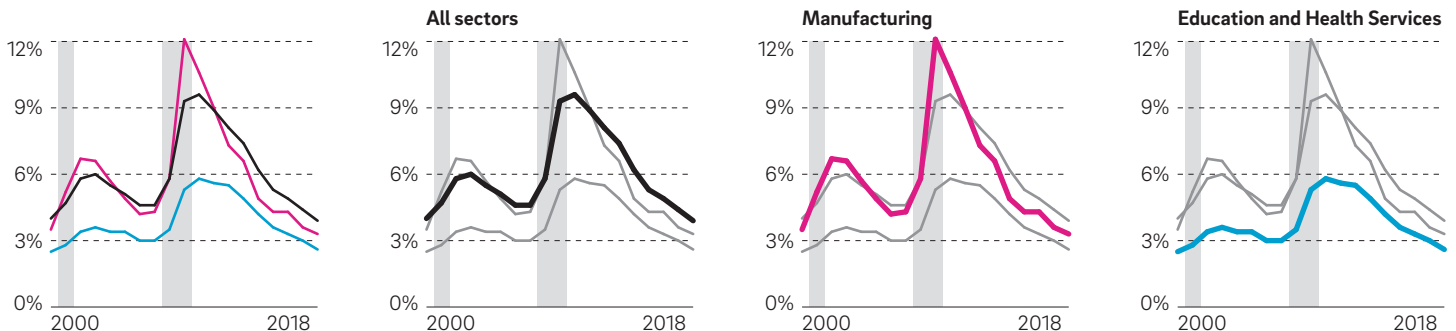


Source: Bureau of Labor Statistics, author's calculations.

FIGURE 4

### Not All Sectors Experience the Same Unemployment

During recessions, manufacturing does worse than the U.S. overall, while "eds and meds" does better. Percent U.S. unemployment rate for select sectors, 2000–2018



Source: Bureau of Labor Statistics.

goods and construction are associated with major expenditures for items that remain in service for many years. Often, these items replace older items whose serviceable lives can be stretched, so businesses may be tempted to delay these major expenditures in uncertain times. That makes durable goods and construction particularly sensitive to cyclical fluctuations. We might observe this highly cyclical effect in manufacturing employment, as manufactured goods are typically exports for a region (as opposed to local services such as restaurants and healthcare services).

The manufacturing unemployment rate is highly cyclically sensitive, in that it tends to be higher than the overall unemployment rate during recessions and lower than the overall unemployment rate during expansions. However, the unemployment rate for educational and health services (often called “eds and meds” by economists) does not appear very cyclically sensitive: Its rate lies below the overall unemployment rate for the entire length of the series and experiences minimal fluctuations (Figure 4).

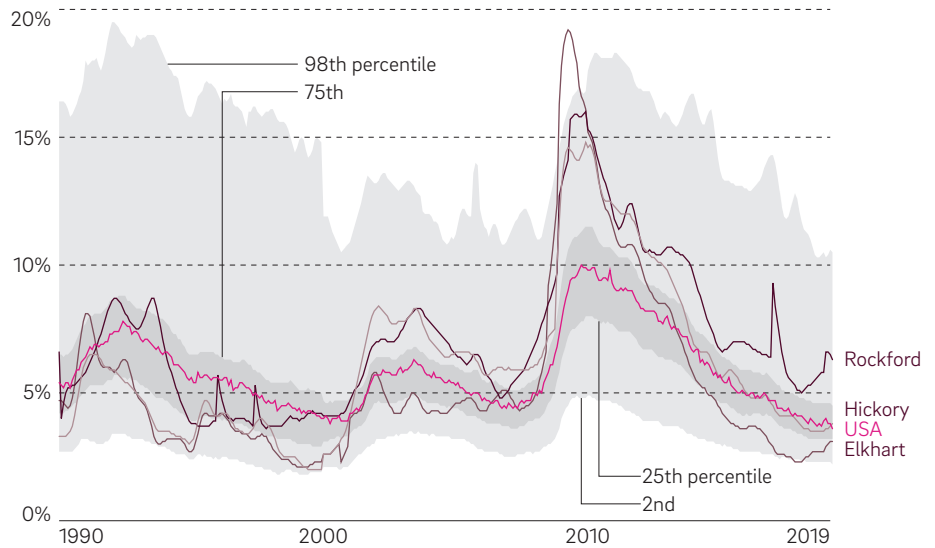
These differences in cyclical sensitivity become clear when we examine some MSAs that are heavily focused in these industries. In the U.S., 8.5 percent of employment is concentrated in manufacturing, but in Hickory, NC, it is 28 percent, in Rockford, IL, it is 22 percent, and in Elkhart, IN, it is 50 percent. Unemployment rates are far more volatile and cyclically sensitive in these three regions, with the highest sensitivity in Elkhart, which boasts the highest concentration in manufacturing of these three metro areas (Figure 5).

In contrast, three metro areas heavily focused in education tend to be cyclically insensitive. All three metro areas are home to major state flagship universities: State College, PA, is home to Pennsylvania State University; Lawrence, KS, to the University of Kansas; and Madison, WI, to the University of Wisconsin-Madison.<sup>14</sup> The unemployment rates of these three “college town” metro areas are typically below the 25th percentile of metro areas and are not very volatile or cyclically sensitive, barely rising above 5 percent even during recessions (Figure 6).

FIGURE 5

### Unemployment Rates for Manufacturing-Focused Metro Areas

MSAs with lots of manufacturing jobs are more sensitive to economic cycles. 98th, 75th, 25th, and 2nd percentiles of nearly 400 metro unemployment rates from January 1990 through April 2019, tracked monthly

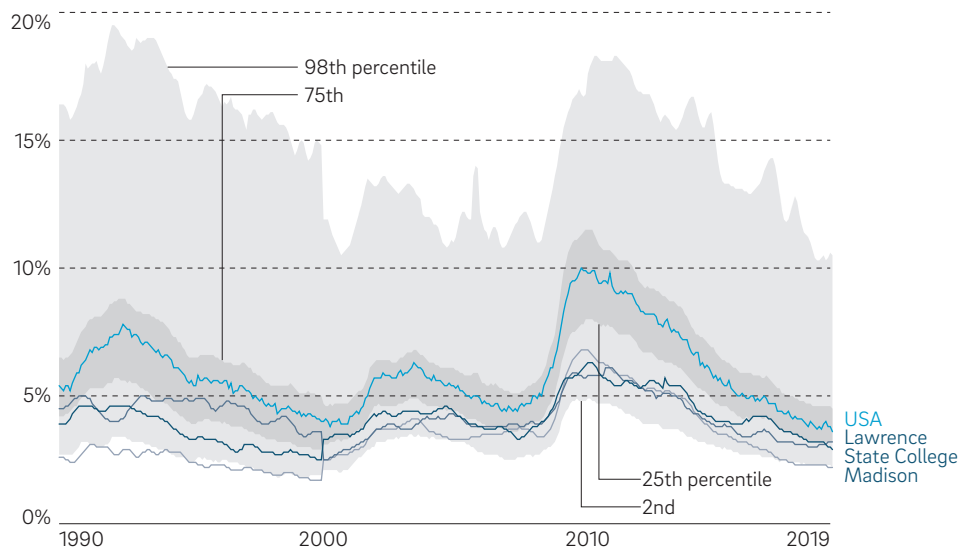


Source: Bureau of Labor Statistics.

FIGURE 6

### Unemployment Rates for "College Town" Metro Areas

MSAs with lots of education jobs are more insensitive to economic cycles. 98th, 75th, 25th, and 2nd percentiles of nearly 400 metro unemployment rates from January 1990 through April 2019, tracked monthly



Source: Bureau of Labor Statistics.

## Spotlight on the Third District

Aside from three metro areas in Southern New Jersey (Atlantic City-Hammonton, Ocean City, and Vineland-Bridgeton), the means and ranges of unemployment rates in the Third District's major metro areas are close to those of the U.S. as a whole (Figure 7). The Atlantic City and Ocean City metro areas both have a heavy concentration of employment in the hospitality and tourism sector related to the "Jersey Shore" economy.<sup>15</sup> Since tourism is an exportable service, as it is consumed largely by nonlocals, it will be cyclically sensitive to the national economy. As well, like dining out, it is one of the goods that consumers economize on in downturns. Overall, the Third District's metro areas

are not very cyclically sensitive, as all but one of the metro areas lie below the 1 value (Figure 8).

## Related Literature and Policy Implications

The cyclical sensitivity of a metro area is largely determined by its industry mix and the extent to which a locality relies on exports. However, some metro areas have features that might make their unemployment rates persistently high or low regardless of the current state of the national business cycle. Rappaport (2012) examines various factors that affect these persistent features of metro area unemployment rates, including place-based

characteristics (such as weather and topography), labor force characteristics (such as education and industry mix), and high moving costs for households and firms.

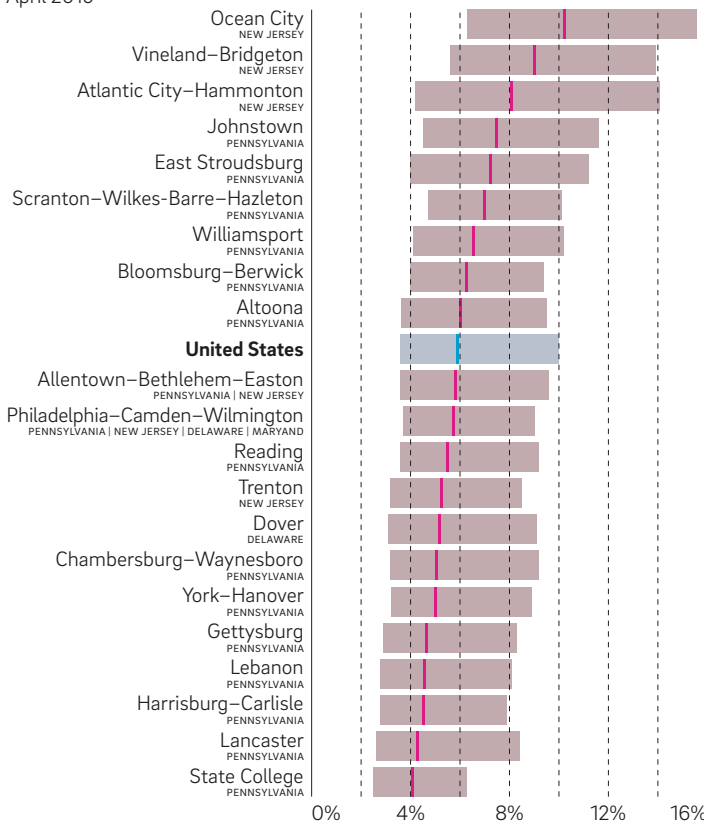
Mangum and Coate (2018) explore declining internal migration throughout the U.S. since the early 1990s with an eye on the implications for local labor market adjustments. The authors note that low-performing regions (for example, the Rust Belt and Appalachia) have long had low mobility, and this has not changed in recent years. But they also note that, as Americans become more attached to their hometowns, the rest of the nation is seeing a decline in mobility, too. Particularly in formerly high-migration areas such as California and Texas, residents are becoming

FIGURE 7

### During Recessions, the Third District Mirrors the Nation

With three exceptions, Third District MSA unemployment rates are close to the U.S. as a whole.

Mean and ranges of unemployment rates in Third District MSAs, January 1990 to April 2019



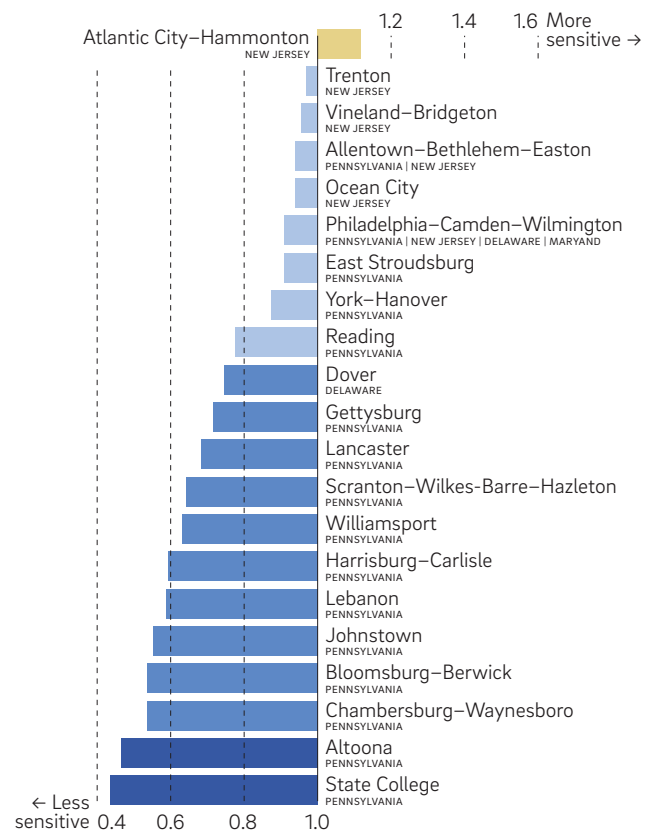
Source: Bureau of Labor Statistics, author's calculations.

FIGURE 8

### Most Third District MSAs Are Less Sensitive to Business Cycle

With one tourism-dependent exception, Third District MSAs are relatively insensitive to U.S. business cycle turning points.

Average cyclical sensitivity of Third District MSAs over past three business cycles




Note: A metro area with a cyclical sensitivity value close to 1 would be as sensitive to the business cycle as is the nation, while a metro area with a value less than 1 would be less sensitive, and a metro area with a value greater than 1 would be more sensitive.

Source: Bureau of Labor Statistics, author's calculations.

more rooted over generations and less likely to move to better-matching jobs in other areas.

By better understanding the characteristics of their local labor markets, policymakers might be able to mitigate some of the effects economic downturns have on their cyclically sensitive or persistently high-unemployment metro areas. For instance, public funds to retrain workers in persistently high-unemployment metro areas could help narrow any skills gap between the local labor force and available jobs. Francis (2013) surveys the literature on this skills gap and on various workforce development programs, including youth programs, employer-focused programs, and community college education. Public funds could also mitigate worker shortages and gluts by relocating workers from high-unemployment areas to low-unemployment areas across different MSAs. This might lead to a better outcome for workers and communities as workers are better matched to jobs that need their skills. Lastly, improved public transportation planning in certain areas could make it easier for workers to reach jobs within their own labor markets. DeMaria and Sanchez (2018) explore medium-size labor markets in the Third District and find that transportation “poses a barrier to employment for workers unable to afford a car because it limits one’s job search radius and makes access to jobs in certain locations infeasible.”

## Final Thoughts

Even though all Americans experience the nation’s recessions and booms, the experience as a worker will vary dramatically across regions over these cycles. Regional economists pay attention to industry mix, demographics, and other place-based characteristics in order to fully understand local labor markets. Policymakers at various levels of government might pay attention to this variation across metro areas, too. Doing so helps them assess which potential policies might mitigate the negative impact of persistently high or overly cyclically sensitive unemployment rates. Furthermore, although monetary policy cannot vary at the regional level, its effects might be assessed by looking at specific areas with a high concentration of industries sensitive to changes in interest rates, such as durable goods manufacturing and construction. 

## Notes

**1** See Hesselbart (2016).

**2** See RV Industry Association (2018).

**3** U.S. federal agencies use the metropolitan statistical area (MSA) to define and measure statistical and economic metropolitan units. An MSA is a grouping of counties (or one county) representing the social and economic linkages between an urban core and its outlying areas. For more information, see Flora (2015).

**4** For more information on the survey methodology used to estimate these respective unemployment rates, see Waddell (2015).

**5** The national unemployment rate is calculated using labor market data from the Current Population Survey (CPS), a survey of roughly 60,000 households (or 110,000 individuals). The CPS has been conducted in the United States every month since 1940, and its state-based design represents each state and the District of Columbia to ensure broad coverage.

**6** The BLS provides alternative measures of unemployment each month. See Bureau of Labor Statistics (2019).

**7** For a more comprehensive definition of employed persons, unemployed persons, and the labor force, see Bureau of Labor Statistics (2015).

**8** See National Bureau of Economic Research (2010).

**9** For example, individuals seeking employment for a long time during economic slowdowns may get discouraged and leave the labor force altogether instead of remaining in the “unemployed” category set by the BLS.

**10** See Toossi (2015).

**11** See Board of Governors of the Federal Reserve System (2019).

**12** While some of the variation in the cyclical sensitivities of MSAs can be explained by industry mix, many MSAs’ sensitivities will vary due to more idiosyncratic reasons, such as one-time shocks during particular business cycle turning points. For example, San Jose-Sunnyvale-Santa Clara, CA, experienced a highly negative shock to employment in response to the bursting of the dot-com bubble in the early-2000s, making it the most cyclically sensitive MSA in the nation in this analysis.

**13** See Domazlicky (1980).

**14** Madison is also the state capital of Wisconsin. The interaction of state government employment and university employment should make this metro area particularly cyclically insensitive.

**15** In April 2019, Ocean City and Atlantic City had 26 percent and 32 percent employment concentrations in hospitality and tourism, respectively, compared to a U.S. concentration of 11 percent.

## References

Board of Governors of the Federal Reserve System. "Frequently Asked Questions: What Is the Lowest Level of Unemployment that the U.S. Economy Can Sustain?" (2019). [https://www.federalreserve.gov/faqs/economy\\_14424.htm](https://www.federalreserve.gov/faqs/economy_14424.htm).

Bureau of Labor Statistics. "Labor Force Statistics from the Current Population Survey" (2015). [https://www.bls.gov/cps/cps\\_htgm.htm#employed](https://www.bls.gov/cps/cps_htgm.htm#employed)

Bureau of Labor Statistics. "Table A-15. Alternative Measures of Labor Underutilization" (2019). <https://www.bls.gov/news.release/empst.t15.htm>.

DeMaria, Kyle, and Alvaro Sanchez. "Accessing Economic Opportunity: Public Transit, Job Access, and Equitable Economic Development in Three Medium-Sized Regions," Federal Reserve Bank of Philadelphia Economic Growth & Mobility Project Report (December 2018), <https://www.philadelphiafed.org/-/media/community-development/publications/special-reports/public-transit/accessing-opportunity.pdf?la=en>.

Domazlicky, Bruce. "Regional Business Cycles: A Survey," *Journal of Regional Analysis and Policy*, 10:1 (1980), pp. 1–20.

Flora, Paul. "Regional Spotlight: Regions Defined and Dissected," Federal Reserve Bank of Philadelphia *Business Review* (Fourth Quarter 2015), pp. 5–11, [https://www.philadelphiafed.org/-/media/research-and-data/publications/regional-spotlight/2015/rs-regions\\_defined\\_and\\_dissected.pdf?la=en](https://www.philadelphiafed.org/-/media/research-and-data/publications/regional-spotlight/2015/rs-regions_defined_and_dissected.pdf?la=en).

Francis, Caroline M. "What We Know About Workforce Development for Low-Income Workers: Evidence, Background and Ideas for the Future," University of Michigan: National Poverty Center Working Paper Series 13-09 (April 2013), <http://npc.umich.edu/publications/u/2013-09-npc-working-paper.pdf>.

Hesselbart, Al. "How Elkhart Became the RV Capital of the World," *Inside Indiana Business*, June 1, 2016, <http://www.insideindianabusiness.com/story/32117836/thursday-how-elkhart-became-the-rv-capital-of-the-world>.

Mangum, Kyle, and Patrick Coate. "Fast Locations and Slowing Labor Mobility," Andrew Young School of Policy Studies Research Paper Series No. 18-05 (2018), [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3175955](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3175955).

National Bureau of Economic Research. "The NBER's Business Cycle Dating Procedure: Frequently Asked Questions" (2010), [https://www.nber.org/cycles/recessions\\_faq.html](https://www.nber.org/cycles/recessions_faq.html).

Parker, Jeffrey. "Natural Unemployment Rates for Sub-National Regions: Estimates for U.S. States," Reed College Working Paper (December 2015), [https://www.reed.edu/economics/parker/state\\_unemployment\\_12-2015.pdf](https://www.reed.edu/economics/parker/state_unemployment_12-2015.pdf).

Peterson, George E., and Donald M. Manson. "The Sensitivity of Local Economic Activity to National Economic Cycles: Literature Review," The Urban Institute Project Report (1982), <https://www.huduser.gov/portal/Publications/pdf/HUD-004039.pdf>.

Rappaport, Jordan. "Why Does Unemployment Differ Persistently Across Metro Areas?" Federal Reserve Bank of Kansas City *Economic Review* (Second Quarter 2012), pp. 5–35, <https://www.kansascityfed.org/publicat/econrev/pdf/12q2Jordan-Rappaport.pdf>.

RV Industry Association. *Historical RV Data*, (2018), <https://www.rvia.org/historical-rv-data>.

Toossi, Mitra. "Labor Force Projections to 2024: The Labor Force Is Growing, but Slowly," *Monthly Labor Review*, U.S. Bureau of Labor Statistics (December 2015), <https://doi.org/10.21916/mlr.2015.48>.

Waddell, Sonya Ravindranath. "State Labor Markets: What Can Data Tell (or Not Tell) Us?" Federal Reserve Bank of Richmond *Econ Focus* (First Quarter 2015), pp. 36–39, [https://www.richmondfed.org/-/media/richmondfedorg/publications/research/econ\\_focus/2015/q1/pdf/district\\_digest.pdf](https://www.richmondfed.org/-/media/richmondfedorg/publications/research/econ_focus/2015/q1/pdf/district_digest.pdf).