Competitiveness Scorecard:
Assessing NYC Metro's Attractiveness as a Home for Human Capital

FEBRUARY 2013

Competitiveness Scorecard:
Project Overview

- **Focus on human capital**: Continuing to attract a young, highly talented workforce will be essential to NYC's ability to retain strength in core industries and successfully cultivate emerging industries

- **Assess urban competitiveness quantitatively**: Review data from large domestic metropolitan areas to capture presence and growth of highly-educated demographic base

- **Identify attractive characteristics**: Examine performance on indicators that make an urban area attractive to potential residents

Why Human Capital?

- Cities with high levels of human capital are the fastest-growing and most productive
- Employment growth projected within highly-skilled and low-skilled service industries
- Information-based and technical industries need a labor pool with specialized knowledge and expertise that require high levels of education, and offer high wages
- The continued development of these industries in turn attracts new capital and additional talent, and strengthens the tax base
- NYC metro's future economic prosperity depends on attracting and retaining a highly-educated labor force

Who Are Our Competitors?

- **15 metropolitan areas** that include ten largest metro regions and ten largest center cities

- Competitors selected based on size: Size and density of large cities offer unique benefits and challenges that are not comparable to smaller areas

- Metropolitan areas, rather than cities, are the unit of analysis: better approximate the boundaries of business and leisure opportunities

- Note: San Francisco and San Jose metro areas presented together as "Silicon Valley"

Urban Competitors:
Largest 15 Domestic Metropolitan Areas
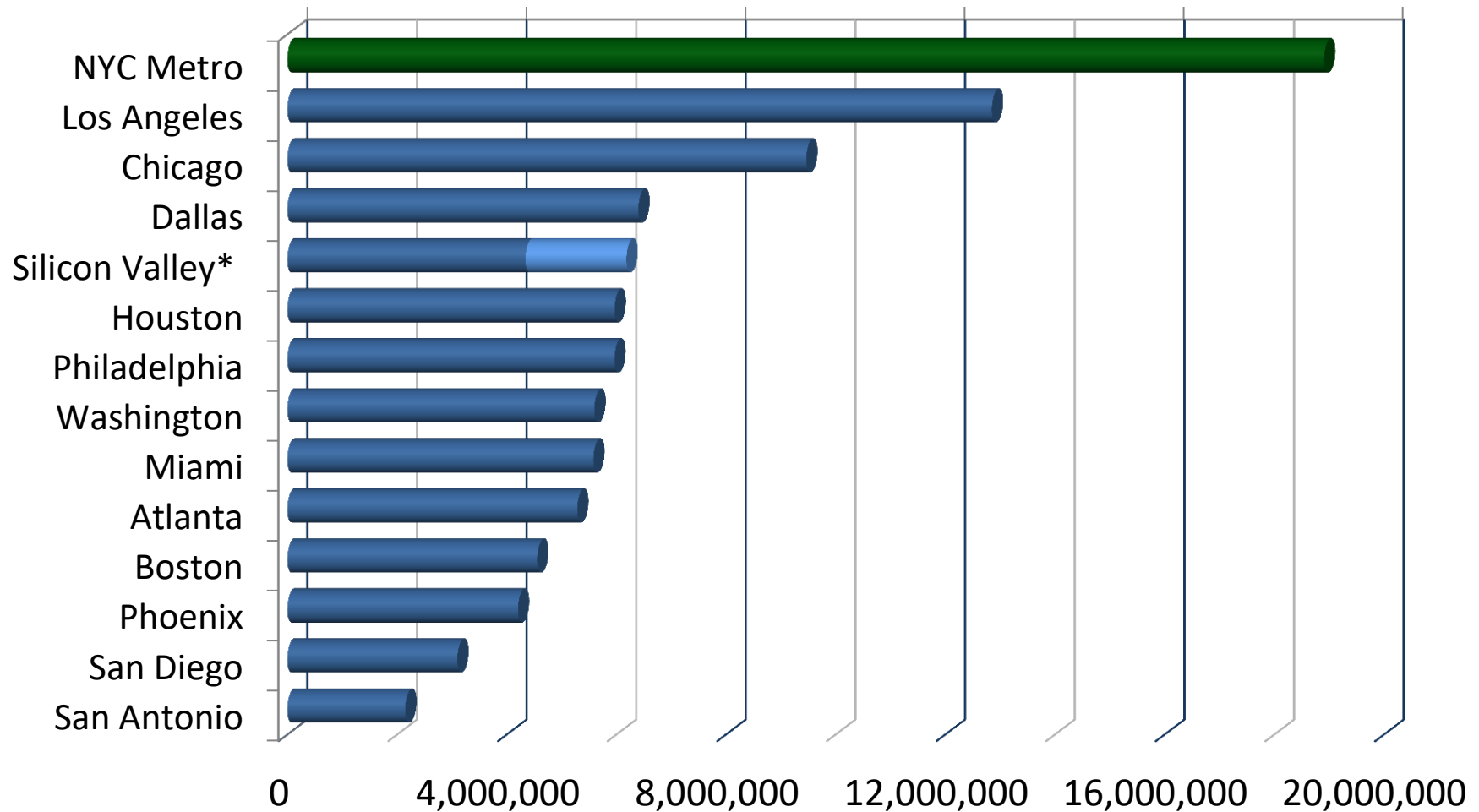
* San Francisco and San Jose metro areas presented together as "Silicon Valley." Includes Bay Area.

Source: U.S. Census Bureau, American Community Survey, 2009-2011 Three-Year Estimates, Table B010003.

What Makes This Study Different?

- **Quantitative approach**: Data, rather than qualitative assessments, drives analysis and results

- **New York City specific**: Academic literature assesses metro areas generally, rather than allowing for direct comparisons between them

- **Scorecard**: Comprehensive set of indicators that benchmarks performance and allows for monitoring future performance

CBC Scorecard

A. DEMOGRAPHICS

Where are the Young and Highly Educated, and Where are They Headed?

People & Net-In Migration

B. HUMAN CAPITAL

What Channels Exist to Build Knowledge, Expand Skills and Foster Innovation?

Higher Education, Employment & Entrepreneurship

C. QUALITY OF LIFE

Is the Area an Attractive Place to Live?

Public Services & Amenities

Scorecard ranks performance of metro areas on each indicator:

Very Competive
1-5

Competitive
6-10

Not Competitive
11-14

Summary of Findings

- New York City metro is very competitive in attracting and retaining highly-skilled individuals
  - Strength of higher education institutions is a competitive advantage and a powerful "pull" factor, particularly for foreign-born talent
  - Robust employment opportunities and competitive pay in key industries are important competitive advantages
  - Safety, recreational opportunities and cultural institutions are attractive characteristics
- However, NYC metro is not an undisputed leader; competitors may be poised to overtake NYC metro
  - Washington DC and Silicon Valley surpass NYC metro on important measures, including net-in migration rates of highly educated
  - NYC metro lags greatly behind Silicon Valley in entrepreneurship
  - NYC metro's weakest performance is on quality of life measures, particularly housing and transit

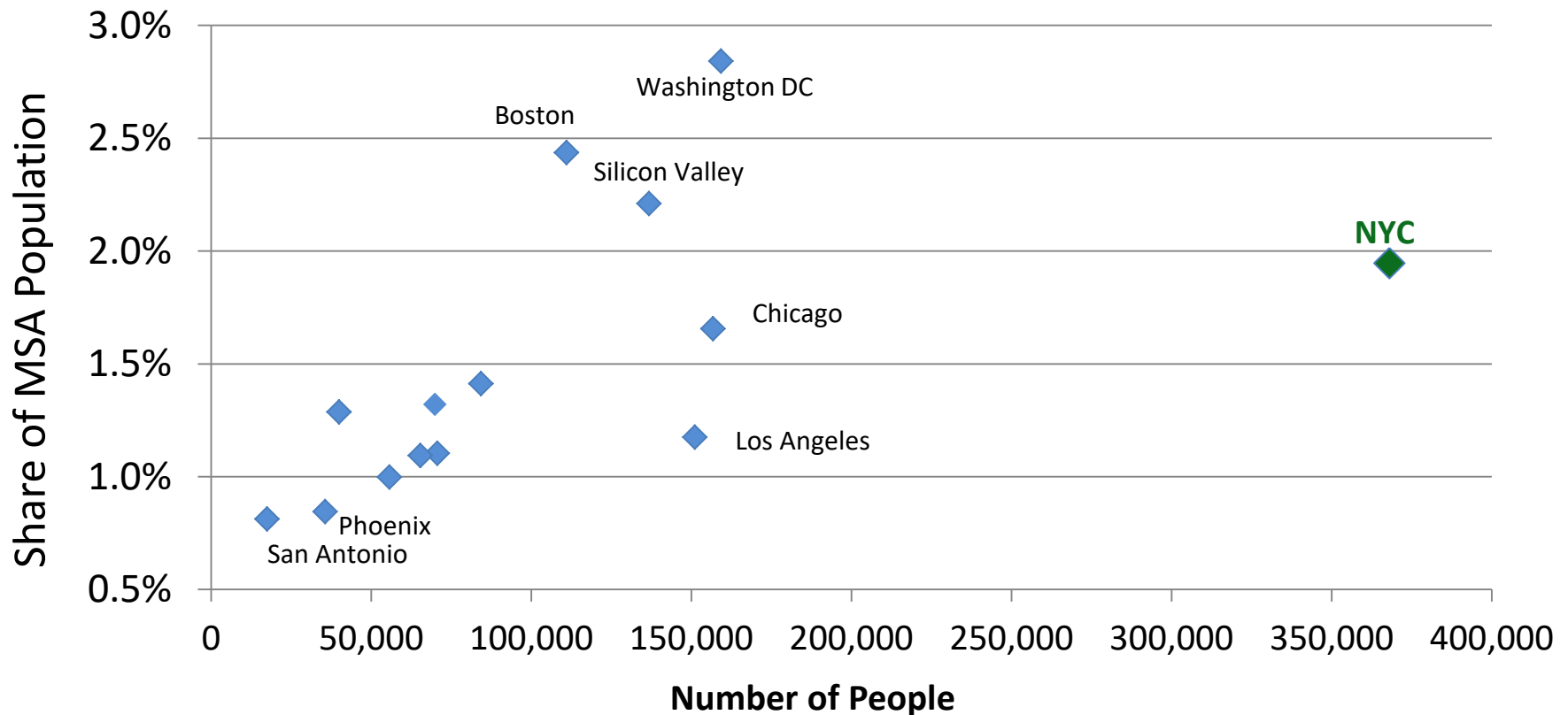# DEMOGRAPHICS

Demographics: Highly Competitive

	METRO AREAS	New York City	Los Angeles	Chicago	Dallas	Silicon Valley	Houston	Philadelphia	Miami	Washington DC	Atlanta	Phoenix	Boston	San Diego	San Antonio
PEOPLE	Number of Young and Highly Educated	1	4	3	8	5	10	7	11	2	9	13	6	12	14
	Young and Highly Educated as a Share of the Population	4	9	5	10	3	11	6	12	1	7	13	2	8	14
	Number of Highly Educated	1	2	4	9	5	11	7	8	3	10	13	6	12	14
	Highly Educated as a Share of the Population	4	10	5	11	2	13	7	9	1	8	12	3	6	14
NET IN-MIGRATION	Number of Young and Highly Educated	2	5	9	6	3	4	14	8	1	10	13	7	11	12
	Percent Change in Number of Young & Highly Educated	9	10	13	5	3	2	14	7	1	11	12	6	8	4
	Number of Highly Educated	4	7	12	5	2	3	14	9	1	11	13	6	8	10
	Percent Change in the Number of Highly Educated	12	11	13	4	5	1	14	9	2	10	8	7	6	3

- New York City metro is very competitive in attracting and retaining highly-skilled individuals

- But Washington DC and Silicon Valley have a greater concentration of highly educated and are growing at a faster pace
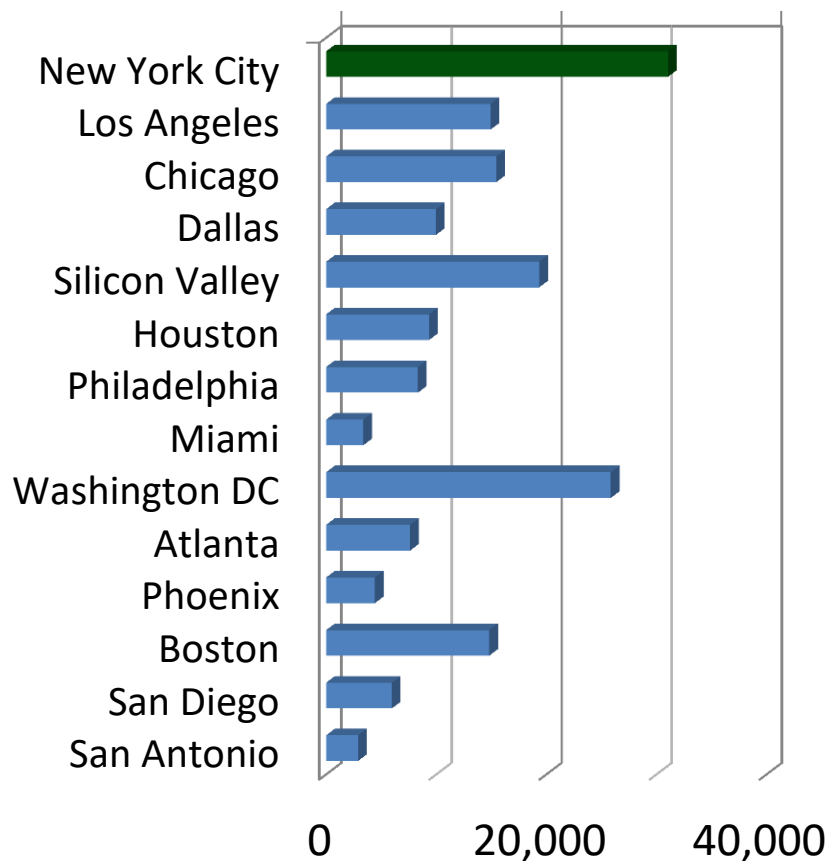
Where Are the Young and Educated?

The greatest number of young and educated are in the New York City metro area, and this demographic constitutes a larger share of the total MSA population than it does in most places.

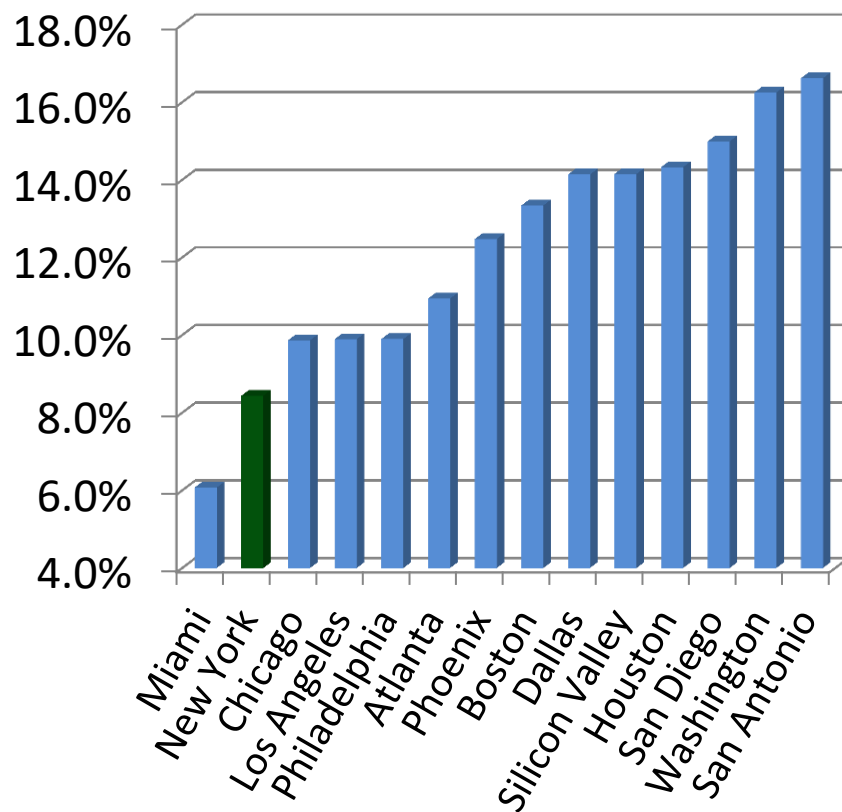**18-33 Year Olds with a Masters, Professional or Doctoral Degree**

Scatter plot showing Share of MSA Population (y-axis, 0.5% to 3.0%) versus Number of People (x-axis, 0 to 400,000). Labeled points: Washington DC (~2.85%, ~155,000), Boston (~2.44%, ~110,000), Silicon Valley (~2.21%, ~135,000), NYC (~1.95%, ~370,000, green marker), Chicago (~1.65%, ~155,000), Los Angeles (~1.17%, ~150,000), Phoenix and San Antonio (lower left).

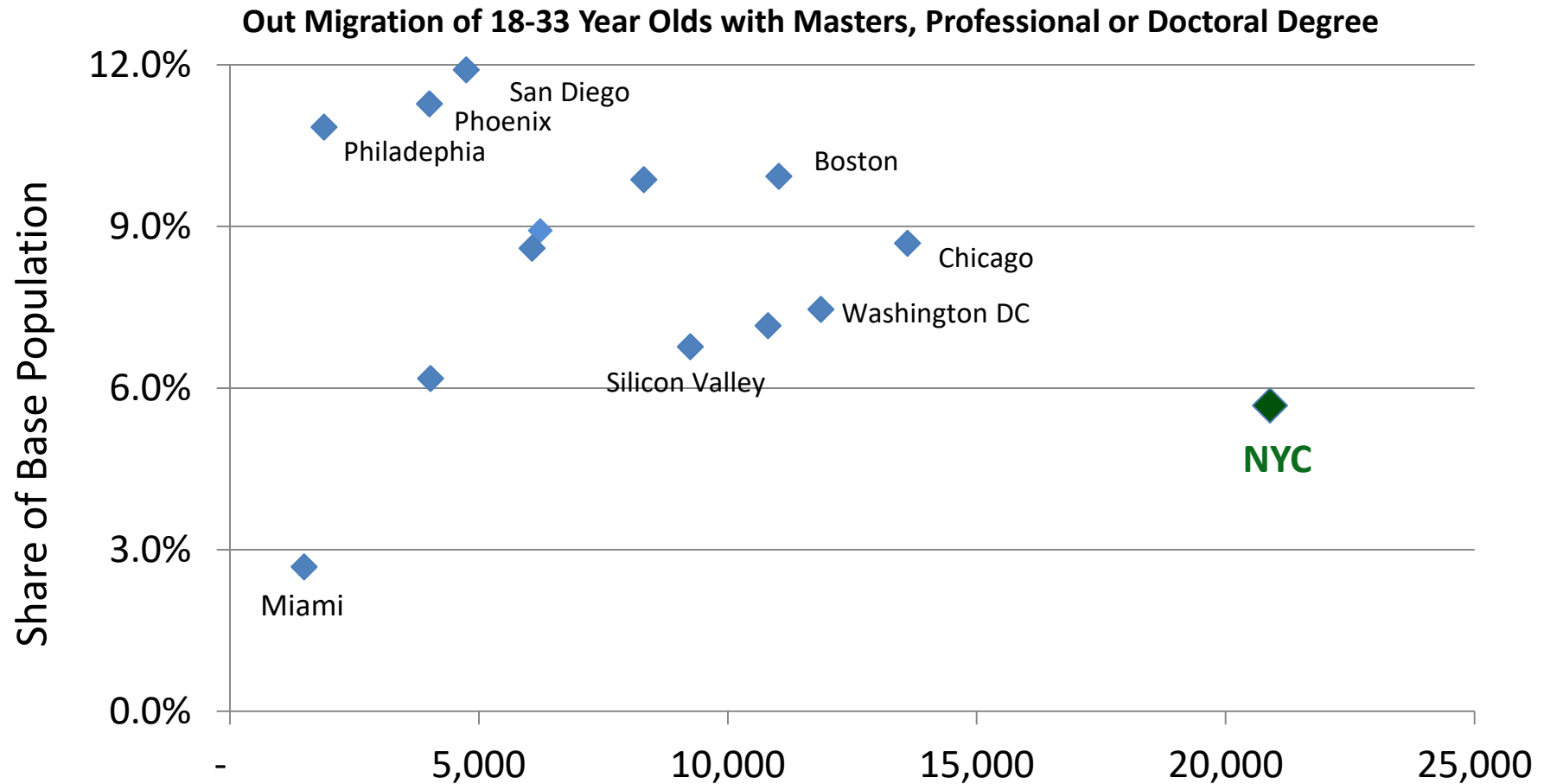# Where are the Young and Highly Educated Going?

In Migration of 18-33 Year Olds With A Masters, Professional or Doctoral Degree

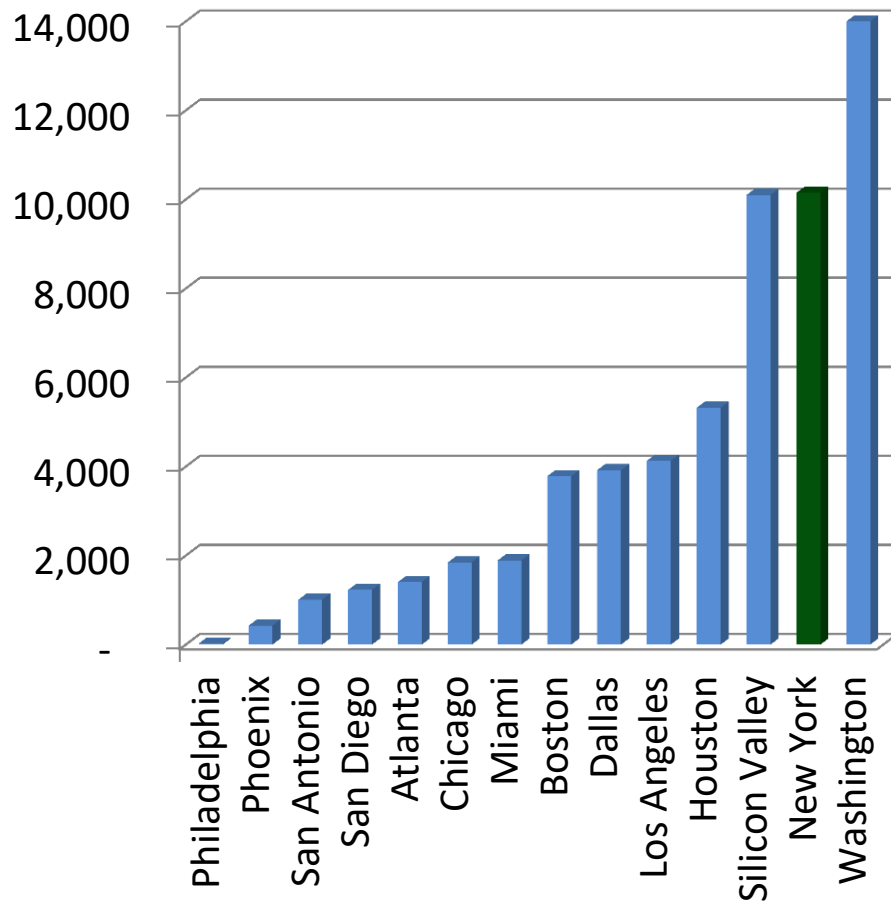**In Migration as a Percent of 18-33 Year Olds with A Masters, Professional or Doctoral Degree**

Source: U.S. Census Bureau, American Community Survey, Factfinder and 2009-2011 Three-Year Estimates Micro Dataset

Which Metro Areas Are Losing
the Young and Highly Educated?

Out Migration of 18-33 Year Olds with Masters, Professional or Doctoral Degree

Y-axis: Share of Base Population (0.0% to 12.0%)

X-axis: - , 5,000, 10,000, 15,000, 20,000, 25,000

Data points labeled: San Diego, Phoenix, Philadephia, Boston, Chicago, Washington DC, Silicon Valley, Miami, NYC
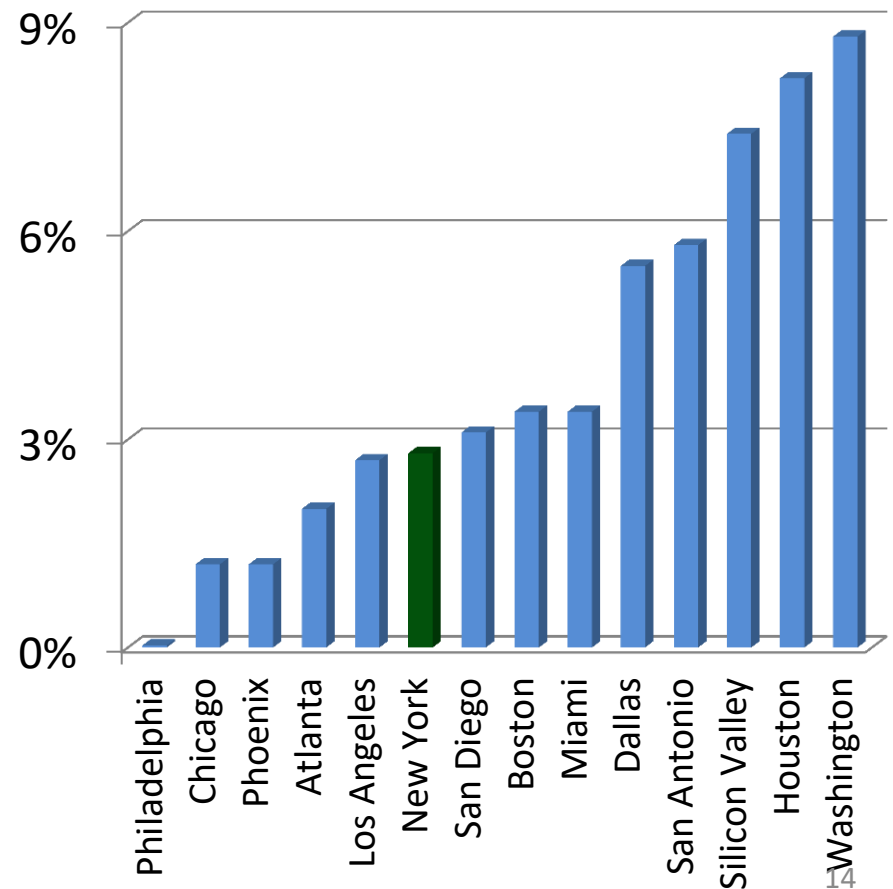
Net In-Migration:
Young Adults with Masters Degrees

Net In-Migration of 18-33 Year Olds with a Masters, Professional or Doctoral Degree
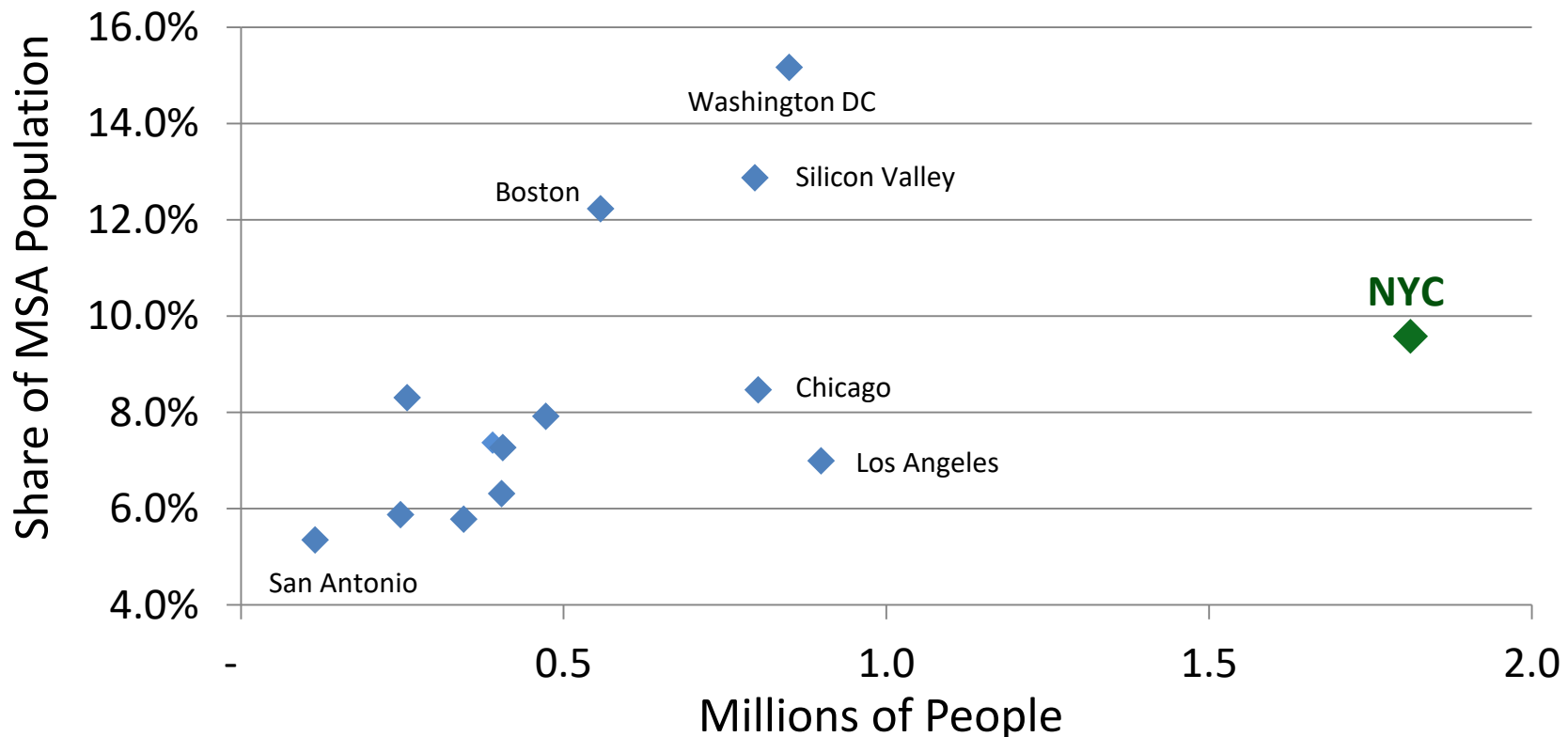
Net In-Migration as a Percent of 18-33 Years Olds with a Masters, Pro. or Doc Degree

Where are the Highly Educated?

The metro areas with the largest shares of highly educated are also the areas with the largest shares of young and highly educated.

All Ages with Masters, Professional & Doctoral Degrees

Scatter plot. Y-axis: Share of MSA Population (4.0% to 16.0%). X-axis: Millions of People (- to 2.0).

Labeled points: Washington DC (~0.85, 15.2%), Silicon Valley (~0.8, 12.9%), Boston (~0.55, 12.2%), NYC (~1.8, 9.5%, green), Chicago (~0.8, 8.4%), Los Angeles (~0.9, 7.0%), San Antonio (~0.15, 5.3%).
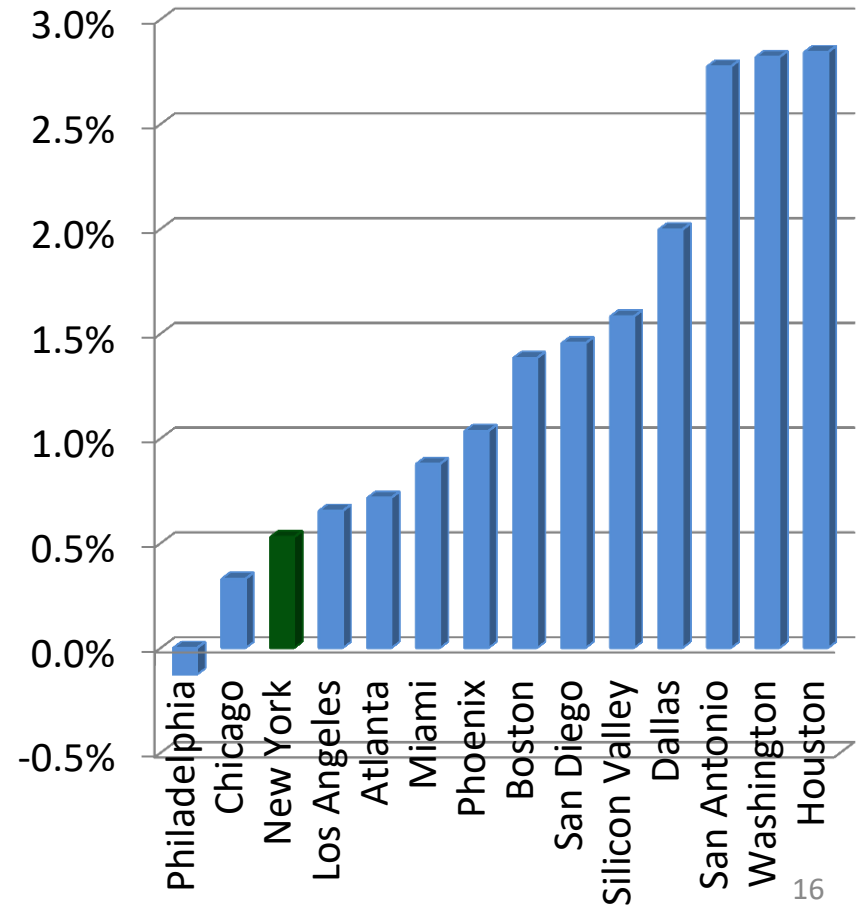
Which Areas Gain the Highly Educated?

Net Migration of People with Masters, Professional or Doctoral Degrees
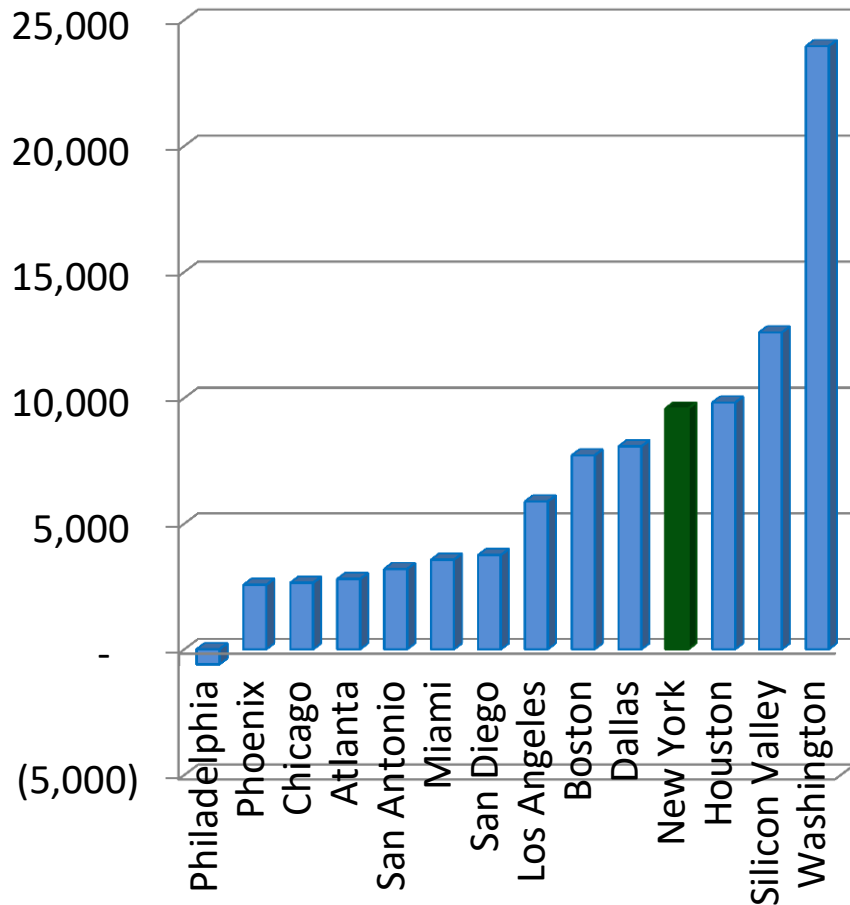
Net Migration as a Share of People with Masters, Professional or Doctoral Degrees

HUMAN CAPITAL

Human Capital: Highly Competitive

METRO AREAS	New York City	Los Angeles	Chicago	Dallas	Silicon Valley	Houston	Philadelphia	Miami	Washington DC	Atlanta	Phoenix	Boston	San Diego	San Antonio
HIGHER EDUCATION														
Number of Educational Institutions	1	2	4	10	7	12	5	9	6	8	11	3	13	14
Number of Undergraduate and Graduate Students	1	2	6	11	9	13	7	8	5	10	3	4	12	14
Number of International Students	1	2	5	8	4	7	9	10	6	11	13	3	12	14
EMPLOYMENT														
Number of Jobs in Key Industries	1	2	3	6	5	10	7	11	4	9	12	8	13	14
Share of Employment in Key Industries	3	9	10	7	2	14	11	12	1	4	8	6	5	13
Average Annual Pay	2	8	7	9	1	5	6	13	4	10	12	3	11	14
Number of Fortune 500 Companies	1	6	3	7	2	4	9	13	5	8	11	10	14	12
ENTREPRENEURSHIP														
Number of Self-Employed	1	2	4	8	9	10	7	3	6	5	12	11	13	14
Number of Self-Employed as a Share of All Employment	3	4	5	12	11	13	9	1	8	2	6	10	7	14
Rate of Business Creation (Kauffman Index)	7	3	10	8	5	4	12	2	9	1	6	11		
Venture Capital, Dollars Invested, 2008-2012	3	4	5	9	1	9	8		7			2	6	9
Venture Capital, Number of Deals, 2008-2012	3	5	4	9	1	9	7		6			2	8	9

Human Capital: Highly Competitive

- NYC metro has an important competitive advantage in higher education: great number of institutions and breadth of course offerings provide training that is not limited to one field or industry

- Strength of higher education institutions is important for attracting domestic and foreign talent

- Robust employment opportunities and competitive pay are strengths

- NYC metro has not fostered entrepreneurship as successfully as Silicon Valley

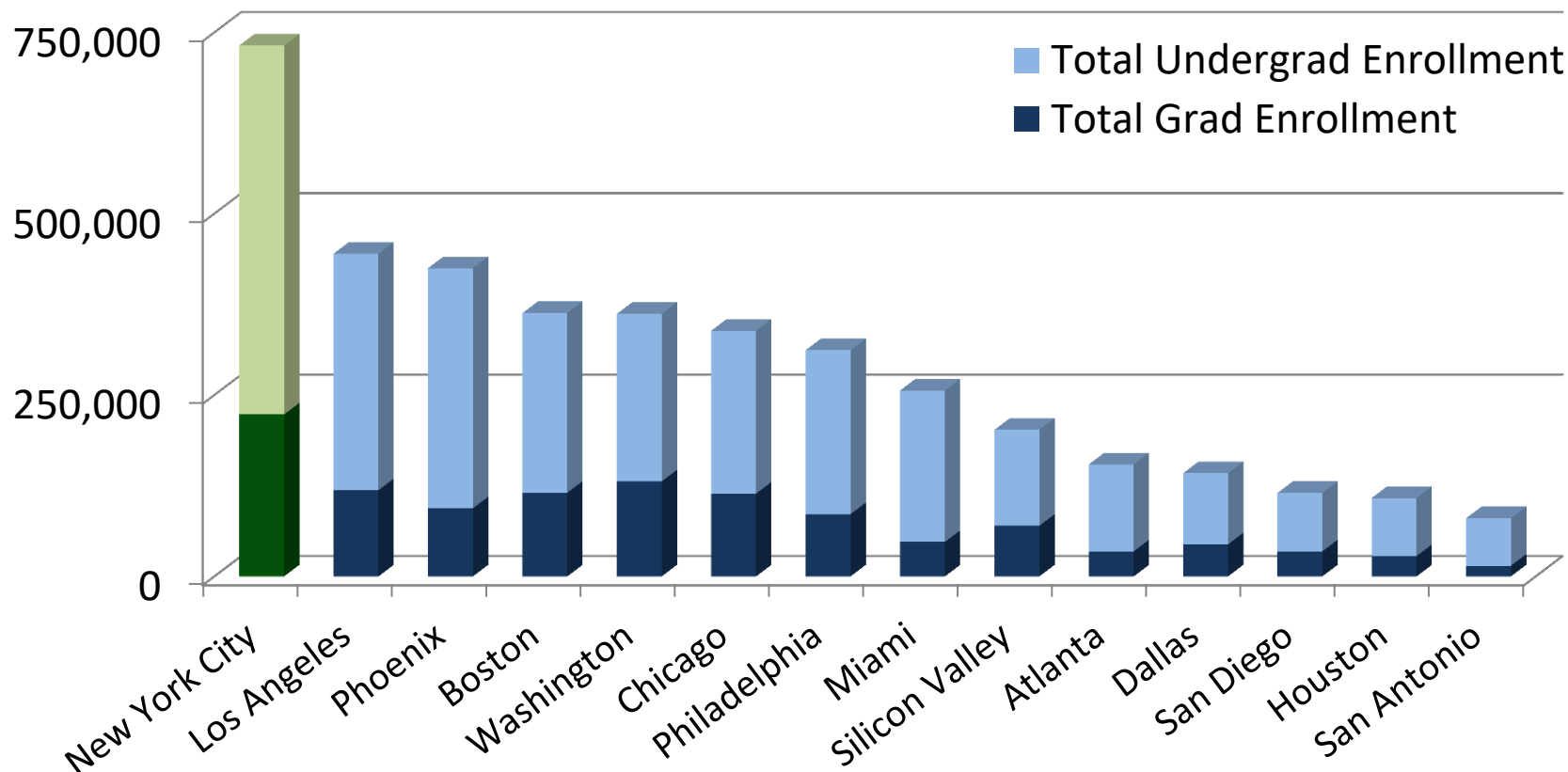# NYC Metro Has the Greatest Number of Academic Institutions

Number of Four-Year Academic Institutions
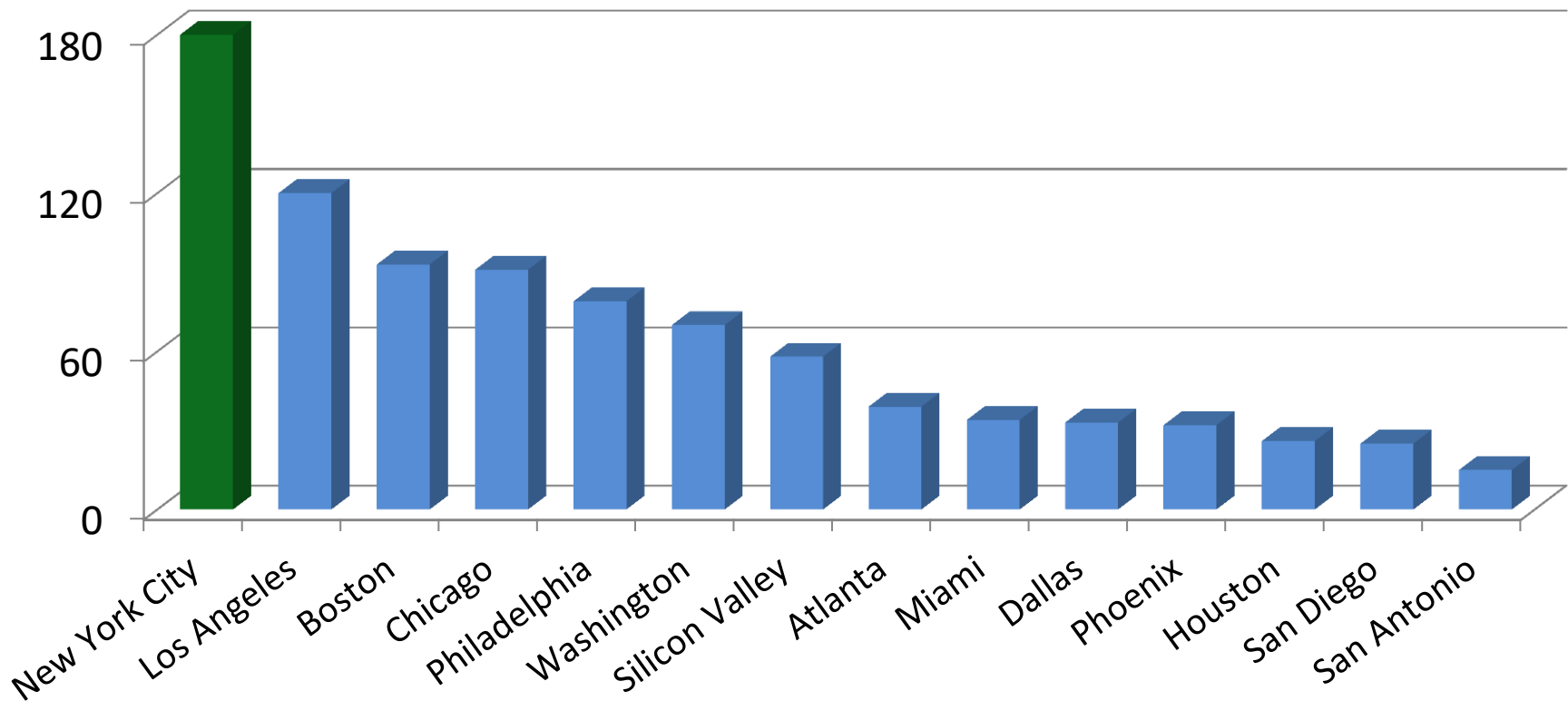
Note: Four-year baccalaureate-granting institutions within a 50-mile geographic radius of the central city Central Business District.

Source: National Center for Education Statistics, Integrated Postsecondary Education Data System, Fall 2008 Enrollment.

NYC Metro Attracts the Greatest Number of Undergraduate and Graduate Students

Legend:
- Total Undergrad Enrollment
- Total Grad Enrollment

Cities (left to right): New York City, Los Angeles, Phoenix, Boston, Washington, Chicago, Philadelphia, Miami, Silicon Valley, Atlanta, Dallas, San Diego, Houston, San Antonio

Y-axis: 0, 250,000, 500,000, 750,000

Notes: Undergraduate enrollment includes non-matriculated and certificate students. University of Phoenix Enrollment includes online enrollment and campuses located outside Arizona.

Source: National Center for Education Statistics, Integrated Postsecondary Education Data System, Fall 2008 Enrollment.

NYC Metro Draws the Greatest Number of Grad Students Across Fields – Except in Engineering

Metro Area	Total Grad Enrollment		Engineering	Math & Science	Business & Management*	Law	Dental & Medical
New York City	1		2	1	2	1	1
Washington	2		4	3	3	2	3
Los Angeles	3		3	4	5	3	6
Boston	4		5	2	6	5	4
Chicago	5		9	7	4	4	2
Phoenix*	6		11	13	1*	14	
Philadelphia	7		7	6	7	7	5
Silicon Valley	8		1	5	8	6	8
Miami	9		13	12	10	9	
Dallas	10		8	10	9	11	
Atlanta	11		6	9	11	10	
San Diego	12		10	11	13	12	
Houston	13		12	8	12	8	7
San Antonio	14		14	14	14	13	9

*Note: Includes online enrollments of the University of Phoenix and campuses located outside Arizona.

NYC Metro Continues to Attract the Greatest Number of International Students
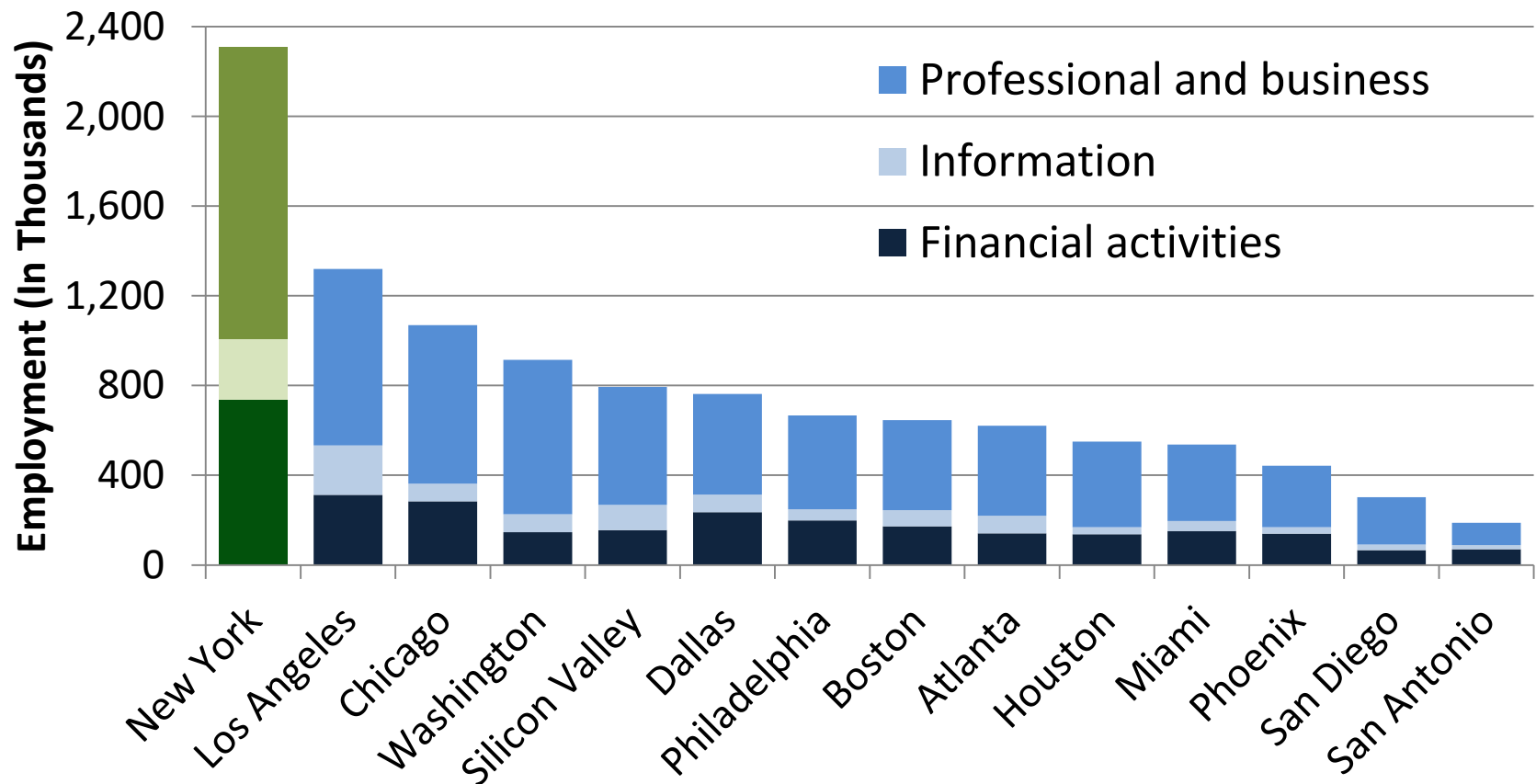
Metro Area	International Student Enrollment, 2009-2010	Share of U.S. International Student Enrollment	Share of Total Metro Enrollment, 2008-09
New York City	60,791	8.8%	7.4%
Los Angeles	42,103	6.1%	6.3%
Boston	29,276	4.2%	8.0%
Silicon Valley	28,480	4.2%	10.2%
Chicago	19,706	2.9%	4.8%
Washington	19,530	2.8%	4.9%
Houston	17,395	2.5%	6.5%
Dallas	16,054	2.3%	7.6%
Philadelphia	12,279	1.8%	4.3%
Miami	11,366	1.6%	4.5%
Atlanta	9,689	1.4%	5.5%
San Diego	7,632	1.1%	4.2%
Phoenix	7,042	1.0%	3.5%

Note: San Antonio was not one of the top 20 metro areas to attract international students. Data not reported.

Source: Institute for International Education, *Open Doors,* 2010; IPEDS, Fall 2008 Enrollment.

NYC Metro Has the Greatest Number of Jobs in Three Key Industries

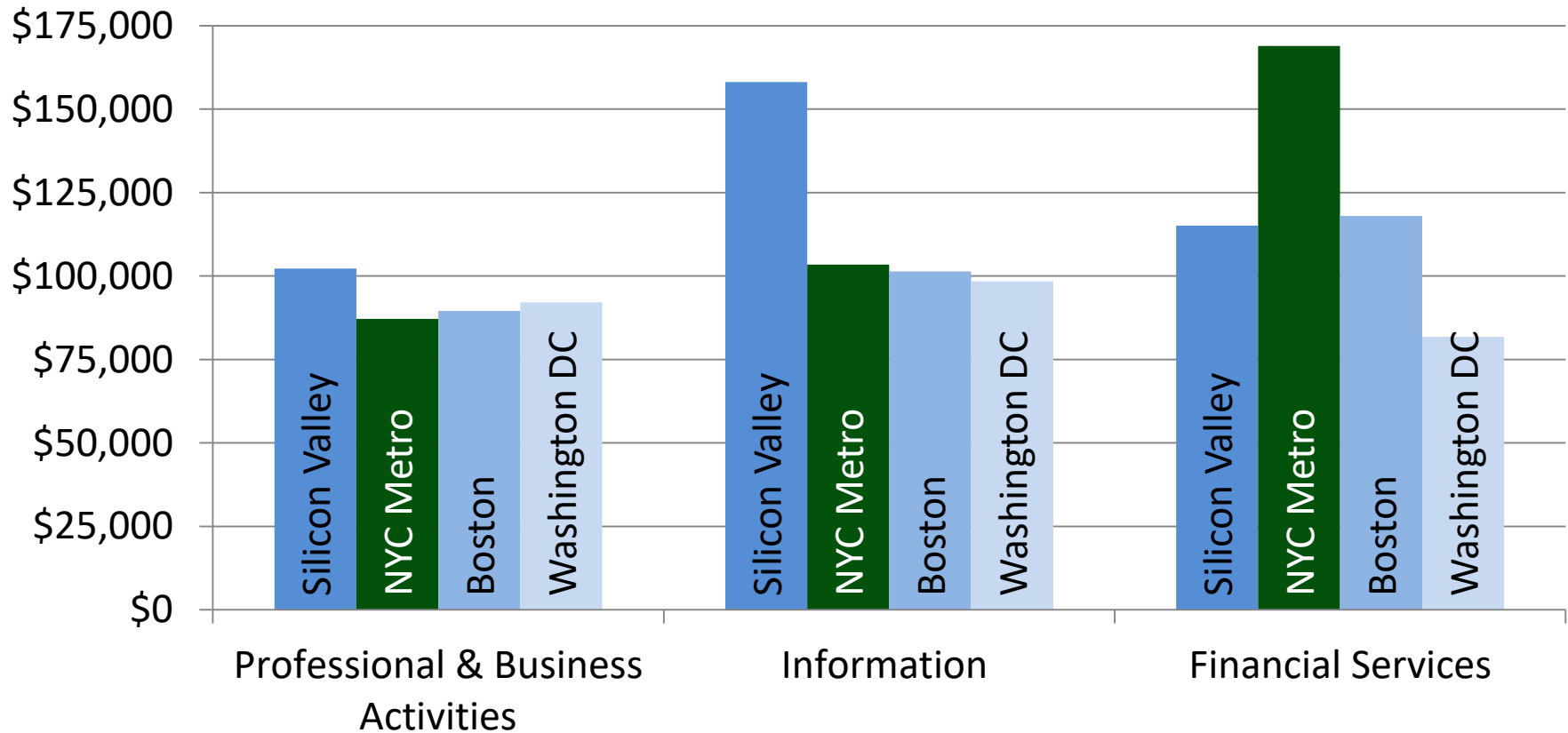**Employment by Metro Area and Industry, 2011**

Legend:
- Professional and business
- Information
- Financial activities

Source: US Bureau of Labor Statistics, *Current Employment Statistics,* 2011 Annual Estimates.

Washington DC and Silicon Valley Have the Greatest Share of Employment in These Industries

Share of Private Employment in Three Key Industries
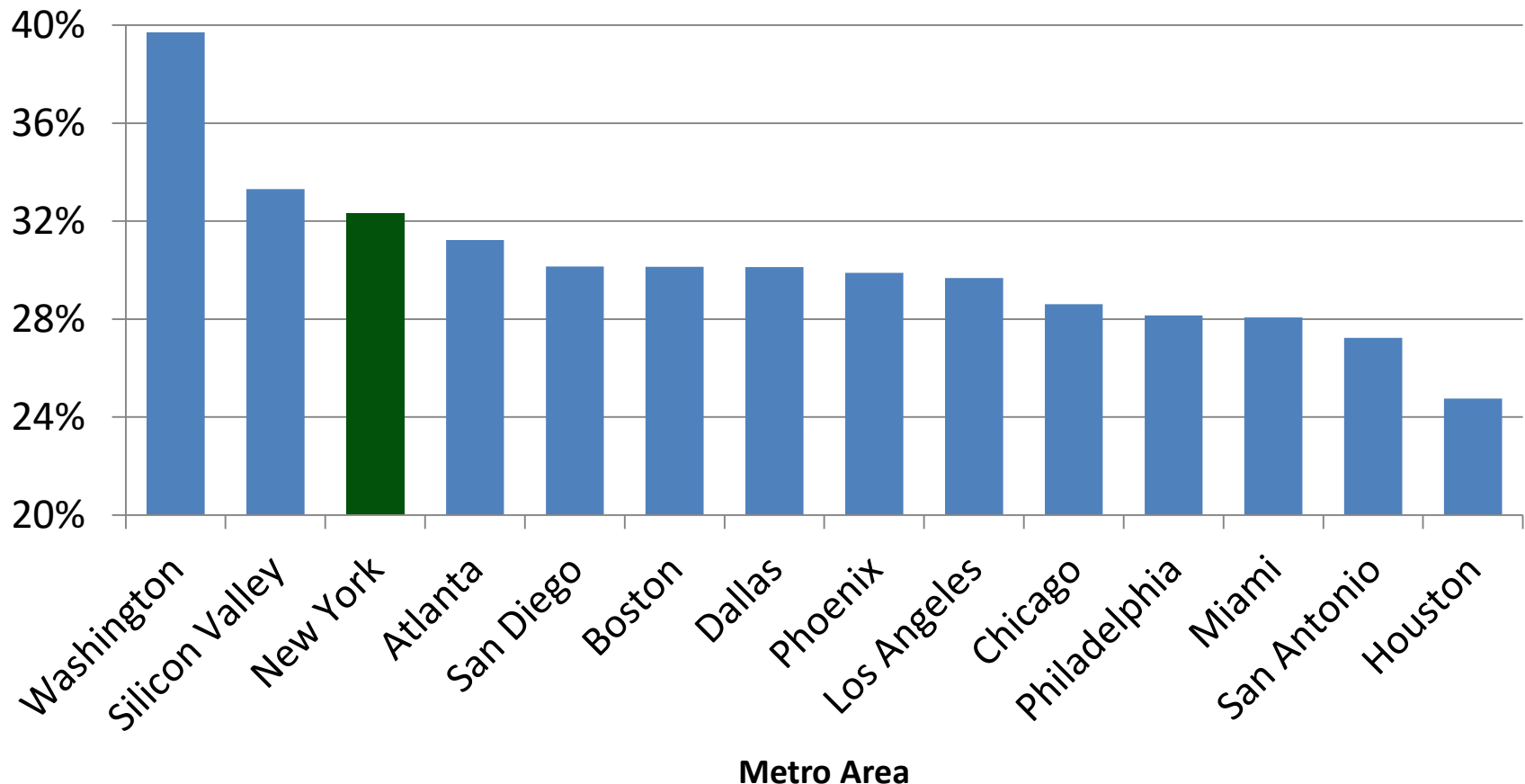
Average Annual Pay in Key Industries is High Relative To Key Competitors

**Metro Areas With Highest Average Annual Pay, 2011**

Professional & Business Activities — Silicon Valley, NYC Metro, Boston, Washington DC
Information — Silicon Valley, NYC Metro, Boston, Washington DC
Financial Services — Silicon Valley, NYC Metro, Boston, Washington DC

Note: Top 4 in each category. Chicago ranks 4th in average annual pay for financial services (Washington DC ranks 7th).
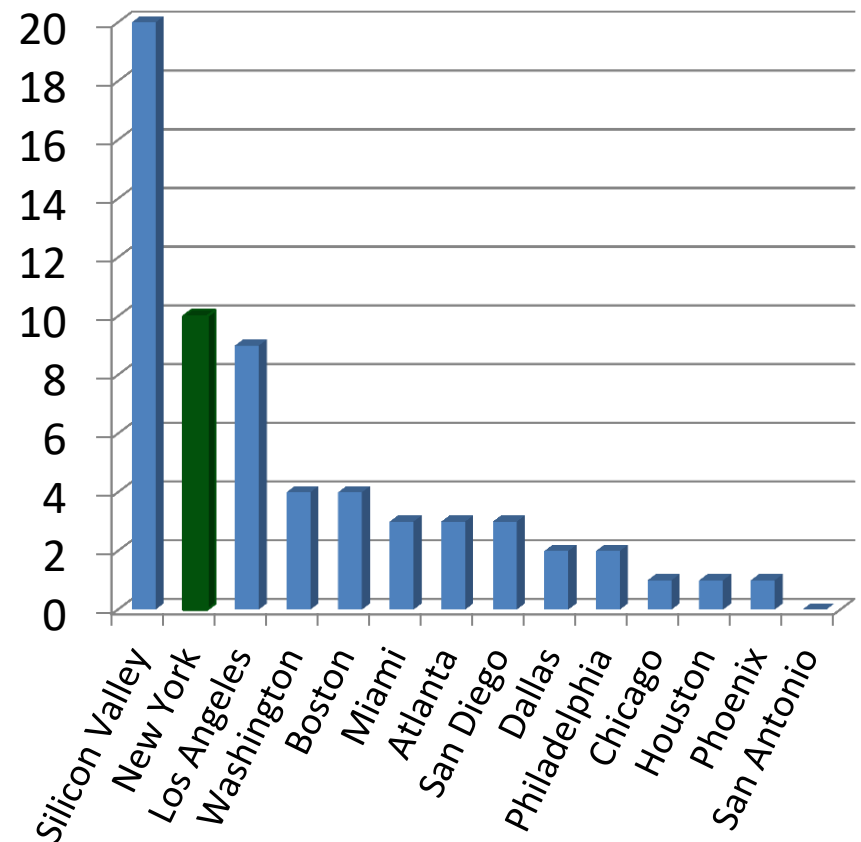
Source: US Census, *Quarterly Census of Employment and Wages,* 2011. Private employment only.

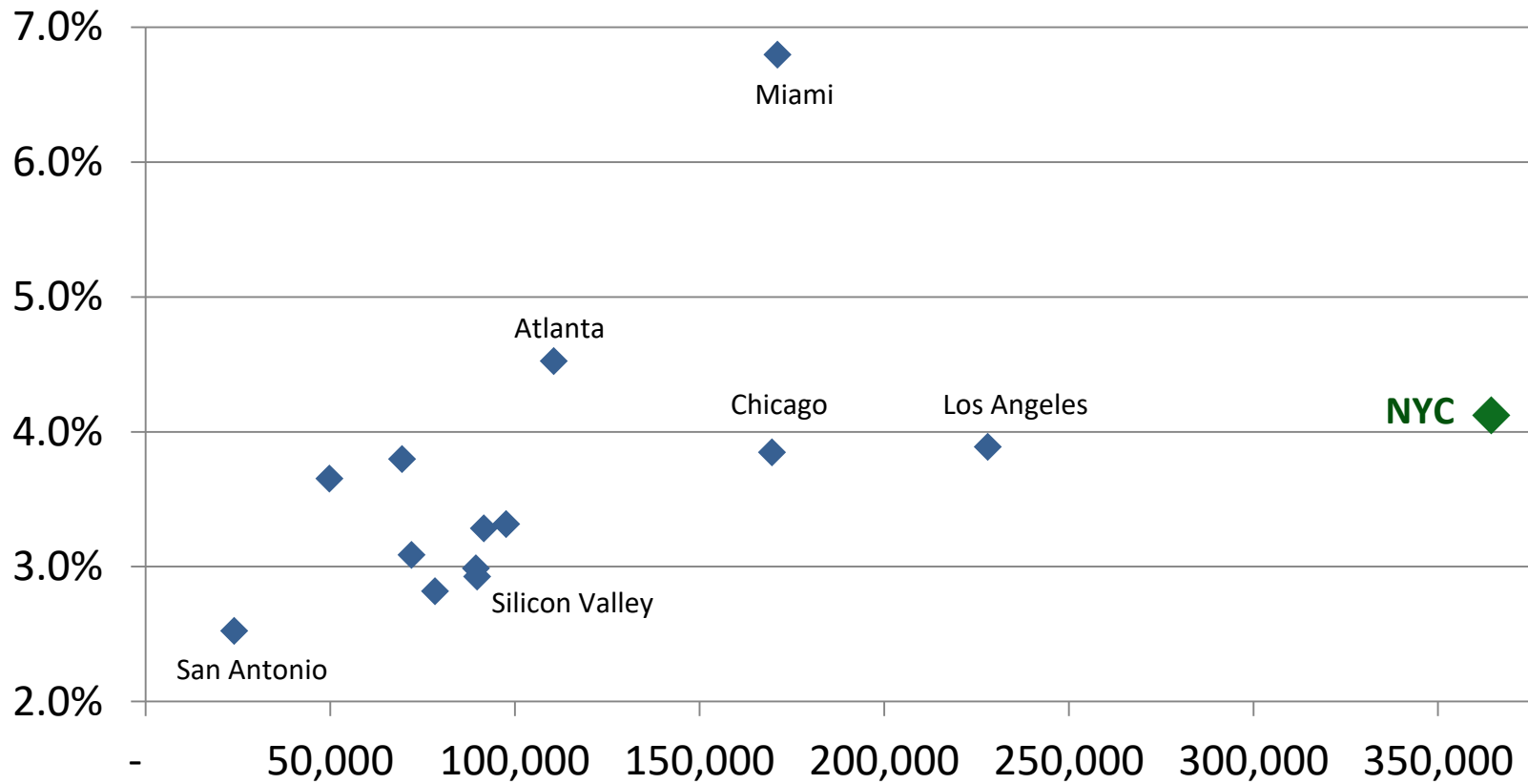# NYC Metro Is a Center for Large, Attractive Employers

Fortune 500 Companies
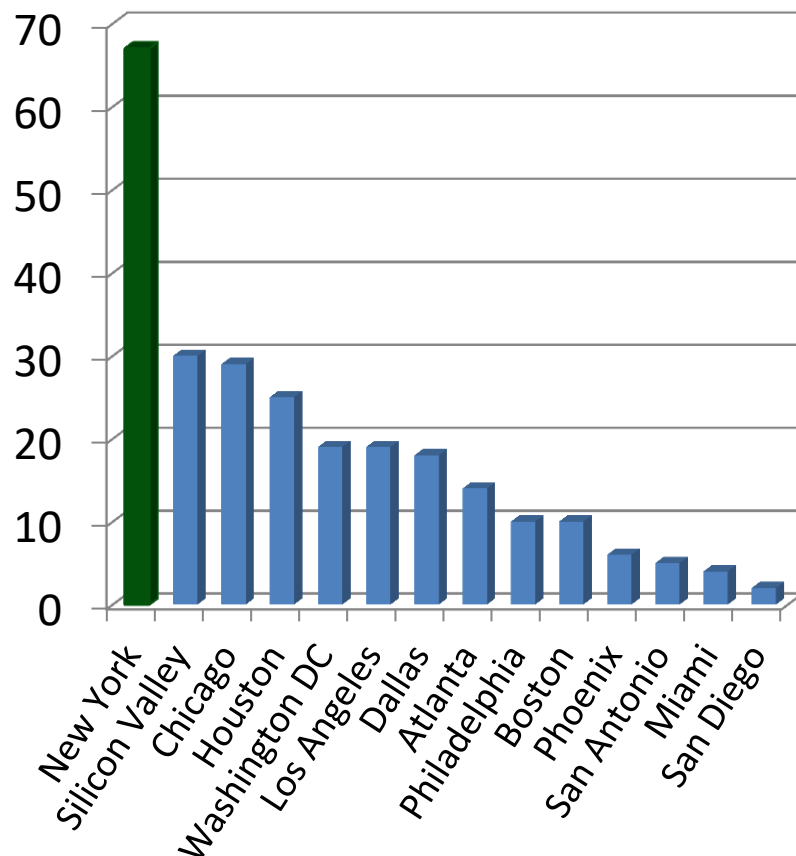
Forbes' Most Promising Companies

NYC Metro Is Above 15-Metro Average in Share of Self-Employed
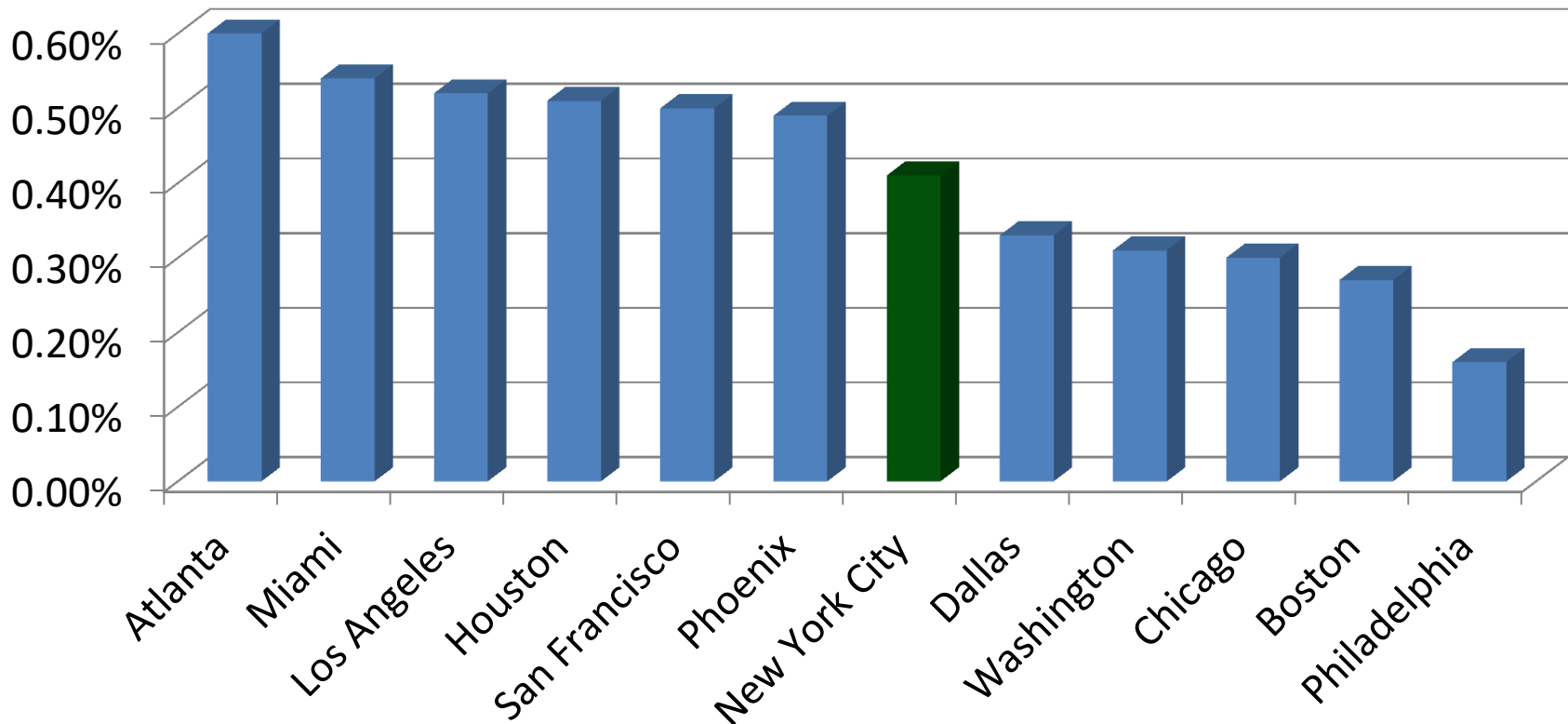
Self-Employed, Number and Share

Note: Includes Incorporated Only.

Source: U.S. Census Bureau, American Community Survey, 2009-2011 Three-Year Estimates, Table C24070.

Other Metro Areas
Have Higher Rates of Business Creation
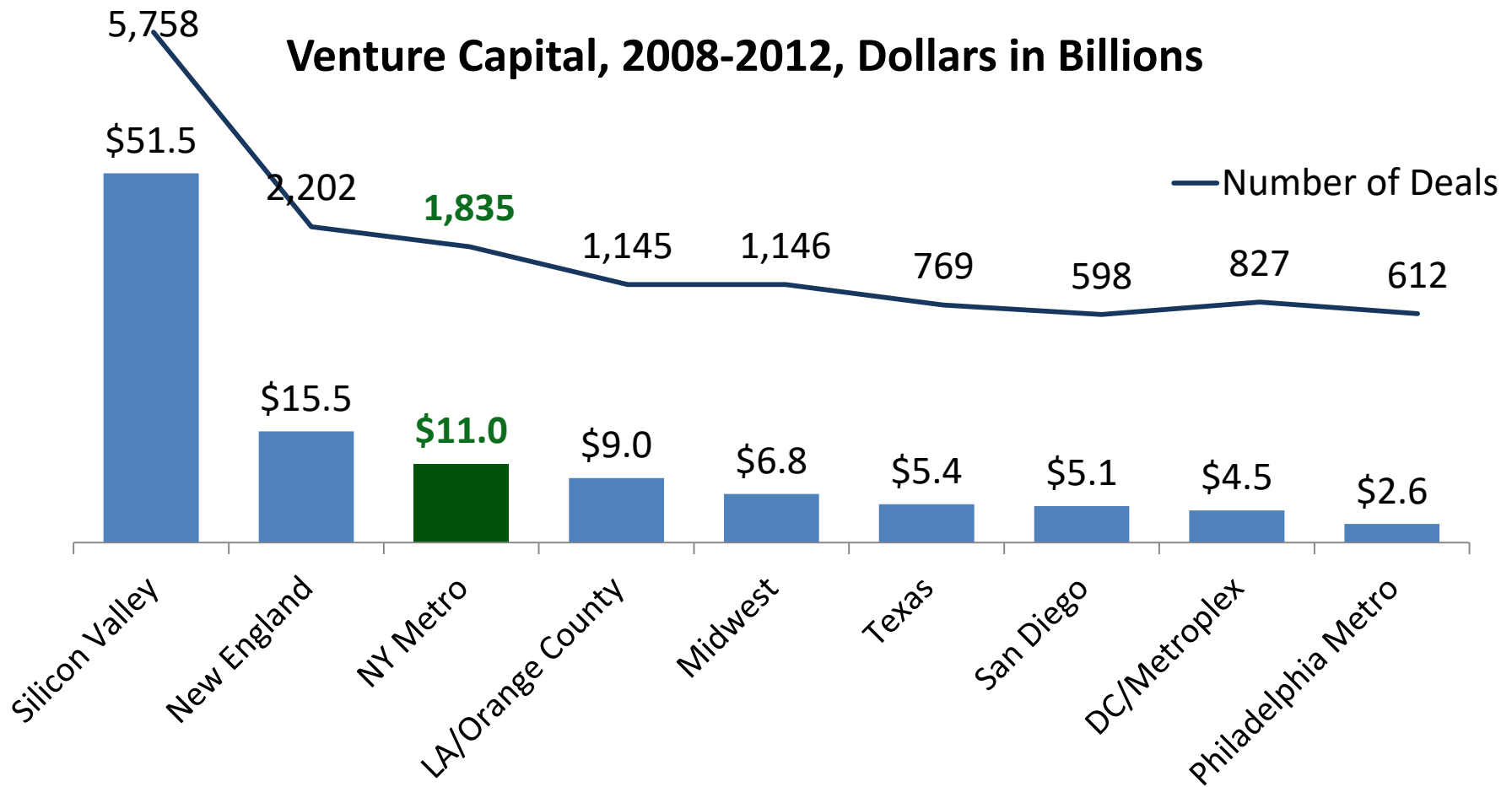
Kauffman Index, 2008-2010

Monthly Rate of Business Creation at the Individual Owner Level

Note: Metro areas of San Antonio, San Diego and San Jose not included in the report.
Source: Robert W. Fairlie, "Kauffmann Index of Entrepreneurial Activity, 1996-2010," March 2011.

Silicon Valley Has Been Most Successful In Attracting Venture Capital

Venture Capital, 2008-2012, Dollars in Billions

Number of Deals

Region	Number of Deals	Dollars in Billions
Silicon Valley	5,758	$51.5
New England	2,202	$15.5
NY Metro	1,835	$11.0
LA/Orange County	1,145	$9.0
Midwest	1,146	$6.8
Texas	769	$5.4
San Diego	598	$5.1
DC/Metroplex	827	$4.5
Philadelphia Metro	612	$2.6

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Silicon Valley Greatly Surpasses NYC Metro Area in Number of IPOs Over Last 15 Years

Metro Area	Total IPOs, 1997-2012	Value of Offerings ($ in billions)	Top Industry	Number of IPOS in that Industry
Silicon Valley	365	$200.8	Internet Specific	96
New York	122	$78.7	Internet Specific	35
Boston	115	$45.1	Biotechnology	25
Los Angeles	69	$36.4	Internet Specific	19
San Diego	55	$14.9	Biotechnology	17
Chicago	50	$64.5	Consumer Related/Internet Specific	8
Washington DC	49	$20.0	Computer Software	14
Atlanta	45	$19.8	Computer Software	11
Houston	39	$28.6	Industrial/Energy	23
Dallas	36	$38.2	Internet Specific	7
Philly	35	$9.8	Medical/Health	9
Miami	28	$13.2	Communications	7
Phoenix	10	$6.3	Medical/Health/ Consumer Related	3
San Antonio	2	$3.4		

Source: Thompson Reuters. Data until March 2012. Value of offering, not IPO size.

QUALITY OF LIFE

Quality of Life: Competitive

	METRO AREAS	New York City	Los Angeles	Chicago	Dallas	Silicon Valley	Houston	Philadelphia	Miami	Washington DC	Atlanta	Phoenix	Boston	San Diego	San Antonio
PUBLIC SERVICES	Crime Rates (1 = Lowest)	1	4	6	9	7	12	8	13	5	10	11	3	2	14
	Percent Proficient on NAEP, Grade 8 Reading	3	8	5	11		6	8	1	10	7		3	2	
	Percent Proficient on NAEP, Grade 8 Math	4	9	7	5		3	8	5	11	9		1	2	
	Rent Affordability (1 = Most Affordable)	9	12	8	1	5	4	11	14	1	10	7	6	13	3
	Commute Times (1 = Shortest Commute)	14	8	12	5	7	6	9	4	13	11	3	10	1	2
AMENITIES	Park Space, Acreage Per Capita	11	11	13	3	7	4	9	14	6	9	2	8	1	5
	Park Space, Acreage as a Share of City Land	2	12	11	7	6	7	9	13	3	14	4	5	1	10
	Entertainment and Arts Establishments Per Capita	3	1	6	12	7	14	8	2	5	9	11	4	10	13
	Bars & Restaurants Per Capita	2	10	6	12	3	13	5	4	7	8	14	1	9	11

- NYC metro's weakest performance is on quality of life measures, particularly commute times and rent affordability

- Safety, recreational opportunities and cultural institutions are NYC metro's strengths

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NYC Metro Is the Safest Large Metro Area

2011 Property and Violent Crime Rates per 100,000 Inhabitants in the Metro Area
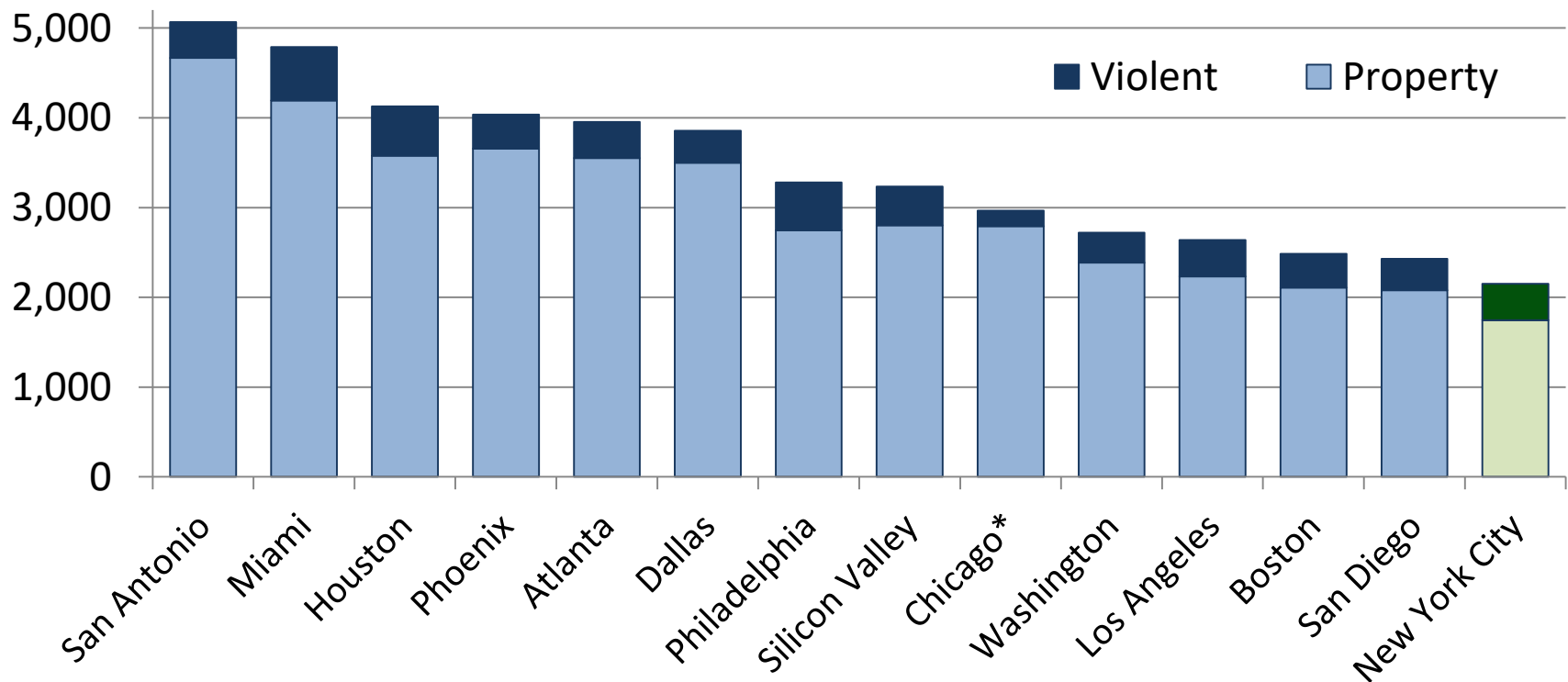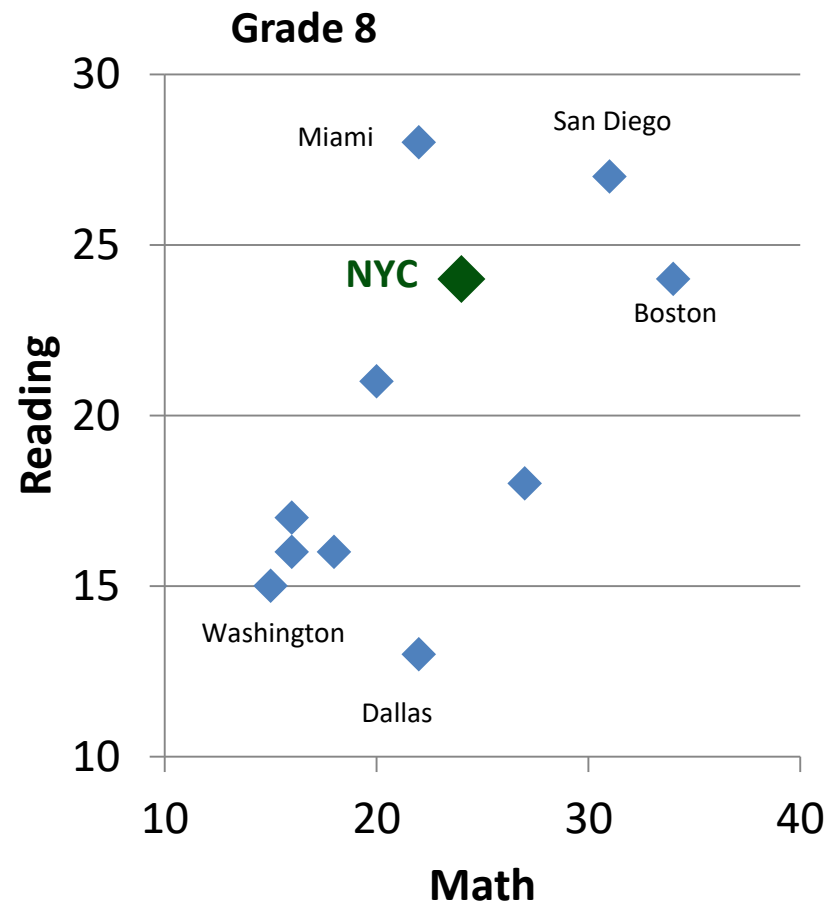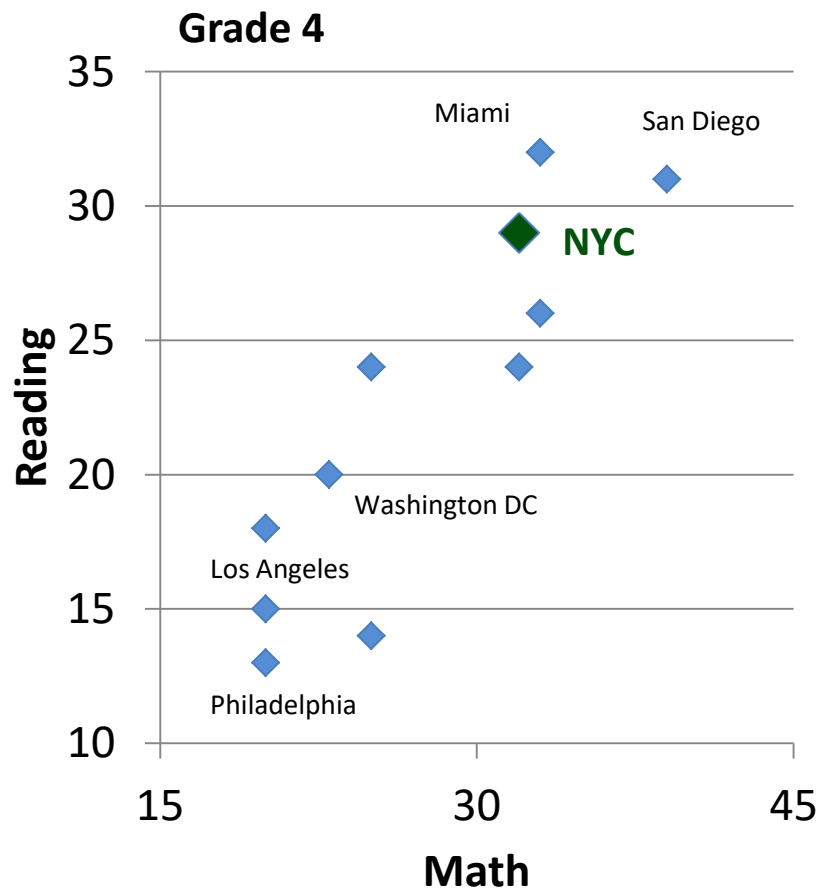
Notes: Violent crime rates for Chicago metro area understated; City of Chicago rape statistics do not meet FBI reporting standards.

Source: U.S. Federal Bureau of Investigation, Criminal Justice Information Services Division, "Table 6: Crime in the United States by Metropolitan Statistical Area, 2011."
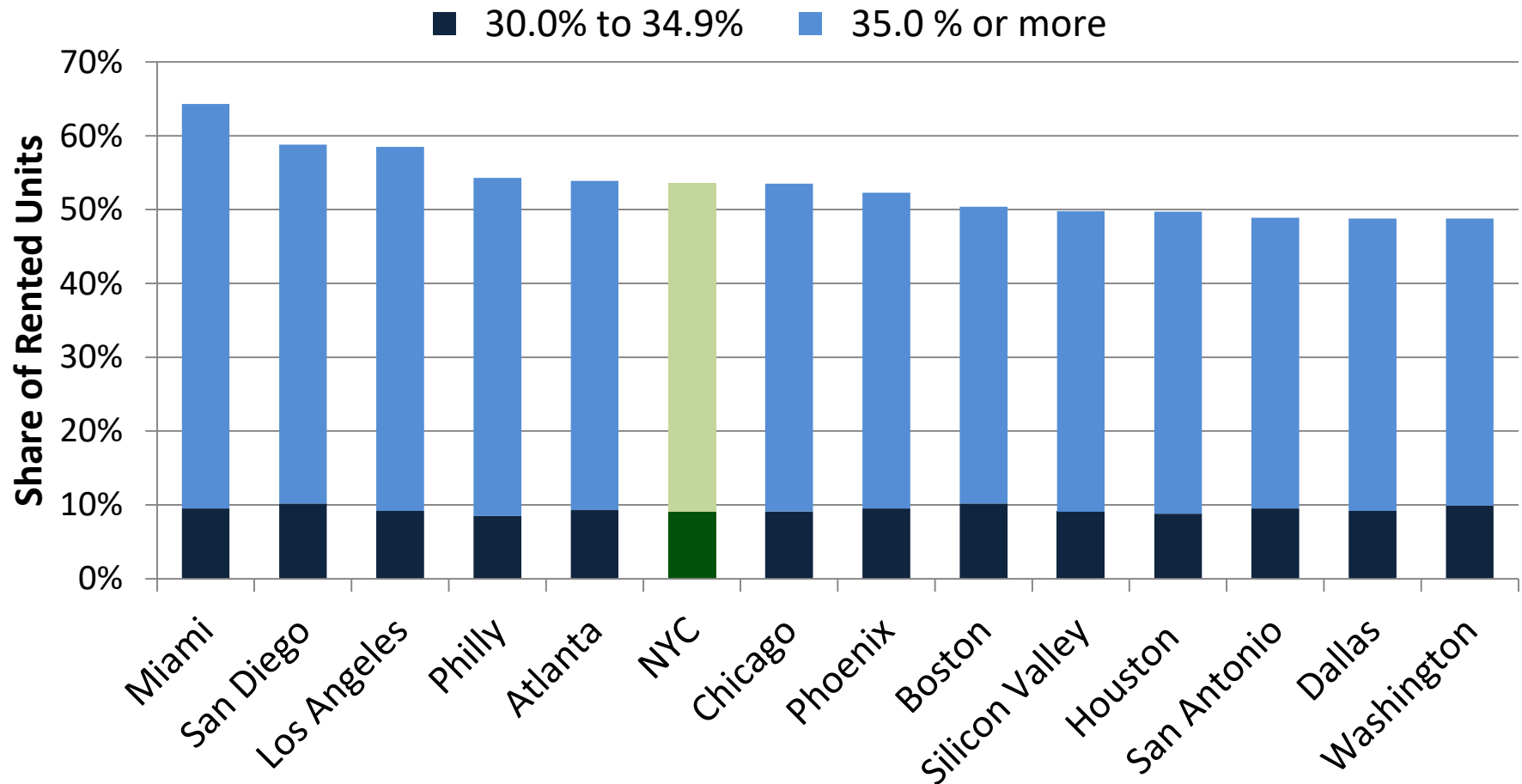
Performance of NYC Schools is Third or Fourth Among Large Urban School Districts

National Assessment of Educational Progress (NAEP)
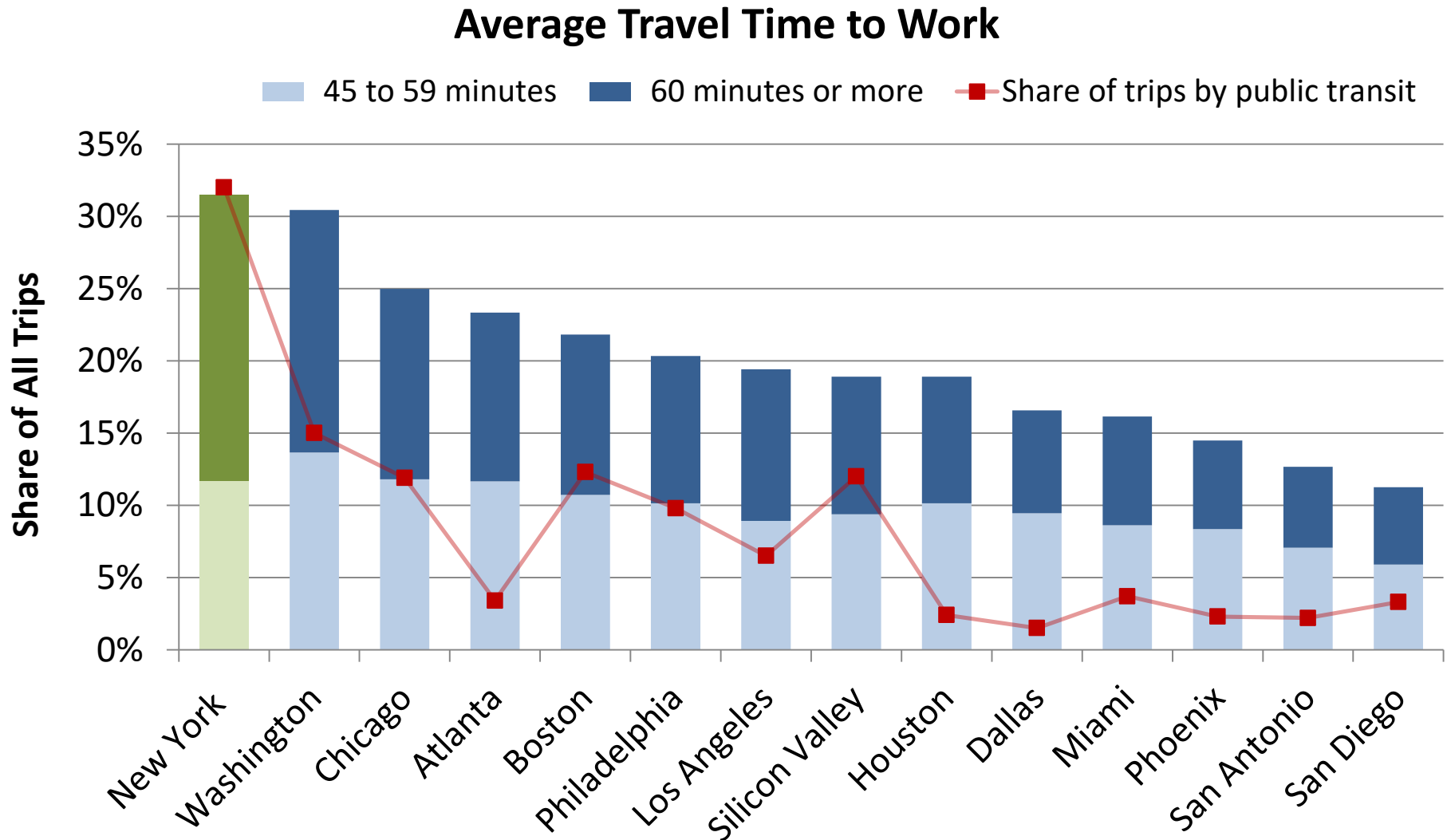### Percent of Students At or Above Proficient Level, 2011

Grade 4

Grade 8

Source: NAEP Results for Large Urban School Districts for 2011. San Francisco, San Jose, San Antonio and Phoenix do not yet participate.

In Most Other Metro Areas,
Rent Constitutes a Smaller Share of Income

Rent as a Share of Household Income

■ 30.0% to 34.9%   ■ 35.0 % or more

NYC Metro Has Lengthiest Commute Times

Average Travel Time to Work

Legend: 45 to 59 minutes ▪ 60 minutes or more ▪ Share of trips by public transit
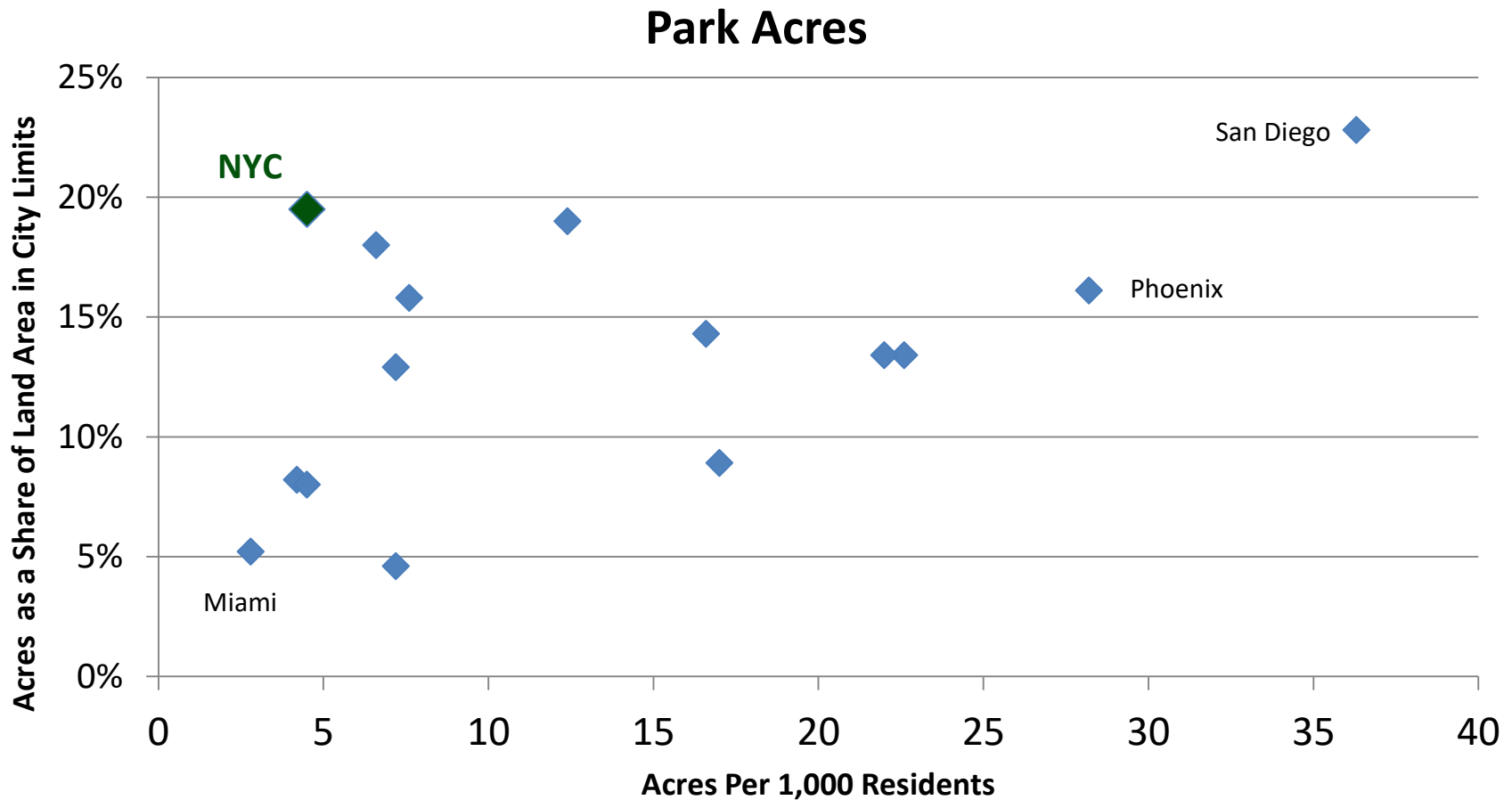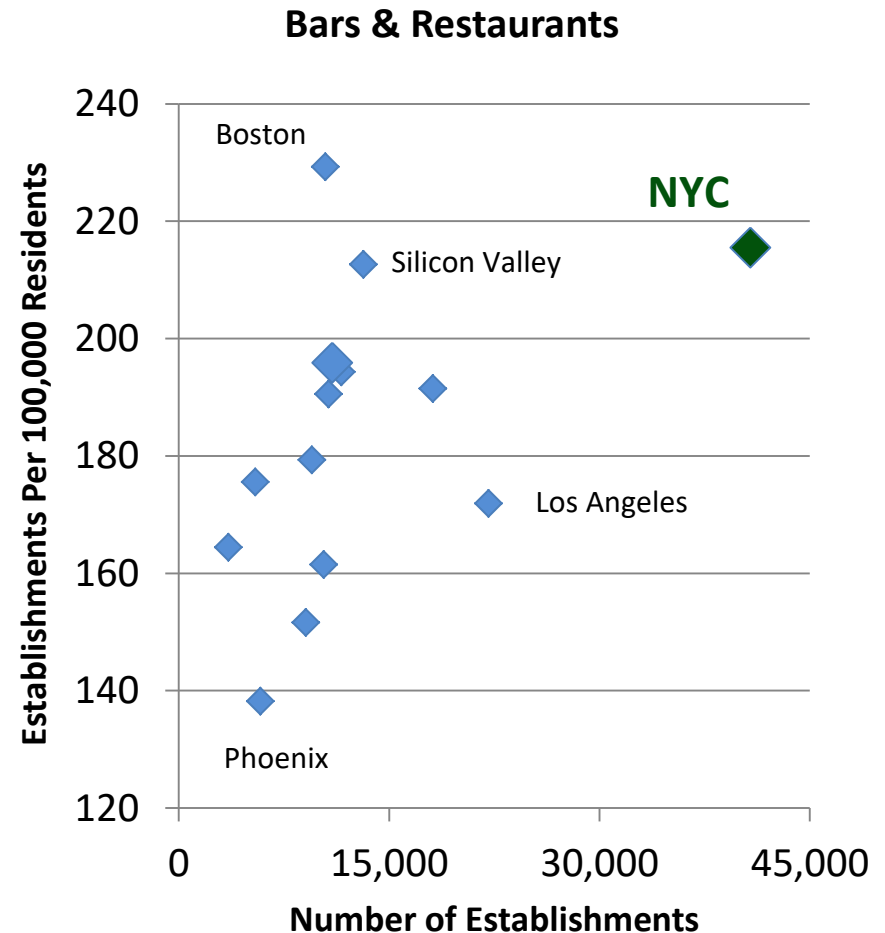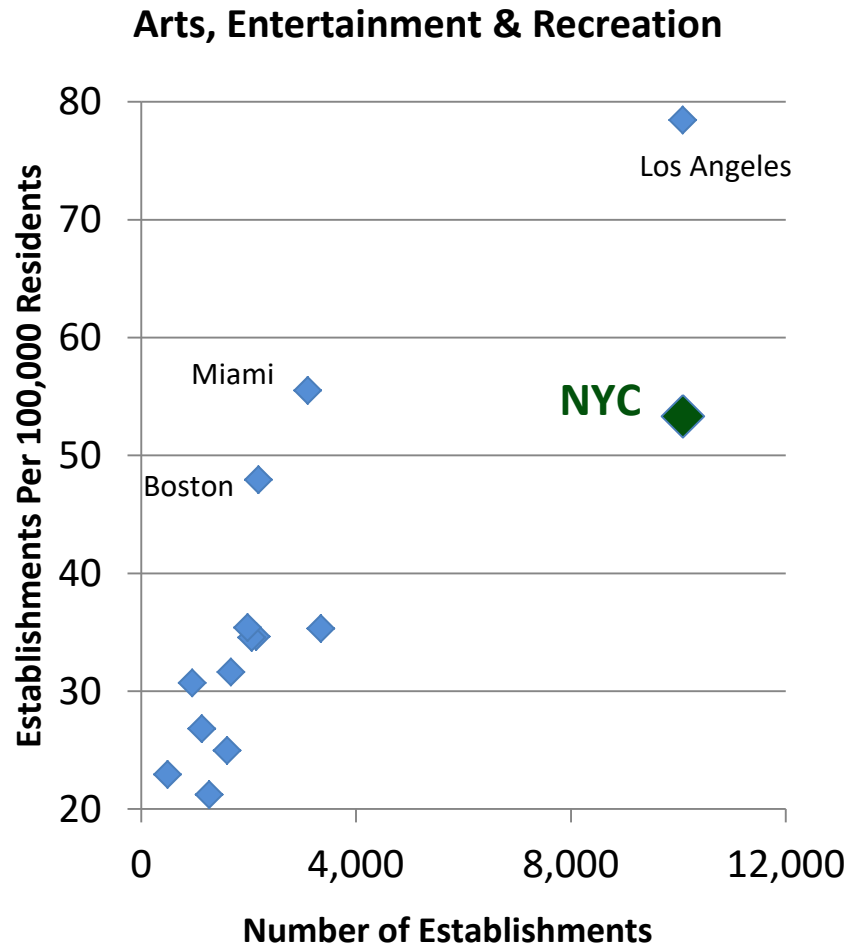
Source: US Census Bureau, American Community Survey, 2009-2011 Three-Year Estimates, C08134.

NYC Has a High Share of Park Space, but a Low Number of Acres on a Per-Capita Basis

Park Acres

Source: The Trust for Public Land, "2011 City Park Facts," 2011.

NYC Metro has an Abundance of Cultural and Recreational Establishments

Arts, Entertainment & Recreation

Bars & Restaurants

Additional Analysis:
FACTORS INFLUENCING MIGRATION

Evaluating Factors Affecting the Residential Decisions of Young People

- The National Longitudinal Survey of Youth (NLSY) is a nationally representative dataset that tracks young people from high school into their careers

- There have been two surveys:
  - 1979 cohort: Sample of more than 9,000 young people, ages 14-22, surveyed biennially (2010)
  - 1997 cohort: Sample of 9,000 young people, ages 12-16, surveyed annually (2009)

- The NLSY includes a wealth of demographic, educational and residential information that allows for some insight into migration behavior after graduating college

- Question: What factors increase the likelihood that educated young people will move into or stay in New York City one year, two years and five years after college?

Identifying important factors

- Approach:
  - Restrict analysis to respondents who have earned an undergraduate degree
  - Use data in the survey and other data that could be collected reliably from 1979 to 2010 for NYC metro and for each state

- Factors included in the model:
  - **Personal ties to NYC metro**: Previously lived in the NYC metro area or born in the Tri-state area
  - **Education**: Attended college in the NYC metro area
  - **Employment conditions**: Difference between unemployment rate in the NYC metro area and where you live or moved from
  - **Personal demographics**: Gender, race, marital status, and born outside of the U.S.
  - **Weather conditions**: Difference in temperature between NYC metro and where you live or moved from

Personal ties, education and employment "pull" people to NYC metro

Previously living in the area, attending school here, having better job prospects, and originating from abroad **increase the likelihood** of living in NYC metro after college, **but** the "pull" decreases over time

Factor	Increased Likelihood You Were Living in NYC		
	One Year After College	Two Years After College	Five Years After College
Previously resided in the NYC metro	12.9	12.6	9.4
Attending college in NYC metro	10.9	5.8	5.1
Born in Tri-state area	4.7	4.8	6.2
Born outside of the U.S.	3.2	3.5	3.5
For each percentage point difference between NYC and alternative location unemployment rate	1.2	1.2	1.3
Married	0.2	0.3	0.4

Note: This research was conducted with restricted access to BLS data. The views expressed here do not necessarily reflect the view of BLS.

Takeaways

- NYC metro is highly competitive in attracting highly-skilled individuals

- NYC metro's dominance in higher education gives the city a major competitive advantage in attracting and retaining talent – and particularly foreign-born talent

- The breadth of offerings in higher education provide a highly-skilled workforce that is not limited to one field or industry

- Continued economic growth and competitive pay in key industries are important "pull" factors for young talent

- The presence of large and growing companies is a competitive advantage; on the other hand, the NYC metro area has not fostered entrepreneurship as successfully as Silicon Valley

- Safety and cultural amenities also provide important competitive advantages, but housing costs and commute times are policy challenges

- Cities to watch are those with high concentrations of highly-educated people and large shares of employment in key industries – Washington DC, San Francisco and San Jose

RECOMMENDATIONS

Maintaining a Competitive Position

- NYC metro has not always been a desirable place to live and work; vigilance is needed to prevent slow or unexpected decline

- NYC metro cannot cruise on auto-pilot; to maintain a competitive position, it must pursue policies that can expand human capital development, foster emerging industries and address weaknesses in quality of life

Policy Recommendations
Attracting Talent: Supporting Higher Ed

- Great number of academic institutions and breadth of offerings offer workforce training that is not limited to one field or industry

- Business, law, medicine, and arts are prominent, but NYC metro does not attract great numbers of engineering students or trained engineers

➢ Focus on supporting higher education in fields where NYC metro is lacking and that are relevant to emerging industries

  – Good example: Applied Sciences Initiative for new campuses focused on engineering, data sciences and engineering, and urban science

  – Other possibilities: health tech, 3D printing, mobile apps, green power, digital marketplace

➢ Develop training programs and apprenticeships with junior colleges and K-12 schools

Cultivating Talent: Fostering Entrepreneurship

- NYC metro has made gains against Boston, but Silicon Valley attracts a far greater amount of venture capital and has spawned double the number of IPOs

➤ Expand the NYC Entrepreneurial Fund to $100 million from $22 million

➤ Improve commercial broadband connectivity and expand free wi-fi in public spaces

➤ Continue to foster incubators and affordable, connected workspace for tech-based start-ups

Retaining Talent: Improving Public Services

- Other metro areas outperform NYC on quality of life measures, particularly commute times and rent affordability

- ➤ Pursue policies, including targeted subsidies and upzoning, that stimulate additional transit-oriented development

- ➤ Develop a viable financial plan for maintaining and enhancing regional mass transit operations based on system needs and demographic growth (CBC Plan: "25-50-25")

Retaining Foreign Talent: Immigration

- NYC metro consistently draws the greatest number of international students each year, but strict visa restrictions do not make it easy for foreign students to remain as employees and entrepreneurs

➢ Changes to visa protocols should provide flexibility for students educated and trained here to gain employment and become residents

This analysis was prepared by Maria Doulis, Director of City Studies, with assistance from Rahul Jain, Gal Fix and Connor Mealey.

The Citizens Budget Commission is a nonprofit, nonpartisan civic organization whose mission is to achieve constructive change in the finances and services of New York City and New York State government.