2017

MUFI 2017-2018 Reports

Miami Urban Future Initiative, Florida International University

FIU | Miami Urban Future Initiative

Year One Reports

2017-2018

KNIGHT FOUNDATION

FIU | Communication, Architecture + The Arts

creative class group

FIU | Miami Urban Future Initiative

The Miami Urban Future Initiative (MUFI) is a joint effort between Florida International University's College of Communication, Architecture + The Arts (CARTA) and Dr. Richard Florida and the Creative Class Group to develop new research and insights for building a stronger, more innovative, and more inclusive economy in Greater Miami. Its efforts are made possible in part thanks to generous funding from the John S. and James L. Knight Foundation.

FIU CARTA hosts this initiative as part of its work to strengthen Miami's creative economy. By analyzing trends and responding to talent needs, CARTA is supporting South Florida's development as an international epicenter for architecture, arts, design, and culture. Dean of the college and Principal Investigator Brian Schriner has over 26 years of higher education teaching and administrative experience and is fully committed to a trans-disciplinary mission to drive the information, innovation, and cultural economy of South Florida.

Dr. Florida has written several global best sellers, including the award winning The Rise of the Creative Class, and has been named the world's most influential thought leader by a 2013 MIT Study. Dr. Florida and the Creative Class Group bring a wealth of knowledge, experience, and global networks to provide insight towards maximizing growth and prosperity.

Knight Foundation's goals of supporting entrepreneurship and innovation in Miami led it to invest in FIU CARTA to form MUFI. The collaboration will engage top thinkers and researchers from across the region and the world alongside Miami's business leaders, economic development practitioners, and other key stakeholders for years to come.

Through data-driven research and assessments of the key trends shaping the region, informing the broad strategic vision for the region's private and public stakeholders, and bringing global thought-leaders and practitioners to think about the region's future, MUFI seeks to provide the thought leadership and awareness to guide Miami's evolution as a global city.

Over the last few decades, Miami has benefited from the strategic action of visionary stakeholders, companies, universities and colleges, and elected officials. It is now time to renew Miami's commitment to a regional strategy and to engage a broad, region-wide conversation about a more inclusive prosperity that takes into account the mounting realities and challenges that face our communities today. The time to act is now: if it misses this opportunity, Miami risks losing the economic advantages it has achieved.

To learn more about the initiative, please visit www.miamiurbanfuture.org. You can also engage with MUFI on social media @MIAUrbanFuture and #MUFI. To explore partnerships and collaborations, please contact MUFI at mufi@fiu.edu or at 305-535-2699

KNIGHT FOUNDATION

FIU | Communication, Architecture + The Arts

creative class group

FIU | Miami Urban Future Initiative

FIU College of Communication, Architecture + The Arts (CARTA) hosts the Miami Urban Future Initiative (MUFI) as part of its work to strengthen Miami's creative economy. By analyzing trends and responding to talent needs, CARTA is supporting South Florida's development as an international epicenter for architecture, arts, design, and culture. Being able to bring leading experts like Dr. Richard Florida and the Creative Class Group to help elevate these regional conversations over the years has been an extraordinary opportunity for our college and the broader South Florida community. It is my hope that you find the reports enclosed within this booklet to be as informative and thought-provoking as I have.

Brian Schriner
Dean, FIU College of Communication, Architecture + The Arts
(CARTA)

Greater Miami is a region on the cusp. Over the past decade or so, it has become a leading global hub lined with new skyscrapers and gleaming towers, with a vibrant arts, culture and design scene and a rapidly rising startup ecosystem to boot. But issues related to sea-level rise, inequality, gentrification, housing affordability and lack of transit cloud its future. We believed the region was missing a think tank based on deep data, serious analysis and best-practices from across the world to help better assess and address our opportunities and challenges. We launched MUFI to fill that gap in knowledge and to help paint a region-wide vision while engaging a robust conversation about South Florida's shared future.

Richard Florida
Visiting Fellow, FIU Miami Urban Future Initiative
(MUFI)


MIAMI'S NEW
URBAN CRISIS
Richard Florida
creative class group
in support by:
FIU
KNIGHT FOUNDATION

MIAMI'S NEW URBAN CRISIS

THE MIAMI URBAN FUTURE INITIATIVE

The Miami Urban Future Initiative is a joint effort between the Creative Class Group and Florida International University's College of Communication, Architecture + The Arts (CARTA) to develop new research and insights for building a stronger, more innovative, and more inclusive economy in Greater Miami. The initiative engages top thinkers and researchers from across the region and the world to combine their knowledge with that of the region's business leaders, economic development practitioners, and other key stakeholders. Its efforts are made possible thanks to generous funding from the John S. and James L. Knight Foundation.

FLORIDA INTERNATIONAL UNIVERSITY

Florida International University (FIU) is classified by Carnegie as a R1: Doctoral Universities—Highest Research Activity and recognized as a Carnegie Community Engaged university. It is a public research university, with colleges and schools, that offers 196 bachelor's, master's, and doctoral programs in fields such as engineering, computer science, international relations, architecture, law, and medicine. As one of South Florida's anchor institutions, FIU contributes almost $9 billion each year to the local economy. FIU is "Worlds Ahead" in finding solutions to the most challenging problems of our time. FIU emphasizes research as a major component of its mission. FIU has awarded more than 220,000 degrees and enrolls more than 55,000 students in two campuses and three centers, including FIU Downtown on Brickell, FIU@I-75, and the Miami Beach Urban Studios. FIU's Medina Aquarius Program houses the Aquarius Reef Base, a unique underwater research facility in the Florida Keys. FIU also supports artistic and cultural engagement through its three museums: Patricia & Phillip Frost Art Museum, the Wolfsonian-FIU, and the Jewish Museum of Florida-FIU. FIU is a member of Conference USA with more than 400 student-athletes participating in 18 sports.

FIU COLLEGE OF COMMUNICATION, ARCHITECTURE + THE ARTS

The College of Communication, Architecture + The Arts (CARTA) provides students with the distinct experience of working closely with an award-winning faculty, in nationally ranked accredited programs, in the heart of Miami, North Miami, Miami Beach, and Wynwood— four of the country's most vibrant, diverse, and creative cities! Focused on its engaged mission of driving the information, innovation, and cultural economy of South Florida and beyond, CARTA is committed to a trans-disciplinary curriculum that prepares graduates for meaningful careers and leadership in their chosen professions.

CREATIVE CLASS GROUP

The Creative Class Group (CCG) is an advisory services firm composed of leading next-generation researchers, academics, and business strategists. Utilizing its unique approach and metrics, CCG works with companies and governments worldwide.

JOHN S. AND JAMES L. KNIGHT FOUNDATION

Knight Foundation is a national organization with strong local roots. The foundation invests in journalism, in the arts, and in the success of cities where brothers John S. and James L. Knight once published newspapers. Knight Foundation's goal is to foster informed and engaged communities, which it believes are essential for a healthy democracy

THE AUTHOR

RICHARD FLORIDA

Richard Florida is a university professor and director of cities at the Martin Prosperity Institute at the University of Toronto, a distinguished fellow at New York University's Schack Institute of Real Estate, and a visiting fellow at Florida International University. He serves as senior editor for *The Atlantic*, where he cofounded and serves as editor at large for *CityLab*. He is also the author of the award-winning *The Rise of the Creative Class*. His latest book, *The New Urban Crisis*, was published by Basic Books in April 2017.

INTRODUCTION

Greater Miami has experienced remarkable economic success in recent years. The metro area—which spans Miami-Dade, Broward, and Palm Beach counties—is now the eighth-largest in the United States, with around 6.1 million residents and economic output that exceeds that of many nations. As a symbol of Miami's dramatic growth, its downtown has been stunningly transformed into a bustling area featuring new restaurants and hotels, an expanding cluster of startup companies, and a twenty-first century skyline of high-rise offices and condo towers.

But, there is a downside to Miami's urban revival: Its recent economic boom has generated a New Urban Crisis born from its very success. Compared to the old urban crisis of the 1960s and 1970s, which was defined by deindustrialization and the economic abandonment of cities, the New Urban Crisis is even larger and more encompassing. Today, the clustering of talent, industry, and economic activity that powers innovation and economic growth has carved deep divides in cities and metros, which have become increasingly unequal and unaffordable.[1]

Photo: Scott Webb

WINNER-TAKE-ALL URBANISM

A defining feature of the New Urban Crisis is "winner-take-all urbanism." In a winner-take-all economy, leading superstar talent like Beyoncé, Brad Pitt, and LeBron James or billionaire CEOs like Bill Gates, Jeff Bezos, and Mark Zuckerberg make outsize money compared to the rest of the population. From 1978 to 2015, America's CEOs saw their pay increase by more than 940 percent, while the average worker's wages grew by just 10 percent. By the 2000s, the average CEO took home 300 times the earnings of the average worker in the U.S.

The same kind of phenomena is at work in today's cities. Under winner-take-all urbanism, the world's leading superstar cities attract disproportionate shares of talent, investment, corporations, industries, and other economic assets.[2]

Miami has quickly joined the ranks of these superstar cities, alongside places like New York, London, Hong Kong, Singapore, Tokyo, Los Angeles, and San Francisco. Miami placed thirtieth on A.T. Kearney's 2017 Global Cities Index—up six places from just five years ago.[3] With $283 billion in economic output, Miami ranks twelfth among U.S. metros and forty-first among global metros, on par with Toronto, Brussels, and Seattle. Miami's economy is also quite productive compared to other global metros. The metro produces roughly $110,000 in economic output per worker—comparable to that of Hong Kong and Frankfurt—and nearly $50,000 in economic output per person, in line with Tokyo and Toronto.[4]

Figure 1: Global Metros and Economic Output

RANK	METRO AREA	COUNTRY	ECONOMIC OUTPUT (MILLIONS)	ECONOMIC OUTPUT PER PERSON	ECONOMIC OUTPUT PER WORKER
1	Tokyo	Japan	$1,624	$43,884	$83,263
2	New York	USA	$1,492	$73,938	$158,339
3	Los Angeles	USA	$928	$69,532	$158,165
4	Seoul-Incheon	S Korea	$903	$36,002	$69,533
5	London	UK	$831	$55,947	$94,847
6	Paris	France	$819	$65,354	$125,287
7	Shanghai	China	$810	$32,684	$69,782
8	Moscow	Russia	$750	$61,482	$105,975
9	Osaka-Kobe	Japan	$681	$36,535	$76,562
10	Beijing	China	$664	$30,335	$55,142
11	Chicago	USA	$582	$60,988	$125,817
12	Sao Paulo	Brazil	$579	$27,366	$57,018
13	Köln- Düsseldorf	Germany	$548	$47,735	$92,483
14	Guangzhou	China	$524	$39,800	$78,646
15	Houston	USA	$505	$75,893	$166,808
16	Shenzhen	China	$491	$45,374	$63,476
17	Mexico City	Mexico	$486	$23,017	$52,807
18	Tianjin	China	$478	$30,538	$53,942
19	Singapore	Singapore	$468	$84,399	$128,493
20	Dallas	USA	$458	$64,488	$132,630
21	Washington	USA	$454	$74,469	$139,109
22	Istanbul	Turkey	$449	$30,723	$85,137
23	Suzhou	China	$440	$41,306	$102,776
24	Chongqing	China	$425	$14,108	$24,540
25	Hong Kong	Hong Kong	$414	$56,751	$109,004
26	Rotterdam-Amsterdam	Netherlands	$397	$55,610	$98,463
27	Delhi	India	$396	$16,861	$58,516
28	Milan	Italy	$381	$49,286	$105,382
29	Nagoya	Japan	$377	$41,672	$81,200
30	San Francisco	USA	$375	$80,551	$164,521
31	Boston	USA	$371	$77,651	$139,160
32	Philadelphia	USA	$364	$59,910	$126,815
33	Wuhan	China	$324	$31,529	$75,061
34	Madrid	Spain	$316	$47,905	$98,405
35	Atlanta	USA	$311	$54,427	$118,944
36	Chengdu	China	$306	$21,272	$61,480
37	Busan-Ulsan	South Korea	$306	$39,160	$78,771
38	Toronto	Canada	$292	$47,750	$92,413
39	Brussels	Belgium	$291	$52,445	$117,979
40	Seattle	USA	$286	$76,504	$146,310
41	Miami	USA	$283	$46,989	$110,888
42	Hangzhou	China	$275	$30,820	$53,465
43	Nanjing	China	$272	$32,983	$78,121
44	Frankfurt am Main	Germany	$270	$60,321	$106,745
45	Wuxi	China	$270	$41,368	$95,183
46	Qingdao	China	$266	$29,357	$93,504
47	Munich	Germany	$266	$66,739	$111,975
48	Sydney	Australia	$251	$51,115	$100,856
49	Changsha	China	$246	$33,604	$114,963
50	Dalian	China	$245	$35,317	$76,067

Note: Values are in U.S. dollars measured in terms of purchasing power parity.
Source: Jesus Leal Trujillo and Joseph Parilla, "Redefining Global Cities," The Brookings Institution, September 29, 2016.

WINNER-TAKE-ALL URBANISM // CONTINUED

Miami's economy—like those of global superstar cities—is defined by large concentrations of high value-added industries like finance, entertainment, and media. The metro also benefits from thriving real estate, hospitality, and tourism sectors and rising shares of high-tech industry, spurred by the migration of startups from suburbs to urban centers. Furthermore, Miami has seen tremendous growth as a startup hub.

While technology, density, and innovation are critical to urban prosperity, research has shown that they are also correlated to various measures of segregation and inequality. The concentration of high-tech startups and venture capital, for instance, is closely associated with higher levels of wage inequality and economic segregation.[5] With over a billion dollars in venture capital activity ($1.3 billion), Miami ranks eighth in the U.S. for venture capital investment. This places the metro alongside Seattle ($1.5 billion), ahead of Chicago ($1.2 billion) and Washington, D.C. ($1.1 billion), and well ahead of Austin ($977 million) and Philadelphia ($897 million).[6] A considerable share of Miami's venture capital is concentrated in downtown areas, including neighborhoods like Brickell, Edgewater-Morningside, and Wynwood, while other clusters are found in Coconut Grove, Miami Beach, and downtown Boca Raton (home to Florida Atlantic University).

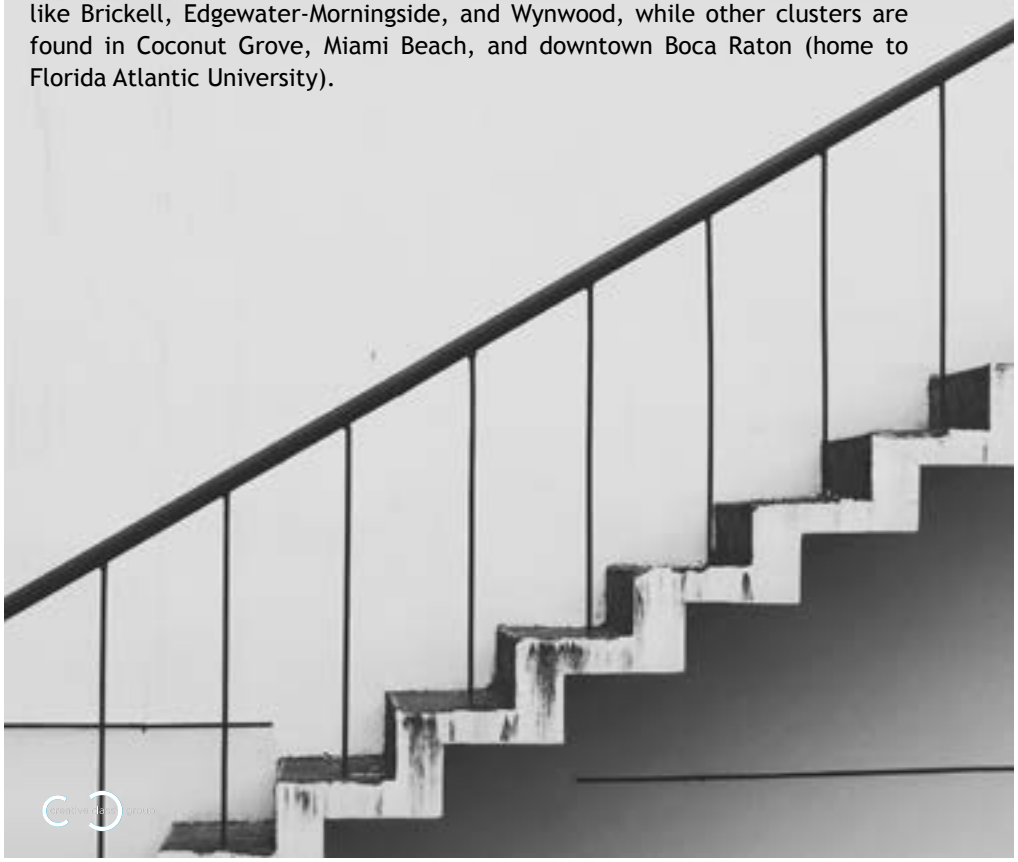
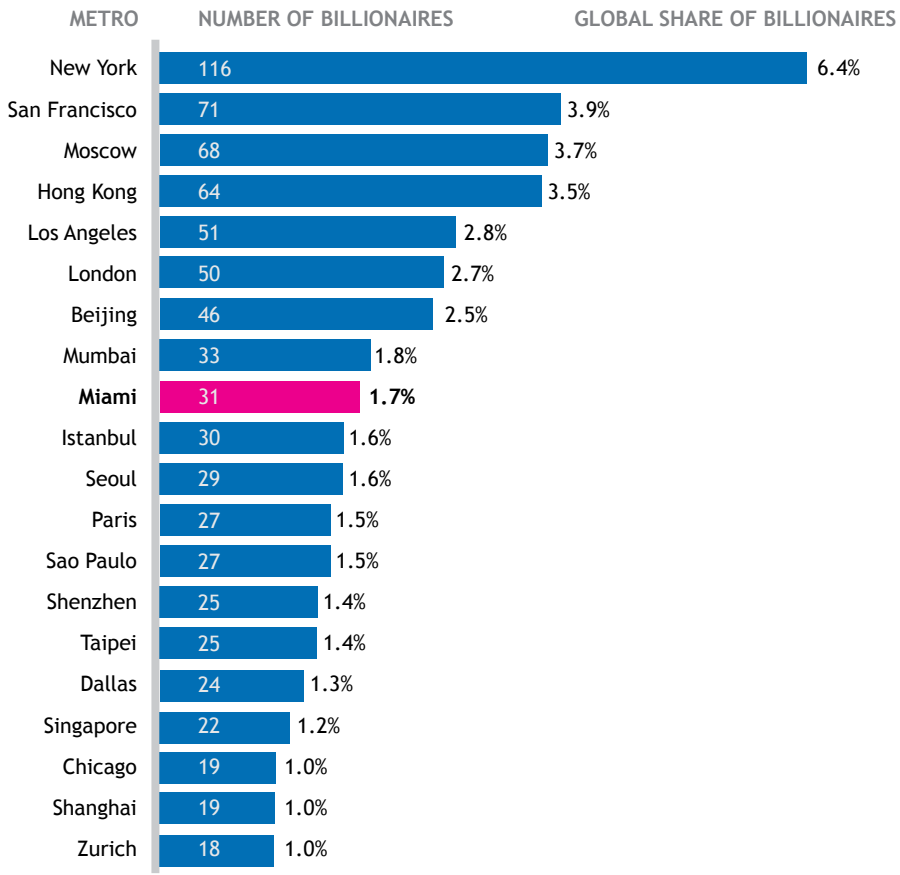


Figure 2: Number and Share of Billionaires for Global Metros

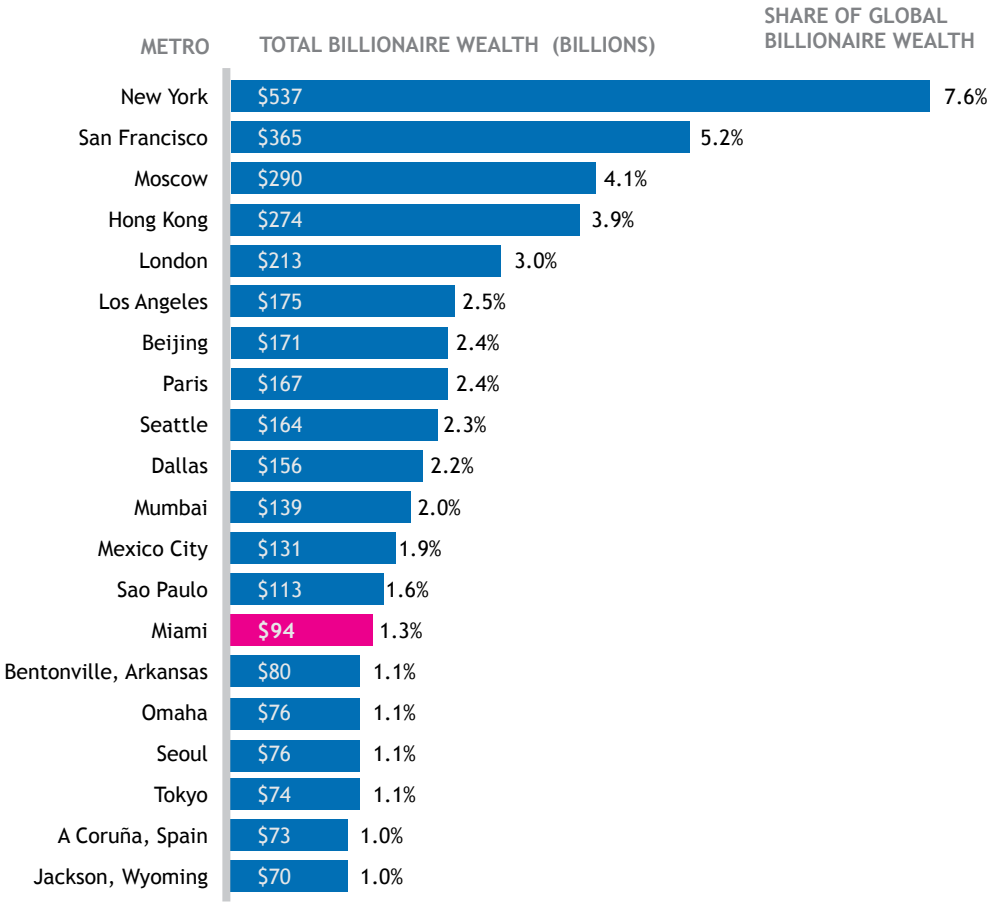


Source: Richard Florida, Charlotta Mellander, and Isabel Ritchie, "The Geography of the Global Super-Rich," Martin Prosperity Institute, Rotman School of Management, University of Toronto, 2016.

WINNER-TAKE-ALL URBANISM // CONTINUED

Another indicator of Miami's winner-take-all urbanism is its high concentration of the super-rich, measured as billionaires, who represent a small fraction of the metro's population, but hold a significant share of its wealth. Home to thirty-one billionaires, or 1.7 percent of the global share, Miami ranks ninth on this metric. The metro ranks fourteenth in terms of the total net worth of its billionaires ($94 billion) and sixth in terms of its number of ultra-high net worth individuals.[7]

Figure 3: Billionaire Wealth for Global Metros



Source: Richard Florida, Charlotta Mellander, and Isabel Ritchie, "The Geography of the Global Super-Rich," Martin Prosperity Institute, Rotman School of Management, University of Toronto, 2016.

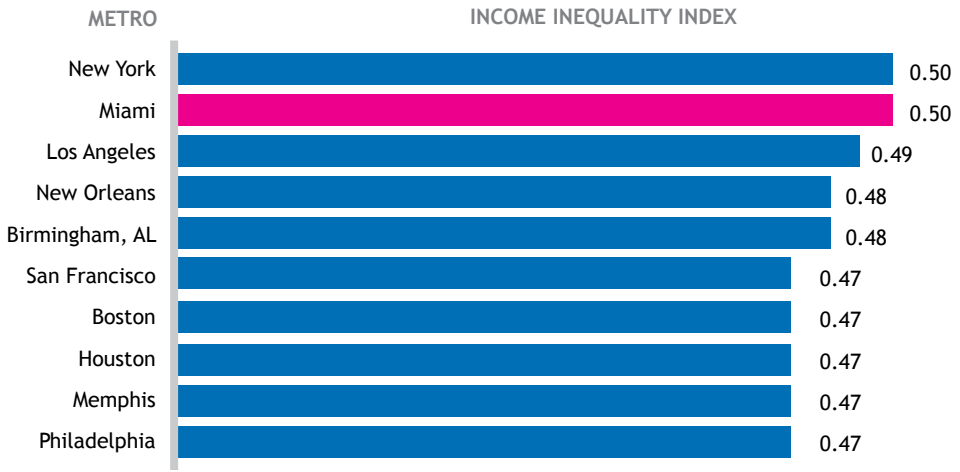
DIMENSIONS OF MIAMI'S NEW URBAN CRISIS

Even the winners of winner-take-all urbanism suffer from a New Urban Crisis. In fact, these metros are typically hit hardest by the downsides of urban growth. Indeed, the New Urban Crisis—measured in terms of inequality, economic segregation, and housing unaffordability—is most severe in the largest, densest, most affluent, highly educated, knowledge-based, innovative, and tech-oriented metros.[8]

ECONOMIC INEQUALITY

A key marker of the New Urban Crisis is a high level of economic inequality. The Miami metro ranks second among large U.S. metros in terms of income inequality, measured by the Gini coefficient. The metro's income inequality is worse than that of L.A., San Francisco, Washington, D.C., Boston, and Chicago, and equivalent to that of Zimbabwe.

Figure 4: Income Inequality Index for Large U.S. Metros



Note: Large metros are those with more than one million people.
Source: Richard Florida, The New Urban Crisis, Basic Books, 2017.

The Miami metro suffers from a troublingly large economic gap between its rich and its poor. As of 2016, the richest 1 percent of residents in Miami took home forty-five times as much as the rest of the metro's residents.[9] This economic disparity is particularly concerning, given that it is propelled by the low incomes of those at the bottom.

This can be seen in the share of income held by the top 5 percent of Miami's population compared to the bottom 20 percent—otherwise known as the 95-20 inequality ratio. While the top 5 percent of Miami households earn an average of $202,461 each year, the lowest 20 percent of households earn an average of $19,775.[10] In other words, the incomes of the top 5 percent are more than ten times that of the bottom 20 percent. Indeed, the Miami metro ranks sixth among large U.S. metros on this 95-20 ratio.

Figure 5: 95-20 Ratios for Large U.S. Metros

Rank	Metro Area	Household Income (95th percentile)	Household income (20th percentile)	95-20 Ratio
1	New York	$282,359	$23,853	11.8
2	San Francisco	$353,483	$31,761	11.1
3	New Orleans	$196,658	$18,173	10.8
4	Boston-Cambridge	$293,653	$27,883	10.5
5	Los Angeles	$243,771	$23,743	10.3
6	Miami	$202,461	$19,775	10.2
7	Houston	$240,711	$24,758	9.7
8	Memphis	$177,790	$18,350	9.7
9	Providence	$204,465	$21,242	9.6
10	Philadelphia	$230,312	$24,261	9.5

Source: Alan Berube and Natalie Holmes, "City and Metropolitan Inequality on the Rise, Driven by Declining Incomes," Brookings Institution Metropolitan Policy Program, January 14, 2016.

DIMENSIONS OF MIAMI'S NEW URBAN CRISIS // CONTINUED

Another key dimension of the New Urban Crisis is the decline in stable, blue-collar, middle-class jobs and the split in the job market between high-paid professional, knowledge, and creative jobs and lower-paid service jobs. Across the U.S., the working class now makes up about a fifth of the workforce (twenty-six million workers), down from 60 percent in the 1880s, while well-paid knowledge, professional, and creative workers make up 33 percent (forty-two million workers) and the much lower-paid service class makes up around 45 percent (sixty million workers).[11]

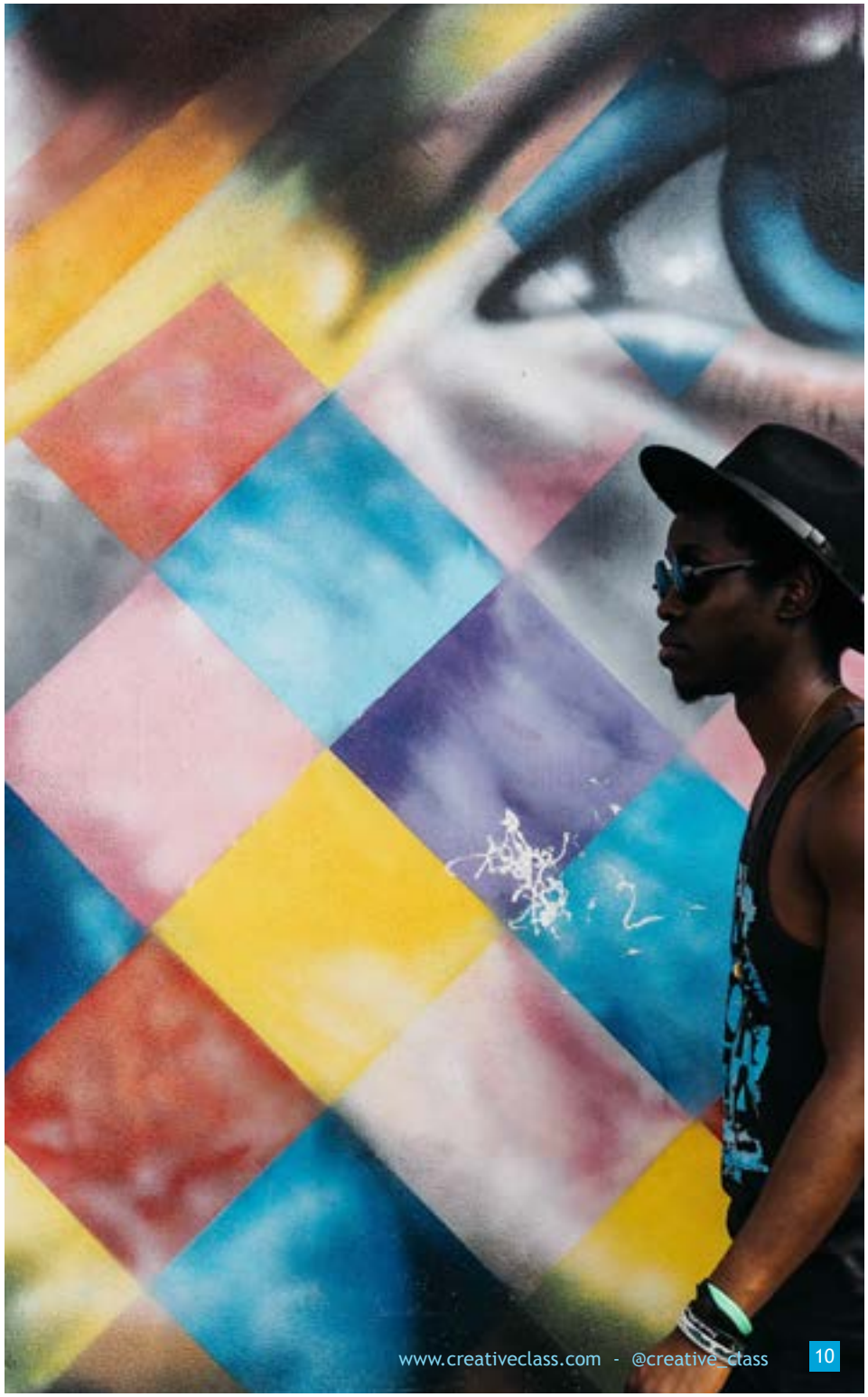
The economic gap among the three major classes is even worse in Greater Miami, where the service class makes up a much larger share of the workforce (51 percent) and earns $34,627 per year. Not only does the average service class worker in Miami make 25 percent less than the average worker ($46,160), but they also make less than half the salary of the average knowledge, professional, and creative class worker ($76,131).

Figure 6: Miami Workforce by Class

Note: 4,950 Miami residents are employed in Agriculture Occupations (less than 1% of the workforce).

	Total Employment	Share of Employment	Average Annual Salary	Share of Average Annual Salary	Share of Creative Class Salary
Creative Class	684,280	27.2%	$76,131	41%	N/A
Service Class	1,277,950	50.8%	$34,627	75%	45%
Working Class	545,810	21.7%	$35,804	78%	47%
Total Workforce	2,512,990		$46,160	N/A	N/A

Source: Bureau of Labor Statistics Occupational Employment Statistics 2016.



SPATIAL INEQUALITY AND ECONOMIC SEGREGATION

Yet another feature of the New Urban Crisis is economic segregation, or spatial inequality—defined as the separation of the advantaged and disadvantaged into distinct areas of a city or metro. In many ways, the effects of spatial inequality are even more concerning than economic inequality, since they compound both the advantages of those at the top and the adverse circumstances of those at the bottom. This divide is deeply damaging to our economic and social fabric. By locating in the best neighborhoods, advantaged residents gain access not only to the most economic opportunities, but also to the best schools, libraries, services, and amenities—all of which allow for increased upward mobility. Meanwhile, less-advantaged residents are relegated to neighborhoods with higher levels of crime, worse schools, and fewer opportunities to improve their circumstances.

The Miami metro ranks among the top ten large metros on one measure of economic segregation and among the top twenty on several others, as the table below shows:

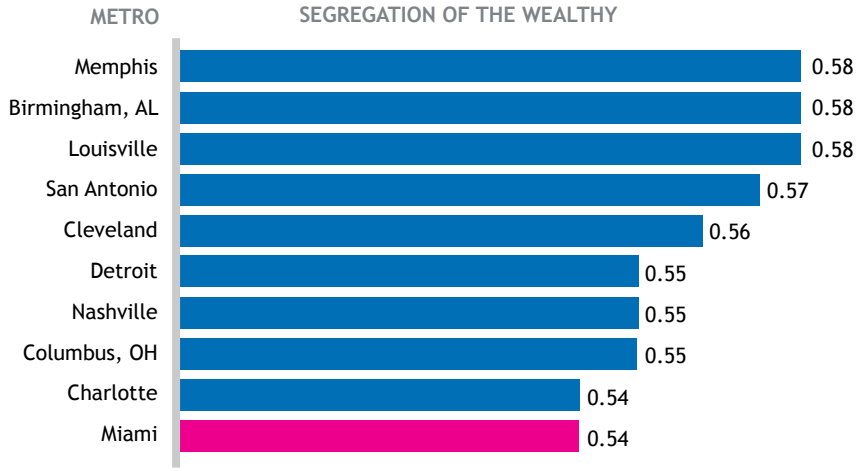
Figure 7: Miami's Levels of Segregation

MEASURE OF SEGREGATION	SCORE	RANK AMONG LARGE U.S. METROS	RANK AMONG ALL U.S. METROS
Overall Economic Segregation	0.79	26	39
Occupational Segregation	0.85	16	30
Creative Class Segregation	0.26	16	36
Service Class Segregation	0.13	21	85
Working Class Segregation	0.25	26	48
Income Segregation	0.72	29	70
Segregation of the Poor	0.33	46	175
Segregation of the Wealthy	0.54	10	31
Segregation Inequality Index	0.83	16	40

Note: Large metros are those with over one million people.
Source: Richard Florida, The New Urban Crisis, Basic Books, 2017.

Miami ranks tenth among large U.S. metros according to its segregation of the wealthy, a measure of the residential segregation of households with incomes of $200,000 or more. This is in many ways the most concerning measure of economic segregation, considering that wealthy residents have the means to segregate themselves from others. Miami ranks worse on this measure than superstar cities like New York and L.A. and leading tech hubs like San Jose, San Francisco, Boston, and Washington, D.C., whose shares are the lowest of the bunch.

Figure 8: Wealth Segregation for Large U.S. Metros



Note: Large metros are those with over one million people.
Source: Richard Florida, The New Urban Crisis, Basic Books, 2017.

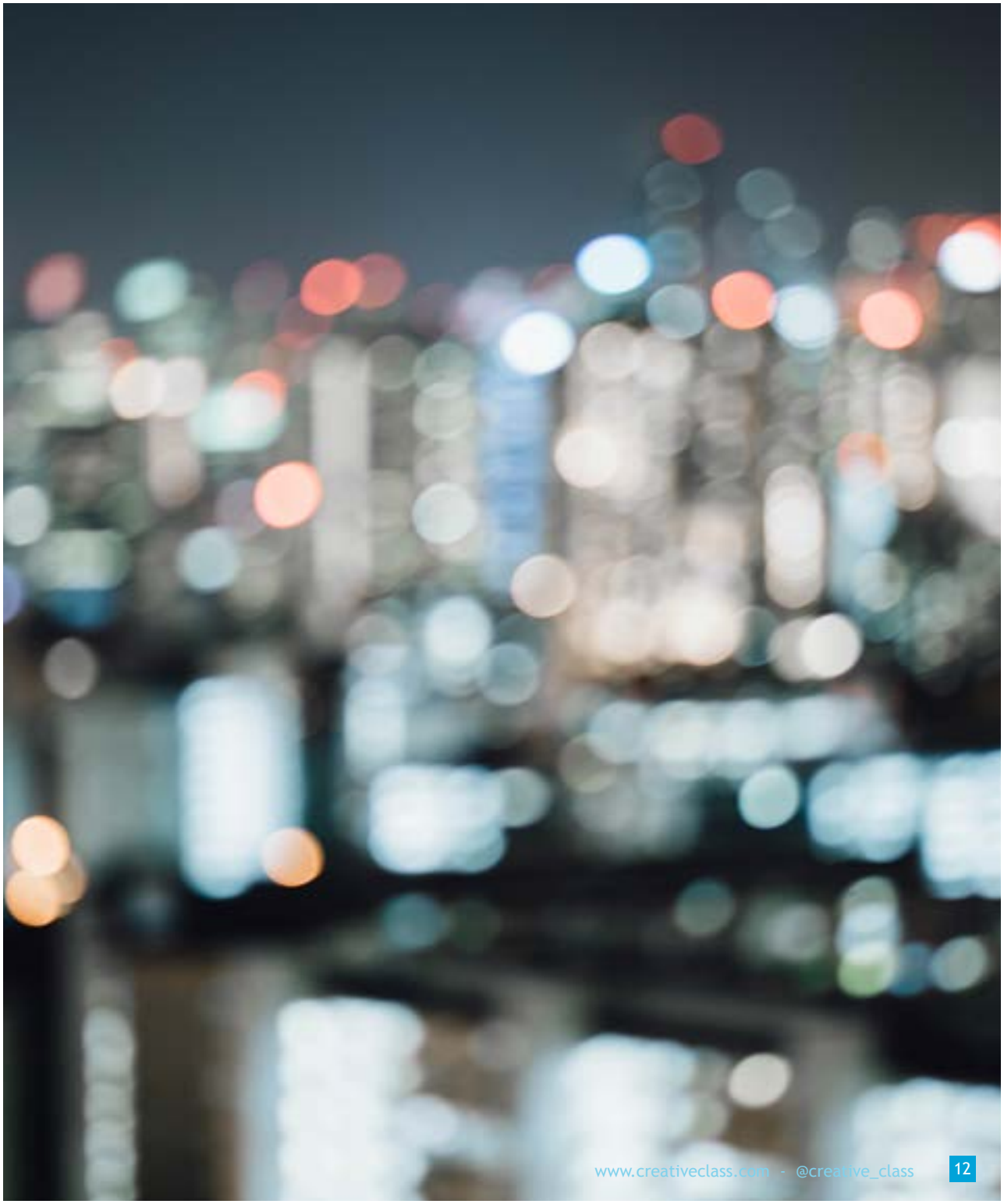
DIMENSIONS OF MIAMI'S NEW URBAN CRISIS // CONTINUED

In Miami and elsewhere, economic inequality and economic segregation compound each other's negative effects. Miami ranks sixteenth among large U.S. metros on the Segregation Inequality Index, which combines the Overall Economic Segregation Index with measures of wage and income inequality.

Figure 9: Segregation Inequality Index for Large U.S. Metros

RANK	METRO AREA	SEGREGATION INEQUALITY INDEX
1	New York	0.98
2	Los Angeles	0.97
3	Houston	0.93
4	San Francisco	0.92
5	Philadelphia	0.90
6	Dallas	0.90
7	Charlotte	0.89
8	Chicago	0.89
9	Austin	0.88
10	Birmingham, AL	0.88
11	Boston	0.87
12	San Antonio	0.86
13	Memphis	0.85
14	San Diego	0.85
15	Denver	0.84
16	Miami	0.83
17	Cleveland	0.83
18	Columbus, OH	0.83
19	Atlanta	0.81
20	San Jose	0.80

Note: Large metros are those with over one million people.
Source: Richard Florida, The New Urban Crisis, Basic Books, 2017.

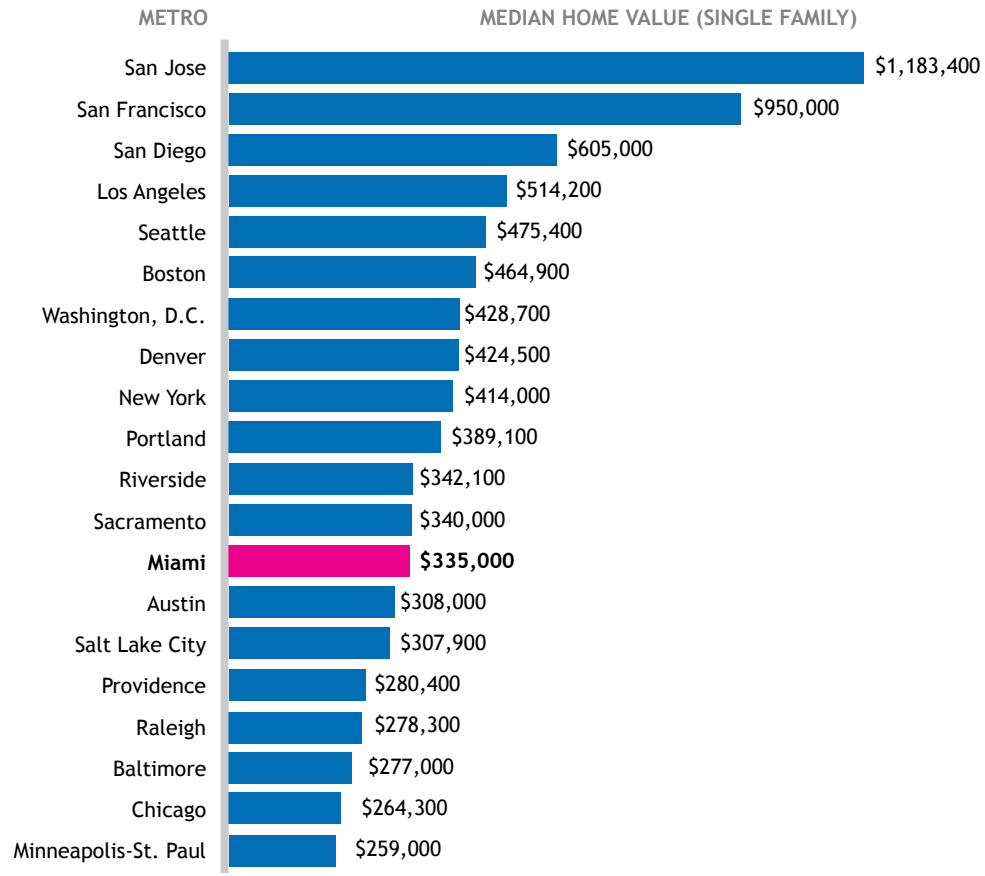


HOUSING UNAFFORDABILITY

Still another key dimension of the New Urban Crisis is the worsening unaffordability of housing. Although Miami's housing prices are not as steep as New York City's or San Francisco's, the metro is still plagued by a deepening crisis of housing affordability.

Miami ranks thirteenth among large U.S. metros according to the median value of its single-family homes ($335,000). In fact, the only places where the median value of single-family homes exceeds that of Miami are an elite group of superstar cities and established knowledge hubs that span the Bay Area, Southern California, the Boston-New York-Washington Corridor, the Pacific Northwest, and Denver.

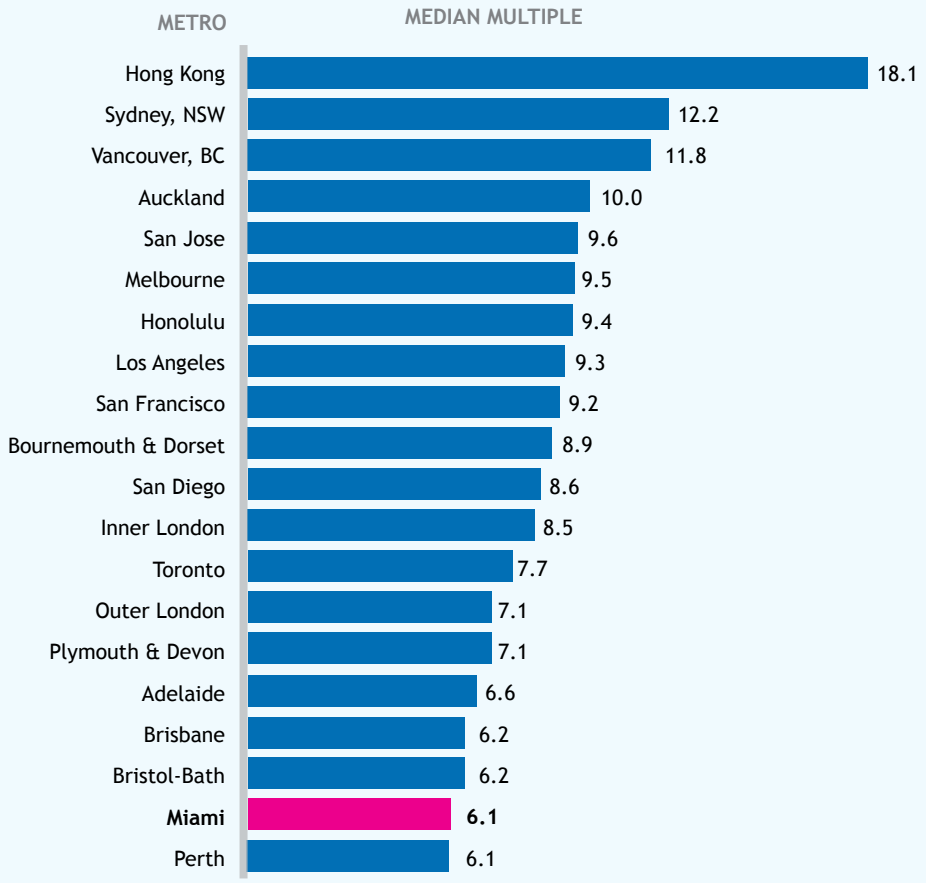
Figure 10: Median Values of Single-Family Homes for Large U.S. Metros



Source: National Association of Realtors, "Metropolitan Median Area Prices and Affordability," 2017.

Miami's burgeoning housing crisis becomes even clearer when we consider the baseline measure of housing affordability: the median cost of housing compared to the median income of residents. Miami ranks among the twenty least-affordable global cities or metros in the world in terms of its "median multiple," or ratio of median housing prices to median household income. This is worse than in New York and Boston, where incomes are higher.

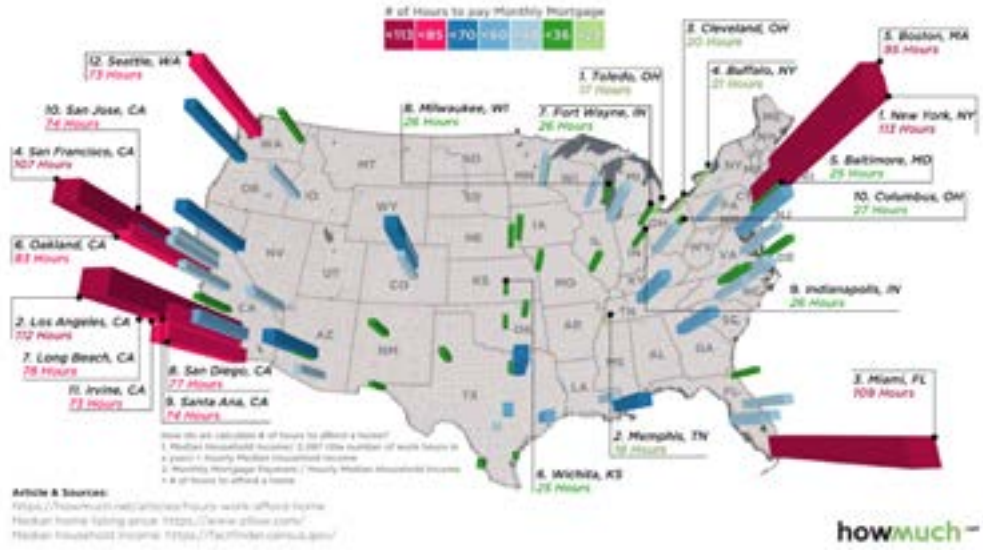
Figure 11: Housing Cost to Income for Global Metros



Note: Median multiple is the median house price divided by median household income.
Source: Demographia, "13th Annual Demographia International Housing Affordability Survey," 2017.

Miami also ranks third among large U.S. cities where people have to work the most hours each month in order to pay their mortgage (determined by comparing the median household income with the average mortgage payment in each city). On average, people in Miami have to work more than 109 hours each month (about twenty-seven hours per week) to pay for housing. This falls just short of the 112-plus hours needed to a pay a mortgage in New York and L.A., but ranks ahead of the hours needed in San Francisco, Boston, and San Jose, as shown on the map below:[12]

Figure 12: Number of Work Hours Needed to Pay Monthly Mortgage



Source: HowMuch.net, "How Many Hours Americans Need to Work to Pay Their Mortgage," October 17, 2017; Data from Zillow and the U.S. Census Bureau American Community Survey 2015.

DIMENSIONS OF MIAMI'S NEW URBAN CRISIS // CONTINUED

Miami's housing affordability crisis can also be seen in the share of owners and renters who devote a significant portion of their income to housing. While the rule of thumb is that households should devote roughly 30 percent of their income to housing, more than 40 percent (41.6 percent) of Miami homeowners are considered "cost-burdened," meaning they devote more than 30 percent. This places Miami second among large U.S. metros, just behind L.A. and ahead of notoriously expensive metros like New York, San Francisco, and San Jose.

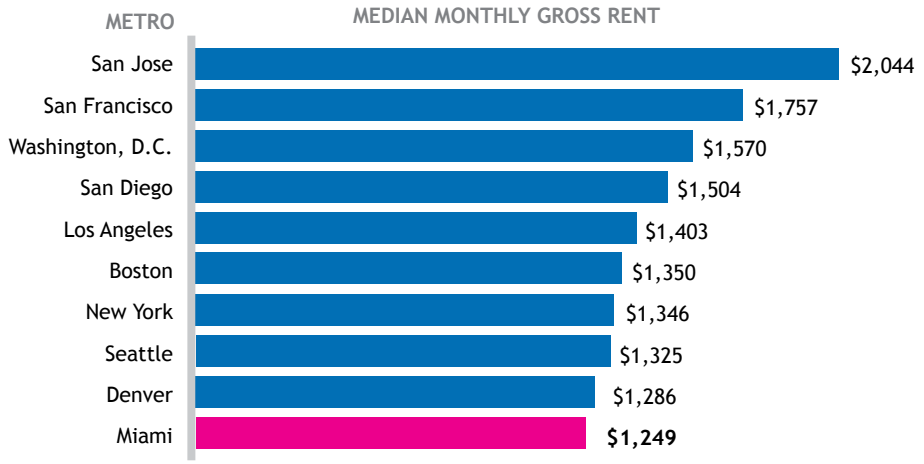
Figure 13: Cost-Burdened Households With a Mortgage for Large U.S. Metros

RANK	METRO AREA	SHARE OF COST-BURDENED OWNER HOUSEHOLDS WITH A MORTGAGE
1	Los Angeles	42.9%
2	Miami	41.6%
3	Riverside	40.4%
4	New York	40.1%
5	San Diego	40.0%
6	San Francisco	36.3%
7	San Jose	34.9%
8	Sacramento	32.9%
9	Las Vegas	32.5%
10	Orlando	32.3%

Note: Large metros are those with over one million people.
Source: U.S. Census American Community Survey 2016.

Miami's housing affordability crisis extends to its renters as well. Miami ranks tenth among large U.S. metros according to its median monthly gross rent ($1,249), which is comparable to that of Denver, Seattle, New York, and Boston.

Figure 14: Monthly Gross Rent for Large U.S. Metros



Source: U.S. Census American Community Survey 2016.

Indeed, the average household in the Miami metro devotes more than 40 percent (43 percent) of its income to rent—the second-highest share among the top fourteen largest metros in the U.S.[13] Today, Miami ranks first among large U.S. metros—ahead of New York, Los Angeles, and San Francisco—according to its share of cost-burdened renter households, with more than six in ten of its renters facing extreme cost burdens.

Figure 15: Cost-Burdened Renter Households for Large U.S. Metros

RANK	METRO AREA	SHARE OF COST-BURDENED RENTER HOUSEHOLDS
1	Miami	62.7%
2	Riverside	58.2%
3	Los Angeles	57.9%
4	San Diego	57.1%
5	New Orleans	57.1%
6	Orlando	54.8%
7	Sacramento	53.5%
8	New York	53.2%
9	Rochester	52.6%
10	Virginia Beach	52.5%

Note: Large metros are those with over one million people.
Source: U.S. Census American Community Survey 2016.

DIMENSIONS OF MIAMI'S NEW URBAN CRISIS // CONTINUED

Overall, Miami's housing affordability crisis hits hardest at its least-advantaged residents. Miami ranks among the top five large U.S. metros where people have the least amount of money left over after paying for their housing, with an average of less than $30,000 left over. This is worse than in expensive metros like New York, San Francisco, Boston, or Washington, D.C., where the average worker has between $42,000 and $49,000 left over.

Miami's housing affordability crisis is even more damaging to the members of its less-advantaged working and service classes. The average member of Miami's working class has just $20,000 left over after accounting for housing costs—worse than in New York and San Francisco, but slightly better than in Austin and L.A. The metro's average service worker has even less (around $15,000 after paying for housing), with Miami ranking sixth among large U.S. metros on this metric.

Figure 16: Average Wage Left Over After Paying for Housing

RANK	METRO AREA	AVERAGE WAGE AFTER HOUSING
1	Orlando	$25,774
2	Las Vegas	$26,194
3	Riverside	$27,296
4	**Miami**	**$27,482**
5	Virginia Beach	$28,448
6	Jacksonville	$29,046
7	Memphis	$29,824
8	Tampa	$30,294
9	San Antonio	$30,434
10	Nashville	$30,520

Note: Large metros are those with over one million people.
Source: Richard Florida, The New Urban Crisis, Basic Books, 2017.

Figure 17: Average Working Class Wage Left Over After Paying for Housing

RANK	METRO AREA	WORKING CLASS WAGES AFTER HOUSING COST
1	Austin	$19,992
2	Los Angeles	$20,050
3	**Miami**	**$20,452**
4	**Riverside**	**$20,777**
5	Orlando	$21,173
6	Tampa	$21,185
7	San Antonio	$21,294
8	Washington, D.C.	$21,539
9	San Diego	$21,595
10	Raleigh	$21,772

Note: Large metros are those with over one million people.
Source: Richard Florida, The New Urban Crisis, Basic Books, 2017.

Figure 18: Average Service Class Wage Left Over After Paying for Housing

RANK	METRO AREA	SERVICE CLASS WAGES AFTER HOUSING COST
1	Orlando	$12,903
2	Virginia Beach	$13,284
3	Riverside	$13,501
4	**San Diego**	**$13,795**
5	Washington, D.C.	$13,923
6	**Miami-Fort Lauderdale-Pompano Beach, FL**	**$14,099**
7	San Jose	$14,372
8	Las Vegas	$14,394
9	Salt Lake City	$15,063
10	Atlanta	$15,161

Note: Large metros are those with over one million people.
Source: Richard Florida, The New Urban Crisis, Basic Books, 2017.

CONCENTRATED POVERTY

Despite the metro's economic resurgence, Greater Miami households still earn one of the lowest median incomes of any major metro in the country: around $48,435 a year. As of 2016, 14 percent of Greater Miami households and one in five families with children lived below the poverty line.[14]

In many metros struggling with concentrated poverty, race tends to overlay class. Miami in particular suffers from a high number of "racially concentrated areas of poverty," or census tracts where more than 40 percent of residents live in poverty and more than 50 percent of the population is non-white. But, unlike most metros, Miami's racially concentrated areas of poverty are less densely populated than its racially concentrated areas of affluence (defined as census tracts where the median income is at least four times the federal poverty level and 90 percent or more of the population is white). Miami's non-white residents also endure much higher levels of residential isolation.[15]

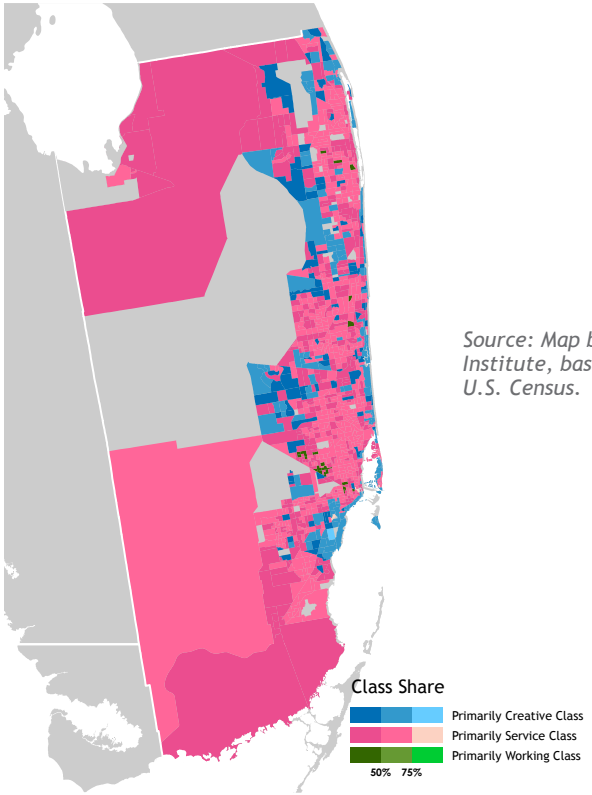
MIDDLE-CLASS DECLINE

In contrast to the old urban crisis of the 1960s and 1970s, the New Urban Crisis is marked by the disappearance of middle-class neighborhoods that were once platforms for upward economic mobility. Across the nation, the share of Americans who lived in middle-class neighborhoods declined from 65 percent in 1970 to 40 percent in 2012. Between 2000 and 2014, the middle-class share of the population shrank in 203 out of 229 metros in the U.S.[16] In Miami, the middle-class share of population declined from 51 percent in 2000 to 48.5 percent in 2014.[17]

A PATCHWORK METROPOLIS

The old categories of city and suburb no longer accurately describe our new urban reality. In some places, the city is rising and the suburbs are declining—a pattern that has been described as a "great inversion."[18] In other places, the suburbs continue to thrive, while neighborhoods in and around the urban core are characterized by concentrated poverty and disadvantage. If today's cities are increasingly divided, today's metropolitan areas take the form of a "patchwork metropolis" where small areas of concentrated affluence and advantage are surrounded by much larger swathes of concentrated disadvantage, which span both cities and suburbs. This patchwork pattern is defined by the locational preferences of the affluent and advantaged, who locate in and around the downtown core in close proximity to knowledge-based institutions and around areas of natural amenities—especially waterfronts.

Figure 19: Miami's Patchwork Metropolis



Source: Map by Martin Prosperity Institute, based on data from the U.S. Census.

As Figure 19 shows, Miami's patchwork pattern is shaped by the location of the affluent and advantaged along its coasts, in and around downtown Miami, and in close proximity to its knowledge institutions. At the same time, the metro's poor and less advantaged residents are pushed into areas of concentrated disadvantage that surround the urban core or extend farther out into the suburban periphery.

PUTTING IT ALL TOGETHER: THE NEW URBAN CRISIS INDEX

The New Urban Crisis Index is a composite ranking of all U.S. metros on three key indicators: economic inequality, economic segregation, and housing unaffordability. The Miami metro ranks sixth among large U.S. metros on this index—behind Los Angeles, New York, San Francisco, and Chicago. In fact, Miami ranks ahead of expensive tech hubs like Boston, San Jose (the heart of Silicon Valley), and Washington, D.C. on this metric. In short, the Miami metro is suffering from an acute case of the New Urban Crisis.

Figure 20: New Urban Crisis Index for Large U.S. Metros

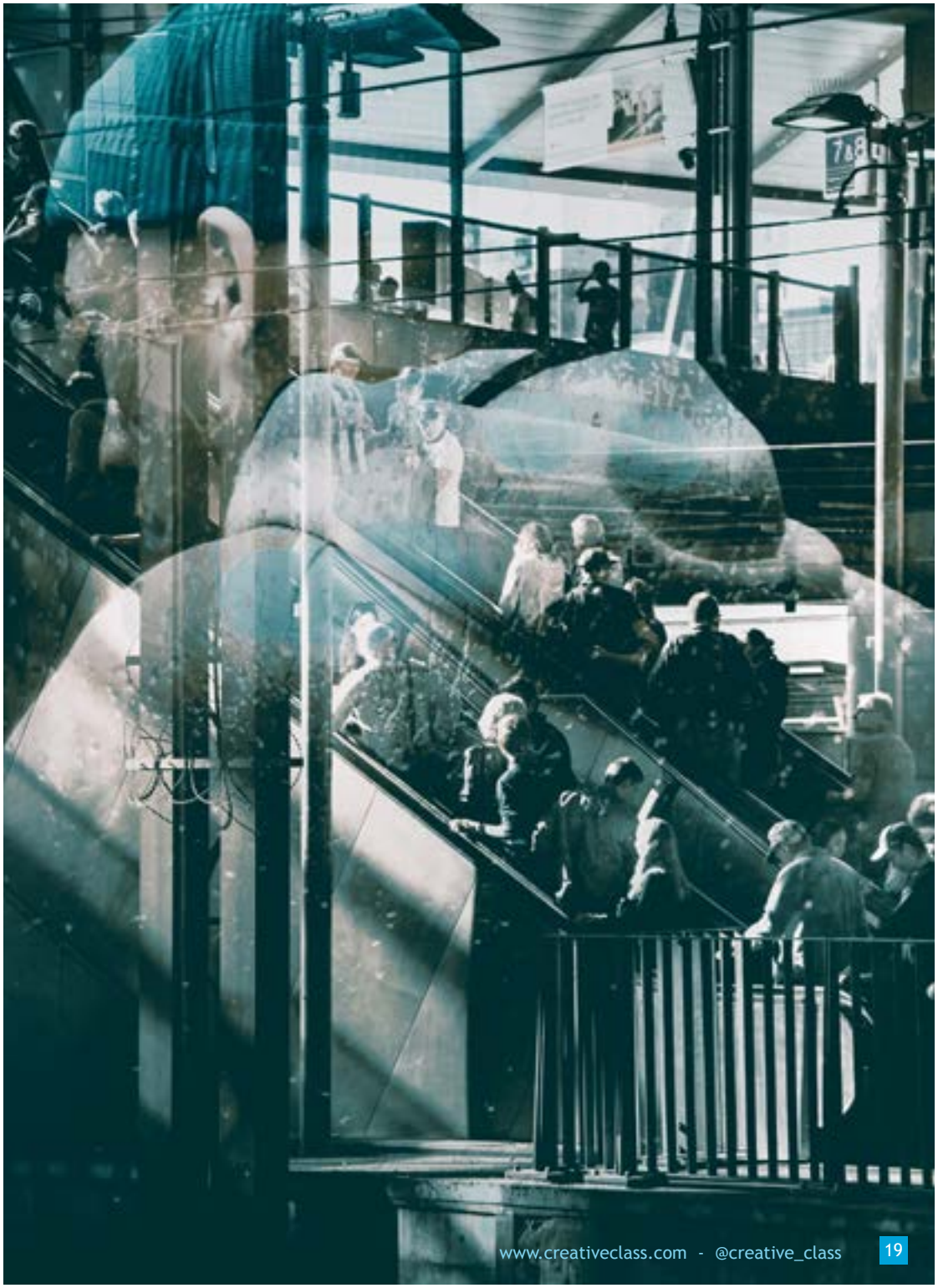
RANK	METRO	NEW URBAN CRISIS INDEX	RANK AMONG ALL U.S. METROS
1	Los Angeles	0.97	2
2	New York	0.97	3
3	San Francisco	0.92	6
4	San Diego	0.88	10
5	Chicago	0.88	12
6	Miami	0.87	14
7	Boston	0.87	15
8	Philadelphia	0.85	18
9	Austin	0.85	20
10	Memphis	0.84	21

Note: Large metros are those with over one million people.
Source: Richard Florida, The New Urban Crisis, Basic Books, 2017.

FROM A NEW URBAN CRISIS TO INCLUSIVE PROSPERITY

Addressing Miami's New Urban Crisis requires a substantial shift in its economic and community development strategy. Just as local forces were largely responsible for Miami's economic comeback and urban revival, so too will they be instrumental in mitigating the metro's New Urban Crisis. In addition to enlisting help from local government, addressing the New Urban Crisis will require the concerted action of Miami's anchor institutions—its hospitals, medical centers, and large universities (places like Florida International University and the University of Miami) that literally anchor the urban economy—as well as private-sector anchors like high-tech firms and real estate developers.

Indeed, when compared to other major metros, Miami's economy is inordinately driven by anchor-based sectors like healthcare, education, and real estate. The metro's anchor institutions are among the largest employers in their local communities and have been essential partners in the region's economic and urban revival. As major economic actors, they also have the resources and capacity needed to help address the New Urban Crisis. Our research of cities across the country shows that urban anchor institutions are beginning to shift their activity and investment toward greater equity and inclusivity.[19] It is time for Miami's anchors to engage in a strategy of inclusive prosperity, making equity a key part of economic development and ensuring that the benefits of economic growth are widely shared by all segments of society. Indeed, Miami's urban anchors would benefit from a mutual pledge to foster inclusive prosperity that can take shape around five key pillars.



UPGRADE SERVICE JOBS

With its large share of low-paid service workers, Miami must consider upgrading its service jobs to family-supporting, sustainable careers. Given the strength of its tourism and hospitality industries, Miami is poised to become a leading, innovative service economy. Across its service industries, Miami should focus on raising the minimum wage from where it currently stands at a $8.05 an hour to a wage that reflects the local cost of living: somewhere between $9.50 and $11.35.[20]

But upgrading service jobs goes beyond paying people higher salaries. On a broader scale, it is about building a stronger, more innovative, and more dynamic service sector. Research by Zeynep Ton of MIT's Sloan School of Management shows that a "good jobs strategy"—which promotes both higher wages and engaging employees more fully in their work—helps to improve customer service, reduce employee turnover, encourage innovation, and generate higher rates of productivity and profit.

Miami's tourism and hospitality industries can uniquely benefit from such a strategy. Not only will local hospitality and tourism anchors prosper from more engaged and productive service workers, but these workers can also help to improve service and visitor experiences. By working in tandem, Miami's tourism, hospitality, hotel, and cruise industries can help to create better-paying, middle-class jobs while improving their own quality and performance. Miami's universities and real estate anchors can also contribute by selecting tenants that are similarly committed to a good jobs strategy. With these measures in place, Miami stands to gain more from upgrading its service jobs than most other regions.

SUPPORT INCLUSIVE INNOVATION AND ENTREPRENEURSHIP

As Miami's startup ecosystem continues to grow, the metro must ensure that its innovation, entrepreneurship, and creativity are more widely shared and inclusive. By working with disadvantaged communities to foster local entrepreneurship, Miami's universities, tech companies, and other anchor institutions can provide low-income residents with the technical skills and entrepreneurial know-how that often translate into economic growth. The metro's local development efforts would also benefit from creative incubators and "maker spaces," where community members can learn to commercialize their efforts.

Just as Miami has gone to great lengths to invest in its startup scene, it must also invest in startups and incubators that cater to local businesses—especially those that are minority-owned. Research has shown that inner city businesses are more likely to hire inner city residents, presenting a huge opportunity for upward mobility among low-income communities.[21] As one of the nation's leading metros for business formation and startup activity, Miami must extend these advantages to its underserved communities in order to sustain its growth.

BUILD MORE AFFORDABLE HOUSING

Miami suffers from a severe lack of affordable housing—particularly in areas that offer the most economic opportunities. As Miami's real estate development continues to scale, the metro must develop affordable workforce housing that enables local workers to live near their jobs and ensures that service workers and young, creative residents do not become priced out.

Rather than simply adding affordable units to luxury housing, Miami should focus on carefully distributing these units across neighborhoods. Local universities like FIU can help facilitate this process either by constructing the housing themselves or providing mortgage assistance and rental supplements to their employees. High-tech companies and real estate developers should also make affordable housing a central plank of their urban projects. By investing in more affordable and workforce housing, Miami's local governments and urban anchors can help generate more inclusive prosperity in the region.

INVEST IN TRANSIT AND INFRASTRUCTURE

A key step to achieving inclusive prosperity in Miami is to invest in local transit and infrastructure. With its service and working classes relegated to neighborhoods outside the city center, Miami is in dire need of a faster rail service and public transportation system that connects less-advantaged residents to schools, jobs, and employment centers. Already, the Brightline high-speed rail project intends to connect Miami to West Palm Beach by the end of 2017, with plans to expand service to Orlando in 2020.[22] As an initiative spearheaded by a private anchor institution (All Aboard Florida), Brightline represents the kind of critical investment that could soon reduce Miami's car dependency. As it stands, Miami is more sprawling and car-dependent than some of its peers, with fewer than 3.8 percent of its workers relying on public transit.[23] By improving access to public transportation, the metro can reduce congestion and commute times while simultaneously increasing density—a key driver of innovation.

DESIGN AND BUILD INCLUSIVE PUBLIC SPACES

Miami's local governments and anchor institutions—particularly real estate developers—must make a concerted effort to design and build public spaces where a diverse mix of people can convene and interact. Already, the metro's local officials are trading density in exchange for developers' commitments to build new public spaces such as the rapidly expanding "Baywalk", located along the downtown waterfront, or South Pointe Park—a beachfront amenity featuring a playground, fishing pier, and green space.

Inclusive development is also taking place outside the metro's urban core. In South Miami, for instance, the Ludlam Trail plans to develop a 6.2-mile, multi-use pathway from Dadeland to Miami International Airport. By positioning 34,000 people within walking distance of greenways, parks, schools, and transit hubs, the project aims to spur job creation in Miami's outlying neighborhoods. Local governments and anchors institutions must continue to ensure that the region's public spaces do not become magnets for high-end development but instead remain open to all residents. This can be achieved, in part, by incorporating community benefits such as job opportunities and mentorship programs into their larger development strategies.

THE ROAD AHEAD

It is time for Greater Miami to spread the benefits of its economic growth and urban revival to more workers and residents. Doing so will require the hard work of the metro's local government, anchor institutions, large organizations, neighborhood groups, civic associations, city builders, and residents—the very same actors that drove the region's economic revival in the first place. Like Miami's urban revival, this shift toward inclusive prosperity will not take place overnight. It begins with local leaders viewing equity and economic development as a mutual goal and continues with a new strategy for a fuller, fairer, and more prosperous urbanism-for-all.

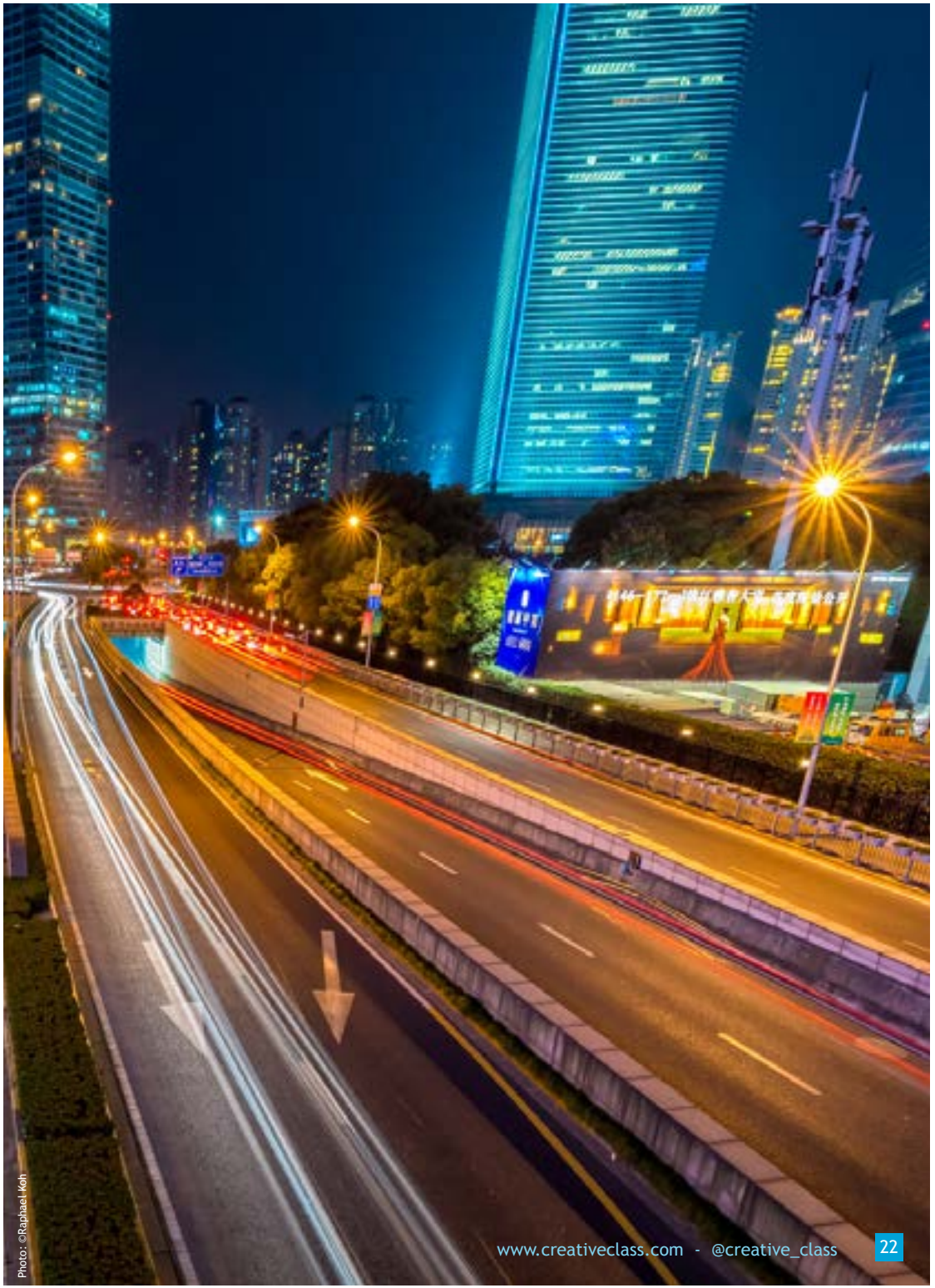


Photo: ©Raphael Koh

REFERENCES

1 Richard Florida, *The New Urban Crisis*, Basic Books, 2017.

2 Joseph Gyourko, Christopher Mayer, and Todd Sinai, "Superstar Cities," *American Economic Journal: Economic Policy* 5, no. 4 (2013): 167-199.

3 A.T. Kearney, "Global Cities 2017: Leaders in a World of Disruptive Innovation," 2017.

4 Jesus Leal Trujillo and Joseph Parilla, "Redefining Global Cities," The Brookings Institution, September 29, 2016.

5 Richard Florida, *The New Urban Crisis*, Basic Books, 2017.

6 Richard Florida, "Venture Capital Remains Highly Concentrated in Just a Few Cities," *CityLab*, October 3, 2017.

7 Richard Florida, Charlotta Mellander, and Isabel Ritchie, "The Geography of the Global Super-Rich," Martin Prosperity Institute, Rotman School of Management, University of Toronto, 2016; Knight Frank, "The Wealth Report," 2015.

8 Richard Florida, *The New Urban Crisis*, Basic Books, 2017.

9 Estelle Sommeiller, Mark Price, and Ellis Wazeter, "Income Inequality in the U.S. by State, Metropolitan Area, and County," Economic Policy Institute, June 16, 2016.

10 Alan Berube and Natalie Holmes, "City and Metropolitan Inequality on the Rise, Driven by Declining Incomes," Brookings Institution, Metropolitan Policy Program, January 14, 2016.

11 Richard Florida, *The Rise of the Creative Class Revisited*, Basic Books, 2014.

12 HowMuch.net, "How Many Hours Americans Need to Work to Pay Their Mortgage," October 17, 2017.

13 Krishna Rao, "The Rent is Too Damn High," Zillow, April 15, 2014.

14 Richard Florida and Steven Pedigo, "Miami's Great Inflection," FIU-Miami Creative City Initiative, 2016.

15 Edward G. Goetz, Tony Damiano, and Jason Hicks, "Racially Concentrated Areas of Affluence: A Preliminary Investigation," University of Minnesota, 2015.

16 Pew Research Center, "America's Shrinking Middle Class: A Close Look at Changes Within Metropolitan Areas," May 11, 2016.

17 Ibid.

18 Alan Ehrenhalt, *The Great Inversion and the Future of the American City*, *Vintage*, 2013.

19 Richard Florida and Steven Pedigo, "The Case for Inclusive Prosperity," NYUSPS Schack Institute of Real Estate Urban Lab, 2017.

20 Richard Florida, "The Case for a Local Minimum Wage," *CityLab*, December 11, 2013.

21 Austin Nijhuis and Kim Zeuli, "The Critical Role Small Businesses Play in Inner City Revitalization," ICIC, October 2016.

22 Rene Rodriquez, "But the Train Service Is Not Quite Ready to Roll," *Miami Herald*, August 8, 2017.

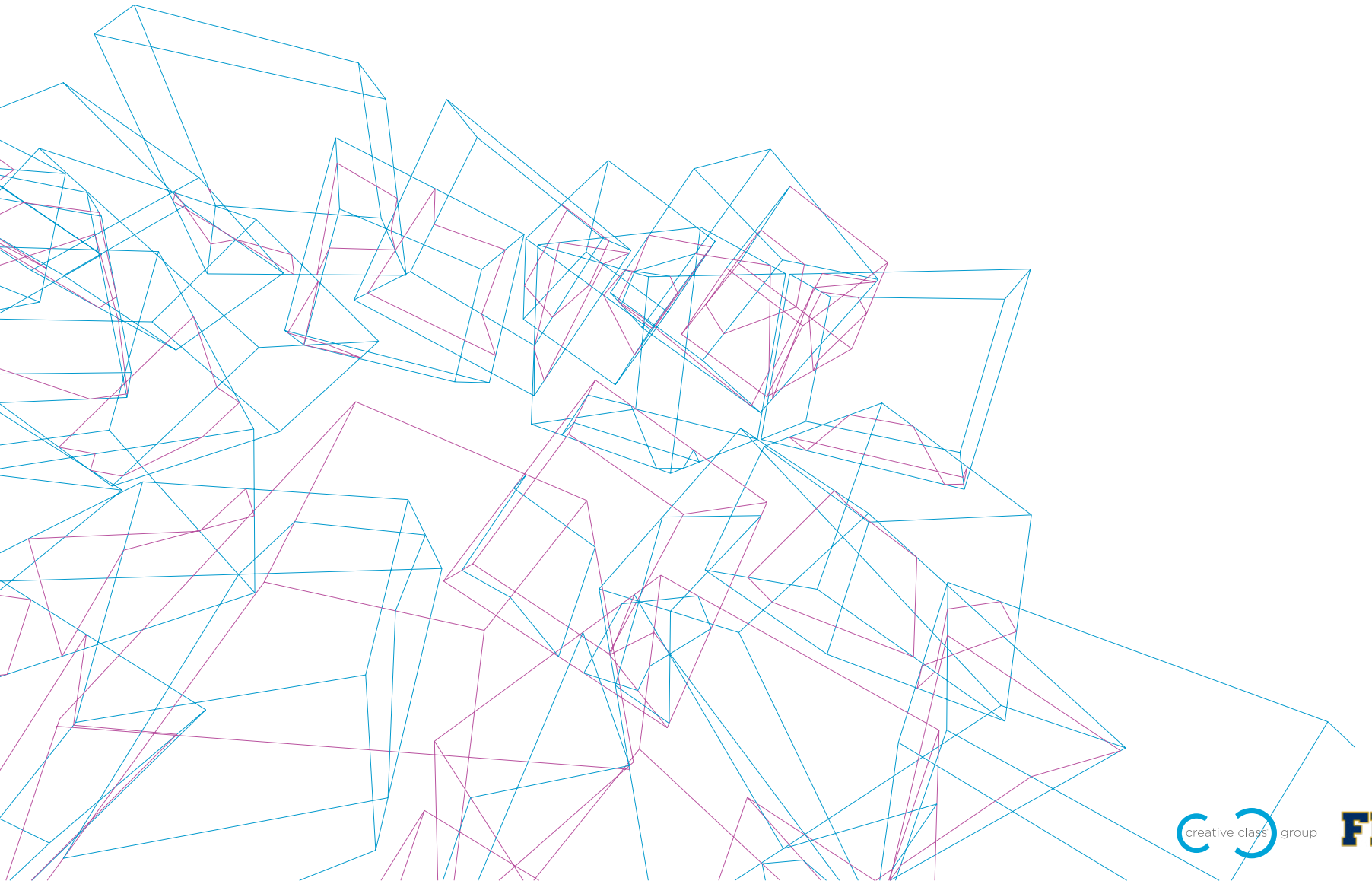
23 Richard Florida and Steven Pedigo, "Miami's Great Inflection," FIU-Miami Creative City Initiative, 2016.

Creative Class Group
www.creativeclass.com
@Creative_Class

creative class group

BENCHMARKING MIAMI'S TALENT BASE

Richard Florida Steven Pedigo



creative class group FIU KNIGHT FOUNDATION

BENCHMARKING MIAMI'S TALENT BASE

THE MIAMI URBAN FUTURE INITIATIVE

The Miami Urban Future Initiative is a joint initiative with FIU's College of Communication, Architecture + The Arts and the Creative Class Group sponsored in part by The John S. and James L. Knight Foundation, which will lead new research and mapping on economic, occupational, creative and technological assets in Miami, in partnership with renowned experts, to provide necessary data, evidence and strategy to grow a more inclusive, creative economy for a 21st century global Miami. Miami has reached a crossroads. Its economy – historically based on tourism, hospitality, transportation, and real-estate development – has deepened, diversified, and become more creative and idea-based, as banking, media, arts, education, and new technology-based industries have assumed a larger role. The region now finds itself at a critical inflection point.

Through this Initiative, we hope to provide the thought leadership and awareness required to guide Miami's evolution as a global city through data-driven research and assessments of the key trends shaping the region, disseminate this information and inform the broad strategic vision for the region's private and public stakeholders through ongoing local convenings and briefs and bring global thought-leaders and practitioners to bear on thinking about the region's future through high-level events and convenings on issues important to Miami and global cities.

@MIAUrbanFuture

www.miamiurbanfuture.org

creative class group

THE AUTHORS

@Richard_Florida

RICHARD FLORIDA

Richard Florida is a university professor and director of cities at the Martin Prosperity Institute at the University of Toronto, a distinguished fellow at New York University's Schack Institute of Real Estate, and a visiting fellow at Florida International University. He serves as senior editor for *The Atlantic*, where he cofounded and serves as editor at large for *CityLab*. He is also the author of the award-winning *The Rise of the Creative Class*. His latest book, *The New Urban Crisis*, was published by Basic Books in April 2017.

@iamstevenpedigo

STEVEN PEDIGO

Steven Pedigo is the Director of Research for the Creative Class Group, a global think tank comprised of leading researchers, academics and strategists. He is also the Director of the NYU Schack Institute of Real Estate Urban Lab and a Clinical Assistant Professor for Economic Development at the NYU School of Professional Studies.

Steven holds a bachelor's degree from the University of Texas at Austin and graduate degrees from the H. John Heinz III School for Public Policy and Management at Carnegie Mellon University and the University of Illinois at Urbana-Champaign.

BENCHMARKING MIAMI'S TALENT BASE

Talent is a key driver of advanced economies. Highly educated and skilled individuals drive income, wages, and economic growth in cities and metros across the globe[1]. As Miami aspires to the ranks of leading global cities, how does its talent base stack up?

The following research brief from the Miami Urban Future Initiative provides a data-driven assessment of the Miami metro's talent base, comparing its performance in recent years to all 53 of America's large metros with populations of more than one million people.

We benchmark the region's talent base across three key metrics. First, we look at occupation, measuring the share of Miami's workforce that is employed in key knowledge, professional, and creative occupations—collectively referred to as the creative class[2]. Next, we look at education, measuring the share of adults with a graduate degree and/or bachelor's degree and higher. Finally, we look at higher education, measuring the share of college and university graduates, students, and faculty. Figure 1 summarizes our key findings.

Figure 1: Miami's Overall Talent Rankings

Metric	Value	Rank Among Large U.S. Metros
Knowledge, Professional, and Creative Occupations	32.4%	50
Management Talent	10.6%	28
Legal Talent	1.6%	5
Healthcare Talent	5.6%	37
Arts, Media, and Design Talent	2.1%	24
Bachelor's Degree and Higher	30.5%	42
Graduate and Professional Degrees	11.3%	39
University Graduates	94,060	8
University Student Enrollment	359,809	9

Note: Definitions and sources for all metrics are listed in the appendix.

Source: U.S. Census American Community Survey 2016; IPEDS, 2014-2015

creative class group

KEY FINDINGS

- **Miami lags on its share of key knowledge, professional, and creative occupations.** With just under a million knowledge, professional, and creative workers, Miami ranks 11th among large metros on this metric. However, the metro falls behind according to its share of high-skill, high-paid workers. With just under a third (32.4 percent) of its workforce employed in knowledge, professional, and creative occupations, Miami ranks 50th among large metros and lags behind the national average of nearly 36 percent.
- **Miami's creative strength lies its legal, arts, and management occupations.** Miami boasts a relatively large share of legal, arts, and management workers. Miami's legal cluster is by far the strongest of its creative occupations, ranking ahead of the legal clusters in Boston and L.A. The sizes of Miami's management workforce and arts, media, and design workforce also exceed the national average.
- **Miami falls short of its competitors on educational attainment.** With just over 30 percent of its adults having earned a bachelor's degree and higher, Miami's educational attainment is roughly on par with the national average but ranks far behind superstar metros like Washington, D.C. or San Jose. Miami performs slightly better according to its share of adults with a graduate degree but still falls below the U.S. average.
- **Miami's workforce is dominated by low-skill, low-wage service workers.** With more than 1.4 million low-skill, low-wage service workers, Miami's service jobs make up nearly half of its workforce. Miami has a larger share of service jobs than any other large metro except Las Vegas. In order to retain its competitiveness and strengthen its middle class, the metro must upgrade these jobs to more sustainable, family-supporting careers.
- **Miami has a large pool of college students.** Miami universities conferred more than 94,000 degrees and enrolled roughly 360,000 college students as of 2014-2015, ranking eighth and ninth on these measures, respectively.

MIAMI'S TALENT BASE

The following section provides a more detailed, data-driven analysis of how Miami stacks up on key measures of talent.

KNOWLEDGE, PROFESSIONAL, AND CREATIVE CLASS TALENT

- **Creative Class Share.** Miami ranks 50th among large U.S. metros according to the share of its creative class workforce, which includes science and technology; arts, media, and culture; and traditional knowledge workers. With the creative class making up 32.4 percent of its total workforce (around 945,000 workers), Miami ranks ahead of just three other metros and slightly behind the national average of 35.9 percent.
- **Creative Class Concentration.** Miami again ranks 50th among large U.S. metros according to the concentration of its creative workforce. This figure is based on a "location quotient," or LQ, which shows how concentrated a group or industry is compared to the U.S. as a whole[3]. With an LQ of 0.9, Miami's share is 10 percent smaller than the national average and lags far behind metros like San Jose and Washington, D.C.
- **Creative Class Wages.** Miami ranks 49th among large U.S. metros according to the median annual earnings of its creative class. With Miami's creative workers earning just over $54,000 a year, these wages fall behind the national average ($59,400) and comprise just half of the earnings of creative workers in San Francisco ($97,200).

MAJOR KNOWLEDGE, PROFESSIONAL, AND CREATIVE WORKFORCE OCCUPATIONAL CLUSTERS

We now turn to the nine major occupations that make up the knowledge, professional, and creative workforce.

- **Legal Talent.** With around 45,000 legal workers (1.6 percent of its total workforce), Miami ranks fifth among large U.S. metros, just behind Washington, D.C., New Orleans, San Francisco, and New York. The region also ranks fifth among large U.S. metros according to the concentration of its legal workers, which is 39 percent larger than the national average.
- **Arts, Media, and Design Talent.** Miami ranks 24th among large U.S. metros on its share of arts, media, and design workers, which exceeds the shares for Chicago and Philadelphia. With an LQ of 1.03, Miami's arts, media, and design workforce is 3 percent larger than the national average.
- **Management.** Miami ranks 28th among large U.S. metros on its share of management workers, which makes up 10.6 percent of the metro's total workforce (nearly 310,000 workers). With an LQ of 1.03, Miami's concentration of management workers is slightly higher than the national average.
- **Healthcare Talent.** Miami ranks 37th among large U.S. metros according to its share of healthcare practitioners, which makes up 5.6 percent of its total workforce. This places the metro ahead of Chicago, Seattle, and San Francisco, alongside Houston, and just behind New York. Miami's total number of healthcare practitioners (163,000) is similar to that of Washington, D.C., and its concentration is 6 percent smaller than the national average.
- **Business and Finance Talent.** Miami ranks 45th among large U.S. metros according to the share of its workers employed in business and finance occupations. While the size of Miami's business and finance workforce (nearly 135,000 workers) is similar to that of Seattle and Minneapolis, Miami ranks much further behind these metros according to its relative share of business and finance workers (4.6 percent of the metro's total). With an LQ of 0.95, Miami's concentration of business and finance talent is 5 percent smaller than the national average.

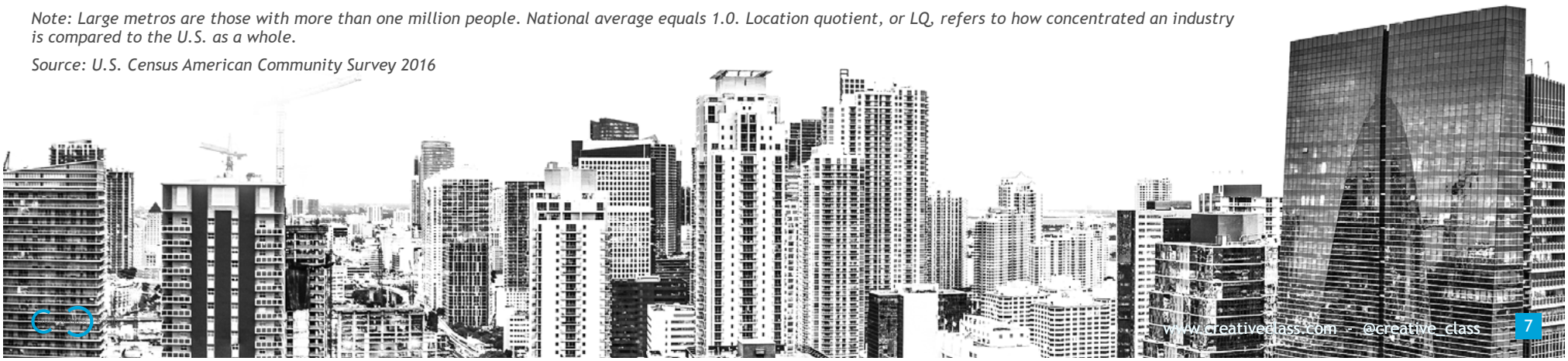
- **Scientific Talent.** Miami ranks 50th among large U.S. metros according to the share of its workers employed in science-related occupations, coming in far behind superstar metros like Boston, San Francisco, and Washington, D.C. With an LQ of 0.46, Miami's science workforce is less than half the average national share.
- **Computer and Math Talent.** Miami ranks 51st among large U.S. metros on its share of workers employed in computer and mathematical occupations. With nearly 55,000 computer and mathematical workers (1.9 percent of the total workforce), Miami ranks behind all large U.S. metros except New Orleans and Riverside. With an LQ of 0.64, Miami's computer and mathematical workforce is 36 percent smaller than the national average.
- **Architecture and Engineering.** Miami ranks 51st among large U.S. metros on its share of workers employed in architecture and engineering occupations. With nearly 32,000 architecture and engineering workers (1.1 percent of the total workforce), Miami falls just behind New York on this metric. With an LQ of 0.59, Miami's architecture and engineering workforce is 41 percent smaller than the national average.
- **Education Workers.** Miami also ranks 51st among large U.S. metros according to its share of workers employed in education-related occupations, ranking alongside Sunbelt metros like Las Vegas, Orlando, and Tampa. While the metro has a significant number of education workers (nearly 135,000), these workers make up only 4.6 percent of the metro's total workforce. With an LQ of 0.78, Miami's education workforce is also 22 percent smaller than the national average.

Figure 2: Miami's Creative Occupational Talent Metrics

Talent Metric	Location Quotient (LQ)	Share of Workforce	Rank Among Large U.S. Metros
Legal Talent	1.39	1.6%	5
Arts, Media, and Design Talent	1.03	2.1%	24
Management Talent	1.03	10.6%	28
Healthcare Talent	0.94	5.6%	37
Business and Finance Talent	0.95	4.6%	45
Science Talent	0.46	0.4%	50
Education Talent	0.78	4.6%	51
Computer and Math Talent	0.64	1.9%	51
Architecture and Engineering Talent	0.59	1.1%	51

Note: Large metros are those with more than one million people. National average equals 1.0. Location quotient, or LQ, refers to how concentrated an industry is compared to the U.S. as a whole.

Source: U.S. Census American Community Survey 2016



SPOTLIGHT: ARTS, MEDIA, AND DESIGN TALENT

Miami's arts, media, and design cluster is the backbone of its creative economy, making up around 6.4 percent of its creative workforce. This cluster grew by 7.1 percent from 2011 to 2015 and is projected to grow by 8 percent from 2015 to 2024.

Many of the leading occupations within this cluster are directly related to the media industry. Miami has a huge competitive advantage in key occupations like broadcast technicians (LQ of 1.58), camera operators (1.53), sound engineers (1.42), film and video editors (1.38), broadcast news analysts (1.35), and radio and television announcers (1.23). Miami also has a significant advantage in terms of its number of interior designers (1.39), makeup artists (1.35), and entertainers and performers (1.21).

Miami's advertising and marketing occupations tend to earn the highest salaries (around $77,400 each year) compared to other arts, media, and design workers and are expected to see the most significant job growth (14.4 percent) from 2015 to 2024. The next-highest earnings come from music and theater occupations ($47,600), followed closely by media ($45,300) and design ($42,300). Meanwhile, Miami's visual arts occupations earn an average annual salary of just $38,000 and saw the least job growth (5.4 percent) from 2010 to 2015.

Figure 3: Miami's Leading Arts, Media, and Design Occupations

Occupation	Location Quotient (LQ)
Broadcast Technicians	1.58
Camera Operators (Television, Video, and Motion Picture)	1.53
Sound Engineering Technicians	1.42
Interior Designers	1.39
Film and Video Editors	1.38
Broadcast News Analysts	1.35
Makeup Artists (Theatrical and Performance)	1.35
Radio and Television Announcers	1.23
Entertainers and Performers	1.21

Note: Occupations include both payroll and self-employed individuals.

Source: EMSI 2015 and CCG Analysis 2015

SERVICE AND WORKING CLASSES

Miami's remaining workforce can be broken down into the service and working classes.

- **Service Class.** Nearly 1.5 million workers in Miami are members of the service class, which consists of low-skill, low-paying jobs in fields like food preparation and service, retail trade, personal care, and clerical and administrative positions. Altogether, the service class makes up nearly half of Miami's workforce—the second-highest share in the nation, behind Las Vegas and significantly higher than the national average (43.1 percent). And yet, Miami's service class earns around $1,500 less each year than the national average.
- **Working Class.** More than half a million (530,000) workers in Miami are members of the working class, which consists mostly of blue-collar workers in industries like manufacturing, construction, transportation, and other manual trades. With the working class making up less than a fifth (18.2 percent) of its total workforce, Miami ranks 27th among large U.S. metros, behind Chicago, L.A., and Atlanta but ahead of Boston, San Francisco, and Washington, D.C. With an LQ of 0.9, Miami's working class is also 10 percent smaller and earns nearly $6,000 less each year than the national average.

Figure 4: Service Sector for Large Metros

Rank	Metro	Service Class Share of Workforce	Total Number of Service Workers	Service Sector LQ
1	Las Vegas	55.5%	559,834	1.29
2	Miami	49.0%	1,428,437	1.14
3	Tucson	48.6%	211,745	1.13
4	Orlando	48.3%	566,455	1.12
5	Tampa	47.2%	652,374	1.09
6	Riverside	46.7%	882,727	1.08
7	San Antonio	46.5%	517,092	1.08
8	Buffalo	46.0%	250,403	1.07
9	Phoenix	45.9%	983,483	1.06
10	Jacksonville	45.8%	317,050	1.06

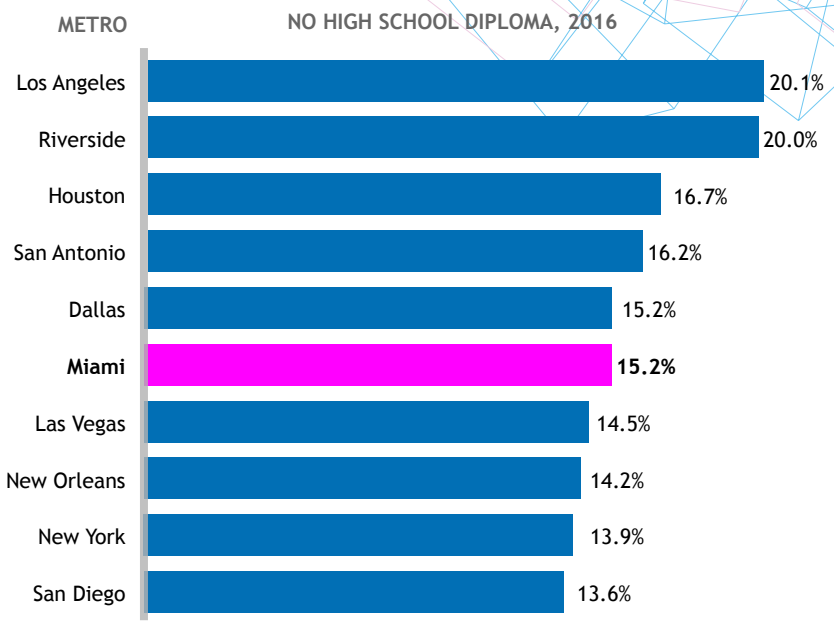
Note: Large metros are those with more than one million people. Ranking is based on share of residents.
Source: U.S. Census American Community Survey 2016

EDUCATIONAL ATTAINMENT

Educational attainment is a commonly used measure of a metro's talent base. Highly educated workers are often found to be key drivers of regional economic growth. We determine educational attainment by the share of workers with a graduate degree and/or bachelor's degree and higher[4].

- **Bachelor's Degree and Higher.** Miami ranks 42nd among large U.S. metros according to its share of adults with a bachelor's degree and higher. With a share of 30.5 percent, Miami ranks ahead of Rustbelt metros like Detroit and Cleveland, just behind Sunbelt metros like Orlando and Phoenix, far behind a number of superstar metros, and roughly on par with the national average (31.3 percent).
- **Graduate and Advanced Degrees.** Miami ranks 39th among large U.S. metros according to the share of its adults with a graduate degree. With 11.3 percent of its workforce having earned this degree, Miami ranks just behind Dallas, Houston, and Los Angeles and slightly behind the national average (11.9 percent).
- **Less-Educated.** Miami ranks sixth among large U.S. metros according to its share of adults without a high school diploma. With a share of 15.2 percent, Miami ranks just behind three Texas metros—Houston, San Antonio, and Dallas—but ahead of New York and San Jose. Miami's share of adults without a high school diploma also far exceeds the national average (12.5 percent).

Figure 5: Share of Adults without a High School Diploma for Large Metros



Note: Large metros are those with more than one million people. Ranking is based on share of residents.

Source: U.S. Census American Community Survey 2016

UNIVERSITY TALENT

We now turn to three measures of Miami's college and university talent: the number of students enrolled at colleges and universities, the number of graduates, and the number of university and college faculty.

- **College and University Enrollment.** Miami is one of America's premier college towns, ranking particularly high—ninth among large U.S. metros—according to its university student enrollment for the 2014-2015 school year. With around 360,000 students enrolled in Miami colleges, the metro ranks behind Dallas and Boston but ahead of Houston and San Francisco.
- That said, Miami ranks significantly lower—33rd among large U.S. metros—according to the number of students enrolled in universities for every 100,0000 residents. (This metric provides a more accurate depiction of Miami's student enrollment by controlling for the size of its population.) With around 5,900 college-enrolled students for every 100,000 residents, Miami ranks ahead of New York but far behind other superstar metros like L.A. and Boston.
- **College and University Degrees.** Miami ranks 18th among large U.S. metros according to the number of degrees conferred by its college and universities. With around 94,000 degrees awarded (2.3 percent of the U.S. total), Miami ranks ahead of Dallas and San Diego, alongside Washington, D.C., Boston, and Philadelphia, but far behind Phoenix, Chicago, L.A., and New York.
- Miami ranks 21st among large U.S. metros according to the number of degrees conferred by its college and universities for every 100,000 residents. With slightly more than 1,500 degrees conferred for every 100,000 residents, Miami ranks just behind Washington, D.C. but ahead of Chicago and L.A.
- **University Faculty.** Miami ranks 12th among large U.S. metros according to the size of its university faculty in 2015. With more than 8,500 university faculty members, Miami ranks ahead of Pittsburgh and Seattle but behind Atlanta and San Francisco.

Miami ranks much lower—46th among large U.S. metros—according to the size of its university faculty per 100,000 residents. With just 140 university faculty members for every 100,000 residents, Miami ranks alongside a number of Sunbelt metros, including Orlando, Charlotte, Dallas, and Phoenix.

Figure 6: University Student Enrollment for Large Metros

Rank	Metro	University Student Enrollment	Share of U.S. Total
1	New York	1,129,174	6.1%
2	Los Angeles	1,077,010	5.8%
3	Chicago	601,049	3.3%
4	Phoenix	527,629	2.9%
5	Washington, D.C.	426,048	2.3%
6	Philadelphia	405,579	2.2%
7	Boston	378,034	2.0%
8	Dallas	367,628	2.0%
9	**Miami**	**359,809**	**1.9%**
10	San Diego	318,932	1.7%

Note: Large metros are those with more than one million people.

Source: IPEDS, 2014-2015

Figure 7: University Degrees Conferred for Large Metros

Rank	Metro	University Student Enrollment	Share of U.S. Total
1	New York	273,226	6.7%
2	Los Angeles	203,633	5.0%
3	Chicago	145,949	3.6%
4	Phoenix	129,900	3.2%
5	Philadelphia	95,891	2.3%
6	Boston	95,861	2.3%
7	Washington, D.C.	95,453	2.3%
8	**Miami**	**94,060**	**2.3%**
9	Dallas	73,572	1.8%
10	San Diego	67,214	1.6%

Note: Based on degrees conferred. Large metros are those with more than one million people.

Source: IPEDS, 2014-2015

Figure 8: University Faculty for Large Metros

Rank	Metro	University Faculty, 2015	Share of U.S. Total
1	New York	45,822	7.4%
2	Los Angeles	24,045	3.9%
3	Chicago	19,631	3.2%
4	Boston	16,886	2.7%
5	Philadelphia	14,705	2.4%
6	Washington, D.C.	12,497	2.0%
7	Houston	11,786	1.9%
8	Baltimore	10,440	1.7%
9	Dallas	9,661	1.6%
10	San Francisco	9,353	1.5%
11	Atlanta	8,826	1.4%
12	Miami	8,508	1.4%
13	Pittsburgh	8,310	1.3%
14	Seattle	7,438	1.2%
15	Minneapolis-St. Paul	7,159	1.2%
16	St. Louis	6,659	1.1%
17	San Diego	6,339	1.0%
18	Denver	6,275	1.0%
19	Nashville	6,261	1.0%
20	Phoenix	6,063	1.0%

Note: Large metros are those with more than one million people.
Source: IPEDS, 2014-2015

BRAIN DRAIN AND TALENT RETENTION

Like many metros, Miami must confront the growing challenge of brain drain, or the outmigration of graduate talent. While there are no perfect measures of brain drain or brain gain, a good approximation comes from talent retention levels at colleges and universities.

- **Graduate Retention (All Colleges).** Miami ranks 16th among large U.S. metros according to the share of college graduates from two- and four-year institutions that remain in the metro following graduation. With more than two-thirds (67.3 percent) of its college graduates choosing to stick around, Miami ranks ahead of San Francisco but slightly behind L.A. and San Jose.
- **Graduate Retention (Four-Year Institutions).** Miami also ranks 16th among large U.S. metros according to the share of graduates from four-year colleges that remain in the metro following graduation (59.6 percent). This places the metro just behind San Francisco and slightly further behind superstar metros like New York and L.A.

Despite conventional wisdom, Miami does reasonably well at retaining its graduate students. It is time for the region to reconsider its longstanding fixation on brain drain and instead focus on its more enviable position as a global hub of *brain circulation*—a phenomenon that propelled Silicon Valley's evolution as an international center for innovation[5].

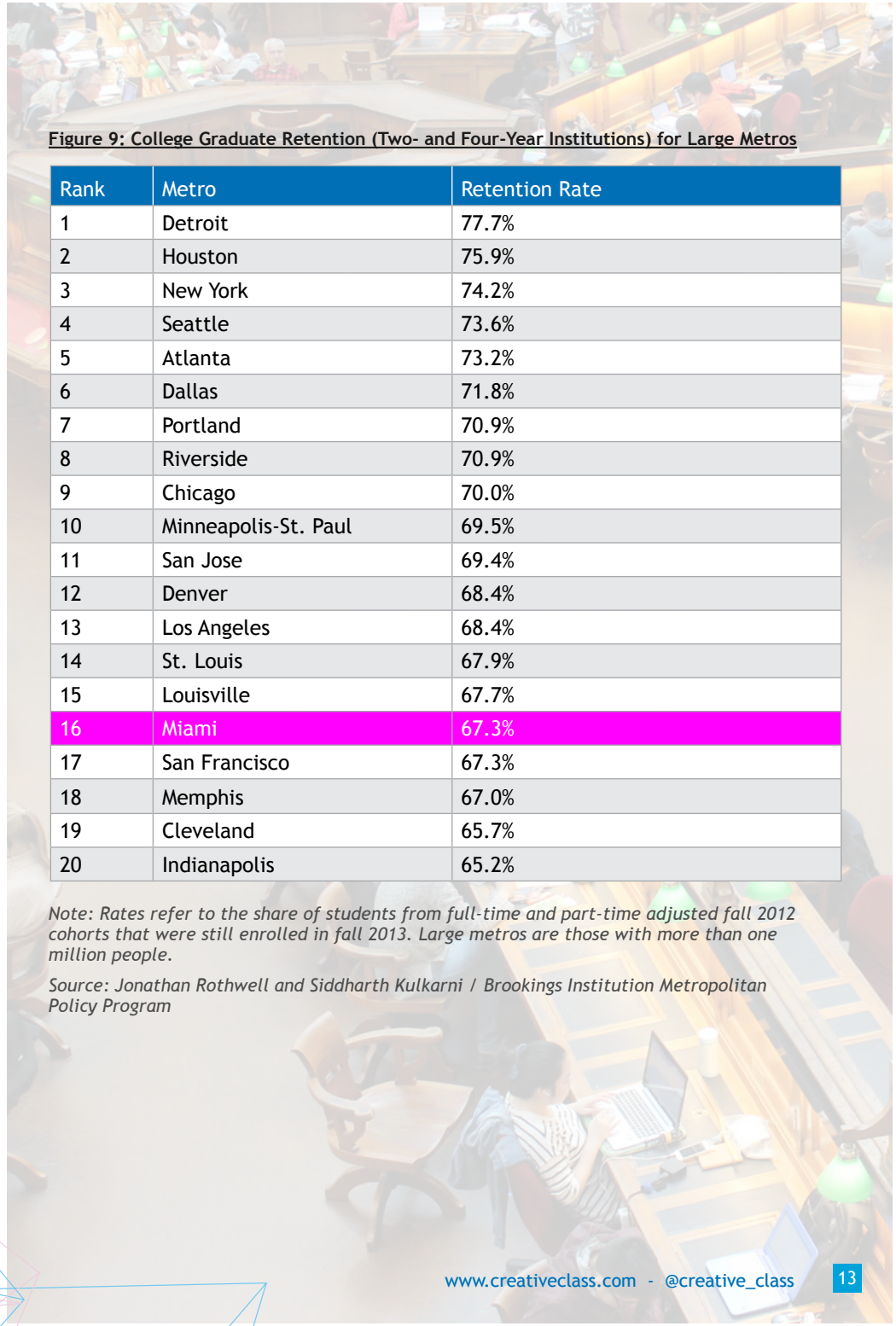


Figure 9: College Graduate Retention (Two- and Four-Year Institutions) for Large Metros

Rank	Metro	Retention Rate
1	Detroit	77.7%
2	Houston	75.9%
3	New York	74.2%
4	Seattle	73.6%
5	Atlanta	73.2%
6	Dallas	71.8%
7	Portland	70.9%
8	Riverside	70.9%
9	Chicago	70.0%
10	Minneapolis-St. Paul	69.5%
11	San Jose	69.4%
12	Denver	68.4%
13	Los Angeles	68.4%
14	St. Louis	67.9%
15	Louisville	67.7%
16	Miami	67.3%
17	San Francisco	67.3%
18	Memphis	67.0%
19	Cleveland	65.7%
20	Indianapolis	65.2%

Note: Rates refer to the share of students from full-time and part-time adjusted fall 2012 cohorts that were still enrolled in fall 2013. Large metros are those with more than one million people.

Source: Jonathan Rothwell and Siddharth Kulkarni / Brookings Institution Metropolitan Policy Program

Figure 10: College Graduate Retention (Four-Year Institutions) for Large Metros

Rank	Metro	Retention Rate
1	New York	71.1%
2	Riverside	70.6%
3	Detroit	70.2%
4	Houston	66.1%
5	San Jose	65.2%
6	Seattle	64.4%
7	Atlanta	64.2%
8	Dallas	63.7%
9	Louisville	63.0%
10	Los Angeles	62.9%
11	Chicago	62.2%
12	Portland	61.7%
13	Denver	61.7%
14	Minneapolis	61.7%
15	San Francisco	60.8%
16	Miami	59.6%
17	Indianapolis	57.0%
18	St. Louis	56.5%
19	Las Vegas	55.0%
20	Salt Lake City	55.0%

Note: Rates refer to the share of students from full-time and part-time adjusted fall 2012 cohorts that were still enrolled in fall 2013. Large metros are those with more than one million people.

Source: Jonathan Rothwell and Siddharth Kulkarni / Brookings Institution Metropolitan Policy Program

APPENDIX

OCCUPATIONAL MEASURES OF TALENT

Knowledge, Professional, and Creative Class: Occupations span computer science and mathematics; architecture and engineering; life, physical, and social sciences; arts, design, music, entertainment, sports, and media; management, business, and finance; and law, health care, education, and training. Our brief measures the total number, relative share, and concentration (location quotient) of these occupations. We also look at the size and concentration of the nine occupational clusters that make up the knowledge, professional, and creative class: Computer and Math; Architecture and Engineering; Science; Education; Arts, Media, and Design; Management, Business and Finance; Legal;, and Healthcare. Data is from the U.S. Census American Community Survey for 2016.

SERVICE AND WORKING CLASSES

Service Class: The service class is employed in routine service jobs, including food preparation and other food service-related occupations, building and grounds cleaning and maintenance, personal care and service, low-end sales, office and administrative support, community and social services, and protective services.

Working Class: The working class is employed in blue-collar occupations, including factory production; extraction, installation, maintenance, and repair; production, transportation, and material moving; and construction.

EDUCATIONAL ATTAINMENT

Bachelor's Degree and Higher: The number of adults with a bachelor's degree and higher. Data is from the U.S. Census Bureau American Community Survey for 2016.

Graduate and Advanced Degrees: The number of adults with a graduate degree. Data is from the U.S. Census Bureau American Community Survey for 2016.

Less-Educated: The number of adults without a high school diploma. Data is from the U.S. Census Bureau American Community Survey for 2016.

UNIVERSITY TALENT MEASURES

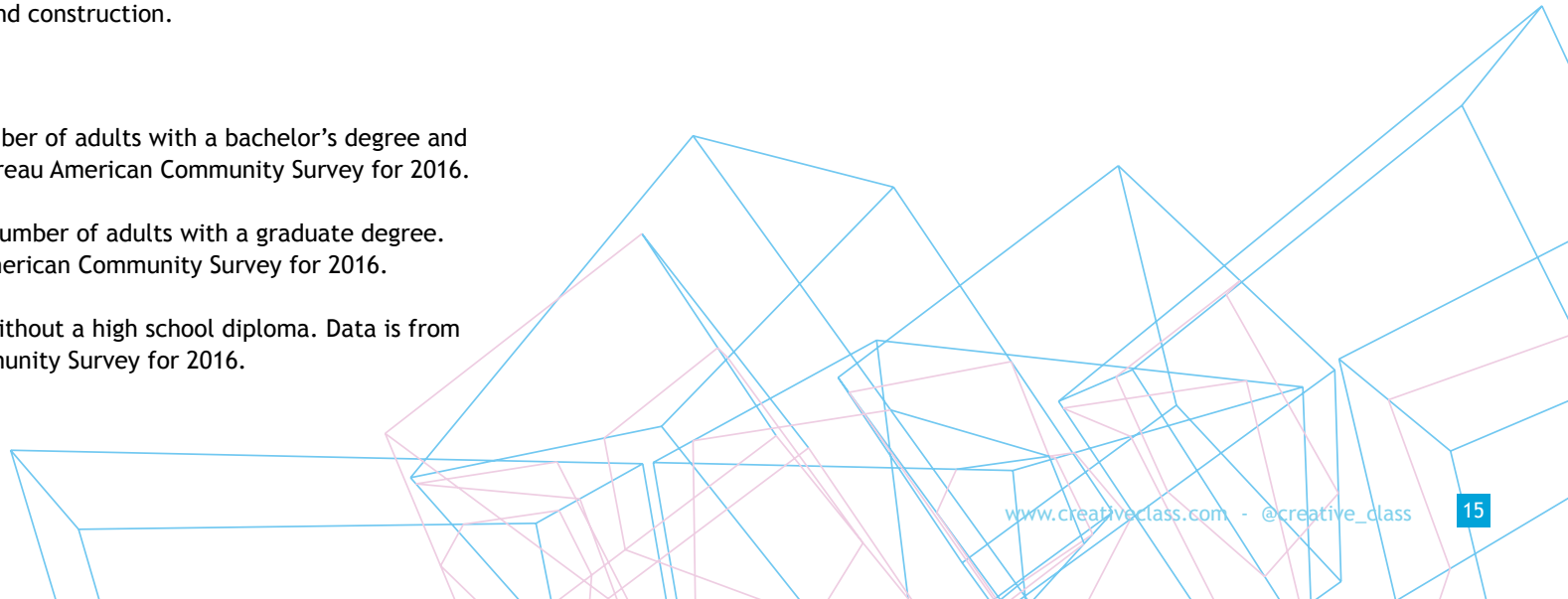
College and University Enrollment: The number of students enrolled in a university. Data is from the Integrated Postsecondary Education Data System (IPEDS) for 2014-2015.

College and University Degrees: The number of degrees given by a metro's universities. Data is from the Integrated Postsecondary Education Data System (IPEDS) for 2014-2015.

University Faculty: The number of university faculty members. Data is from the Integrated Postsecondary Education Data System (IPEDS) for 2014-2015.

BRAIN DRAIN AND TALENT RETENTION

Graduate Retention (All Colleges and Four-Year Institutions): The share of college and university graduates that remain in the metro where they went to school. Data comes from Jonathan Rothwell and Siddharth Kulkarni at the Brookings Institution Metropolitan Policy Program, who conducted a detailed analysis of college graduation and alumni data across 1,700 of the largest U.S. colleges and universities.[6]



REFERENCES

1. Richard Florida, “Talent Beats Trade in Economic Development,” CityLab, September 11, 2012, https://www.citylab.com/life/2012/09/talent-beats-trade-economic-development/3083/.

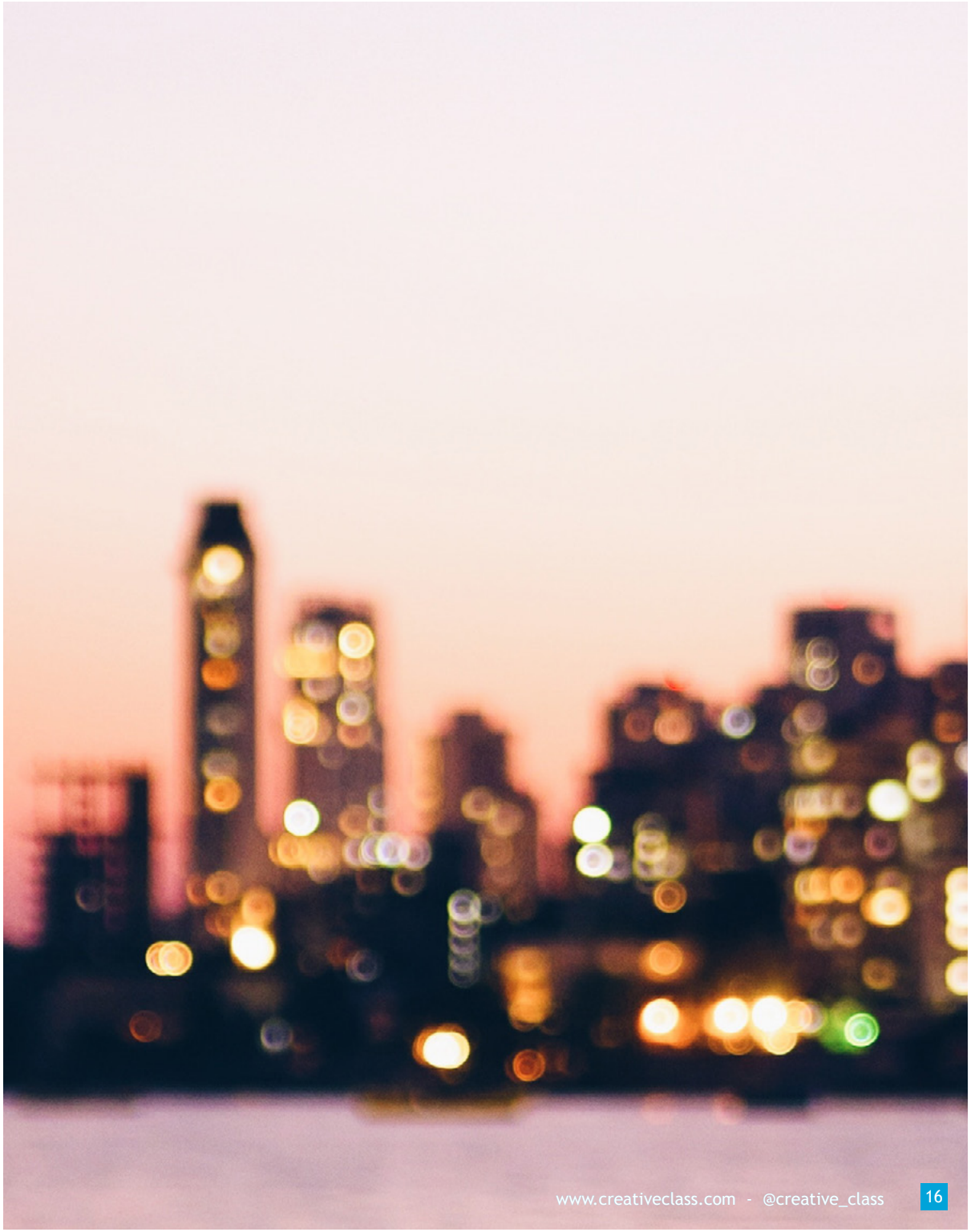
2. Richard Florida, The New Urban Crisis, Basic Books, 2017; Richard Florida, “The Creative Class and Economic Development,” Economic Development Quarterly 28: no. 196 (2014), 196-2015.

3. Rob Sentz, “Understanding Location Quotient,” Esmi, October 14, 2011, http://www.economicmodeling.com/2011/10/14/understanding-location-quotient-2/.

4. Edward Glaeser, Triumph of the City, Penguin Books, 2011.

5. AnnaLee Saxenian, “Brian Circulation: How High-Skill Immigration Makes Everyone Better Off,” The Brookings Institution, December 1, 2002, http://www.brookings.edu/research/articles/2002/12/winter-immigration-saxenian.

6. Jonathan Rothwell and Siddharth Kulkarni, “Beyond College Rankings: A Value-Added Approach to Assessing Two- and Four-Year Schools,” The Brookings Institution Metropolitan Policy Program, April 2015, https://www.brookings.edu/wp-content/uploads/2015/04/BMPP_CollegeValueAdded.pdf.



BENCHMARKING MIAMI'S GROWTH AND COMPETITIVENESS

Richard Florida Steven Pedigo

creative class group FIU KNIGHT FOUNDATION

BENCHMARKING MIAMI'S INNOVATION AND ENTREPRENEURSHIP

THE MIAMI URBAN FUTURE INITIATIVE

The Miami Urban Future Initiative is a joint initiative with FIU's College of Communication, Architecture + The Arts and the Creative Class Group sponsored in part by The John S. and James L. Knight Foundation, which will lead new research and mapping on economic, occupational, creative and technological assets in Miami, in partnership with renowned experts, to provide necessary data, evidence and strategy to grow a more inclusive, creative economy for a 21st century global Miami. Miami has reached a crossroads. Its economy – historically based on tourism, hospitality, transportation, and real-estate development – has deepened, diversified, and become more creative and idea-based, as banking, media, arts, education, and new technology-based industries have assumed a larger role. The region now finds itself at a critical inflection point.

Through this Initiative, we hope to provide the thought leadership and awareness required to guide Miami's evolution as a global city through data-driven research and assessments of the key trends shaping the region, disseminate this information and inform the broad strategic vision for the region's private and public stakeholders through ongoing local convenings and briefs and bring global thought-leaders and practitioners to bear on thinking about the region's future through high-level events and convenings on issues important to Miami and global cities.

@MIAUrbanFuture

www.miamiurbanfuture.org

creative class group

THE AUTHORS

@Richard_Florida

RICHARD FLORIDA

Richard Florida is a university professor and director of cities at the Martin Prosperity Institute at the University of Toronto, a distinguished fellow at New York University's Schack Institute of Real Estate, and a visiting fellow at Florida International University. He serves as senior editor for *The Atlantic*, where he cofounded and serves as editor at large for *CityLab*. He is also the author of the award-winning *The Rise of the Creative Class*. His latest book, *The New Urban Crisis*, was published by Basic Books in April 2017.

@iamstevenpedigo

STEVEN PEDIGO

Steven Pedigo is the Director of Research for the Creative Class Group, a global think tank comprised of leading researchers, academics and strategists. He is also the Director of the NYU Schack Institute of Real Estate Urban Lab and a Clinical Assistant Professor for Economic Development at the NYU School of Professional Studies.

Steven holds a bachelor's degree from the University of Texas at Austin and graduate degrees from the H. John Heinz III School for Public Policy and Management at Carnegie Mellon University and the University of Illinois at Urbana-Champaign.

BENCHMARKING MIAMI'S GROWTH AND COMPETITIVENESS

The Miami metro—spanning Miami-Dade, Broward, and Palm Beach counties—has grown at a stunning rate over the last five years. Today, Miami's population gains outpace those of Los Angeles, San Francisco, Boston, and Washington, D.C. But does this influx of residents translate into sustained and shared economic growth?

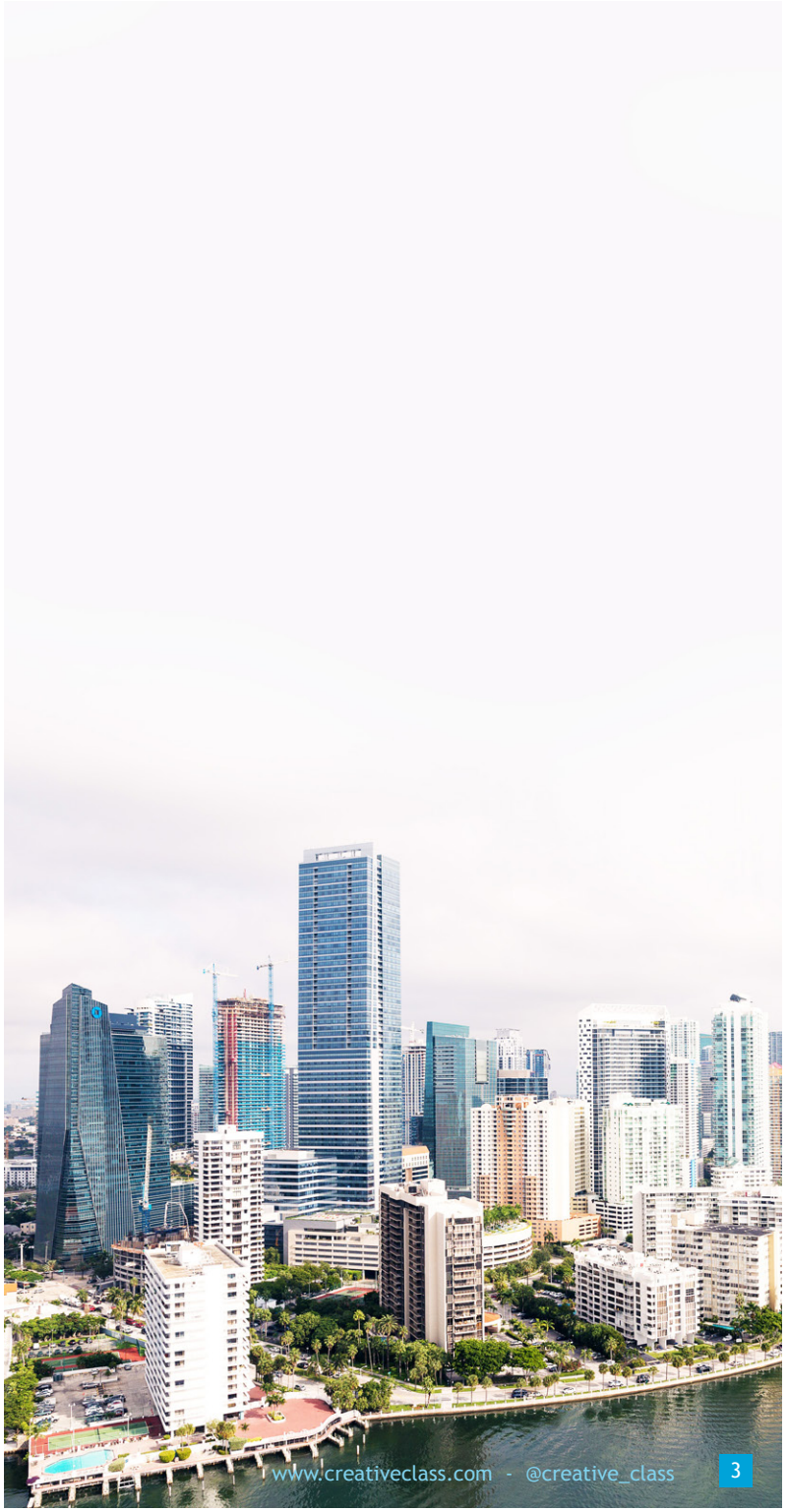
Not all growth is created equal. A metro's population may rise as its employment and income levels decline, and vice versa. In order to build a stronger, more inclusive economy, metros must increase their economic output, employment, wages, incomes, and key businesses and industries alongside their populations.

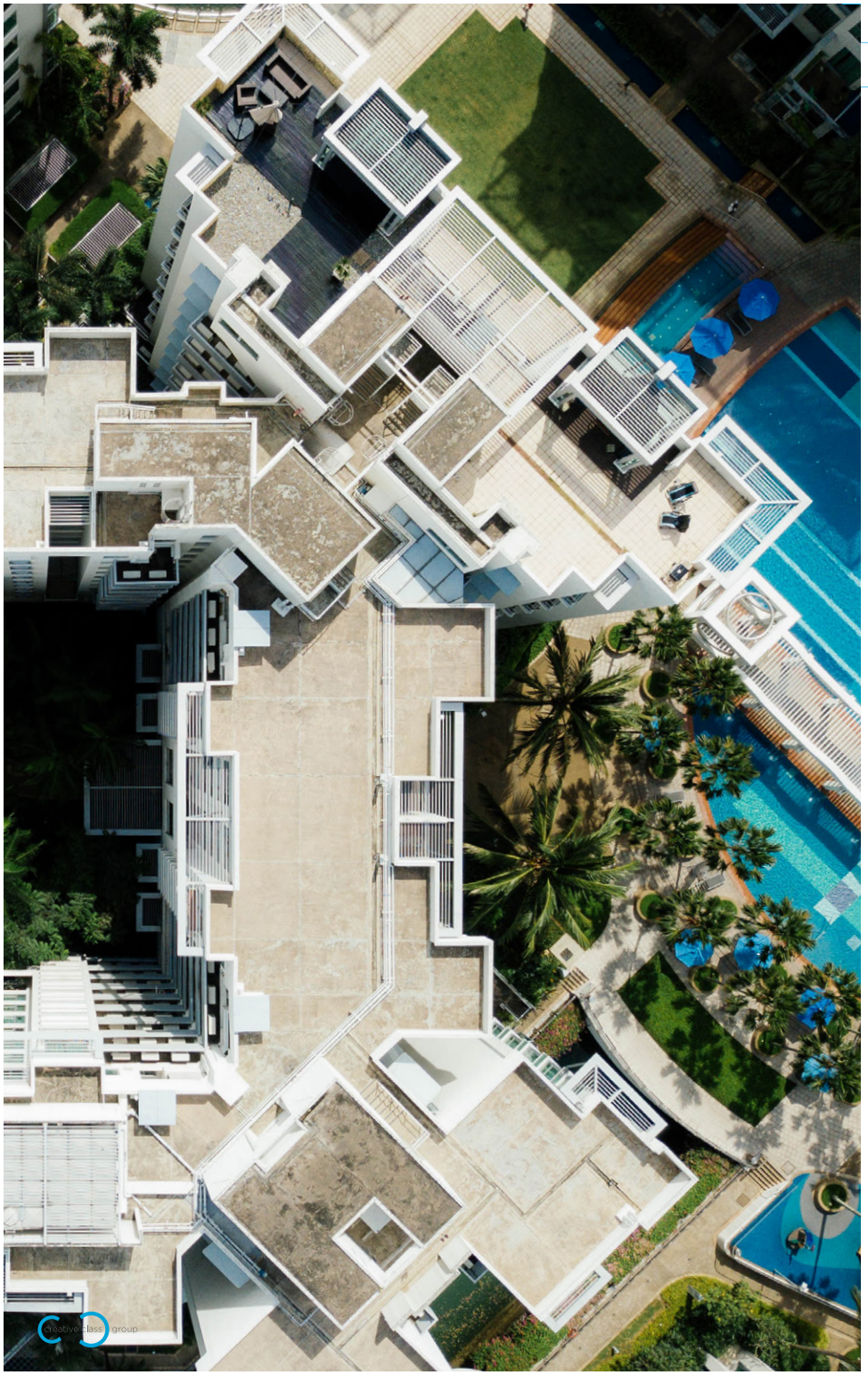
The following research brief from the Miami Urban Future Initiative provides a data-driven assessment of the economic growth and competitiveness of the Miami metro, comparing its performance in recent years to all 53 of America's large metros with populations of more than one million people.

Figure 1: Miami's Overall Competitiveness Rankings

Metric	Value	Rank among Large U.S. Metros
Population Size (2016)	6.1 million	8
Population Growth (2011-2016)	1.3%	19
Growth in Economic Output (2011-2016)	3.0%	13
Wage Growth (2010-2015)	3.3%	18
Income Growth (2010-2015)	1.3%	42
Employment Growth (2010-2015)	3.4%	6
Growth in Business Establishments (2010-2015)	2.0%	8
Average Size of Business Establishments (2015)	11.27	53
Growth in Business Establishment Size (2010-2015)	5.6%	25
Traded Sector Establishments (2015)	54,842	4
Traded Sector Business Establishment (LQ)* (2015)	1.17	9

**Note: Location quotient, or LQ, refers to how concentrated an industry is compared to the U.S. as a whole. Growth is on an annualized basis. Definitions and sources for all metrics are listed in the appendix.*





KEY FINDINGS

- **Miami's population is large, but its population growth is relatively slow.** With more than six million residents, Miami ranks eighth among large metros according to its population size, which is comparable to that of Philadelphia and Washington, D.C. But, Miami ranks 19th in terms of population growth, with a growth rate of 1.3 percent per year. This is better than the national average but worse than fast-growing metros like Austin, Houston, Nashville, and Denver.
- **Miami's employment has grown rapidly.** Miami had the sixth highest rate of employment growth (3.4 percent annually) among large metros between 2010 and 2015. This exceeds the national average but lags leading knowledge hubs like San Francisco, Austin, and San Jose.
- **Miami has experienced sharp business growth.** Miami has the eighth highest rate of business growth among large metros (roughly 2 percent annually). This is considerably better than the national average and rates for New York, Los Angeles, and Washington, D.C. but worse than the rates for Austin, Dallas, and Houston.
- **Miami has a substantial concentration of key export-oriented or "traded sector" businesses.** Miami takes fourth place—behind the much larger metros of New York, Los Angeles, and Chicago—on its level of traded sector businesses.
- **Miami's economy is highly dependent on small businesses.** On average, Miami's business establishments are smaller than those in any other large U.S. metro. This is not surprising for an economy driven by hospitality, tourism, and real estate industries. Nevertheless, it signals Miami's lack of larger companies, which provide higher-paying jobs and make for a more resilient economy.
- **Miami's economic output is large, but the growth of its economic output lags leading tech hubs.** Miami's economic output, or GDP, is roughly $288 billion, placing it 12th in the U.S., just behind Seattle. From 2011 to 2016, the metro's GDP grew at a rate of 3 percent per year, exceeding the national average of 1.9 percent. Still, Miami's GDP grew at less than half the rate of San Jose's or Austin's.
- **Miami has seen reasonable wage growth, but suffers from a slower rate of income growth.** Miami ranks 18th in terms of its wage growth, which increased at an annual rate of 3.3 percent between 2011 and 2016. This is slightly higher than the average U.S. wage growth. Miami ranks much lower—42nd among large metros—in terms of its income growth, which increased at an annual rate of just 1.3 percent during the same time period. Miami's income growth rate is half that of New York or Los Angeles, a third of San Francisco's, a quarter of San Jose's, and slightly below the U.S. average of 2.1 percent.

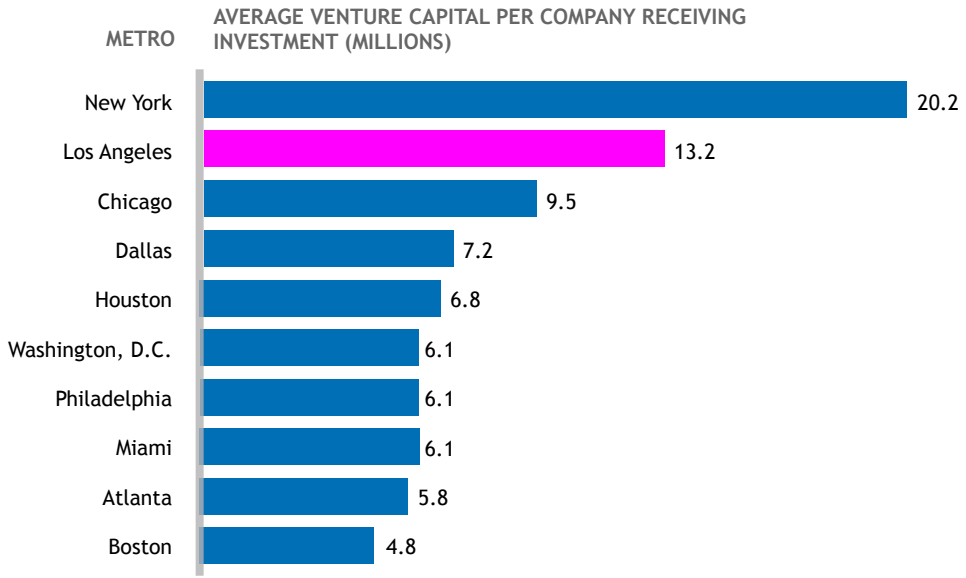
MIAMI'S GROWTH AND COMPETITIVENESS

The following section provides a more detailed, data-driven analysis of how Miami stacks up on key measures of economic growth and competitiveness.

POPULATION

- **Population Size.** With just over 6 million residents, Miami ranks eighth among large U.S. metros according to its population size. This puts the metro ahead of Atlanta and Boston and roughly in line with Philadelphia and Washington, D.C. (ranked sixth and seventh).
- **Population Growth.** Miami ranks 19th among large U.S. metros according to its population growth. With an annual growth rate of roughly 1.3 percent, Miami ranks alongside San Francisco and Washington, D.C. but behind metros like Austin, Houston, San Antonio, Orlando, and Phoenix. The metro's annual population growth is nearly double the national average (0.73 percent). As Miami continues to grow rapidly, the metro is expected to surpass Philadelphia next year in terms of overall population size.

Figure 2: Population Size for Large U.S. Metros



Note: Large metros are those with more than one million people.

Source: U.S. Census American Community Survey 2016

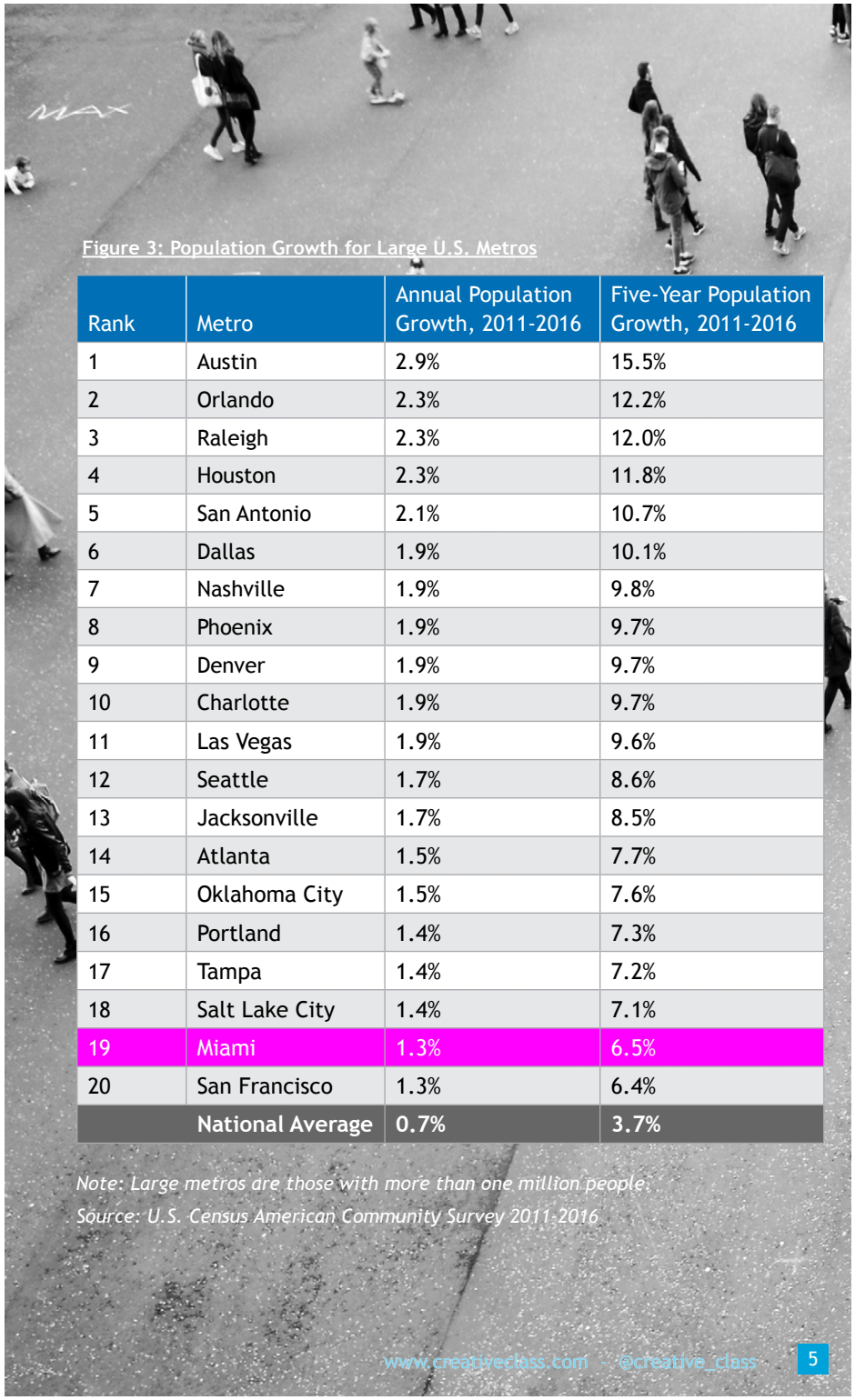


Figure 3: Population Growth for Large U.S. Metros

Rank	Metro	Annual Population Growth, 2011-2016	Five-Year Population Growth, 2011-2016
1	Austin	2.9%	15.5%
2	Orlando	2.3%	12.2%
3	Raleigh	2.3%	12.0%
4	Houston	2.3%	11.8%
5	San Antonio	2.1%	10.7%
6	Dallas	1.9%	10.1%
7	Nashville	1.9%	9.8%
8	Phoenix	1.9%	9.7%
9	Denver	1.9%	9.7%
10	Charlotte	1.9%	9.7%
11	Las Vegas	1.9%	9.6%
12	Seattle	1.7%	8.6%
13	Jacksonville	1.7%	8.5%
14	Atlanta	1.5%	7.7%
15	Oklahoma City	1.5%	7.6%
16	Portland	1.4%	7.3%
17	Tampa	1.4%	7.2%
18	Salt Lake City	1.4%	7.1%
19	Miami	1.3%	6.5%
20	San Francisco	1.3%	6.4%
	National Average	0.7%	3.7%

Note: Large metros are those with more than one million people.

Source: U.S. Census American Community Survey 2011-2016

MIAMI'S INNOVATION AND ENTREPRENEURSHIP (CONTINUED)

ECONOMY

- **Economic Output.** Miami ranks 12th among large U.S. metros according to its economic output, measured as GDP, which amounted to $288 million in 2016. This places the metro just behind Seattle, ahead of San Jose, and much further behind top-ranking metros like New York and Los Angeles.
- **Growth in Economic Output.** Miami ranks 13th among large U.S. metros according to the growth of its economic output, which grew at an annual rate of roughly 3 percent. This places Miami on par with Los Angeles and Las Vegas, substantially ahead of the national average (1.9 percent per year), but well behind San Jose, Austin, and San Antonio, whose annual growth rates exceed 5 percent.

Figure 4: Economic Output for Large U.S. Metros

Rank	Metro	Economic Output (millions)
1	New York	$1,426
2	Los Angeles	$885
3	Chicago	$569
4	Dallas	$471
5	Washington, D.C.	$449
6	Houston	$442
7	San Francisco	$406
8	Philadelphia	$381
9	Boston	$372
10	Atlanta	$320
11	Seattle	$294
12	Miami	$288
13	San Jose	$237
14	Detroit	$224
15	Minneapolis	$218
16	Phoenix	$203
17	San Diego	$191
18	Denver	$180
19	Baltimore	$165
20	Portland	$152

Note: Large metros are those with more than one million people.

Source: U.S. Bureau of Economic Analysis 2016

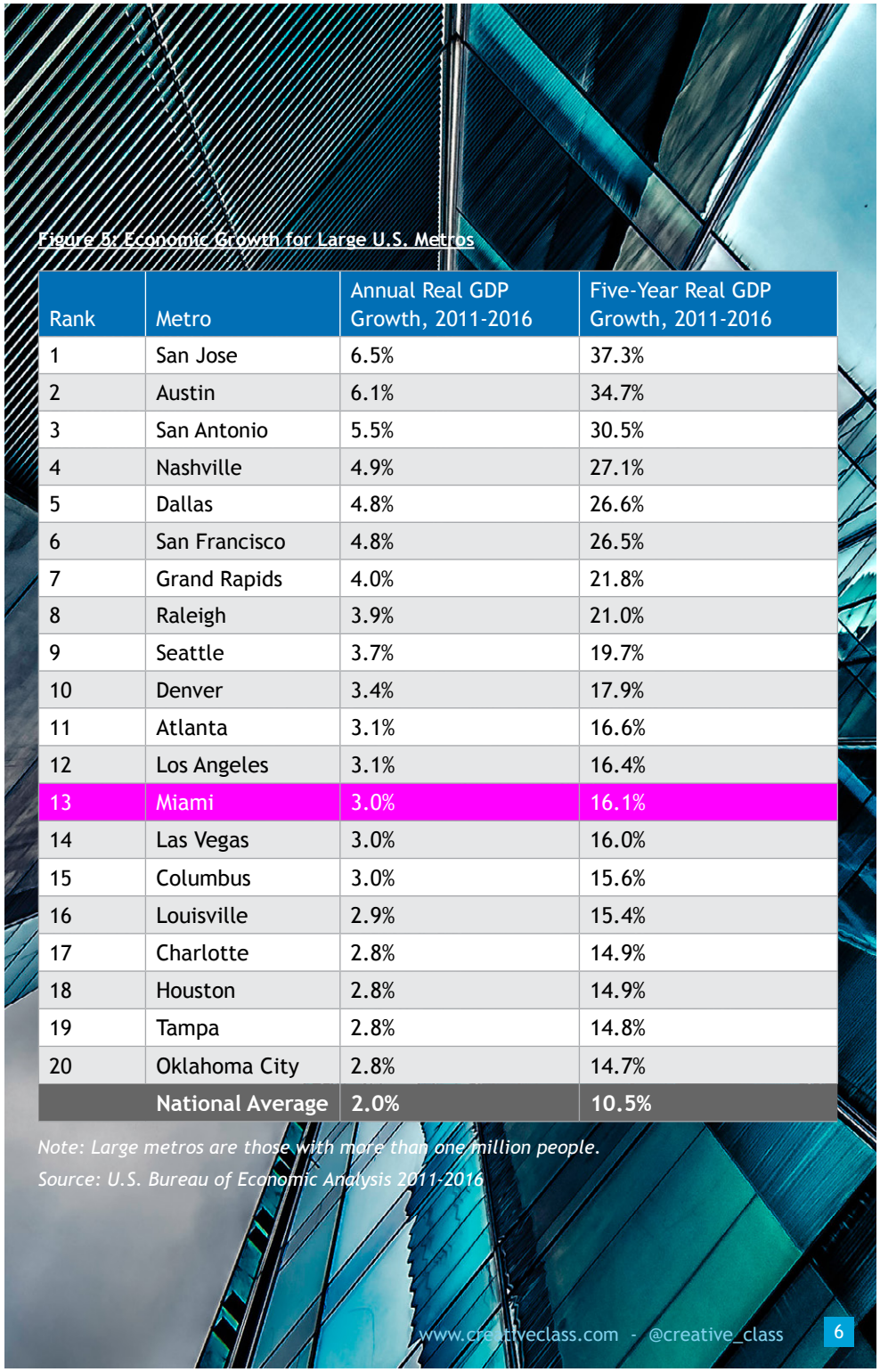


Figure 5: Economic Growth for Large U.S. Metros

Rank	Metro	Annual Real GDP Growth, 2011-2016	Five-Year Real GDP Growth, 2011-2016
1	San Jose	6.5%	37.3%
2	Austin	6.1%	34.7%
3	San Antonio	5.5%	30.5%
4	Nashville	4.9%	27.1%
5	Dallas	4.8%	26.6%
6	San Francisco	4.8%	26.5%
7	Grand Rapids	4.0%	21.8%
8	Raleigh	3.9%	21.0%
9	Seattle	3.7%	19.7%
10	Denver	3.4%	17.9%
11	Atlanta	3.1%	16.6%
12	Los Angeles	3.1%	16.4%
13	Miami	3.0%	16.1%
14	Las Vegas	3.0%	16.0%
15	Columbus	3.0%	15.6%
16	Louisville	2.9%	15.4%
17	Charlotte	2.8%	14.9%
18	Houston	2.8%	14.9%
19	Tampa	2.8%	14.8%
20	Oklahoma City	2.8%	14.7%
	National Average	2.0%	10.5%

Note: Large metros are those with more than one million people.

Source: U.S. Bureau of Economic Analysis 2011-2016

MIAMI'S INNOVATION AND ENTREPRENEURSHIP (CONTINUED)

WAGES

- **Wage Growth.** Miami ranks 18th among large U.S. metros according to its wage growth, which grew 3.3 percent annually between 2010 and 2015. This is better than the national average (2.6 percent per year), on par with Atlanta, and higher than L.A. and New York. But, Miami's wages are growing at about half the rate of the two top-ranking metros: San Jose and San Francisco.

Figure 6: Wage Growth for Large U.S. Metros

Rank	Metro	Annual Real Wage Growth, 2010-2015	Five-Year Real Wage Growth, 2010-2015
1	San Jose	7.3%	44.8%
2	San Francisco	6.1%	36.6%
3	Austin	5.5%	32.7%
4	Nashville	4.7%	27.5%
5	Houston	4.7%	27.2%
6	Charlotte	4.6%	27.1%
7	Grand Rapids	4.5%	26.1%
8	Raleigh	4.5%	26.1%
9	Seattle	4.3%	25.2%
10	Dallas	4.1%	23.9%
11	Portland	4.1%	23.5%
12	Denver	4.0%	23.4%
13	Orlando	3.9%	22.3%
14	Salt Lake City	3.8%	21.8%
15	San Antonio	3.7%	21.3%
16	Riverside	3.7%	21.2%
17	Columbus	3.5%	19.8%
18	Miami	3.3%	19.0%
19	Atlanta	3.3%	18.9%
20	Boston	3.2%	18.1%
	National Average	**2.6%**	**14.6%**

Note: Large metros are those with more than one million people.

Source: U.S. Bureau of Economic Analysis and CPI 2010-2015

MIAMI'S INNOVATION AND ENTREPRENEURSHIP (CONTINUED)

INCOME

- **Income Growth.** Miami ranks especially low—42nd among large U.S. metros—according to its personal income growth. With a growth rate of 1.3 percent annually between 2010 and 2015, Miami ranks alongside Rustbelt metros like St. Louis and Sunbelt metros like Orlando and Las Vegas. Miami's personal income growth is also worse than the annual U.S. average of 2.1 percent and falls behind Chicago and Los Angeles. Miami falls even further behind top-ranking San Jose, whose income growth rate is nearly four times higher.

EMPLOYMENT

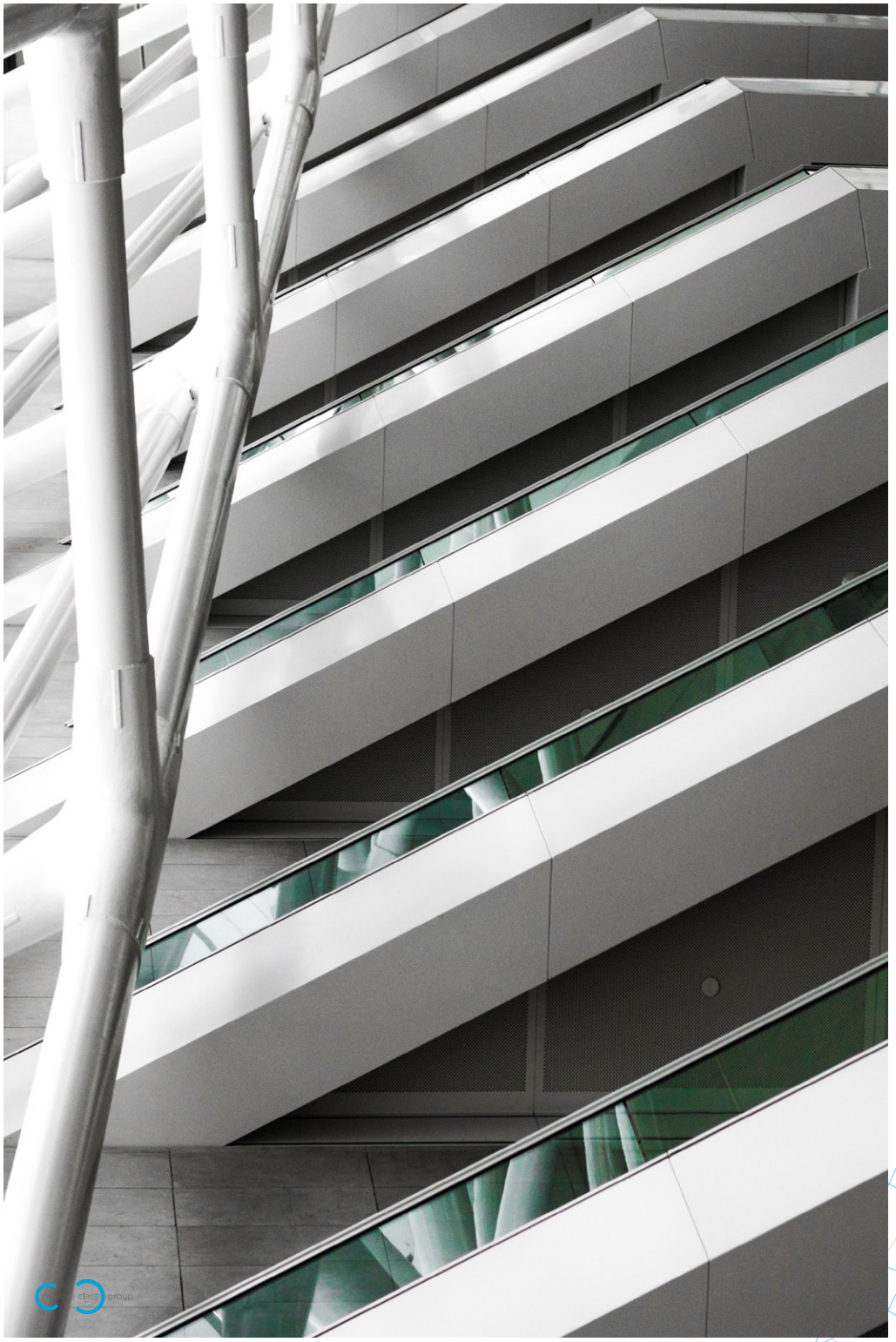
- **Employment Growth.** Miami's employment growth exceeds its population growth. With an annual employment growth rate of 3.4 percent, Miami ranks sixth among large U.S. metros, slightly behind tech hubs like Austin, San Jose, and San Francisco, on par with Raleigh and Charlotte, and considerably ahead of New York and Boston. Miami's annual employment growth also ranks substantially ahead of the national average of 1.9 percent per year.

Figure 7: Employment Growth for Large U.S. Metros

Rank	Metro	Annual Employment Growth, 2010-2015	Five-Year Employment Growth, 2010-2015
1	Austin	4.0%	21.8%
2	San Jose	3.7%	20.1%
3	Orlando	3.5%	18.9%
4	San Francisco	3.5%	18.8%
5	Riverside	3.5%	18.6%
6	Miami	3.4%	18.2%
7	Raleigh	3.4%	18.2%
8	Charlotte	3.4%	18.1%
9	Nashville	3.4%	17.9%
10	Grand Rapids	3.3%	17.5%
	National Average	**1.9%**	**10%**

Note: Large metros are those with more than one million people.

Source: U.S. Bureau of Economic Analysis 2010-2015



BUSINESS ESTABLISHMENTS

- **Growth of Business Establishments.** Miami ranks eighth among large U.S. metros according to the growth of its business establishments, with an annual growth rate of 2 percent. This is more than double the national average of 0.7 percent annually. The metro's growth of business establishments falls behind Austin, Dallas, and Houston, on par with Nashville and Orlando, and ahead of New York, San Francisco, and Los Angeles.
- **Average Size of Business Establishments.** Miami ranks last among large U.S. metros according to the average size of its business establishments. The average business in Miami has roughly 11 employees compared to 14 in New York, 17 in Washington, D.C., and 20 in San Jose.
- **Growth of Business Establishment Size.** From 2010 to 2015, the size of Miami's businesses grew by 5.6 percent. While Miami ranks 25th among large U.S. metros—ahead of New York and Los Angeles—on this metric, it ranks significantly behind tech hubs like Seattle and San Francisco and just behind the U.S. average (7 percent).

Figure 8: Business Establishment Growth for Large U.S. Metros

Rank	Metro	Annual Business Establishment Growth, 2010- 2015	Five-Year Business Establishment Growth, 2010- 2015
1	Grand Rapids	5.9%	33.4%
2	Charlotte	5.3%	29.5%
3	Austin	3.5%	18.6%
4	Dallas	2.1%	11.1%
5	Houston	2.1%	10.9%
6	Nashville	2.0%	10.6%
7	Orlando	2.0%	10.5%
8	Miami	2.0%	10.4%
9	San Antonio	1.9%	9.8%
10	Las Vegas	1.9%	9.6%
12	National Average	0.7%	3.6%

Note: Large metros are those with more than one million people.

Source: U.S. Census County Business Patterns 2010-2015

VALUE-ADDED INDUSTRIES (TRADED SECTOR)

- **Number of Traded Sector Establishments.** Traded sector businesses are key to a metro's economic growth and competitiveness. By exporting goods and services outside their immediate geographic area, these businesses tend to offer higher wages and produce higher levels of innovation. With nearly 55,000 traded sector establishments (3.3 percent of the national share), Miami performs extremely well on this metric, ranking fourth among large U.S. metros. In addition to ranking just behind the nation's three largest metros—Chicago, Los Angeles, and New York—Miami ranks ahead of major metros like San Francisco, Philadelphia, and Washington, D.C.
- **Concentration of Traded Sector Establishments.** Miami ranks ninth among large U.S. metros according to its concentration of traded sector businesses. This figure is based on a "location quotient," or LQ, which shows how concentrated an industry is compared to the U.S. as a whole. With an LQ of 1.17, Miami has roughly 17 percent more traded sector businesses than the national average and about the same number as Houston. But the metro still ranks behind other superstar metros like Los Angeles, San Jose, San Francisco, and Washington, D.C.

Figure 9: Traded Sector Business Establishments for Large U.S. Metros

Rank	Metro	Traded Sector Business Establishments	Share of U.S. Total
1	New York	144,290	8.7%
2	Los Angeles	119,219	7.2%
3	Chicago	68,225	4.1%
4	Miami	54,842	3.3%
5	Washington, D.C.	44,468	2.7%
6	Dallas	44,228	2.7%
7	Atlanta	40,069	2.4%
8	Houston	39,421	2.4%
9	San Francisco	38,696	2.3%
10	Philadelphia	36,150	2.2%

Note: Large metros are those with more than one million people. U.S. Cluster Mapping Project traded sector definitions utilized.

Source: U.S. Census Bureau (County Business Patterns) 2015

Figure 10: Traded Sector Business Establishment Concentration for Large U.S. Metros

Rank	Metro	Traded Sector Business Establishments	Traded Sector Business Establishment LQ
1	Los Angeles	144,290	1.34
2	San Jose	119,219	1.31
3	San Francisco	68,225	1.23
4	Austin	54,842	1.21
5	Washington, D.C.	44,468	1.20
6	Denver	44,228	1.19
7	Salt Lake City	40,069	1.19
8	Atlanta	39,421	1.18
9	Miami	38,696	1.17
10	Houston	36,150	1.17

Note: Large metros are those with more than one million people. U.S. Cluster Mapping Project traded sector definitions utilized.

Source: U.S. Census Bureau (County Business Patterns) 2015

APPENDIX

POPULATION

Population Size: The number of residents in a metro. Data is from the U.S. Census American Community Survey for 2016.

Population Growth: The rate at which a metro's population grew both annually and over a five-year period. Data is from U.S. Census American Community Survey for 2011-2016.

ECONOMY

Economic Output: Real gross domestic product (GDP). Data is from the U.S. Bureau of Economic Analysis for 2016.

Growth in Economic Output: The rate at which a metro's economic output, measured as GDP, grew both annually and over a five-year period. Data is from the U.S. Bureau of Economic Analysis for 2011-2016.

WAGES

Wage Growth: The rate at which a metro's real wages (adjusted for inflation) grew both annually and over a five-year period. Data is from the U.S. Bureau of Economic Analysis and Consumer Price Index for 2010-2015.

INCOME

Income Growth: The rate at which a metro's real per-capita personal income (adjusted for inflation) grew both annually and over a five-year period. Data is from the U.S. Bureau of Economic Analysis and Consumer Price Index for 2010-2015.

EMPLOYMENT

Employment Growth: The rate at which a metro's number of employed residents grew both annually and over a five-year period. Data is from the U.S. Bureau of Economic Analysis for 2010-2015.

BUSINESS ESTABLISHMENTS

Growth in Business Establishments: The rate at which a metro's number of business establishments grew both annually and over a five-year period. Data is from the U.S. Census County Business Patterns for 2010-2015.

Average Size of Business Establishments: The average size of a metro's business establishments, measured in terms of number of employees. Data is from the U.S. Census County Business Patterns for 2015.

Growth in Business Establishment Size: The rate at which the average size of a metro's business establishments grew both annually and over a five-year period. Data is from the U.S. Census County Business Patterns for 2010-2015.

VALUE-ADDED INDUSTRIES (TRADED SECTOR)

Traded Sector Establishments: Business establishments that export goods and services outside of their immediate geographic area. Data is from the U.S. Census Bureau County Business Patterns for 2015.

Concentration of Traded Sector Businesses: The share of traded sector businesses relative to the national average. Data is from the U.S. Census Bureau (County Business Patterns) for 2015 and is analyzed using a "location quotient," or LQ, which shows how concentrated an industry is compared to the U.S. as a whole.

REFERENCES

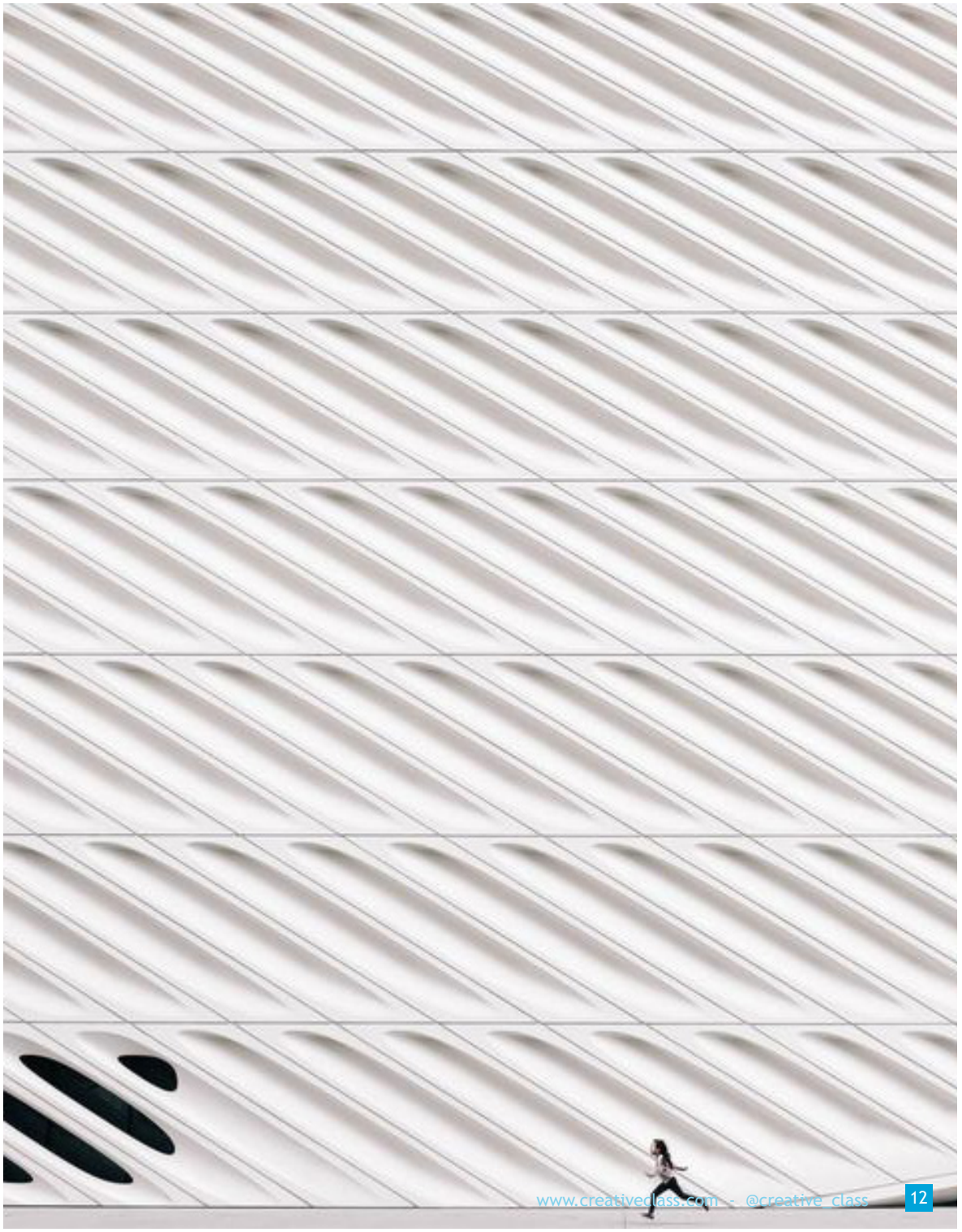
1. Richard Florida, "The Great Growth Disconnect: Population Growth Does Not Equal Economic Growth," *CityLab*, September 30, 2013, https://www.citylab.com/life/2013/09/great-growth-disconnect-population-growth-does-not-equal-economic-growth/5860/.

2. Jesus Leal Trujillo and Joseph Parilla, "Redefining Global Cities," The Brookings Institution and JP Morgan Chase, 2016, https://www.brookings.edu/wp-content/uploads/2016/09/metro_20160928_gcitypes.pdf.

3. Mari A. Schaefer, "Here's Why Miami and Phoenix are About to Surpass Philly's Population," *The Philadelphia Inquirer*, March 22, 2017, http://www.philly.com/philly/news/census-2016-philly-miami-phoenix-metro.html.

4. U.S. Cluster Mapping, "Clusters 101," Institute for Strategy and Competitiveness, Harvard Business School, http://www.clustermapping.us/content/clusters-101.

5. Rob Sentz, "Understanding Location Quotient," Esmi, October 14, 2011, http://www.economicmodeling.com/2011/10/14/understanding-location-quotient-2/.



@MIAUrbanFuture

www.miamiurbanfuture.org

creative class group

FIU

KNIGHT FOUNDATION

BENCHMARKING MIAMI'S INNOVATION AND ENTREPRENEURSHIP

Richard Florida Steven Pedigo

In support by:
creative class group
FIU
KNIGHT FOUNDATION

BENCHMARKING MIAMI'S INNOVATION AND ENTREPRENEURSHIP

THE MIAMI URBAN FUTURE INITIATIVE

The Miami Urban Future Initiative is a joint initiative with FIU's College of Communication, Architecture + The Arts and the Creative Class Group sponsored in part by The John S. and James L. Knight Foundation, which will lead new research and mapping on economic, occupational, creative and technological assets in Miami, in partnership with renowned experts, to provide necessary data, evidence and strategy to grow a more inclusive, creative economy for a 21st century global Miami. Miami has reached a crossroads. Its economy – historically based on tourism, hospitality, transportation, and real-estate development – has deepened, diversified, and become more creative and idea-based, as banking, media, arts, education, and new technology-based industries have assumed a larger role. The region now finds itself at a critical inflection point.

Through this Initiative, we hope to provide the thought leadership and awareness required to guide Miami's evolution as a global city through data-driven research and assessments of the key trends shaping the region, disseminate this information and inform the broad strategic vision for the region's private and public stakeholders through ongoing local convenings and briefs and bring global thought-leaders and practitioners to bear on thinking about the region's future through high-level events and convenings on issues important to Miami and global cities.

@MIAUrbanFuture

www.miamiurbanfuture.org

creative class group

THE AUTHORS

@Richard_Florida

RICHARD FLORIDA

Richard Florida is a university professor and director of cities at the Martin Prosperity Institute at the University of Toronto, a distinguished fellow at New York University's Schack Institute of Real Estate, and a visiting fellow at Florida International University. He serves as senior editor for *The Atlantic*, where he cofounded and serves as editor at large for *CityLab*. He is also the author of the award-winning *The Rise of the Creative Class*. His latest book, *The New Urban Crisis*, was published by Basic Books in April 2017.

@iamstevenpedigo

STEVEN PEDIGO

Steven Pedigo is the Director of Research for the Creative Class Group, a global think tank comprised of leading researchers, academics and strategists. He is also the Director of the NYU Schack Institute of Real Estate Urban Lab and a Clinical Assistant Professor for Economic Development at the NYU School of Professional Studies.

Steven holds a bachelor's degree from the University of Texas at Austin and graduate degrees from the H. John Heinz III School for Public Policy and Management at Carnegie Mellon University and the University of Illinois at Urbana-Champaign.

BENCHMARKING MIAMI'S INNOVATION AND ENTREPRENEURSHIP

The Miami metro—which spans Miami-Dade, Broward, and Palm Beach counties—is an aspiring hub for entrepreneurship and innovation. While Miami has long been a breeding ground for small businesses, the economic value of these businesses has historically trailed behind that of leading tech hubs like the San Francisco Bay Area, Austin, Seattle, and Boston-Cambridge. But the tide appears to be turning in Miami's favor.

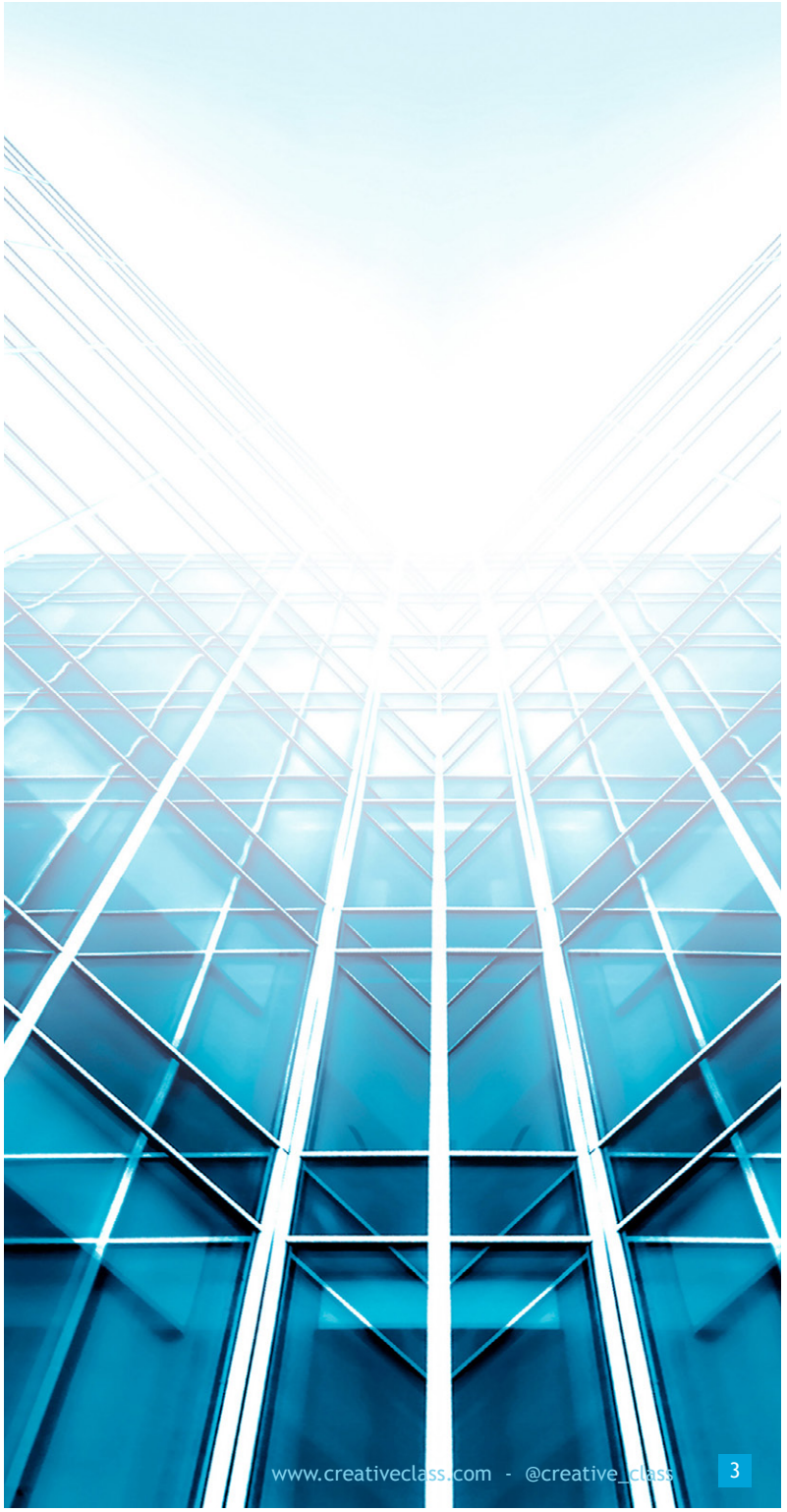
Due to the efforts of local entrepreneurs and significant venture capital investment from the Knight Foundation, among other organizations, the Miami metro has quickly strengthened its entrepreneurial ecosystem. In 2017, the metro ranked first on the Kauffman Index of Startup Activity, which uses metrics such as new companies, business density, and growth rates to measure entrepreneurial activity.[1]

The following research brief from the Miami Urban Future Initiative provides a data-driven assessment of the Miami metro on key indicators of innovation and entrepreneurship, comparing its performance to all 53 of America's large metros with populations of more than one million people.

Figure 1: Miami's Overall Rankings

Metric	Value	Rank among Large U.S. Metros
Venture Capital Investment	$1.3 billion	8
Venture Capital Investment per 100,000 People	$21.4 million	10
Companies Receiving Venture Capital	91	15
Average Venture Capital per Company	$14.2 million	2
High-Tech Businesses	9,679	9
Knowledge Economy Businesses	82,495	4
Knowledge Economy Businesses (LQ)*	1.15	9
Higher Education R&D Expenditures	$565.4 million	23
Higher Education R&D Expenditures per 100,000 People	$9.3 million	43

Note: Location quotient, or LQ, refers to how concentrated an industry is compared to the U.S. as a whole. Definitions and sources for all metrics are listed in the appendix.



KEY FINDINGS

- **Miami ranks eighth on venture capital investment.** Miami attracted $1.3 billion in venture capital investment in 2016, ranking eighth among large metros on this metric. And yet, the metro ranks much lower—31st among large metros—according to the number of companies that received venture capital investment in 2016 (adjusted for population size). This suggests that Miami is dependent on a small group of superstar companies like Magic Leap, which may have skewed its performance.
- **Miami ranks second according to its average investment per company.** On average, Miami's high-tech companies each earned $14.2 million in venture capital investment in 2016—the second-highest share among large metros. Only San Francisco performed better on this metric, with an average investment of $17.7 million per high-tech company.
- **Miami ranks highly according to its number of high-tech and knowledge economy businesses.** Miami ranks ninth among large metros according to its absolute number of high-tech and high-tech services businesses. The metro also ranks 10th according to its number of high-tech manufacturing businesses and fourth according to its knowledge economy businesses.
- **Miami lags in terms of its concentration of high-tech businesses.** Miami ranks 17th among large metros according to its number of high-tech businesses per 100,000 residents and 40th among large metros according to its concentration of high-tech businesses, which is 8 percent below the national average. The metro's concentration of high-tech services and manufacturing businesses also falls below the national average.
- **Small businesses are a key feature of Miami's high-tech sector.** Miami ranks second-to-last (behind Las Vegas) according to the size of its high-tech businesses, which have 11 employees on average. This share is also 44 percent smaller than the U.S. average.
- **Research and development spending must increase.** University research and development spending is vital to the economic performance of leading entrepreneurial regions like Boston-Cambridge, New York, and Seattle. With around $565 million spent on university research and development in 2015, Miami ranks 24th among large metros—far behind superstar metros like New York, Boston, and Los Angeles. This ranking is even lower—43rd among large metros—when adjusted for population size.

MIAMI'S INNOVATION AND ENTREPRENEURSHIP

The following section provides a more detailed, data-driven analysis of how Miami stacks up on key measures of innovation and entrepreneurship.

VENTURE CAPITAL STARTUPS AND INVESTMENT

- **Venture Capital Investment.** Miami ranks eighth among large U.S. metros according to the total amount of venture capital invested in its high-tech startups: roughly $1.3 billion in 2016. While this is better than Chicago and Washington, D.C., it is still less than 2 percent of all U.S. venture capital investment. Overall, Miami's share of venture capital investment is 18 times smaller than San Francisco's and five times smaller than that of New York or San Jose (the Silicon Valley).

  Miami ranks 10th among large U.S. metros according to the amount of venture capital invested for every 100,000 residents. (This metric provides a more accurate depiction of Miami's venture capital investment by controlling for the size of its population.) With around $21 million in high-tech investment per 100,000 residents, Miami ranks ahead of Washington, D.C. but behind New York and Seattle.

- **Companies Receiving Venture Capital.** Miami ranks 15th among large U.S. metros according to the number of its high-tech companies that received venture capital investments in 2016. Miami ranks in between Atlanta and Houston on this metric but far behind San Francisco, New York, and Boston.

  Miami lags even further behind according to the number of companies that received venture capital investments per 100,0000 people, coming in 31st among large U.S. metros. With just two companies receiving venture capital investments for every 100,000 residents, Miami ranks ahead of a number of Rustbelt and Sunbelt metros but behind the majority of superstar metros.

  Miami ranks second among large U.S. metros according to its average venture capital investment per high-tech company. With an average investment of $14.2 million, Miami ranks just behind San Francisco but ahead of all other large metros, including San Jose, Boston, New York, and L.A. These results are likely skewed by Magic Leap, a Miami company that attracted substantial funding last year.[2]

Figure 2: Venture Capital Investment for Large U.S. Metros

Rank	Metro	Venture Capital Investment (billions)	Venture Capital Investment (Share of U.S. Total)
1	San Francisco	$23.4	34.1%
2	New York	$7.6	11.0%
3	San Jose	$6.7	9.8%
4	Boston	$6.0	8.8%
5	Los Angeles	$5.4	7.9%
6	San Diego	$1.5	2.3%
7	Seattle	$1.5	2.2%
8	Miami	$1.3	1.9%
9	Chicago	$1.2	1.8%
10	Washington, D.C.	$1.1	1.6%

Note: Large metros are those with more than one million people.

Source: National Venture Capital Association 2016

Figure 3: Venture Capital Investment per 100,000 Residents for Large U.S. Metros

Rank	Metro	Venture Capital Investment per 100,000 Residents (millions)
1	San Francisco	$500
2	San Jose	$339
3	Boston	$126
4	Salt Lake City	$53
5	Austin	$48
6	San Diego	$47
7	Los Angeles	$41
8	Seattle	$40
9	New York	$38
10	Miami	$21

Note: Large metros are those with more than one million people.

Source: National Venture Capital Association 2016

MIAMI'S INNOVATION AND ENTREPRENEURSHIP (CONTINUED)

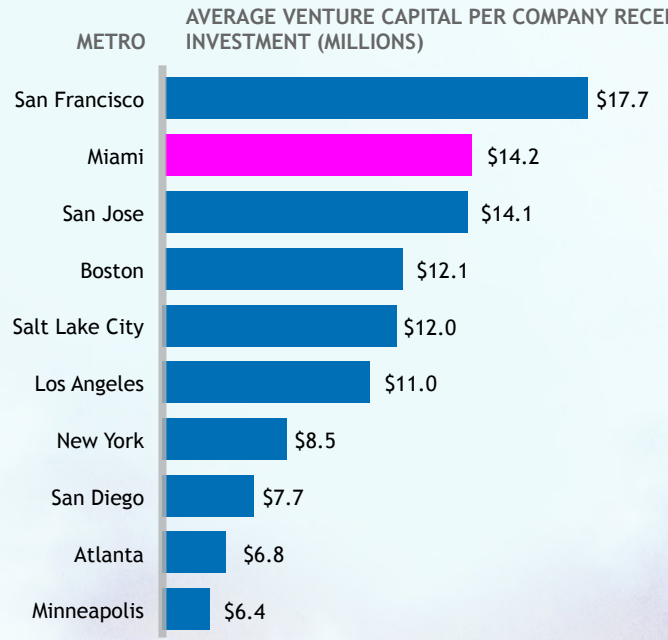
Figure 4: Number of Companies Receiving Venture Capital for Large U.S. Metros

Rank	Metro	Companies Receiving Venture Capital	Companies Receiving Venture Capital (Share of U.S. Total)
1	San Francisco	1,323	17.7%
2	New York	888	11.9%
3	Boston	500	6.7%
4	Los Angeles	496	6.6%
5	San Jose	478	6.4%
6	Seattle	265	3.5%
7	Chicago	220	2.9%
8	San Diego	200	2.7%
9	Washington, D.C.	191	2.6%
10	Austin	182	2.4%
11	Philadelphia	149	2.0%
12	Dallas	138	1.8%
13	Denver	124	1.7%
14	Atlanta	111	1.5%
15	Miami	91	1.2%
16	Houston	85	1.1%
17	Minneapolis	77	1.0%
18	Pittsburgh	76	1.0%
19	Portland	74	1.0%
20	Phoenix	73	1.0%

Note: Large metros are those with more than one million people.

Source: National Venture Capital Association 2016

Figure 5: Average Venture Capital per Company Receiving Investment for Large U.S. Metros



Note: Large metros are those with more than one million people.

Source: National Venture Capital Association 2016

HIGH-TECH BUSINESSES

We now turn to the nine major occupations that make up the knowledge, professional, and creative workforce.

- **High-Tech Businesses.** High-tech businesses—consisting of high-tech manufacturing and high-tech services—are an indicator of a region's innovative and entrepreneurial capacity. With around 9,700 high-tech businesses (2.5 percent of the national total), Miami ranks ninth among large U.S. metros, ahead of tech hubs like Houston, Seattle, and San Jose, just behind Dallas, Atlanta, and Boston, and further behind New York, L.A., and Washington, D.C.

  Miami ranks 17th among large U.S. metros according to its number of high-tech businesses, adjusted for population size. With 160 high-tech businesses for every 100,000 residents, Miami ranks ahead of Philadelphia and Chicago but behind Portland and New York.

- **Concentration of High-Tech Businesses.** Miami ranks far lower—40th among large U.S. metros—according to its concentration of high-tech businesses. This figure is based on a "location quotient," or LQ, which shows how concentrated an industry is compared to the U.S. as a whole.[3] With an LQ of 0.92, Miami's share is 8 percent smaller than the national average. By contrast, the two top-ranking metros—New York and Washington, D.C.—have more than double the national share of high-tech businesses.

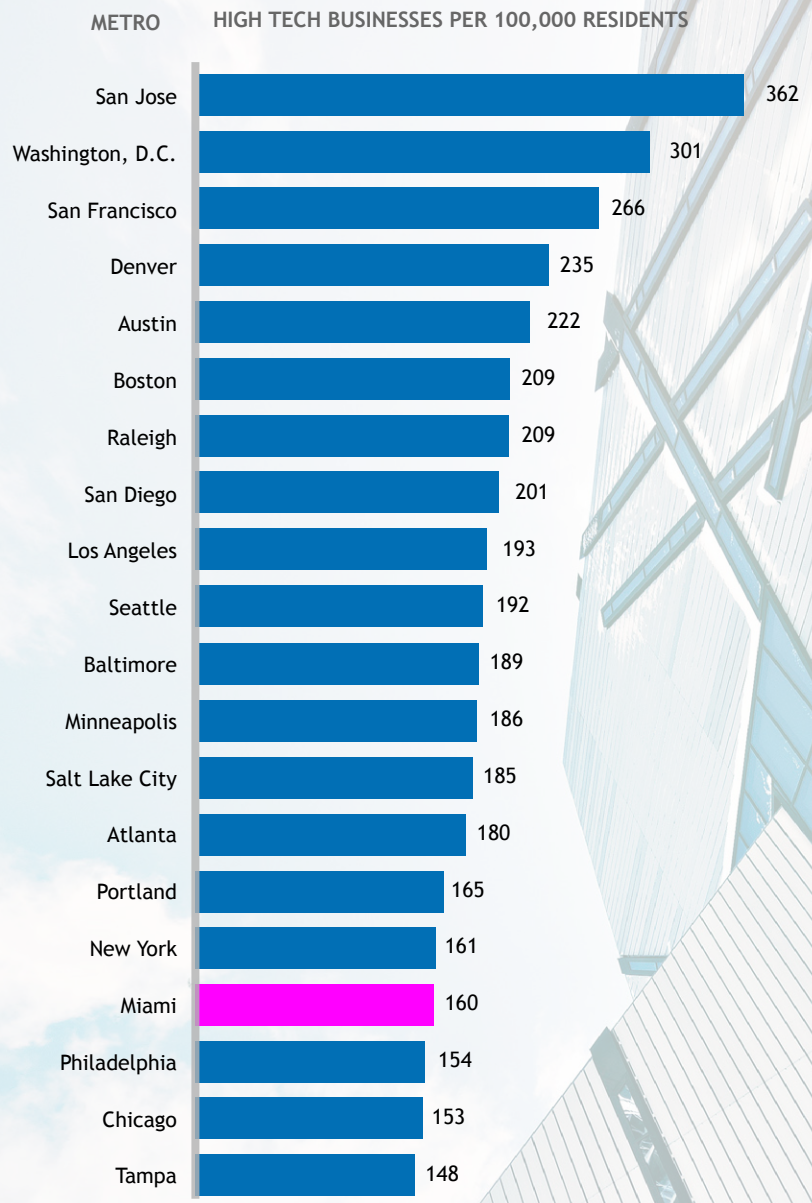
Figure 6: High-Tech Businesses for Large U.S. Metros

Rank	Metro	High-Tech Businesses	High-Tech Businesses (Share of U.S. Total)
1	New York	32,455	8.3%
2	Los Angeles	25,753	6.6%
3	Washington, D.C.	18,454	4.7%
4	Chicago	14,542	3.7%
5	San Francisco	12,431	3.2%
6	Dallas	10,647	2.7%
7	Atlanta	10,430	2.7%
8	Boston	10,026	2.6%
9	Miami	9,679	2.5%
10	Philadelphia	9,345	2.4%

Note: Large metros are those with more than one million people. Milken Institute high-tech business definition utilized.

Source: U.S. Census Bureau (County Business Patterns) 2015

Figure 7: High-Tech Businesses per 100,000 Residents for Large U.S. Metros



Note: Large metros are those with more than one million people. Milken Institute high-tech business definition utilized.

Source: U.S. Census Bureau (County Business Patterns) 2015

MIAMI'S INNOVATION AND ENTREPRENEURSHIP (CONTINUED)

SIZE DISTRIBUTION OF HIGH-TECH BUSINESSES

- **High-Tech Business Size.** Miami ranks second-to-last—52nd among large U.S. metros—according to the average size of its high-tech businesses based on their number of employees. With an average of around 11 employees, Miami's high-tech businesses are a third the size of those in San Jose and Seattle. Only Las Vegas ranks lower on this metric.
- **Concentration of High-Tech Business Size.** Miami again ranks 52nd among large U.S. metros according to the location quotient of its high-tech business size. With an LQ of 0.56, Miami's high-tech businesses are 44 percent smaller than the national average. By contrast, top-ranking metros like San Jose and Seattle have high-tech businesses that are more than 70 percent larger than the national average.

HIGH-TECH SERVICES

- **High-Tech Services.** High-tech services businesses span industries such as telecommunications, computer system design, and internet services. With more than 9,000 high-tech services businesses (2.5 percent of the national total), Miami ranks ninth among large U.S. metros on this metric, in between Dallas and Philadelphia. But, the metro falls behind Washington D.C. and L.A., which have more than double the amount, as well as New York, which has more than triple.

  Miami ranks 17th among large U.S. metros according to its number of high-tech services businesses, adjusted for population size. With more than 150 high-tech services businesses for every 100,000 residents, Miami ranks ahead of Philadelphia and Chicago, but behind Portland and New York.
- **Concentration of High-Tech Services.** Miami ranks far lower—39th among large U.S. metros—according to the location quotient of its high-tech services businesses. With an LQ of 0.93, Miami's share of high-tech services businesses is 7 percent smaller than the national average, placing the metro alongside Rustbelt metros like Detroit and Cincinnati but behind top-ranking metros like San Jose and Washington, D.C., which have more than double the national share.

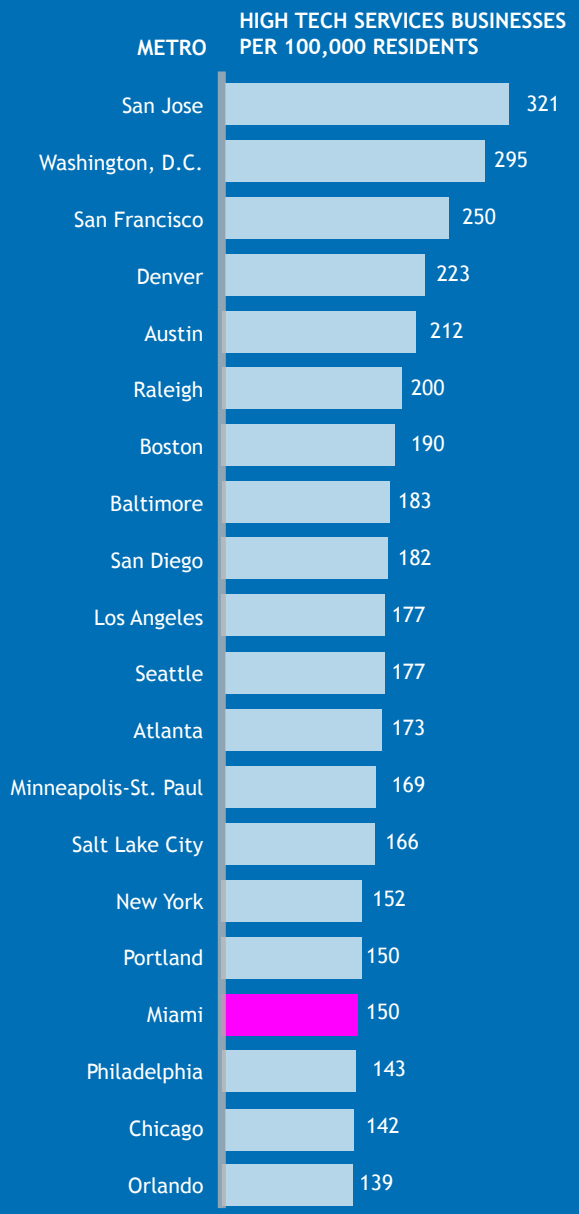
Figure 8: High-Tech Services Businesses for Large U.S. Metros

Rank	Metro	High-Tech Services Businesses	High-Tech Services Businesses (Share of U.S. Total)
1	New York	30,693	8.4%
2	Los Angeles	23,595	6.5%
3	Washington, D.C.	18,078	5.0%
4	Chicago	13,504	3.7%
5	San Francisco	11,708	3.2%
6	Atlanta	10,005	2.7%
7	Dallas	9,990	2.7%
8	Boston	9,122	2.5%
9	Miami	9,072	2.5%
10	Philadelphia	8,682	2.4%

Note: Large metros are those with more than one million people. Milken Institute high-tech business definition utilized.

Source: U.S. Census Bureau (County Business Patterns) 2015

Figure 9: High-Tech Services Businesses per 100,000 Residents for Large U.S. Metros



Note: Large metros are those with more than one million people. Milken Institute high-tech business definition utilized.

Source: U.S. Census Bureau (County Business Patterns) 2015

MIAMI'S INNOVATION AND ENTREPRENEURSHIP (CONTINUED)

HIGH-TECH MANUFACTURING

- **High-Tech Manufacturing.** High-tech manufacturing businesses span industries such as computer equipment, pharmaceutical and medicine, and electronic manufacturing. With more than 600 high-tech manufacturing businesses (2.2 percent of the national total), Miami ranks 10th among large U.S. metros, ahead of tech hubs like Seattle and Washington, D.C. but behind superstar metros like L.A., New York, and Chicago.

  Miami ranks 23rd among large U.S. metros according to its number of high-tech manufacturing businesses, adjusted for population size. With just 10 high-tech manufacturing businesses for every 100,000 residents, Miami ranks ahead of Phoenix and Pittsburgh but behind Austin and Chicago.

- **Concentration of High-Tech Manufacturing.** Miami ranks 35th among large U.S. metros according to the location quotient of its high-tech manufacturing businesses (0.84), which are 16 percent smaller than the national average. This puts the metro just behind Orlando, ahead of major metros like New York and Washington, D.C., but far behind top-ranking San Jose, whose share is more than four times the national average.

Figure 10: High-Tech Manufacturing Businesses for Large U.S. Metros

Rank	Metro	High-Tech Manufacturing Businesses	High-Tech Manufacturing Businesses (Share of U.S. Total)
1	Los Angeles	2,158	7.9%
2	New York	1,762	6.5%
3	Chicago	1,038	3.8%
4	Boston	904	3.3%
5	San Jose	816	3.0%
6	San Francisco	723	2.7%
7	Philadelphia	663	2.4%
8	Dallas	657	2.4%
9	San Diego	635	2.3%
10	Miami	607	2.2%

Note: Large metros are those with more than one million people. Milken Institute high-tech business definition utilized.

Source: U.S. Census Bureau (County Business Patterns) 2015

KNOWLEDGE ECONOMY

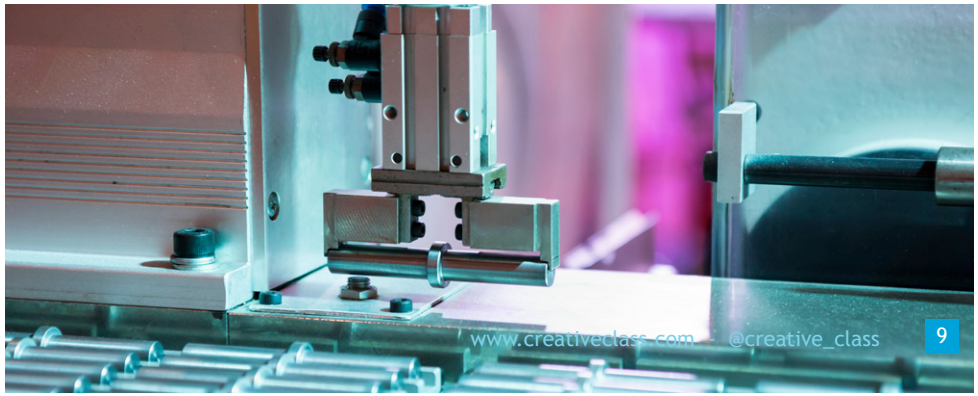
- **Knowledge Economy Businesses.** Knowledge economy businesses—those involved in the production and distribution of information—are key drivers of urban economic growth. With nearly 82,500 knowledge economy businesses (3.2 percent of the national share), Miami ranks fourth among large U.S. metros, ahead of Washington, D.C. and Dallas but behind Chicago, L.A., and New York.
- **Concentration of Knowledge Economy Businesses.** Miami also ranks highly according to the location quotient of its knowledge economy businesses (1.15), exceeding the national average by 15 percent. Coming in ninth among large U.S. metros, Miami has the same location quotient as Las Vegas but ranks behind major tech hubs like Washington, D.C., San Jose, San Francisco, and Austin.

Figure 11: Knowledge Economy Businesses for Large U.S. Metros

Rank	Metro	Knowledge Economy Businesses	Knowledge Economy Businesses (Share of U.S. Total)
1	New York	220,813	8.5%
2	Los Angeles	152,753	5.9%
3	Chicago	96,102	3.7%
4	Miami	82,495	3.2%
5	Washington, D.C.	70,974	2.7%
6	Dallas	66,714	2.6%
7	Atlanta	58,712	2.3%
8	San Francisco	57,853	2.2%
9	Philadelphia	57,443	2.2%
10	Houston	55,179	2.1%

Note: Large metros are those with more than one million people. Machlup knowledge economy business definition utilized.

Source: U.S. Census Bureau (County Business Patterns) 2015



MIAMI'S INNOVATION AND ENTREPRENEURSHIP (CONTINUED)

Figure 12: Knowledge Economy Business LQ for Large U.S. Metros

Rank	Metro	Knowledge Economy Business LQ
1	Washington, D.C.	1.25
2	San Jose	1.23
3	San Francisco	1.20
4	Austin	1.19
5	Denver	1.19
6	San Diego	1.18
7	Phoenix	1.18
8	St. Louis	1.16
9	Miami	1.15
10	Las Vegas	1.15

Note: Large metros are those with more than one million people. Machlup knowledge economy business definition utilized. National average is 1.0.

Source: U.S. Census Bureau (County Business Patterns) 2015

UNIVERSITY R&D SPENDING

- University R&D Spending. The amount of money colleges and universities spend on research and development (known as university R&D spending) is a key underpinning of a region's high-tech, entrepreneurial ecosystem. With around $565 million in university R&D spending in 2015, Miami ranks 24th among large U.S. metros on this metric. This places Miami well behind metros like New York, which invested more than $4 billion in 2015, and Boston and L.A., which spent around $3 billion each.

  Miami ranks even lower—43rd among large U.S. metros—according to the amount of money its colleges and universities spent on research and development, adjusted for population size. With its colleges and universities spending around $9.3 million for every 100,000 residents, Miami ranks alongside Phoenix but behind the majority of other large metros.

APPENDIX

All venture capital data (below) is from the National Venture Capital Association for 2016.

VENTURE CAPITAL STARTUPS AND INVESTMENT

Venture Capital Investment: The amount of venture capital invested in high-tech startups.

Venture Capital Investment per 100,000 Residents: The amount of venture capital invested in high-tech startups for every 100,000 residents.

Companies Receiving Venture Capital: The number of high-tech startups receiving venture capital in a given year.

Companies Receiving Venture Capital per 100,000 Residents: The number of high-tech startups receiving venture capital in a given year for every 100,000 residents.

Average Venture Capital per Company: The average amount of venture capital invested in a high-tech startup, excluding those companies that did not receive any venture capital investment.

Data on high-tech businesses and knowledge economy businesses (below) is from the U.S. Census Bureau County Business Patterns for 2015.

HIGH-TECH BUSINESSES

High-Tech Businesses: Businesses spanning 19 technology-intensive industries, which spend an above-average amount of revenue on research and development and employ an above-industry-average number of technology-using occupations. The definition of high-tech businesses is based on that of the Milken Institute.

High-Tech Businesses per 100,000 Residents: The number of high-tech businesses for every 100,000 residents.

Concentration of High-Tech Businesses: The share of high-tech businesses relative to the national average based on a "location quotient," or LQ, which shows how concentrated an industry is compared to the U.S. as a whole.

HIGH-TECH BUSINESSES

High-Tech Businesses: Businesses spanning 19 technology-intensive industries, which spend an above-average amount of revenue on research and development and employ an above-industry-average number of technology-using occupations. The definition of high-tech businesses is based on that of the Milken Institute.[4]

High-Tech Businesses per 100,000 Residents: The number of high-tech businesses for every 100,000 residents.

Concentration of High-Tech Businesses: The share of high-tech businesses relative to the national average based on a "location quotient," or LQ, which shows how concentrated an industry is compared to the U.S. as a whole.

SIZE DISTRIBUTION OF HIGH-TECH COMPANIES

High-Tech Business Size: The average size of a high-tech business based on number of employees.

Concentration of High-Tech Business Size: The size of high-tech businesses relative to the national average based on a "location quotient," or LQ.

HIGH-TECH SERVICES

High-Tech Services Businesses: High-tech services businesses span nine industries: telecommunications, software publishing, motion picture and video, computer system design, medical and diagnostic laboratories, scientific research and development services, architecture and engineering services, internet and data processing services, and other information services. The definition of high-tech services is from the Milken Institute.[5]

High-Tech Services Businesses per 100,000 Residents: The number of high-tech services businesses for every 100,000 residents.

Concentration of High-Tech Services Businesses: The share of high-tech services businesses relative to the national average based on a "location quotient," or LQ.

APENDIX (CONTINUED)

HIGH-TECH MANUFACTURING

High-Tech Manufacturing Businesses: High-tech manufacturing businesses span 10 manufacturing industries: computer equipment, audio and video equipment, communication equipment, commercial and service industry machinery, pharmaceutical and medicine, medical equipment and supplies, aerospace products, magnetic and optical media, navigation/measuring, and electronic manufacturing. The definition is from the Milken Institute.[6]

High-Tech Manufacturing Businesses per 100,000 Residents: The number of high-tech manufacturing businesses for every 100,000 residents.

Concentration of High-Tech Manufacturing Businesses: The share of high-tech manufacturing businesses relative to the national average based on a "location quotient," or LQ.

KNOWLEDGE ECONOMY

Knowledge Economy Businesses: Businesses involved in the production and distribution of information, including real estate; finance and insurance; professional, scientific, and technical services; management of companies and enterprises; educational services; healthcare and social assistance; and information services.

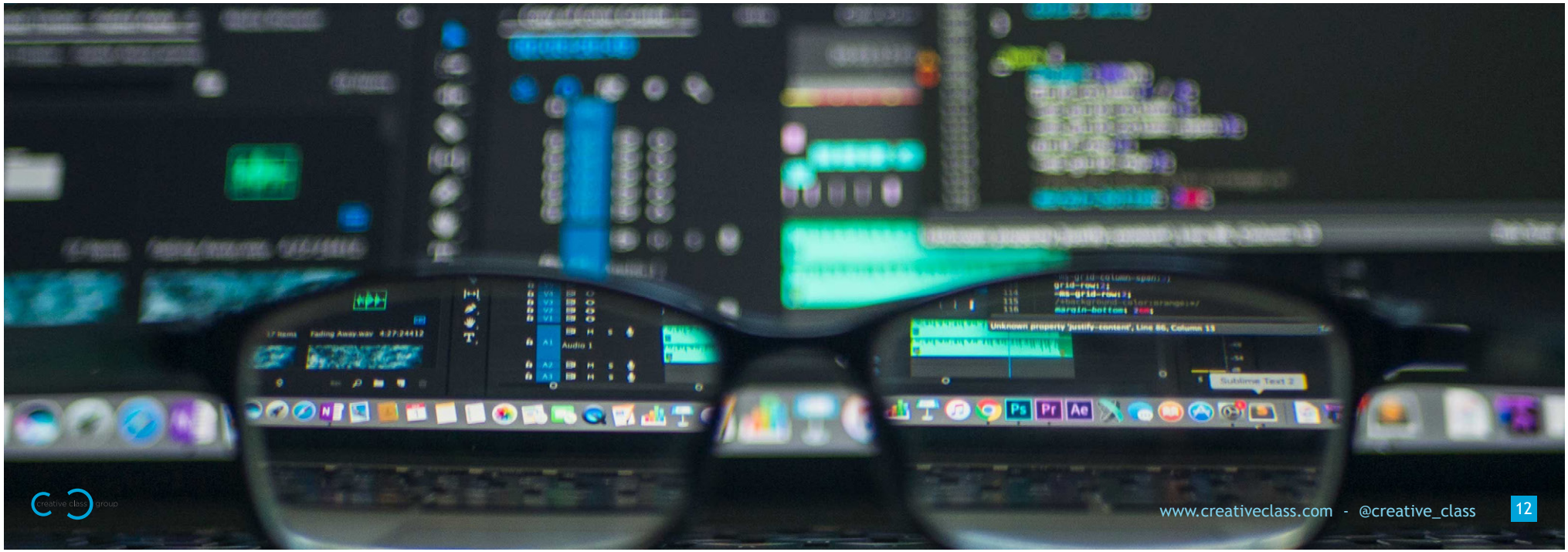
Concentration of Knowledge Economy Businesses: The share of high-tech manufacturing businesses relative to the national average based on a "location quotient," or LQ.

Data on university R&D spending (below) is from the National Science Foundation for 2015.

UNIVERSITY R&D SPENDING

University R&D Spending: The amount of money that colleges and universities spent on research and development in a given year.

University R&D Spending per 100,000 Residents: The amount of money that colleges and universities spent on research and development for every 100,000 residents in a given year.



REFERENCES

1. 2017 Kauffman Index of Startup Activity, Ewing Marion Kauffman Foundation, http://www.kauffman.org/kauffman-index/rankings?report=startup-activity&indicator=se-rate&type=metro.

2. Jessi Hempel, "Magic Leap Just Landed an Astounding Amount of VC Money," *Wired*, February 2, 2016, https://www.wired.com/2016/02/magic-leap-raises-the-biggest-c-round-in-venture-history/.

3. Rob Sentz, "Understanding Location Quotient," Esmi, October 14, 2011, http://www.economicmodeling.com/2011/10/14/understanding-location-quotient-2/.

4. Ross C. DeVol, Kevin Klowden, Armen Bedroussian, and Benjamin Yeo, "North America's High-Tech Economy: The Geography of Knowledge-Based Industries," Milken Institute, June 1, 2009, http://assets1b.milkeninstitute.org/assets/Publication/ResearchReport/PDF/NAHTweb.pdf.

5. Ibid.

6. Ibid.

@MIAUrbanFuture
www.miamiurbanfuture.org

creative class group

FIU

KNIGHT FOUNDATION

BENCHMARKING MIAMI'S GLOBALIZATION

Richard Florida Steven Pedigo

creative class group FIU KNIGHT FOUNDATION

BENCHMARKING MIAMI'S GLOBALIZATION

THE MIAMI URBAN FUTURE INITIATIVE

The Miami Urban Future Initiative is a joint initiative with FIU's College of Communication, Architecture + The Arts and the Creative Class Group sponsored in part by The John S. and James L. Knight Foundation, which will lead new research and mapping on economic, occupational, creative and technological assets in Miami, in partnership with renowned experts, to provide necessary data, evidence and strategy to grow a more inclusive, creative economy for a 21st century global Miami. Miami has reached a crossroads. Its economy – historically based on tourism, hospitality, transportation, and real-estate development – has deepened, diversified, and become more creative and idea-based, as banking, media, arts, education, and new technology-based industries have assumed a larger role. The region now finds itself at a critical inflection point.

Through this Initiative, we hope to provide the thought leadership and awareness required to guide Miami's evolution as a global city through data-driven research and assessments of the key trends shaping the region, disseminate this information and inform the broad strategic vision for the region's private and public stakeholders through ongoing local convenings and briefs and bring global thought-leaders and practitioners to bear on thinking about the region's future through high-level events and convenings on issues important to Miami and global cities.

@MIAUrbanFuture

www.miamiurbanfuture.org

creative class group

THE AUTHORS

@Richard_Florida

RICHARD FLORIDA

Richard Florida is a university professor and director of cities at the Martin Prosperity Institute at the University of Toronto, a distinguished fellow at New York University's Schack Institute of Real Estate, and a visiting fellow at Florida International University. He serves as senior editor for *The Atlantic*, where he cofounded and serves as editor at large for *CityLab*. He is also the author of the award-winning *The Rise of the Creative Class*. His latest book, *The New Urban Crisis*, was published by Basic Books in April 2017.

@iamstevenpedigo

STEVEN PEDIGO

Steven Pedigo is the Director of Research for the Creative Class Group, a global think tank comprised of leading researchers, academics and strategists. He is also the Director of the NYU Schack Institute of Real Estate Urban Lab and a Clinical Assistant Professor for Economic Development at the NYU School of Professional Studies.

Steven holds a bachelor's degree from the University of Texas at Austin and graduate degrees from the H. John Heinz III School for Public Policy and Management at Carnegie Mellon University and the University of Illinois at Urbana-Champaign.

BENCHMARKING MIAMI'S GLOBALIZATION

The Miami Metro—which spans Miami-Dade, Broward, and Palm Beach counties—has quickly ascended the ranks of global powerhouses. In 2017, Miami ranked 30th on A.T. Kearney's Global Cities Index, just behind Frankfurt and Dubai.[1] With its enviable location, prominent international airport, and major port, Miami now serves as an economic and financial hub for Latin America and a gateway to Europe and the rest of the world.

The following research brief from the Miami Urban Future Initiative provides a data-driven assessment of Miami's status as a global metro, comparing its performance in recent years to all 53 of America's large metros with populations of more than one million people.

Figure 1: Miami's Overall Globalization Rankings

Metric	Value	Rank among Large U.S. Metros
Foreign-Born Residents	40.5% (2.5 million residents)	1
Foreign-Born Share of Adults with a Bachelor's Degree or Above	41.4%	2
Foreign-Born Share of Adults with an Advanced Degree	39.4%	2
Foreign-Born Share of Knowledge, Professional, and Creative Workers	38.9%	2
Residents Who Moved from Abroad One Year Ago	1.9% (114,000 residents)	2
Exports	$33.3 billion	7
International Freight	1.5 million tons	1
International Airport Passengers	26.6 million	2
Foreign-Owned Businesses	2,579	8

Note: Definitions and sources for all metrics are listed in the appendix.

KEY FINDINGS

- **Miami's people make it global.** The Miami metro ranks first among large U.S. metros according to its concentration of foreign-born residents, who make up more than 40 percent of its population—nearly three times the national average. Miami ranks second according to its share of residents who moved to the metro from outside the U.S. in 2015 (1.9 percent).
- **Miami's educated and high-skill workforce is critically dependent on foreign-born talent.** Miami ranks second among large U.S. metros according to the foreign-born share of residents with a bachelor's degree or above (41.4 percent) or advanced degree (39.4 percent). The metro also ranks second among large U.S. metros according to the foreign-born share of its high-skilled creative class (38.9 percent). On all three of these metrics, Miami ranks second only to San Jose, the heart of Silicon Valley, and ahead of New York, Los Angeles, and San Francisco.
- **Miami is an export powerhouse.** Miami ranks seventh among large U.S. metros according to its exports, having exported $33.3 billion in goods and services in 2015. The metro ranks first among large U.S. metros according to its international freight, or the amount of merchandise goods, commodities, and cargo that it transported internationally in 2016.
- **Miami's airport is a global advantage.** Miami ranks second among large U.S. metros according to its number of international passengers, behind New York and just ahead of L.A. The metro ranks even higher—first among large U.S. metros—when its number of international passengers is adjusted for population size.

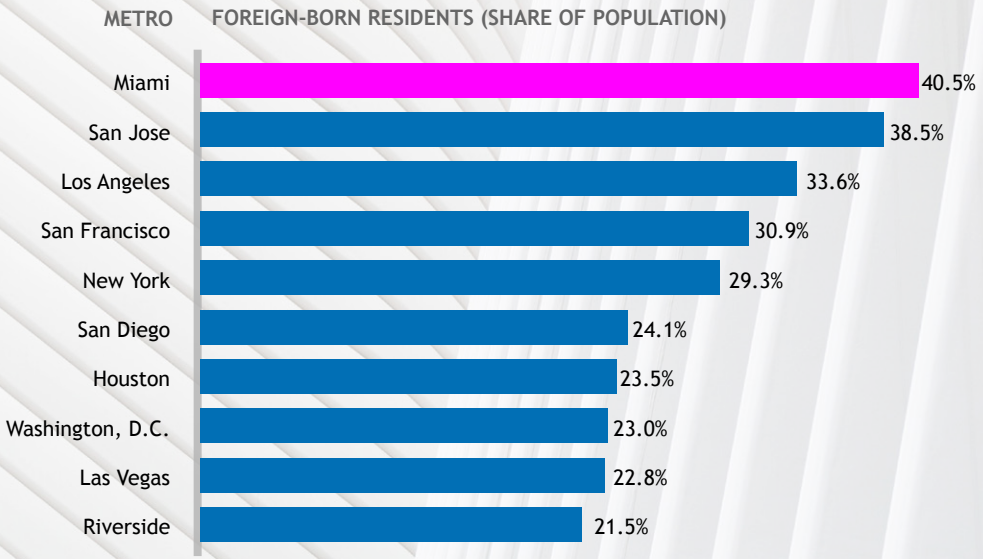
BENCHMARKING MIAMI'S GLOBAL ECONOMY

The following section provides a more detailed, data-driven analysis of how Miami stacks up on key measures of global competitiveness.

FOREIGN-BORN TALENT

- **Foreign-Born Residents.** Miami ranks first among large U.S. metros according to its share of foreign-born residents. In 2016, foreign-born residents made up 40.5 percent of Miami's total population, placing the metro ahead of San Jose, L.A., and San Francisco.
- **Concentration of Foreign-Born Residents.** Miami again ranks first among large U.S. metros according to the concentration of its foreign-born residents. This figure is based on a "location quotient," or LQ, which shows how concentrated a group or industry is compared to the U.S. as a whole.[2] With an LQ of 2.99, Miami's concentration of foreign-born residents is nearly three times the national average.

Figure 2: Foreign-Born Share for Large U.S. Metros



Note: Large metros are those with more than one million people.

Source: U.S. Census American Community Survey 2016

Figure 3: Foreign-Born Concentration for Large U.S. Metros

Rank	Metro	Foreign-Born Location Quotient (LQ)
1	Miami	2.99
2	San Jose	2.84
3	Los Angeles	2.48
4	San Francisco	2.28
5	New York	2.16
6	San Diego	1.78
7	Houston	1.73
8	Washington, D.C.	1.70
9	Las Vegas	1.69
10	Riverside	1.59

Note: Location quotient, or LQ, refers to how concentrated an industry is compared to the U.S. as a whole.

Source: U.S. Census American Community Survey 2015

IN-MIGRATION OF RESIDENTS

- **Share of Residents Who Moved from Abroad.** Miami ranks second among large U.S. metros according to the share of its residents ages one and over who moved from abroad from 2015 to 2016. With a share of 1.9 percent, Miami ranks just behind San Jose and ahead of Washington, D.C., San Francisco, and Boston.

Figure 4: Share of Residents Who Moved from Abroad from 2015 to 2016 for Large U.S. Metros

Rank	Metro	Share of Residents Who Moved from Abroad (2015-2016)
1	San Jose	2.0%
2	Miami	1.9%
3	Washington, D.C.	1.3%
4	San Francisco	1.3%
5	Boston	1.3%
6	Seattle	1.2%
7	San Diego	1.2%
8	Orlando	1.2%
9	Houston	1.2%
10	Tucson	1.0%

Note: Large metros are those with more than one million people.

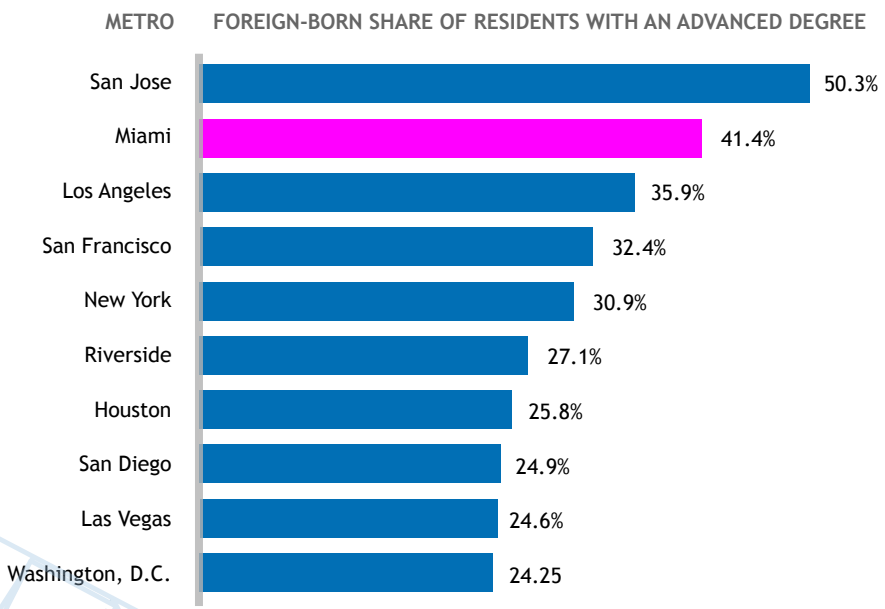
Source: U.S. Census American Community Survey 2016

BENCHMARKING MIAMI'S GLOBAL ECONOMY (CONTINUED)

HIGH-SKILL IMMIGRANT TALENT

- **College-Educated Foreign-Born Residents.** Miami ranks second among large U.S. metros according to its foreign-born share of college-educated residents. With foreign-born people making up 41.4 percent of college-educated residents in Miami, the metro ranks behind San Jose but ahead of L.A., San Francisco, and New York.
- **Foreign-Born Residents with Advanced Degrees.** Miami also ranks second among large U.S. metros according to its foreign-born share of residents with advanced degrees. With foreign-born people making up 39.4 percent of residents with advanced degrees in Miami, the metro again ranks behind San Jose but ahead of L.A., San Francisco, and New York.
- **Foreign-Born Creative Class.** Miami ranks second among large U.S. metros according to the foreign-born share of its creative class (science and technology, arts, media, and culture, and traditional knowledge workers). With foreign-born people making up 38.9 percent of Miami's creative class in 2015, the metro ranks behind San Jose but ahead of L.A., San Francisco, and New York.

Figure 5: Foreign-Born Share of Residents with a Bachelor's Degree or Above



Note: Large metros are those with more than one million people.

Source: U.S. Census American Community Survey 2015

Figure 6: Foreign-Born Share of Residents with an Advanced Degree

Rank	Metro	Foreign-Born Share of Residents with an Advanced Degree
1	San Jose	57.1%
2	Miami	39.4%
3	Los Angeles	34.0%
4	San Francisco	33.3%
5	New York	30.4%
6	Houston	30.2%
7	San Diego	26.1%
8	Seattle	25.0%
9	Washington, D.C.	24.9%
10	Riverside	24.1%

Note: Large metros are those with more than one million people.

Source: U.S. Census American Community Survey 2015

Figure 7: Foreign-Born Share of the Creative Class

Rank	Metro	Foreign-Born Share of Creative Class
1	San Jose	46.9%
2	Miami	38.9%
3	Los Angeles	31.6%
4	San Francisco	29.8%
5	New York	28.1%
6	San Diego	22.8%
7	Houston	22.7%
8	Washington, D.C.	22.1%
9	Las Vegas	21.6%
10	Riverside	18.6%

Note: Large metros are those with more than one million people.

Source: U.S. Census American Community Survey 2015

GLOBAL CONNECTIVITY

Global connectivity is a key driver of economic output in cities and metro areas. To gauge Miami's global connectivity, we turn to three measures: exports, international freight, and the number of international air passengers. The measure of international air passengers has become increasingly important in the global economy, with research linking air connectivity to greater inter-city investments and higher levels of business connections.[3]

- Exports. Miami ranks seventh among large U.S. metros according to its exports (goods and services that are produced locally and sold internationally). With $33.3 billion of exports in 2015, Miami ranks ahead of Dallas, New Orleans, and San Francisco, just behind Chicago and Detroit, and further behind Houston and New York.

  Miami ranks 15th among large U.S. metros according to its exports when adjusted for population size. With more than $548 million of exports for every 100,000 residents, Miami ranks ahead of San Francisco but behind San Jose and Seattle.

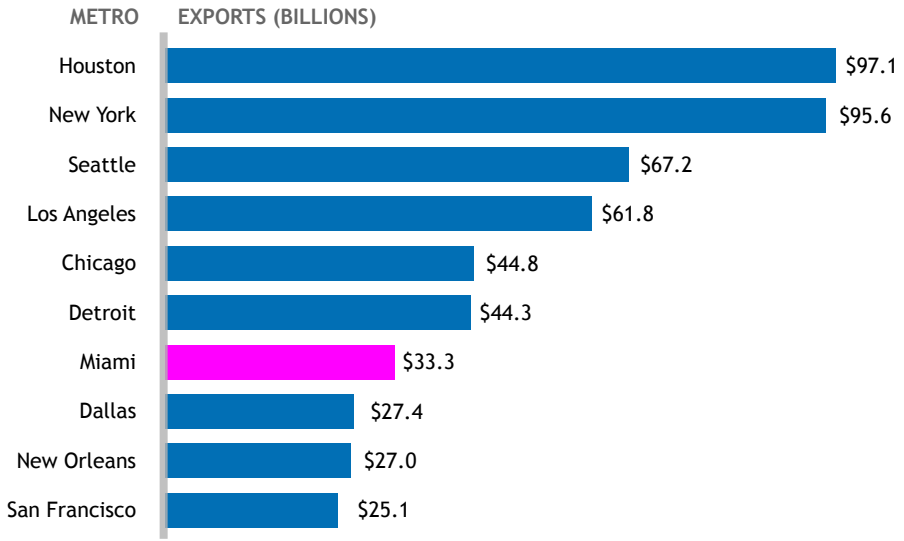
- International Freight. Miami ranks first among large U.S. metros according to the amount of merchandise goods, commodities, and cargo that it transported internationally in 2016. With 1.5 million tons of international freight, Miami ranks just ahead of L.A. and New York and even further ahead of major cities like Chicago and San Francisco.

  Miami also ranks high—second among large U.S. metros—according to its international freight when adjusted for population size. With nearly 25,000 tons transported internationally for every 100,000 residents, Miami ranks ahead of L.A., Chicago, San Francisco, and New York but behind Memphis (home to the FedEx headquarters).

- International Airport Passengers. Miami ranks second among large U.S. metros according to its number of international passengers. With a total of 26.6 million international passengers, Miami ranks behind New York, just ahead of L.A., and even further ahead of Chicago and San Francisco.

  Miami ranks first among large U.S. metros according to its number of international passengers when adjusted for population size. With nearly 438,000 international passengers per 100,000 residents, Miami ranks ahead of metros with some of the busiest airports in the world, including Atlanta, Chicago, and L.A.

Figure 8: Exports for Large U.S. Metros

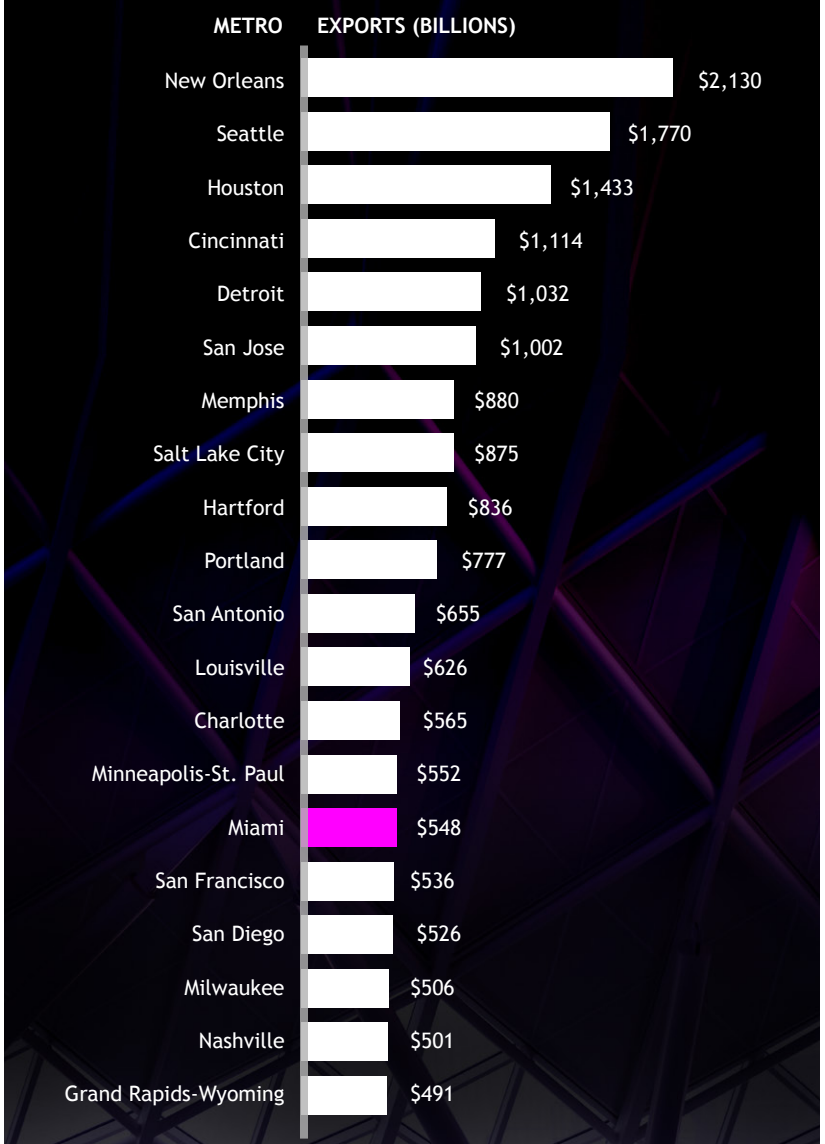


Note: Large metros are those with more than one million people.

Source: U.S. Department of Commerce International Trade Administration 2015

BENCHMARKING MIAMI'S GLOBAL ECONOMY (CONTINUED)

Figure 9: Exports per 100,000 Residents for Large U.S. Metros



Note: Large metros are those with more than one million people.

Source: U.S. Department of Commerce International Trade Administration 2015

Figure 10: International Freight for Large U.S. Metros

Rank	Metro	International Freight (tons)
1	Miami	1,496,343
2	Los Angeles	1,234,101
3	New York	1,123,076
4	Chicago	821,646
5	Memphis	531,741
6	San Francisco	358,630
7	Cincinnati	308,027
8	Atlanta	270,118
9	Dallas	228,624
10	Houston	227,297

Note: Large metros are those with more than one million people.

Source: U.S. Department of Transportation 2016

Figure 11: International Freight per 100,000 Residents for Large U.S. Metros

Rank	Metro	International Freight (tons)
1	Memphis	39,598
2	Miami	24,666
3	Cincinnati	14,227
4	Louisville	9,373
5	Los Angeles	9,272
6	Chicago	8,637
7	San Francisco	7,664
8	New York	5,573
9	Atlanta	4,665
10	Indianapolis	4,411

Note: Large metros are those with more than one million people.

Source: U.S. Department of Transportation 2016

Figure 12: International Airport Passengers for Large U.S. Metros

Rank	Metro	International Passengers (millions)
1	New York	45.4
2	Miami	26.6
3	Los Angeles	23.1
4	Chicago	12.9
5	San Francisco	12.6
6	Houston	11.4
7	Atlanta	11.2
8	Dallas	7.9
9	Washington, D.C.	7.6
10	Boston	6.2

Note: Large metros are those with more than one million people.

Source: U.S. Department of Transportation 2016

Figure 13: International Airport Passengers per 100,000 Residents for Large U.S. Metros

Rank	Metro	International Passengers
1	Miami	437,921
2	San Francisco	268,849
3	Orlando	235,239
4	New York	225,376
5	Atlanta	193,601
6	Los Angeles	173,748
7	Houston	168,228
8	Las Vegas	162,779
9	Chicago	135,635
10	Boston	130,065

Note: Large metros are those with more than one million people.

Source: U.S. Department of Transportation 2016

HEADQUARTERS OF FOREIGN COMPANIES

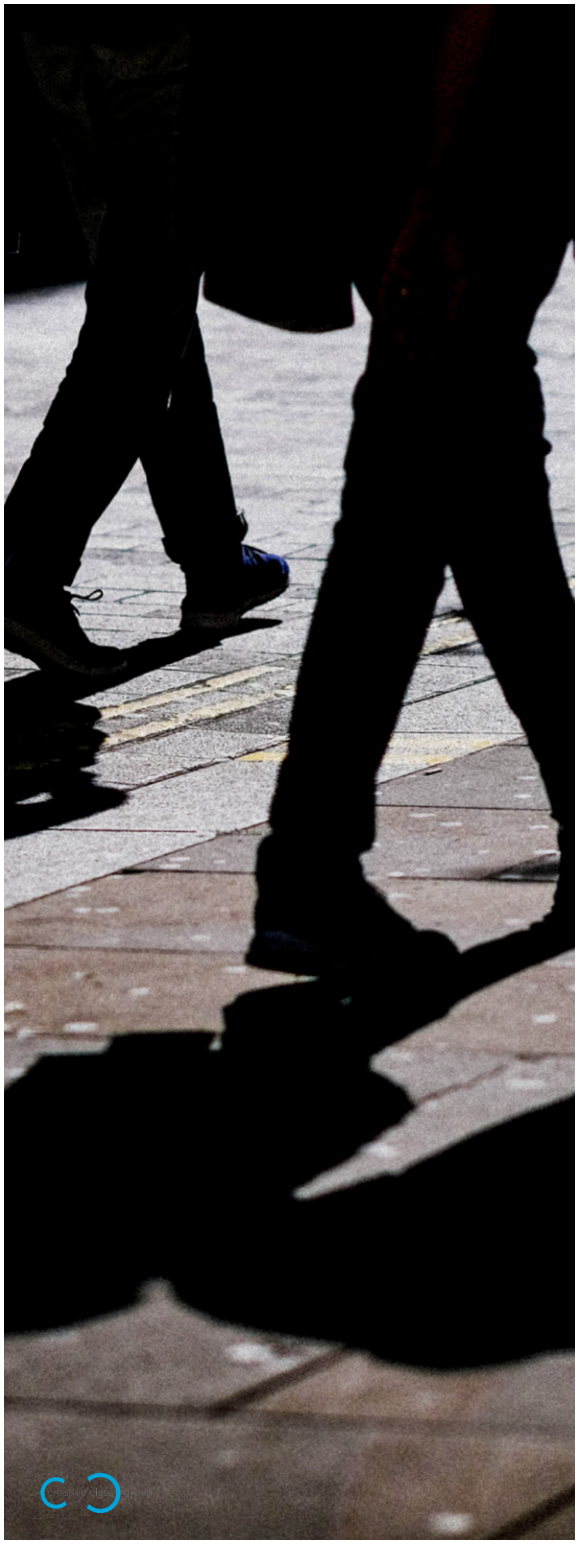
- **Foreign-Owned Businesses.** Miami ranks eighth among large U.S. metros according to its number of foreign-owned business establishments in 2011. With more than 2,500 foreign-owned business establishments, Miami ranks alongside Atlanta, Philadelphia, and Washington, D.C., ahead of San Francisco, and behind New York, L.A., and Chicago.
- **Foreign-Owned Employment.** Miami ranks 33rd among large U.S. metros according to the concentration of its foreign-owned business establishments. With an LQ of 0.94, Miami's concentration of foreign-owned businesses is 6 percent smaller than the national average, placing the metro just ahead of Austin and Seattle.

Figure 14: Foreign-Owned Businesses for Large U.S. Metros

Rank	Metro	Foreign-Owned Business Establishments
1	New York	8,298
2	Los Angeles	5,320
3	Chicago	4,279
4	Houston	2,852
5	Boston	2,692
6	Dallas	2,601
7	Atlanta	2,589
8	Miami	2,579
9	Philadelphia	2,486
10	Washington, D.C.	2,479

Note: Large metros are those with more than one million people.

Source: Brookings Institution 2011



APPENDIX

FOREIGN-BORN TALENT

Foreign-Born Residents: Residents that were born outside the United States. Data is from the U.S. Census American Community Survey for 2015.

Concentration of Foreign-Born Residents: The share of foreign-born residents relative to the national average based on a "location quotient," or LQ, which shows how concentrated a group is compared to the U.S. as a whole. Data is from the U.S. Census American Community Survey for 2015.

IN-MIGRATION OF RESIDENTS

Share of Residents Who Moved from Abroad: The share of residents ages one and over who moved from outside the U.S. from 2015 to 2016. Data is from the U.S. Census American Community Survey for 2016

HIGH-SKILL IMMIGRANT TALENT

College-Educated Foreign-Born Residents: The foreign-born share of residents with a bachelor's degree or higher. Data is from the U.S. Census American Community Survey for 2015.

Foreign-Born Residents with Advanced Degrees: The foreign-born share of residents with a graduate or professional degree. Data is from the U.S. Census American Community Survey for 2015.

Foreign-Born Creative Class: The foreign-born share of a metro's creative class, which includes science and technology, arts, media, and culture, and traditional knowledge workers. Data is from the U.S. Census American Community Survey for 2015.

GLOBAL CONNECTIVITY

Exports: Goods and services produced locally and sold internationally. Data is from the U.S. Department of Commerce International Trade Administration for 2015.

Exports Per 100,000 Residents: The number of exports for every 100,000 residents. Data is from the U.S. Department of Commerce International Trade Administration for 2015.

International Freight: The amount of merchandise goods, commodities, and cargo (measured in tons) that is transported internationally. Data is from the U.S. Department of Transportation for 2016.

International Freight Per 100,000 Residents: The amount of international freight for every 100,000 residents. Data is from the U.S. Department of Transportation for 2016.

International Airport Passengers: The number of international airport passengers enplaned on U.S. carrier scheduled domestic and international service flights and foreign carrier scheduled international service flights from the United States. Data is from the U.S. Department of Transportation for 2016.

International Airport Passengers Per 100,000 Residents: The number of international airport passengers for every 100,000 residents. Data is from the U.S. Department of Transportation for 2016.

HEADQUARTERS OF FOREIGN COMPANIES

Foreign-Owned Businesses: The number of business establishments owned by a person or company from another country. Data is from the Brookings Institution for 2011.

Foreign-Owned Employment: The share of foreign-owned businesses relative to the national average. Data is from the Brookings Institution for 2011 and is analyzed using a "location quotient," or LQ.

REFERENCES

1. A.T. Kearney, "Global Cities 2017: Leaders in a World of Disruptive Innovation," 2017.

2. Rob Sentz, "Understanding Location Quotient," Emsi, October 14, 2011, http://www.economicmodeling.com/2011/10/14/understanding-location-quotient-2/.

3. Richard Florida, "How Direct Flights Shape a City's Fortunes," *CityLab*, October 31, 2017, https://www.citylab.com/equity/2017/10/how-direct-flights-shape-a-citys-fortunes/544478/.

@MIAUrbanFuture

www.miamiurbanfuture.org

creative class group

FIU

KNIGHT FOUNDATION