



The Untold Story of the Varied Middle
Local Economic Conditions 2017

About the National League of Cities

The National League of Cities (NLC) is the nation's leading advocacy organization devoted to strengthening and promoting cities as centers of opportunity, leadership and governance. Through its membership and partnerships with state municipal leagues, NLC serves as a resource and advocate for more than 19,000 cities and towns and more than 218 million Americans. NLC's Center for City Solutions provides research and analysis on key topics and trends important to cities and creative solutions to improve the quality of life in communities.

About the Authors

Christiana K. McFarland is research director and **Emily Robbins** is principal associate, Economic Development, in NLC's Center for City Solutions. **Trevor Langan**, research associate, and **Anita Yadavalli**, program director, City Fiscal Policy in the Center, contributed significantly to this analysis.

Acknowledgments

The authors would like to acknowledge **JoElla Straley**, principal associate, Information Design and Visual Storytelling, who designed the report, and the NLC staff who contributed to the analysis and editing.

The Untold Story of the Varied Middle **Local Economic Conditions 2017**

Table of Contents

- 1** Introduction
- 2** Trends
- 7** Types of Local Economies
- 15** Dispersion of Drivers
- 20** Discussion and Conclusion
- 22** Methodology



P-V
224
346-104
← ONE WAY

P-V
226
WRONG WAY

P-V
228
346
←

P-V
230
WRONG WAY

HYSTER

30

HYSTER

0201

Introduction

Rural vs. urban. It's a simple yet compelling narrative about the dichotomous relationship between place and economic growth. It has become our frame of reference for everything from the opioid epidemic to national election results. Often this characterization is meaningful, particularly to describe post-recession economic trends in the broadest of terms. Urban cores seem to be pulling people and businesses across the United States like constellations, leaving behind vast swaths of empty storefronts and mills where vibrant towns once stood.

But digging deeper reveals an even more dynamic economic landscape, particularly among mid-sized cities. The drivers of both economic growth and decline in places with populations between 50,000 and 300,000 are quite varied, changing rapidly and leading to divergent economic outcomes. Until now, our glimpse into mid-sized cities has been limited to a fuzzy picture of places that are not rural, not mega-cities, but someplace in between. Mid-sized economies are home to one-third of the U.S. population and what the McKinsey Global Institute calls "the true vigor of America's urban economy."^{1,2}

To better understand the forces undergirding the condition of local economies of all types, the National League of Cities (NLC) conducted

the *2017 Local Economic Conditions* survey. This biennial survey gauges the performance of key local economic indicators from the unique vantage point of those who are held most accountable for prosperity and equity in cities: their chief elected officials. This year's results are based on responses from 224 cities across population sizes and locations within and outside metropolitan areas.³



Digging deeper reveals an even more dynamic economic landscape, particularly among mid-sized cities.

We conducted a cluster analysis to clearly identify how specific economic factors converge and give rise to distinct types of local economies. Five groupings of local economies emerged: a highly rural cluster; a large central city cluster; and three distinct types of mid-sized local economies. In the report that follows, we further define these economic types to offer an aggregate picture of local economic trends while recognizing the variations across cities.

Trends

According to our sample of 224 cities, the vast majority of cities across the nation—84 percent—report that their local economies have improved over the past year. Few have witnessed significant economic decline, while 12 percent report stable conditions. Similar rates were reported in 2015 (Figure 1). As for trends at the state and regional levels, city leaders indicate that regional economies are growing at similar rates as city

economies, whereas state economies have improved more slowly over the past year (Figure 2). These findings lend credence to the intertwined fate of cities and their regions. They are also indicative of the bottom-up, city-led growth occurring throughout the country. For example, in North Carolina, 79 percent of all taxable property lies within cities, 80 percent of all jobs are within city boundaries and 75 percent of all retail sales occur in cities.⁴

Figure 1

Change in local economic conditions 2013, 2015, 2017

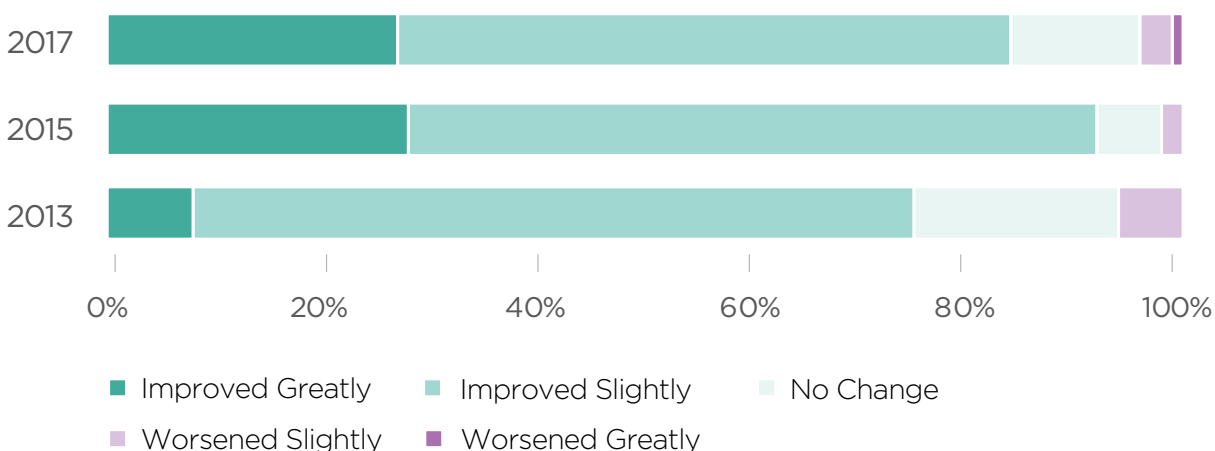
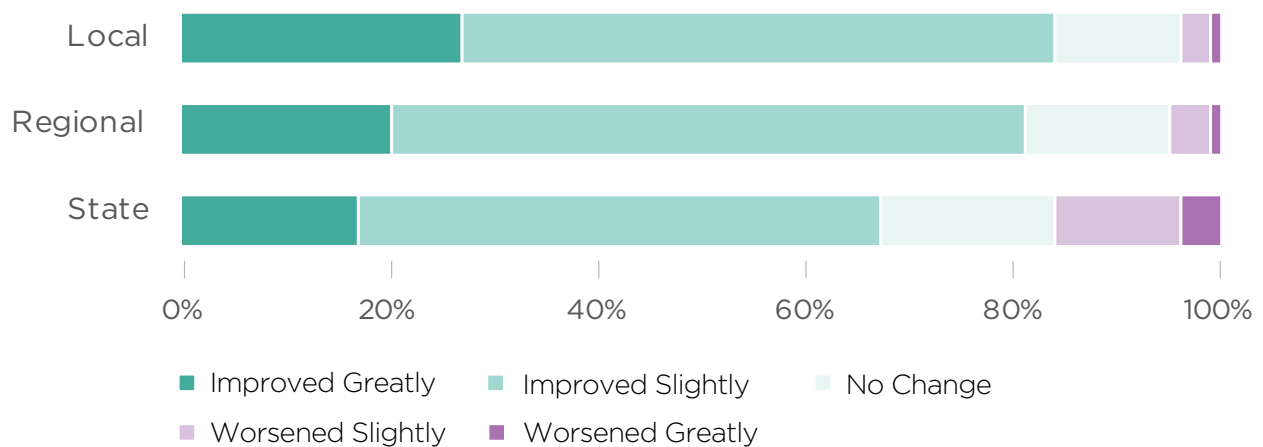


Figure 2 Change in local, regional and state economic conditions 2017



Overall local economic trends are a composite of business and workforce conditions, real estate conditions, fiscal health and demographic characteristics, among others. City leaders were presented with a list of 24 key economic indicators within these categories and asked whether these indicators have improved or worsened over the past year (see Figure 3).

Business Starts and Expansions Lead Growth

Many cities reported a widespread improvement in activity around business growth and employment since last year. About three in four cities experienced increases in new business starts (78 percent), business expansions (73 percent), employment (74 percent), residential property values (78 percent) and general fund revenue (72 percent).

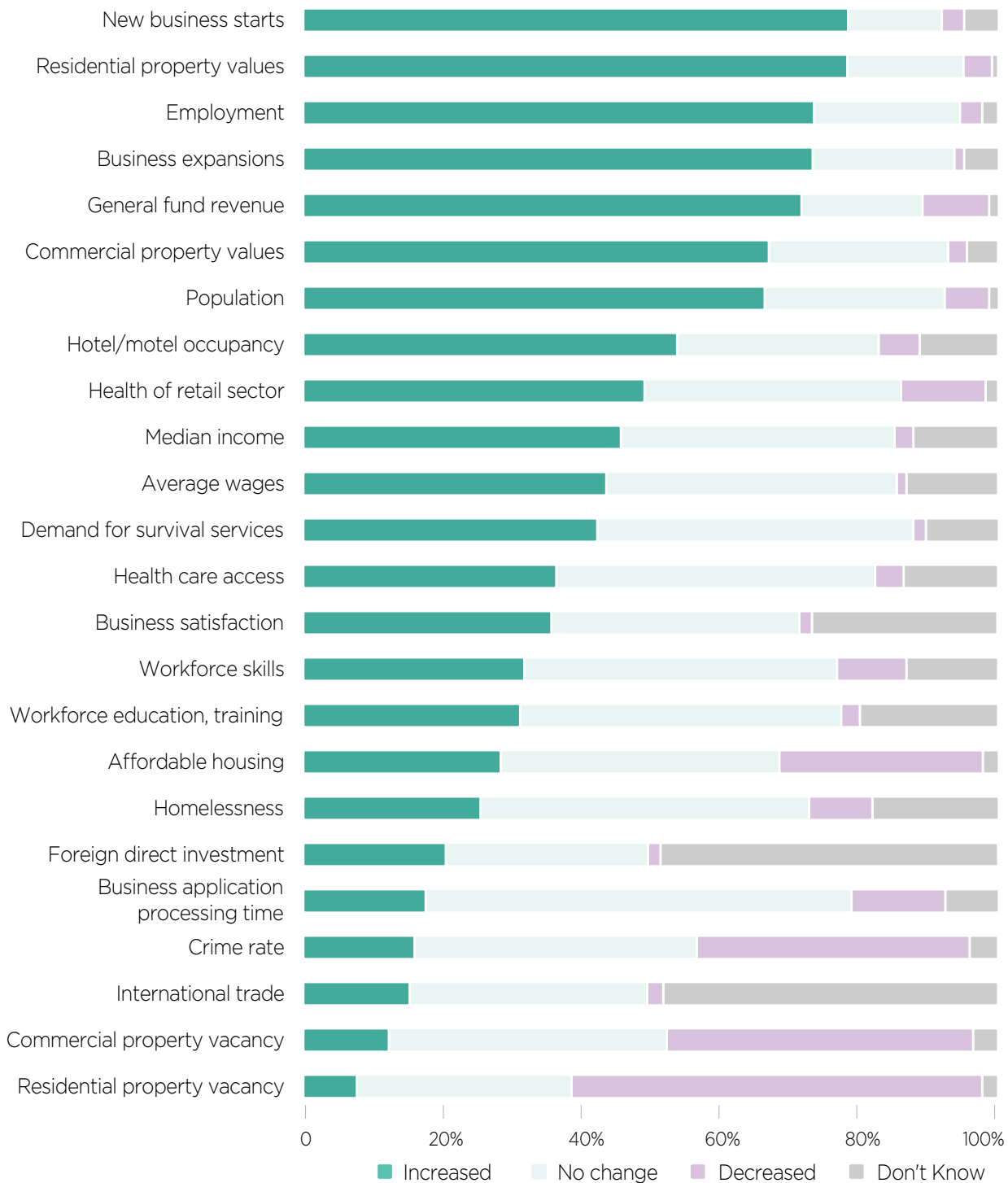
Affordable Housing, Workforce Alignment Key Impediments

Conversely, the economic indicators that deteriorated most prevalently relate to socioeconomic conditions and affordable housing availability. The demand for survival services, such as food banks and shelter housing, increased during the past year in four in 10 cities (42 percent).

The homelessness rate increased in 26 percent of cities, and the availability of affordable housing decreased in nearly one in three (29 percent).

City leaders were also asked which three among the 24 factors had the most positive and the most negative impacts on their local economies (Figure 4). Those exhibiting the strongest positive influence on local economic conditions during the past year are new business creations

Figure 3 Change in key local economic indicators 2017



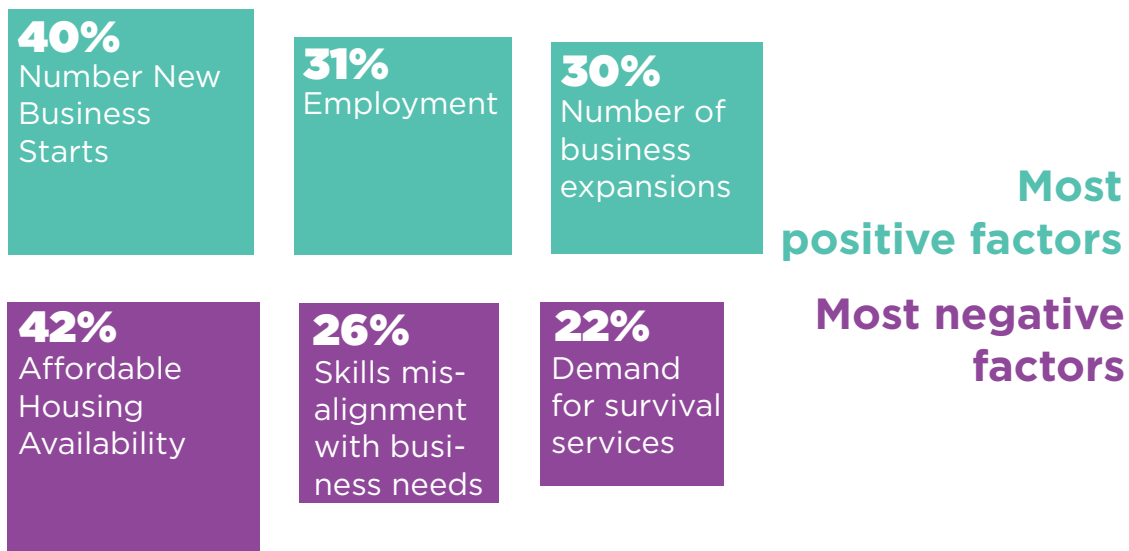
(40 percent), business expansions (30 percent) and growth in general employment (31 percent). These broad trends point to local economies that are creating favorable environments for business growth and that are benefiting many residents.

The most significant barriers to local economic growth are lack of affordable housing (42 percent), misalignment of workforce skills and employer needs (26 percent) and demand for such basic services as food and shelter (22 percent).

However, this growth is not reaching the most vulnerable populations.

Figure 4 Top factors impacting local economies

Percent of cities selecting factor as one of three most positive/most negative.





Types of Local Economies

Despite the reach of positive and negative drivers across cities, the scale and strength at which they present themselves vary significantly. The iterations and convergence of factors gives rise to distinct types of local economies, each requiring tailored economic development approaches. To capture how these factors interact, we conducted a cluster analysis, which allows us to define economy types by categorizing cities into five mutually exclusive groups based on their population size, most powerful positive economic drivers and most powerful negative economic drivers.⁵ The cluster analysis yielded groups of cities that are more similar within clusters than they are to cities in other clusters.

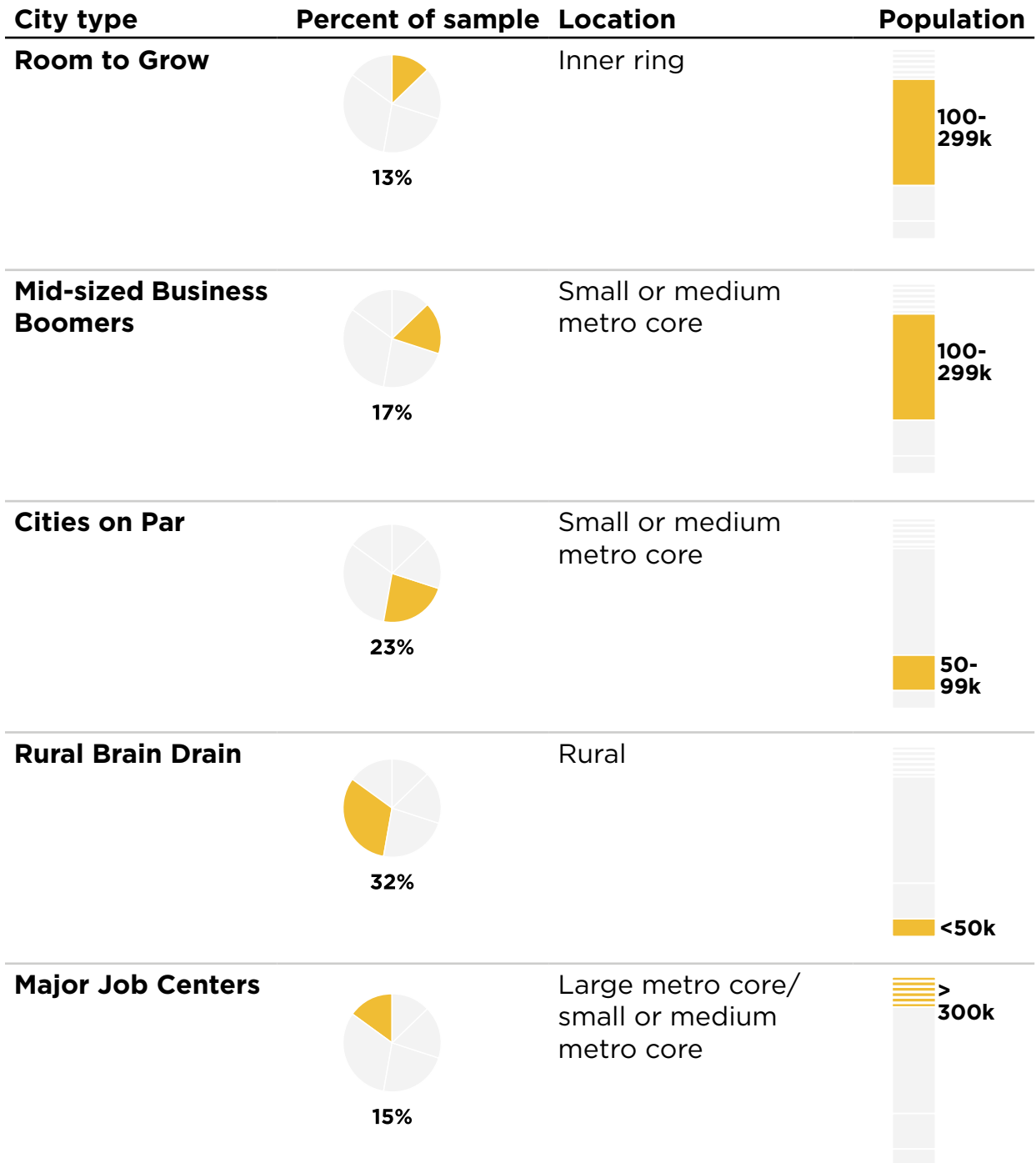
Five types of local economies emerged from this analysis:

- **Three distinct types of mid-sized local economies:** Room to Grow, Mid-sized Business Boomers and Cities on Par
- **One highly rural economy:** Rural Brain Drains
- **One large city cluster:** Major Job Centers

— “ —

The iterations and convergence of factors gives rise to distinct types of local economies, each requiring tailored development approaches.

Figure 5 Types of Local Economies



City type	Top positives	Top negatives
Room to Grow	<ul style="list-style-type: none"> • Commercial property values • Affordable housing • Population 	<ul style="list-style-type: none"> • Health of retail • Skills misalignment with business needs • Crime rate
Mid-sized Business Boomers	<ul style="list-style-type: none"> • New business starts • Business expansions • Hotel/motel occupancy rate 	<ul style="list-style-type: none"> • Affordable housing • Skills misalignment with business needs • Homelessness rate
Cities on Par	<ul style="list-style-type: none"> • New business starts • Residential property values • Business expansions 	<ul style="list-style-type: none"> • Affordable housing • Demand for survival services • Skills misalignment with business needs
Rural Brain Drain	<ul style="list-style-type: none"> • New business starts • Residential property values • General fund revenue 	<ul style="list-style-type: none"> • Affordable housing • Skills misalignment with business need • Population
Major Job Centers	<ul style="list-style-type: none"> • Employment • Business expansions • New business starts 	<ul style="list-style-type: none"> • Demand for survival services • Affordable housing • Homelessness rate

Room to Grow

The Room to Grow cluster is defined by favorable commercial property values, affordable housing stock and population growth. Cities in this cluster, such as Plano, Texas; Scottsdale, Arizona; and Hayward, California, tend to be larger, inner-ring suburbs and are known for their office parks and outlet malls. These areas are under threat as corporate headquarters look to move from spacious suburbs into core-city downtowns. They are also experiencing a significant decline in the health of their retail sectors.

While the retail slowdown is occurring nationwide, the economies in this cluster are being fundamentally transformed by the broader shift to e-commerce.

Interestingly, this is the only cluster in which affordable housing availability is identified as a positive economic driver: these suburbs appear to be key exhaust valves for otherwise tight regional housing markets, reaping the benefits of affordability challenges in core cities that are forcing people out.

Mid-Sized Business Boomers

The Mid-sized Business Boomer cluster comprises hotbeds of business expansions located mostly in core cities of mid-sized metro areas. Business boomers, such as Ann Arbor, Michigan, and Longmont, Colorado, have adapted to the new tech and small-scale manufacturing economies and are attracting business travel and tourism. Their business sectors, however, seem to be growing more quickly than the available talent,

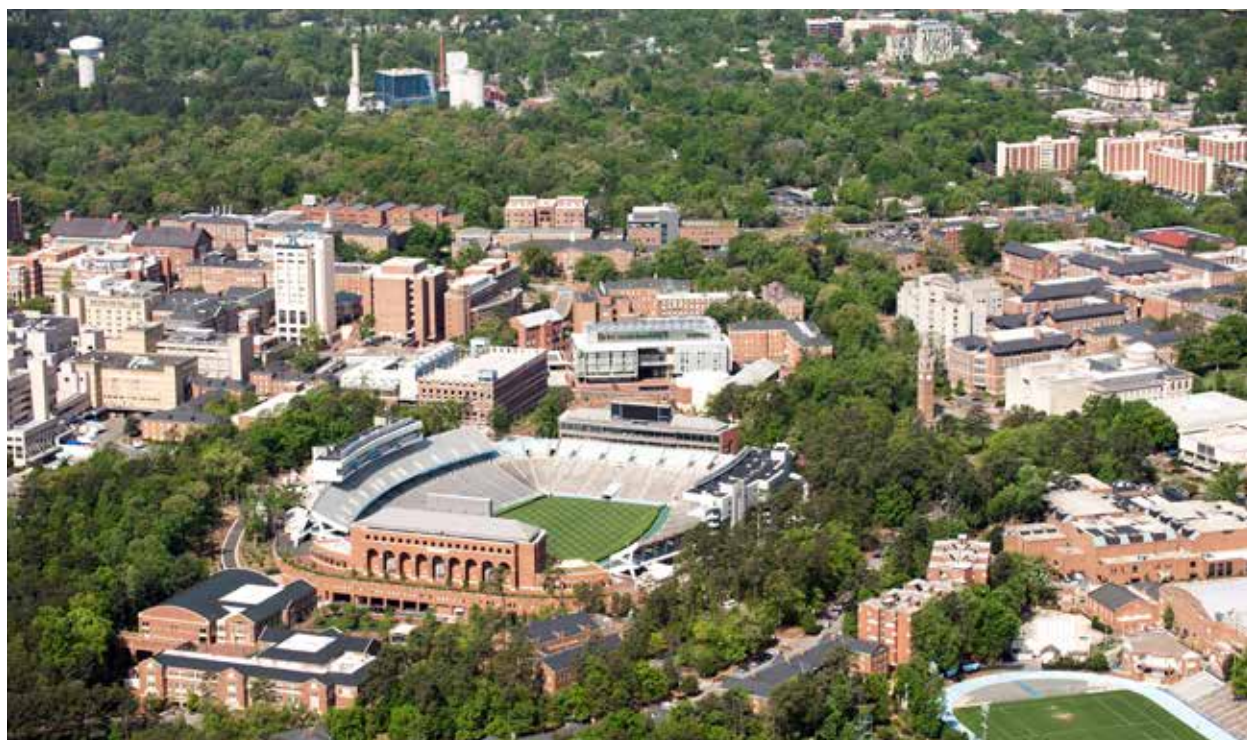
leading to a significant misalignment of workforce skills and business demands. And as business boomers become more concentrated business centers, their housing markets are tightening, presenting significant challenges related to affordable housing and homelessness.



Cities on Par

The economies of the Cities on Par cluster tend to have populations between 50,000 and 100,000 and are defined largely by their high residential property values. Predominantly, Cities on Par are cores of smaller metros, while some are inner ring suburbs. In some places, such as Ames, Iowa, and Chapel Hill, North Carolina, these economies are driven by proximity to college campuses. With fewer distinguishing characteristics than other clusters, Cities on Par seem to be more or less

experiencing the national trend of slow, positive growth following the Great Recession. They rely on new business starts to drive growth and have noted reductions in commercial and residential property vacancies and crime over the past year. But much like many other cities across the country, they suffer from a lack of affordable housing and are having trouble meeting the needs of at-risk populations. This is not surprising considering the trend toward suburbanization of poverty.⁶



Chapel Hill, North Carolina

Rural Brain Drains

Rural Brain Drains, like Chardon, Ohio, and Rison, Arkansas, have populations of less than 50,000 and tend to be disconnected from major population and employment centers. Long-term population decline is the defining characteristic of this cluster, as well as a lack of availability of affordable housing.

Analysis from the U.S. Department of Agriculture indicates a consistent decline in rural population from

2010-2016.⁷ This research also found that rural area populations peaked in 2006, but began to decline shortly after the recession due to housing market challenges and unemployment. Studies also indicate that the growth of high-poverty neighborhoods has been fastest in rural communities.⁸

Major Job Centers

Major Job Centers, such as Austin, Boston, San Francisco, and Seattle, are mostly core cities of large metropolitan areas. Although they are home to bountiful employment and business expansions, these cities struggle with significant housing affordability and poverty issues.

Although overall homelessness is down, this trend is on the rise in high-cost of living cities, like Major Job Centers. Harvard's Joint Center for Housing Studies finds that this is particularly the case in places with legal right-to-shelter policies, such as

Boston, New York, and Washington DC. "These cities (and some states) require public provision of shelter for those experiencing homelessness, which can lead to increased demand for services—particularly if they are located near communities without this right."⁹



Dispersion of Drivers

After identifying the factors most prevalent within each type of local economy, we looked at how the factors differ among clusters to determine whether specific factors are largely characteristic of particular types of local economies.

As we discussed previously, **new business starts** is a top driver of economic conditions, with 40 percent of cities rating it as a key positive factor influencing local growth. Further analysis reveals that new business starts are not isolated to specific types of local economies but contribute to growth in most cities throughout the country, except in Room to Grow economies. Given the low-density development and isolated nature of office parks that are common in Room to Grow cities, it is not surprising that new businesses, which often thrive in dense, open and collaborative innovation ecosystems, are less likely to be a strong growth factor in these economies.¹⁰

The Kauffman Foundation analyzed the business activity of startups and small businesses over the past two decades and found that both declined sharply between 2008 and 2013 but have been on the rise for the past

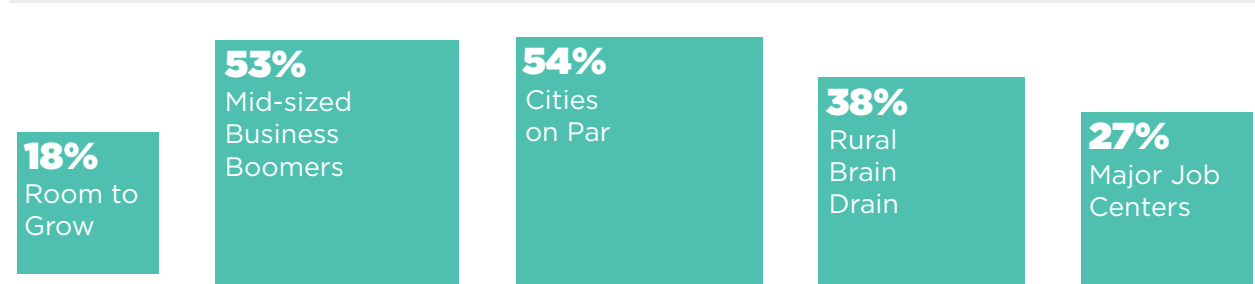
few years.¹² More recent census data on small businesses also reveal an increase in the total number of firms between 2014 and 2015, as well as a rise in their total sales receipts, payroll and employment.¹² Additionally, new business growth has been more inclusive than in previous years. Between 2014 and 2015, the number of minority-owned small businesses increased by 4.9 percent and the number of women-owned small businesses rose by 3 percent.¹³

The **expansion of existing businesses** is also a driving positive condition for 30 percent of cities. The latest census data on firm expansions (measured by employment) show overall growth between 2012 and 2014.¹⁴ The survey reveals that these expansions are heavily clustered in core cities of large (Major Job Centers) and mid-sized (Mid-sized Business Boomers) metro areas. Unsurprisingly, **employment growth** is following a similar pattern, with 31 percent of cities—mostly Major Job Centers and Mid-sized Business Boomers—indicating it as a key economic driver. These findings point to the rise of mid-sized metros and suggest that core cities of various sizes continue to be hotbeds of business growth in the United States.

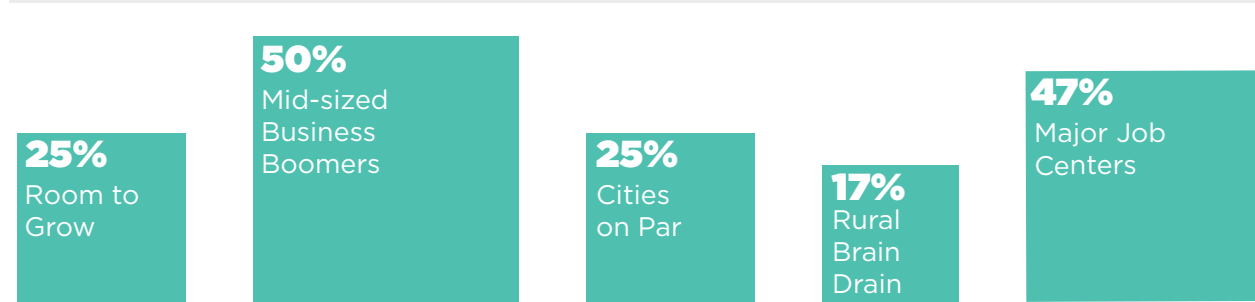
Top Positive Drivers

Percent of cities by economy type selecting factors as one of three most positive.

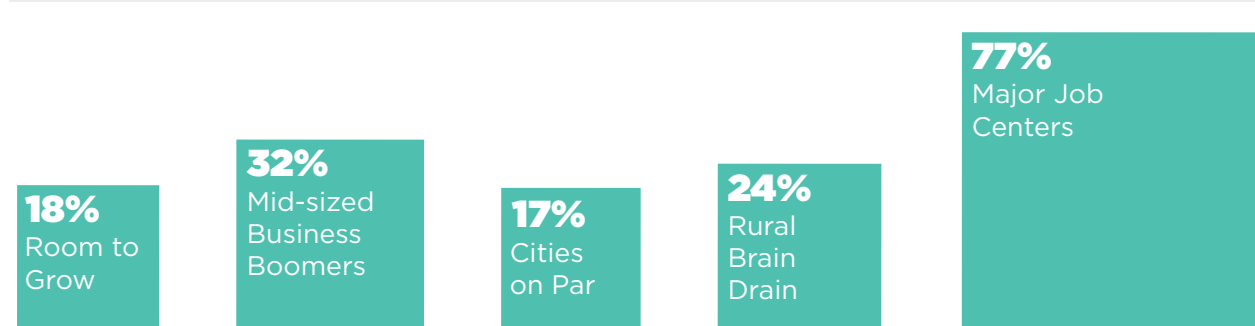
New business starts



Expansion of existing business



Employment growth



Top Negative Drivers

Percent of cities by economy type selecting factors as one of three most negative.

Skills misalignment with employer needs

29%

Room to Grow

42%

Mid-sized Business Boomers

19%

Cities on Par

22%

Rural Brain Drain

27%

Major Job Centers

Availability of affordable housing

25%

Room to Grow

68%

Mid-sized Business Boomers

40%

Cities on Par

38%

Rural Brain Drain

38%

Major Job Centers

Demand for survival services

18%

Room to Grow

21%

Mid-sized Business Boomers

35%

Cities on Par

6%

Rural Brain Drain

44%

Major Job Centers

Despite gains in employment, there are still a significant number of individuals—approximately 3.6 million—who are out of work and looking to reenter the labor market.¹⁵ Among this unemployed population, there are wide variances in terms of skills, demographic factors and income levels.¹⁶ Thus, local governments need a varied set of policy tools to help address distinct workforce development needs, which is very likely why city leaders rate the **misalignment between workforce skills and needs of businesses** as the second most pressing economic challenge for their communities (26 percent). Interestingly, although an outsized percentage of Mid-sized Business Boomers indicated workforce misalignment as a top concern, statistically, this factor does not uniquely define any one cluster. It is a significant challenge for local economies of all types across the United States.

Lack of **affordable housing** is a major economic barrier for 42 percent of cities. Harvard's Joint Center for Housing Studies reports that there is a worrisome gap between supply and demand for affordable housing: for every 100 very low-income households, there are only 55 units of affordable housing available.¹⁷ This figure is even starker for minority households. There is not enough federal housing assistance to support everyone who needs it, a challenge that affects all

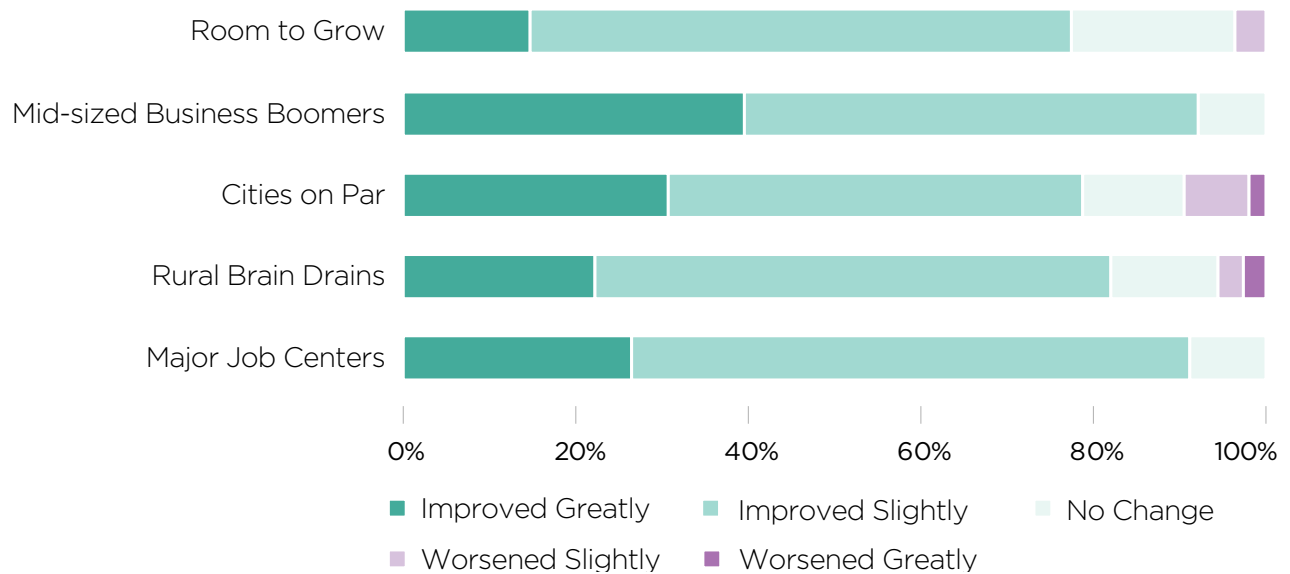
types of local economies but is most concentrated in Mid-sized Business Boomers.¹⁸ Room to Grow is the only economy type in which more cities identified affordable housing as a positive factor.

Although by some measures the national economy is improving, lower-wage workers are still struggling to afford not just housing but basic necessities as well. **Demand for survival services**, such as shelter housing and assistance from food banks, is a leading negative driver of economic conditions in 22 percent of cities. This survey finding underscores the fact that measures of income inequality and poverty remain significant concerns for the broader economy. Demand for survival services is most significantly concentrated in Major Job Centers, with a noteworthy presence in Cities on Par. Cities on Par are seeing an increase in poverty due to poorer populations moving from higher-cost urban cores. Rising residential property values and housing affordability issues in Cities on Par may also be leading to increased demand for survival services.

Despite the significant variation among local economies, the majority of cities in nearly all five clusters report that their general economic performance has increased slightly over the past year. Mid-sized Business Boomers are more likely than other cities to report

that their economic performance has improved greatly, while Rural Brain Drains are more likely than others to report significant decline.

Figure 6 Change in local economic condition by economy type



Discussion and Conclusion

Our analysis of local economies presents a picture of both promising economic trends and the complexities that lie beneath. Nearly all cities are experiencing moderate growth, with new businesses driving this growth in most economies throughout the nation. Another commonality is one that is holding cities back from more expansive growth: the misalignment between skills of the workforce and needs of business. The widespread nature of workforce issues indicates a structural challenge within the U.S. economy that demands action from all levels of government as well as from multisector partners.

Digging deeper to understand other factors that are distinct among local economies illuminates how local economies function within broader regional economies, and how the trajectory of one type of local economy can inform the planning and strategies of others. For example, there are similarities between emerging Mid-sized Business Boomers and more established Major

“
The widespread nature of workforce issues indicates a structural challenge in the U.S. economy that demands action from all levels of government and multisector partners.

Job Centers. The density of these places and their locations as core cities create an environment ripe for business expansion. Both types are also susceptible to more severe housing affordability challenges as demand increases from new workers.

Additionally, Major Job Centers, home to substantial proportion of social services in most regions, are experiencing typical large-city

problems with poverty and demand for survival services such as food banks and shelter housing. Poverty-specific issues have not yet reached critical proportions in Mid-sized Business Boomers, but they may soon develop if they are not addressed. Should those economies get ahead of these challenges, they have the opportunity to situate themselves not only as leaders of national economic growth but also as pioneers of growth that is equitable and sustainable.

Additionally, Room to Grow economies are experiencing some of the most significant changes in terms of both population and business dynamics. They are being left out of the new business growth wave that is rising across the nation and are leading the

declining retail trend. Their saving grace is their affordable housing stock, which is attracting new residents. However, it is likely that these changes are widening the disconnect between where people live and where jobs are located throughout regions. A key economic opportunity for these communities is to ensure efficient and reliable transit systems between people and jobs.

Unlocking the latent economic potential of the United States will require that we tackle widespread obstacles to growth—namely, workforce and housing affordability challenges—while enabling cities and regions, particularly mid-sized economies, to localize solutions to meet their specific needs and harness their assets.



Methodology

Survey: The National League of Cities *2017 Local Economic Conditions* is a biannual national email survey that asks city government officials to assess their local economic conditions. The first survey was conducted in 2013. For this current assessment, surveys were distributed to chief elected officials in a sample of 1,072 cities from February through May 2017. In total, the data from this report were drawn from 224 cities for a response rate of 21 percent and a margin of error of +/-5 percent.

Cluster Analysis: Cluster analysis is used to identify similar groups, often as a marketing strategy to effectively carry out a plan or action that benefits the largest number of recipients. This tool is especially useful for analyzing the local economic conditions of cities. We are specifically interested in two questions: (1) given conditions affecting the economy, how can we use clusters to determine how those conditions are changing from one year to the next? and (2) how can what we learn about characteristic differences among clusters to help us identify preferable policy actions?

Cluster analysis requires thoughtful

consideration of three things: the actual variables used to segment the data into clusters; the number of variables used; and scaling of the variables. In our survey, city officials were asked to identify the three most positive and negative conditions that they perceived to be affecting their economy, thereby giving us the best indicators of drivers of and barriers to economic growth.

First, we segmented the cities into five clusters on the basis of the population of city, the three most positive economic conditions identified by cities and the three most negative economic conditions identified.

Second, we considered the number of variables to use in the analysis. There is a large body of literature on cluster analysis that aims to understand the relationship between the number of variables used and the sample size. While there is no consensus, some researchers appear to accept Formann's (1984) general rule of 2^k number of observations, where k refers to the number of variables.¹⁹ Using our sample of 224 cities, this would lend itself to approximately seven to eight variables. Nonetheless, Dolnicar (2002) analyzes 243 cluster analyses and finds that while

half of those analyses used samples of fewer than 300 observations (similar to this current survey), a majority of that half used slightly more than the number of variables recommended by Forman. This cluster analysis uses 24 variables related to the characteristics listed above.²⁰

Finally, the survey questions do not all use the same scale. For example, some questions ask for a response on a scale of 1 to 4, from fewer than 50,000 in population to greater than 300,000, while the other questions yield binary responses (1 = a top positive factor, 0 = not a top positive factor). Because of this disparity, the survey responses needed to be equalized, and the mixed nature of the data led researchers to recommend the Gower similarity coefficient for equalizing the data. Once this was done, the clusters were derived using Ward's method, which is an incremental clustering process.

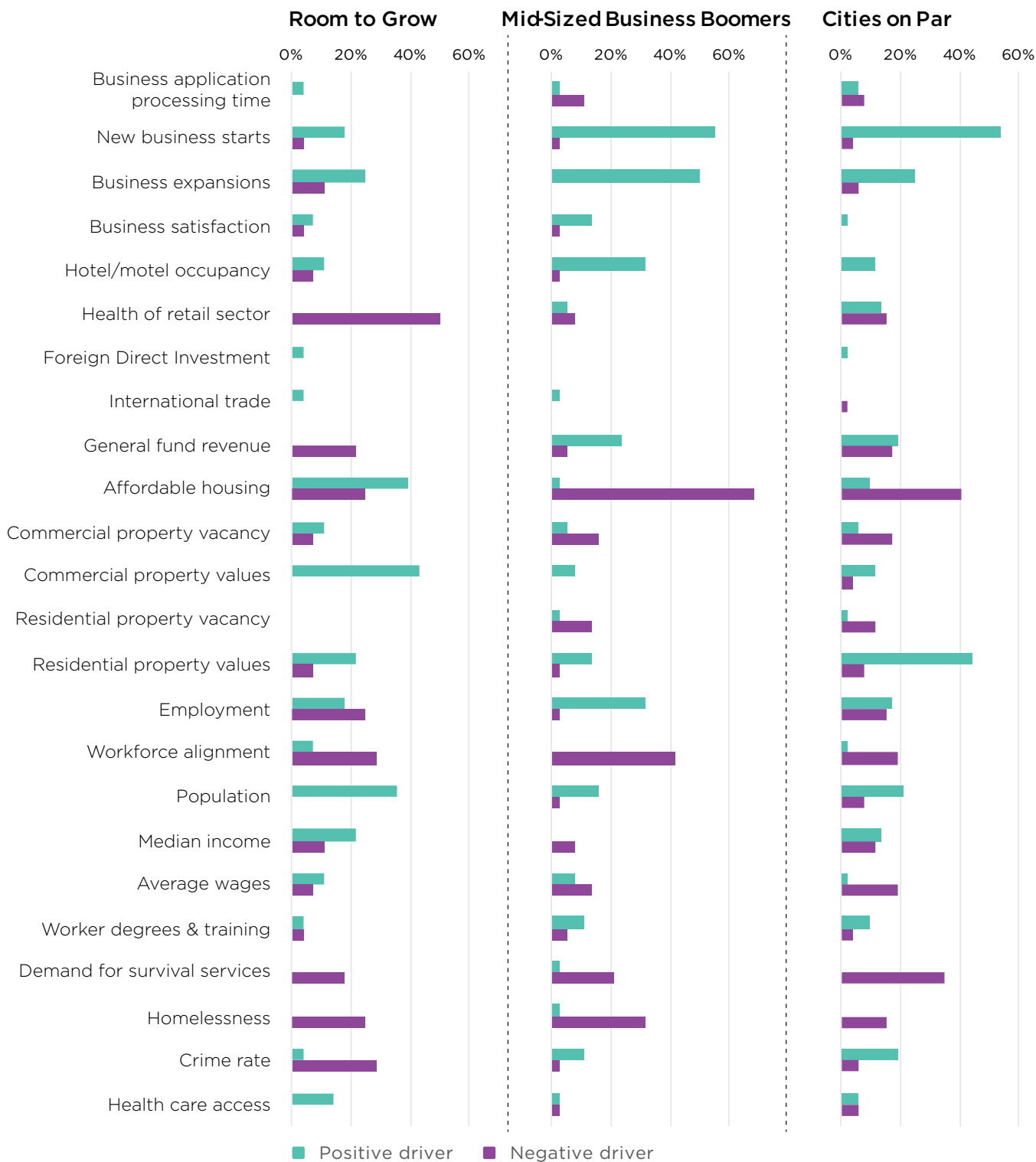
Analysis of Variation (ANOVA): ANOVA is often used after a cluster analysis is conducted. While we are generally interested in the factors that make groups—or cities in this case—different from one another, we are also interested in whether a given factor is statistically different across those groups (note that a *t*-test is used to compare only two groups at a time while an ANOVA test is used to compare more than two groups). This type of analysis works as a robustness check and is especially informative in cases where multiple groups are categorized by the same factor. For example, we notice above that several clusters are characterized

by their propensity to choose new business starts as their number one positive economic condition. The results of the cluster analysis show that more cities in Mid-sized Business Boomer clusters (55 percent) chose new business starts than in the Cities on Par cluster (54 percent) or in rural brain drains (38 percent). But are those differences statistically significant? In other words, are mid-sized business boomer cities actually different from the others? That is the purpose of the ANOVA.

We performed an ANOVA test on all factors that helped define more than one cluster. The results suggest that most factors are statistically significant (i.e., *p*-value < 0.10), with the following being highly significant (i.e., *p*-value < 0.001): number of business expansions as a positive economic condition, employment as a positive economic condition, demand for survival services as a negative economic condition and population between 100,000 and 299,000. This suggests that these four factors were the most defining ones among the five clusters. On the other hand, only one factor was statistically insignificant (i.e., *p*-value > 0.10): skills alignment with employer needs as a negative economic condition. This means that the makeup of the clusters is not driven by that factor but is instead driven by the other factors.

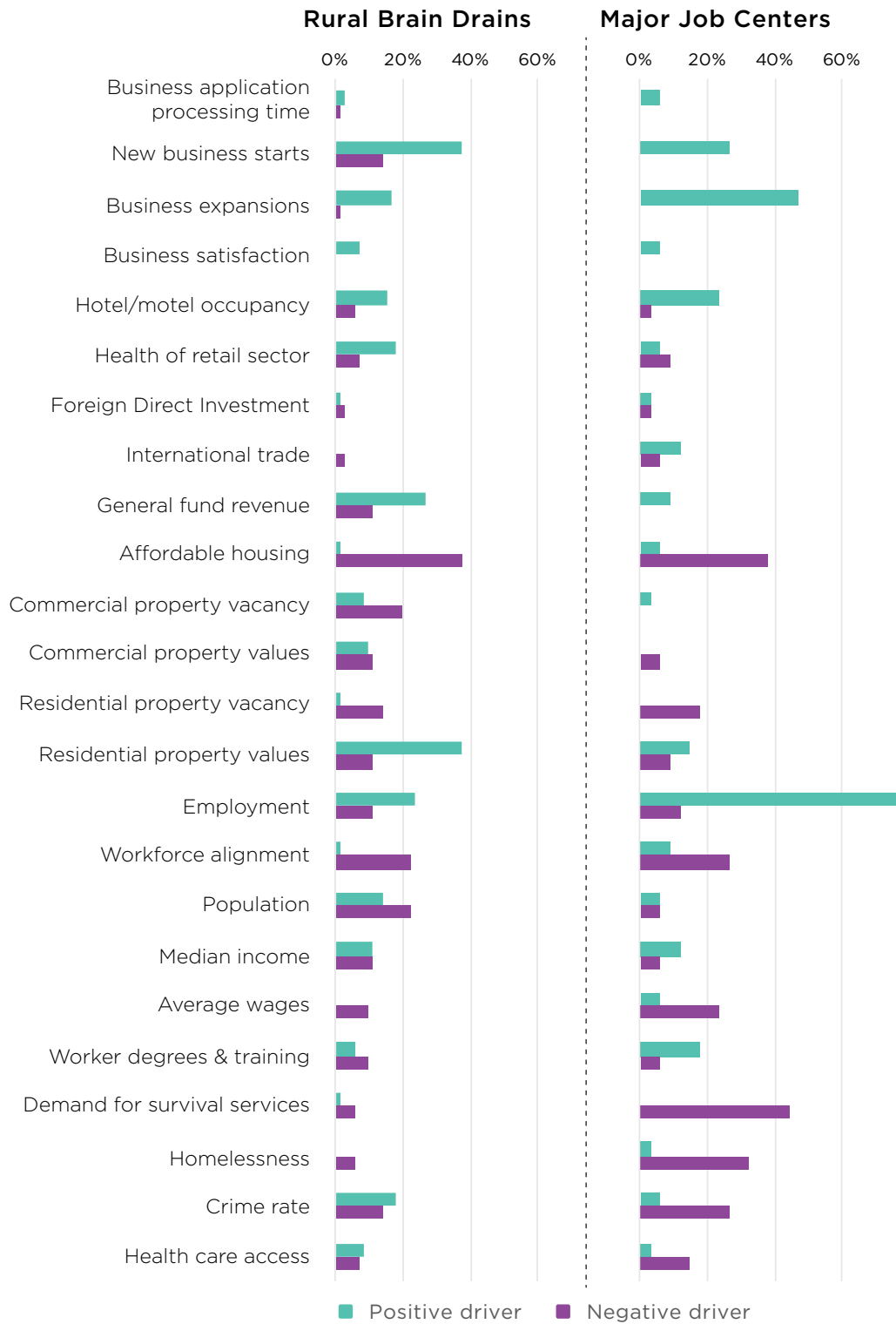
Appendix: Top drivers by economy type

Percent of cities by economy type selecting factors as one of three most positive/most negative.



Appendix: Top drivers by economy type

Percent of cities by economy type selecting factors as one of three most positive/most negative.



Endnotes

- 1** U.S. Census Bureau. (2012). *Census of Governments* [Data file]. Retrieved from <https://www.census.gov/govs/cog/>
- 2** Manyika, J., Remes, J., Dobbs, R., Orellana, J., & Schaer, F. (2012, April). *Urban America: U.S. Cities in the Global Economy*. Retrieved from www.mckinsey.com/global-themes/urbanization/us-cities-in-the-global-economy. Manyika, et al. define mid-sized as those between 150,000 and 1 million. Although these are at a scale somewhat larger than the definition of “mid-sized” used in our analysis, the general sentiment regarding both the economic importance of mid-sized economies and the lack of attention to these contributions is noted.
- 3** Throughout the report, we use the term “city” to refer to towns, cities and municipalities more generally.
- 4** North Carolina League of Municipalities. (2017). *Building North Carolina: One Hometown at a Time*. Retrieved from <https://herewegrownc.org/>
- 5** See Methodology section for further details.
- 6** Kneebone, E. (2016, Sept. 15). *Suburban poverty is missing from the conversation about America's future*. Retrieved from <https://www.brookings.edu/articles/suburban-poverty-is-missing-from-the-conversation-about-americas-future/>
- 7** U.S. Department of Agriculture. (2017, June 15). *Population and Migration*. Retrieved from <https://www.ers.usda.gov/topics/rural-economy-population/population-migration/>
- 8** Joint Center for Housing Studies of Harvard University. (2017). *State of the Nation's Housing 2017*. Retrieved from http://www.jchs.harvard.edu/research/state_nations_housing
- 9** Joint Center for Housing Studies of Harvard University. (2017).
- 10** Wagner, J. & Watch, D. (2017, April). *Innovation Spaces: The New Design of Work*. Retrieved from https://www.brookings.edu/wp-content/uploads/2017/04/cs_20170404_innovation_spaces_pdf.pdf
- 11** Fairlie, R. W., Tareque, I., Reedy, E.J., Morelix, A., & Russell, J. (2016, November) *The Kauffman Index: Main Street Entrepreneurship: National Trends*. Retrieved from <http://www.kauffman.org/kauffman-index/reporting/main-street>; Fairlee, R., Morelix, A., & Tareque, I. (2017, May). *The Kauffman Index: Startup Activity: National Trends*. Retrieved from <http://www.kauffman.org/kauffman-index/reporting/startup-activity>
- 12** U.S. Census Bureau. (2017, July 13). *2015 Annual Survey of Entrepreneurs* [Data file]. Retrieved from <https://www.census.gov/newsroom/press-kits/2017/entrepreneurs.html>
- 13** U.S. Census Bureau. (2017, July 13).
- 14** U. S. Census Bureau. (2017, Feb.). *Statistics of U.S. Businesses* [Data file]. Retrieved from <https://www.census.gov/programs-surveys/susb.html>
- 15** Ross, M. & Holmes, N. (2017, June). *Meet the out-of-work: Local profiles of jobless adults and strategies to connect them to employment*. Retrieved from https://www.brookings.edu/wp-content/uploads/2017/06/out-of-work_paper_final.pdf
- 16** Ross, M. & Holmes, N. (2017, June).
- 17** Joint Center for Housing Studies of Harvard University. (2017).
- 18** Joint Center for Housing Studies of Harvard University. (2017).
- 19** Formann, A.K. (1984). *Die Latent-Class-Analyse: Einführung in die Theorie und Anwendung*. Weinheim, Germany: Beltz.
- 20** Dolnicar, S. (2002, Dec. 2). *A Review of Unquestioned Standards in Using Cluster Analysis for Data-driven Market Segmentation*. Retrieved from <http://ro.uow.edu.au/commpapers/273/>



NLC NATIONAL
LEAGUE
OF CITIES