



Boston's Economy 2017

Matthew Resseger, Senior Economist, BPDA



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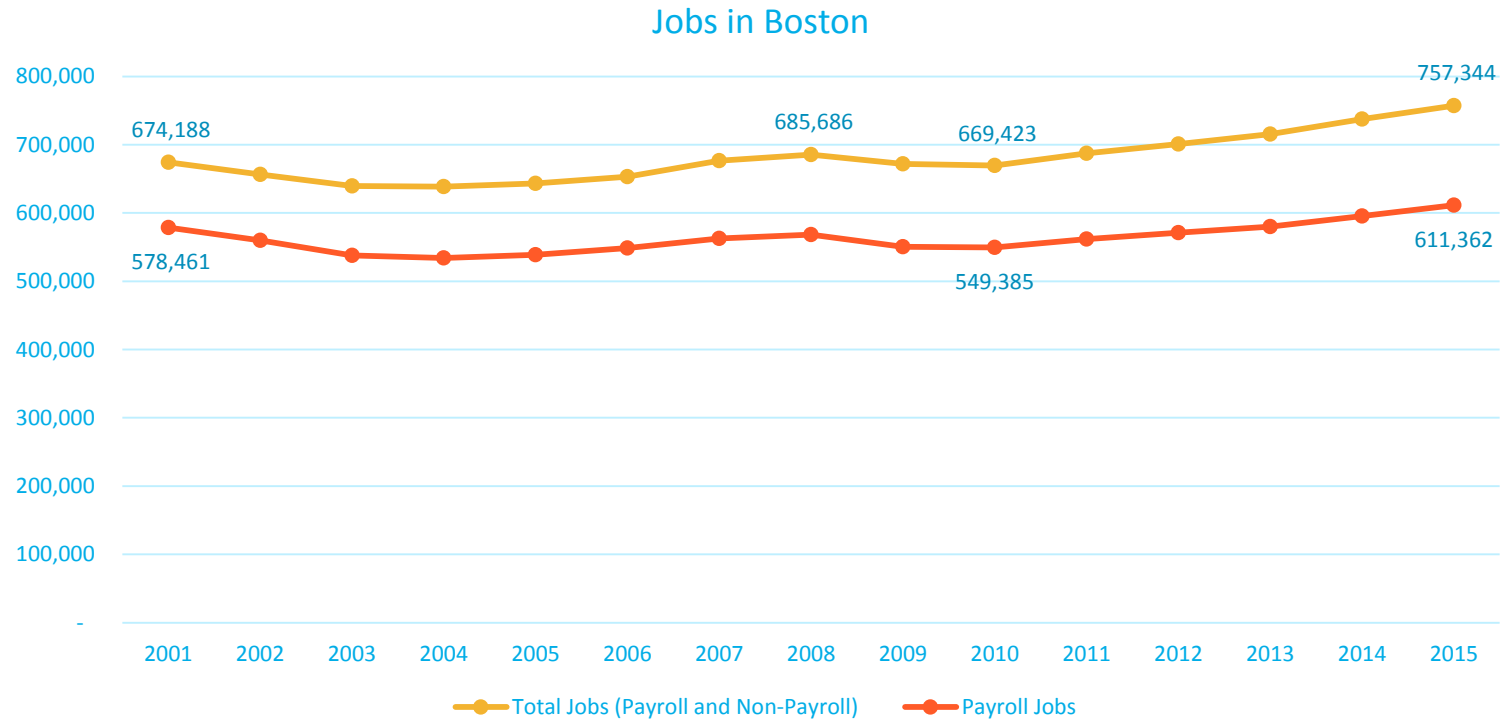
01.

Economic Growth and Employment



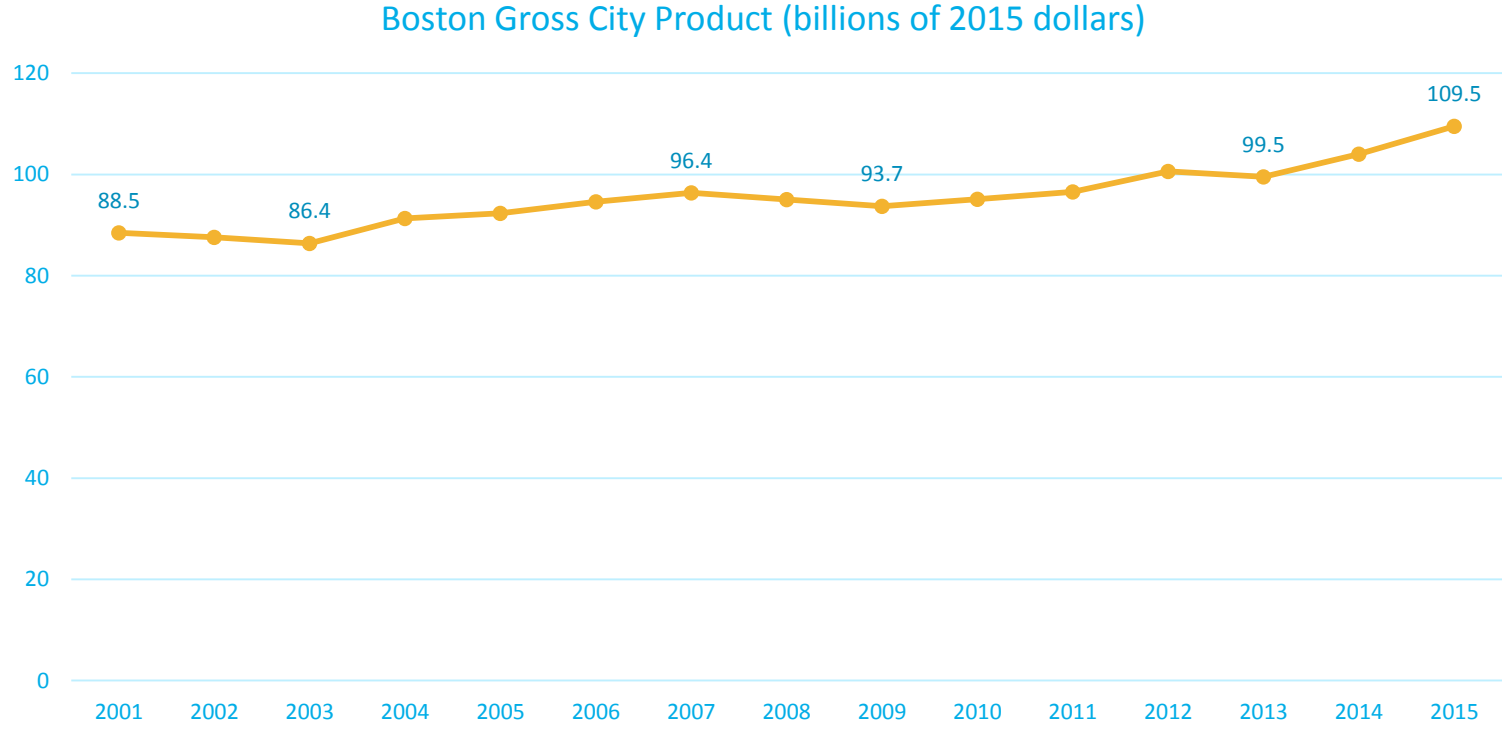
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The total number of jobs has grown consistently since the end of the most recent recession.



Source: U.S. Bureau of Economic Analysis, Massachusetts Executive Office of Labor and Workforce Development (EOLWD), BPDA Research Division Analysis.

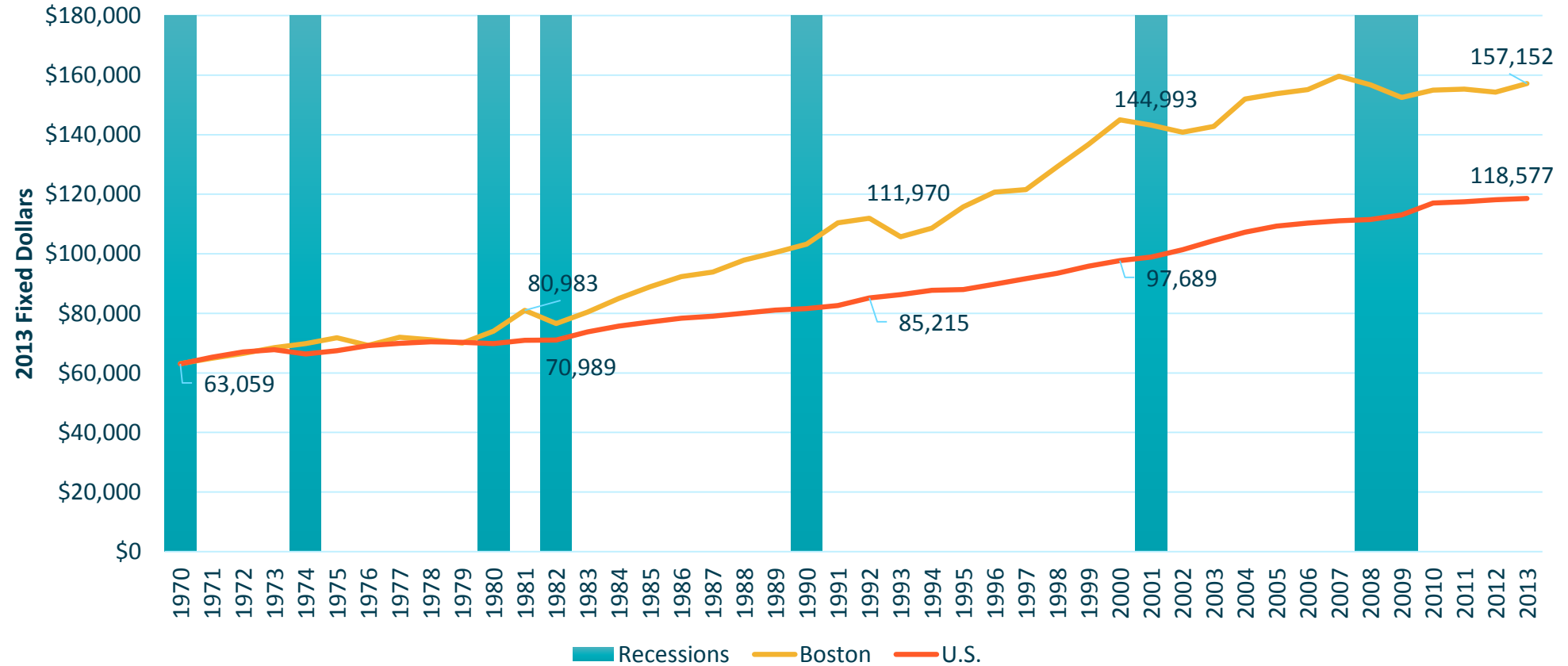
Gross City Product



Source: U.S. Bureau of Economic Analysis, BPDA Research Division Analysis.

- Boston's output per worker has grown faster than that of the U.S. since 1980. Boston's GCP per worker grew by 10.1% in the last decade
- Boston workers produced on average \$157,152 per year, \$38,575 more than the national average

Boston and U.S. Labor Productivity (GDP per Worker), 1970-2013



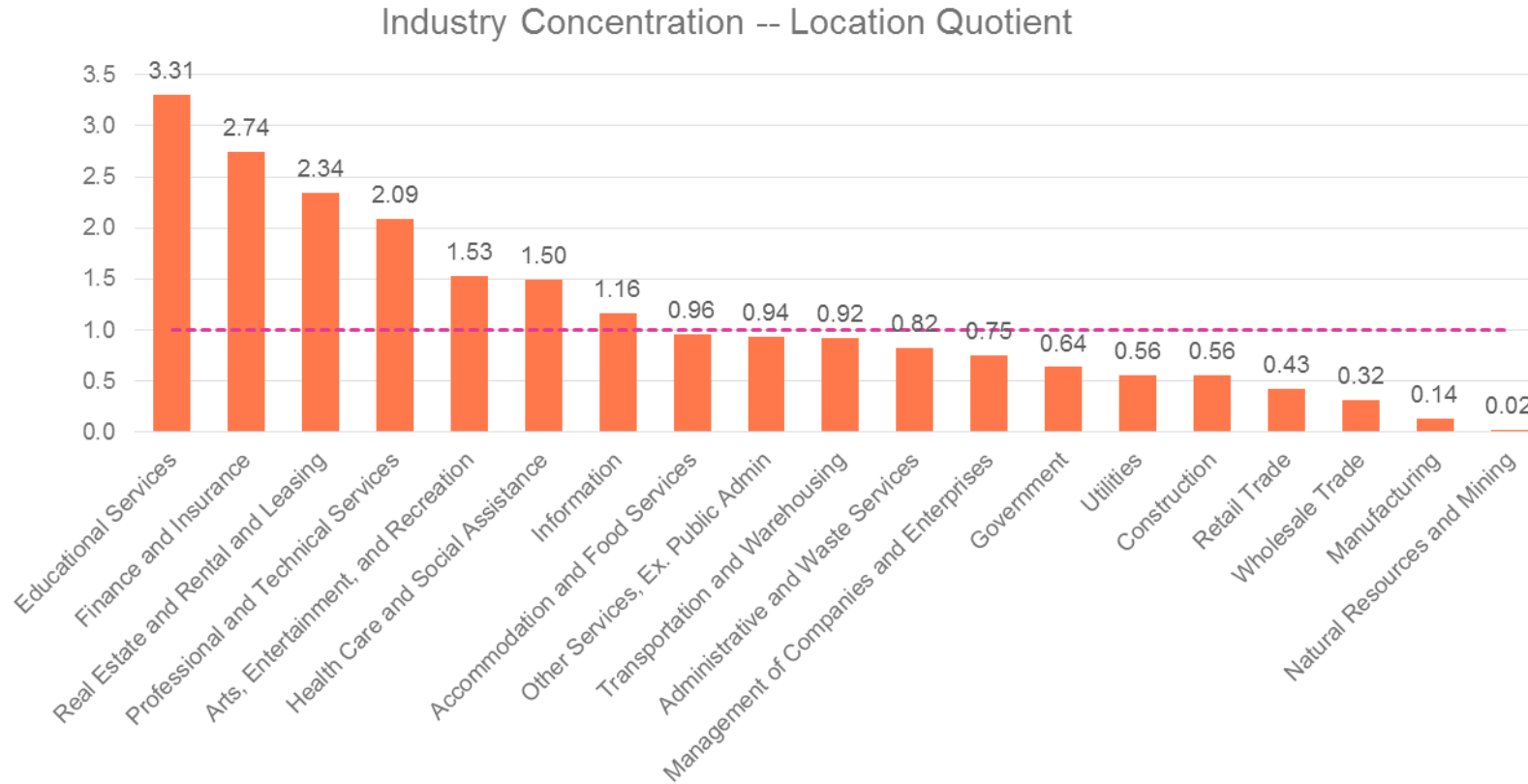
Source: Bureau of Economic Analysis (BEA), Massachusetts Executive Office of Labor and Workforce Development (DWD), BPDA Research Division Analysis

Jobs by Industry

INDUSTRY	2015	%
Health Care and Social Assistance	139,911	18.5%
Professional and Technical Services	91,858	12.1%
Finance and Insurance	86,971	11.5%
Government	76,708	10.1%
Accommodation and Food Services	59,910	7.9%
Educational Services	57,534	7.6%
Administrative and Waste Services	37,274	4.9%
Real Estate and Rental and Leasing	34,591	4.6%
Retail Trade	34,142	4.5%
Other Services (except public administration)	32,762	4.3%
Transportation and Warehousing	26,037	3.4%
Construction	17,478	2.3%
Information	16,861	2.2%
Arts, Entertainment, and Recreation	16,805	2.2%
Wholesale Trade	9,862	1.3%
Management of Companies and Enterprises	8,390	1.1%
Manufacturing	7,969	1.1%
Utilities	1,894	0.3%
Natural Resources and Mining	387	0.1%
Total	757,344	100.0%

Source: U.S. Bureau of Economic Analysis, Massachusetts Executive Office of Labor and Workforce Development (EOLWD), BPDA Research Division Analysis.

Industry Concentrations



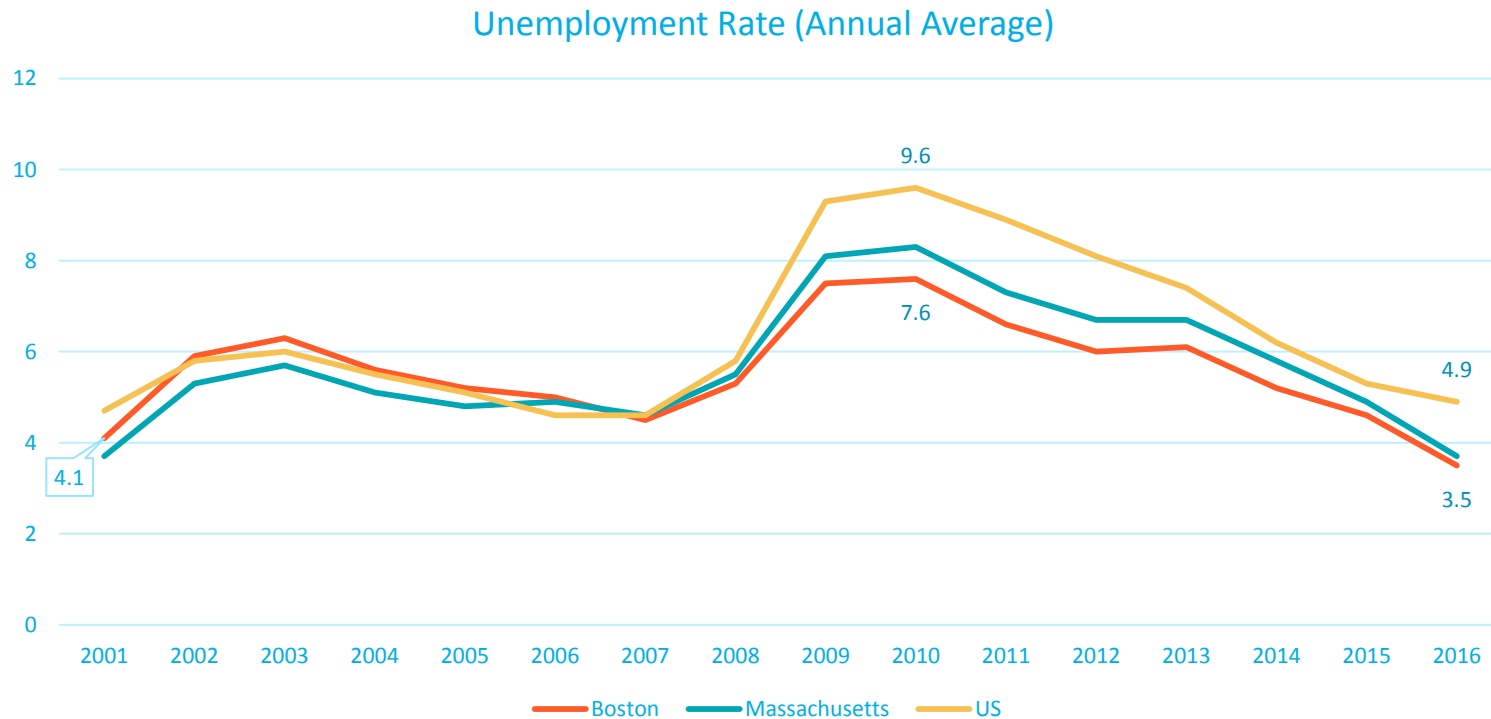
Source: U.S. Bureau of Economic Analysis, Massachusetts Executive Office of Labor and Workforce Development (EOLWD), BPDA Research Division Analysis.

Job Growth by Industry



Source: U.S. Bureau of Economic Analysis, Massachusetts Executive Office of Labor and Workforce Development (EOLWD), BPDA Research Division Analysis.

- Boston’s unemployment rate for residents has been below the state and national averages since the recession, and continues to fall to levels not seen since the late 1990s.
- Monthly unemployment in Boston in the last 3 months of 2016 averages 2.5%.



Source: U.S. Bureau Labor Statistics (BLS), Massachusetts Executive Office of Labor and Workforce Development (EOLWD), BPDA Research Division Analysis.

- Even as Boston's economy thrives, residents are lagging behind non-residents in their representation in the highest paying sectors.
- A goal of Imagine Boston 2030 is to lay out strategies through which Boston's economic prosperity can be shared more broadly.

	MEDIAN INCOME AMONG FULL-TIME, FULL-YEAR WORKERS	SHARE OF EMPLOYMENT	
		BOSTON RESIDENTS	NON-RESIDENTS
Finance and Insurance	\$88,000	8.1%	12.9%
Professional and Technical Services	\$80,000	11.1%	12.8%
Utilities	\$72,000	0.4%	0.6%
Information	\$70,000	2.1%	2.6%
Government	\$65,000	5.8%	6.6%
Educational Services	\$60,000	12.2%	9.6%
Construction	\$58,000	3.6%	5.5%
Real Estate and Rental and Leasing	\$55,000	2.4%	2.3%
Manufacturing	\$55,000	2.3%	3.2%
Health Care and Social Assistance	\$54,000	19.3%	18.2%
Transportation and Warehousing	\$50,000	3.2%	5.0%
Wholesale Trade	\$50,000	1.2%	1.8%
Arts, Entertainment, and Recreation	\$45,000	2.0%	1.4%
Retail Trade	\$40,000	7.6%	4.7%
Other Services	\$40,000	4.8%	3.3%
Administrative and Waste Services	\$37,000	4.1%	3.8%
Accommodation and Food Services	\$30,000	9.5%	5.5%
Total	\$60,000	100.0%	100.0%

27.4% of residents employed in 5 highest paying sectors, compared to 35.5% of non-residents.

28.0% of residents employed in 5 lowest paying sectors, compared to 18.6% of non-residents.

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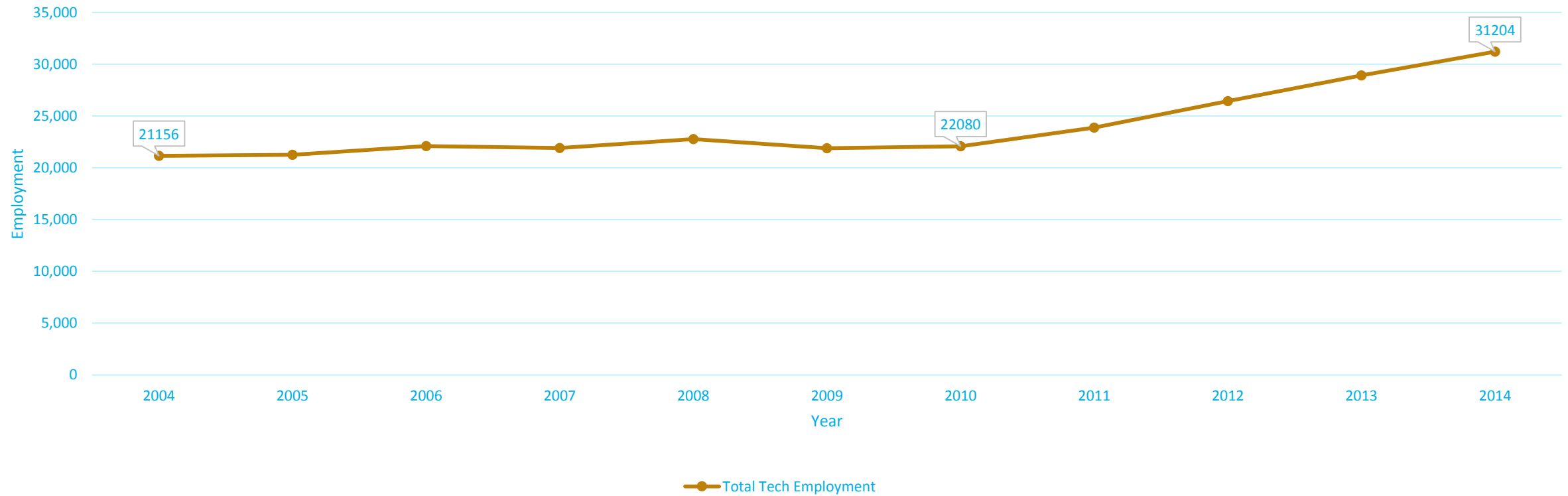
High Tech Sector



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Total High Tech Industry Employment

The Total Growth of High Tech Industry Sector Since 2004



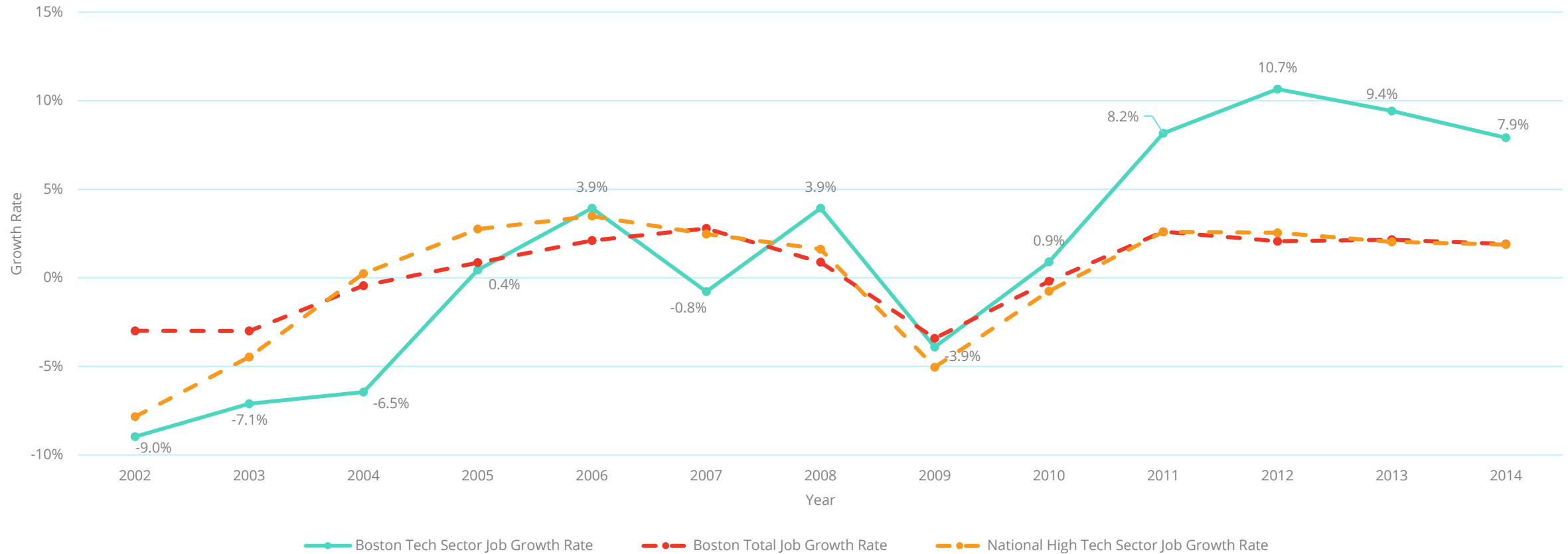
Source: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages, 2002 - 2014, BPDA Research Division Analysis.

Total High Tech Industry Employment

- Definition of “High Tech” industries: Computer and Electronics Manufacturing, Pharmaceutical & Medicine Manufacturing, Aerospace Product and Parts Manufacturing, Software Publishers, Data Processing, Hosting, and Related Services, Other Information Services (including Internet Publishing and Broadcasting and Web Search), Architectural, Engineering and Related Services, Computer Systems Design and Related Services, and Scientific Research and Development Services.
- These industries have at least 25% of their workers in a STEM (Science, Technology, Engineering and Mathematics) occupation.

Source: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages, 2002 - 2014, BPDA Research Division Analysis.

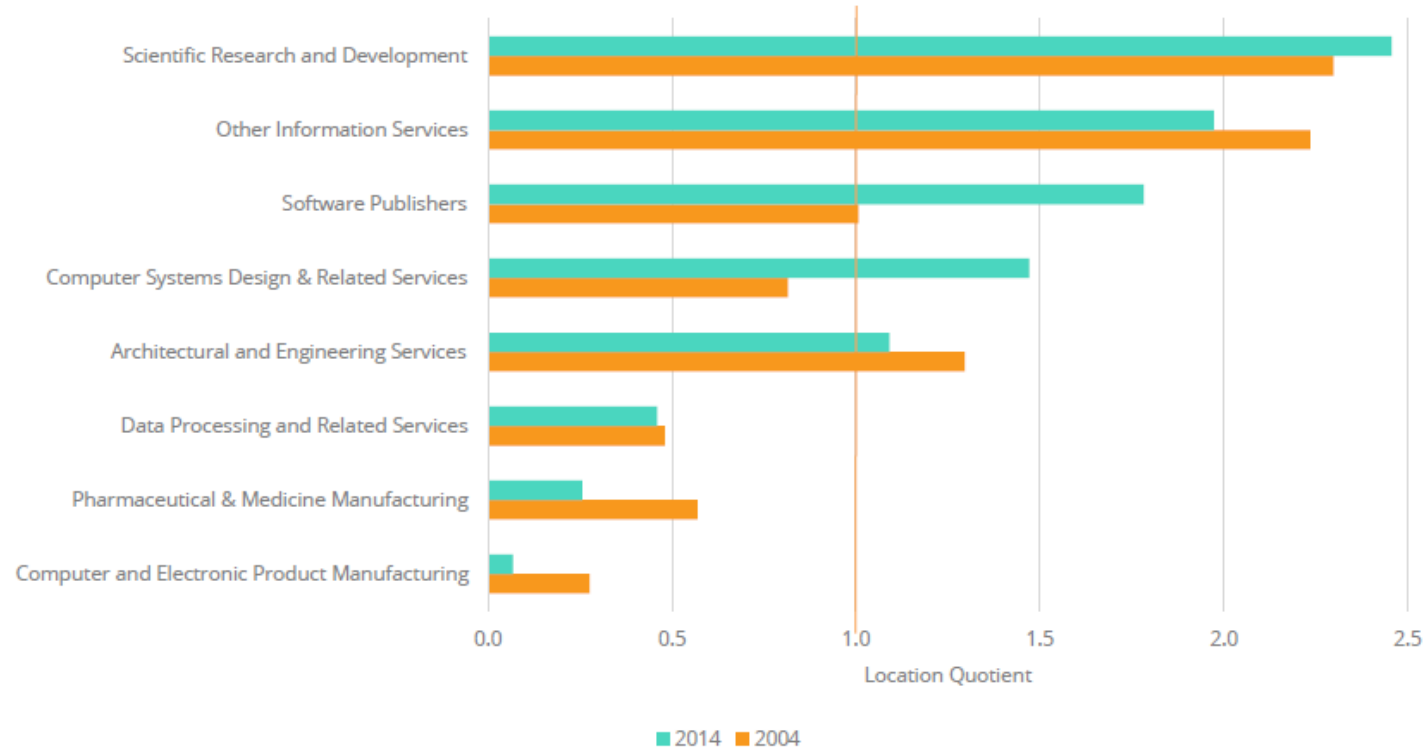
High Tech Job Growth



Source: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages, 2002 - 2014, BPDA Research Division Analysis.

- From 2004 to 2014, Boston's employment continued to be more than twice as concentrated in Scientific Research and Development as the US average.
- Over that same time period, Boston's location quotient in Computer Systems Design went from under 1 to roughly 1.5, and Software Publishing rose from 1 to 1.8.

FIGURE 4 LOCATION QUOTIENTS OF HIGH TECH SECTORS
Boston Compared to U.S.
2004 & 2014



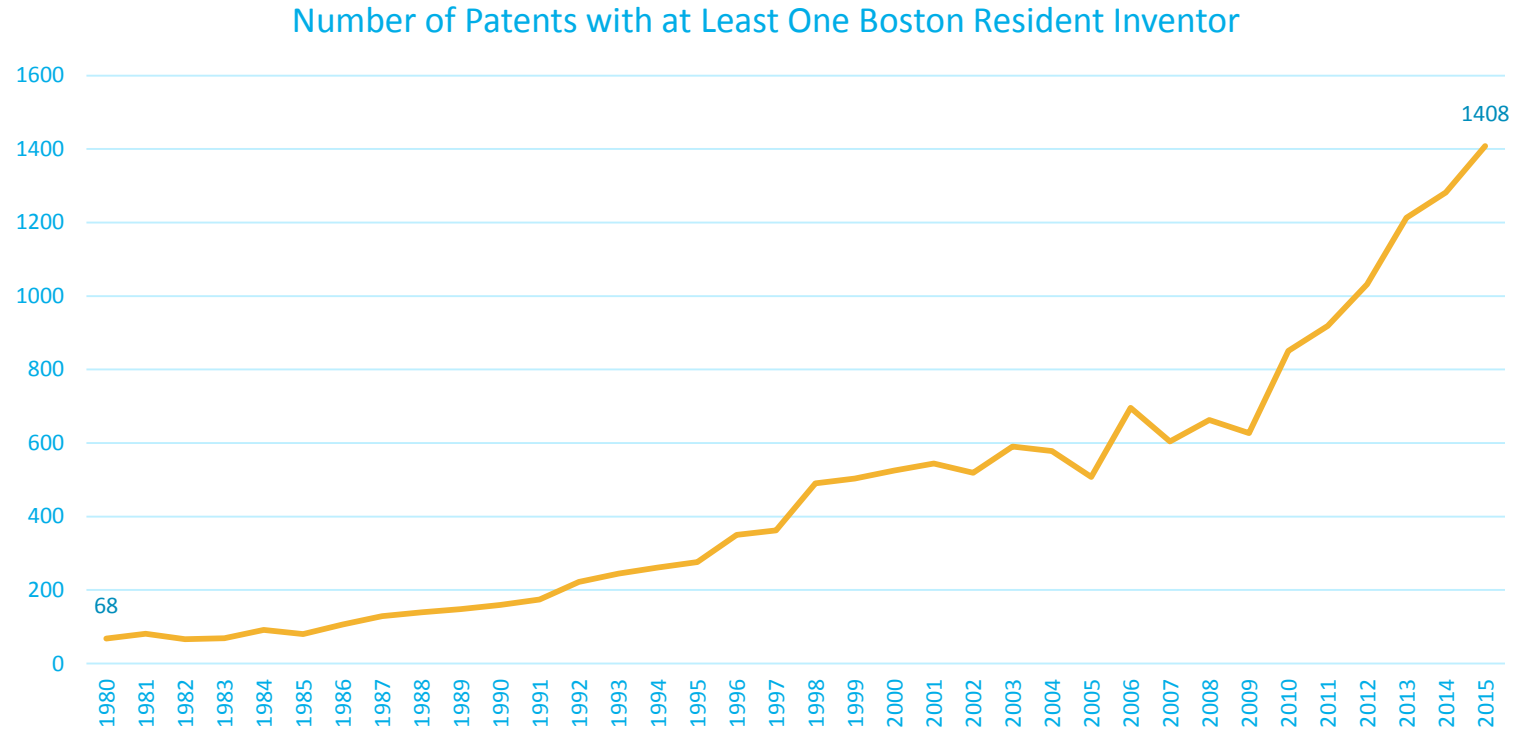
Source: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages, 2004 & 2014, BRA Research Division Analysis

Venture Capital Funding

- Over the last 20 years, Massachusetts companies had the second most venture capital funding of any state, trailing only California. Over that time period, Massachusetts companies raised 80 billion dollars.
- Biotech continues to lead the way, with Boston-based Intarcia and Cambridge-based Moderna both closing large deals in the latter half of 2016.
- Boston and Cambridge account for over half of deals, a change from an earlier era when Route 128 dominated.

Source: PwC and CB Insights MoneyTree Report Q4 and Full-Year 2016; CB Insights, “The 2014 U.S. Venture Capital Year in Review,” January 2015

Patents Issued to Boston Residents



Source: USPTO Patent Full-Text and Image Database, 1980 - 2014, BPDA Research Division Analysis.

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Health Care and Medical Research

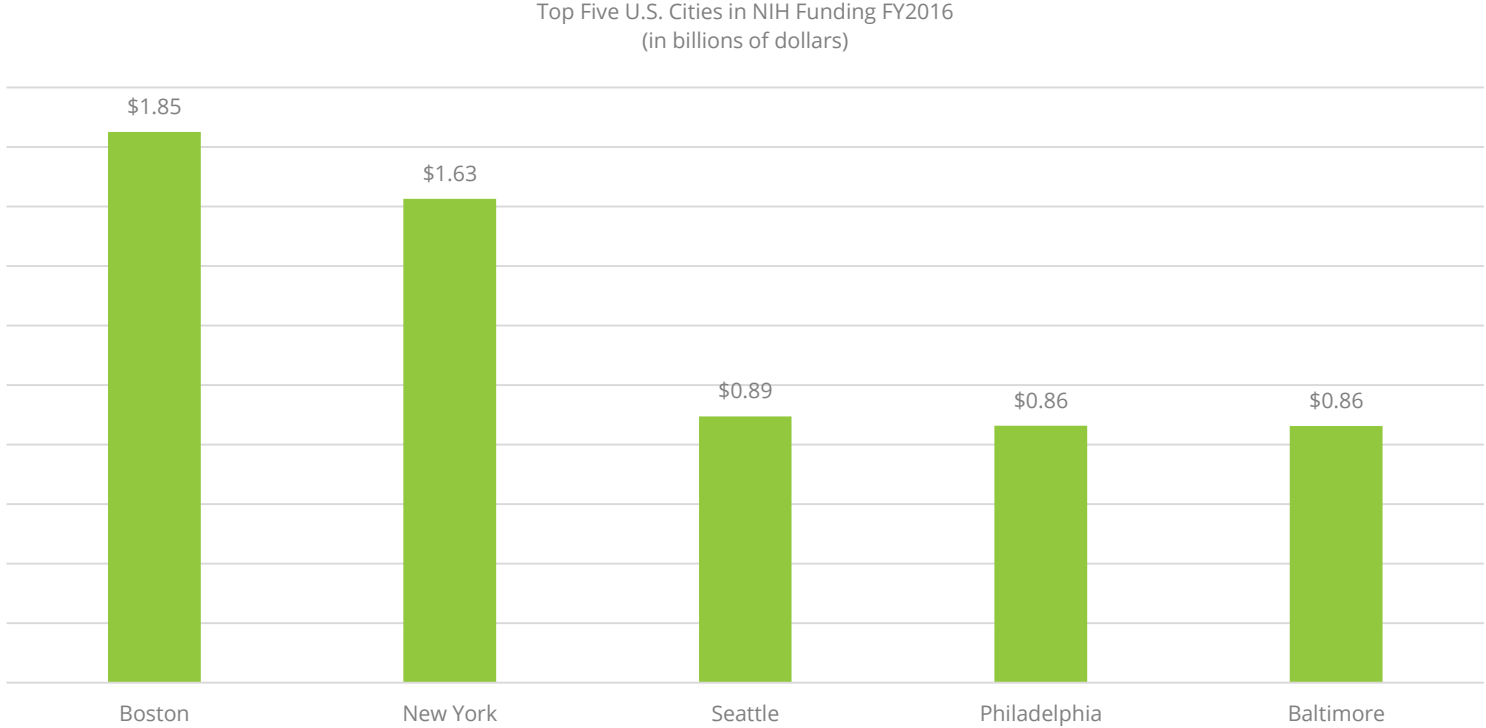


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Boston's Health Care Sector

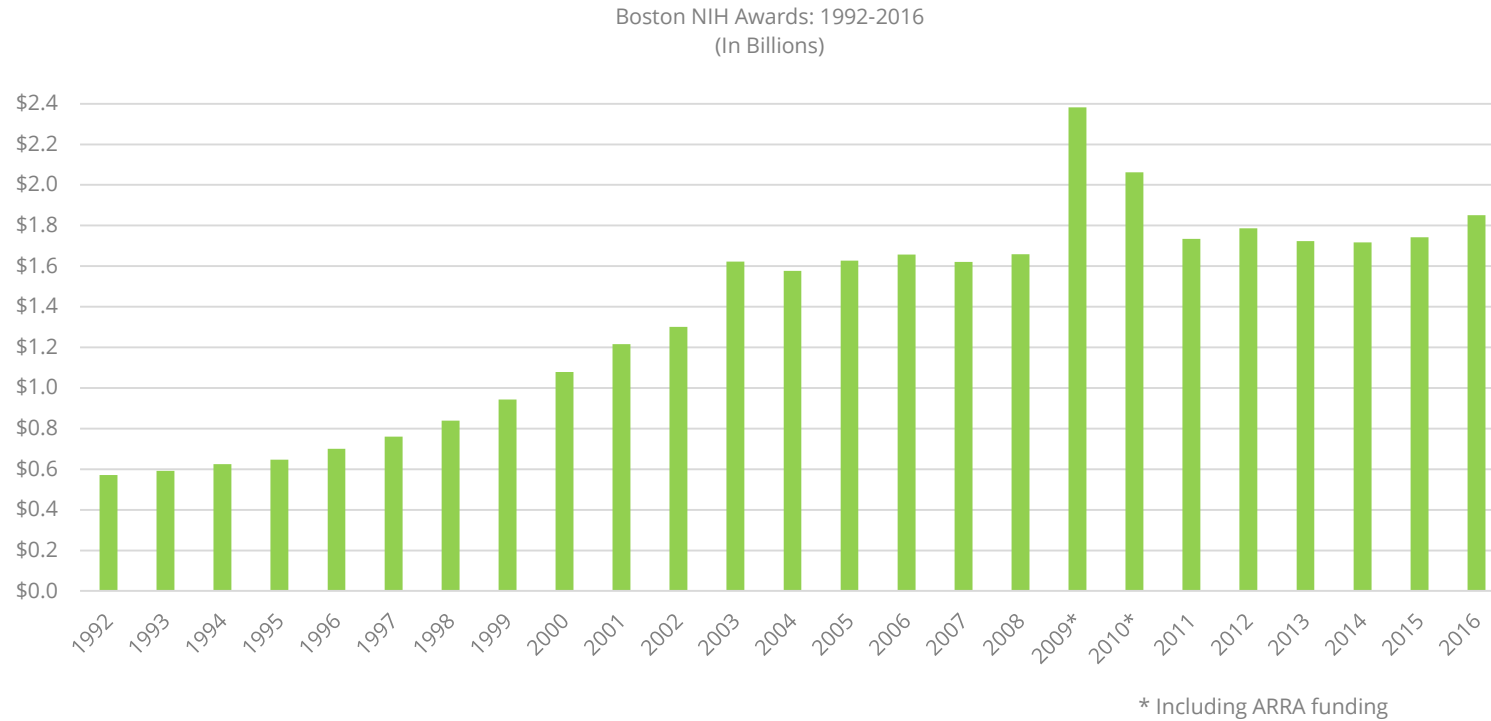
- Health Care and Social Assistance is Boston's largest sector, employing 139,911 people.
- Five of Boston's 10 largest employers are hospitals (Massachusetts General, Brigham and Women's, Children's Hospital, Beth Israel Deaconess Medical Center, and Boston Medical Center)
- This large base of hospitals, along with the region's world class universities, have helped Boston become a world leader in biomedical research, both with their own research, and for-profit companies drawn to the area by their presence.

Cities Receiving Largest Amount of NIH Funding



Source: National Institutes of Health, "NIH Awards by Location and Organization," FY1992-FY2016, BPDA Research Division Analysis.

Boston's NIH Funding over the Years



Source: National Institutes of Health, "NIH Awards by Location and Organization," FY1992-FY2016, BPDA Research Division Analysis

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The Creative Economy



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Creative Industries

The BPDA list includes industries that are part of the production chain for goods and services in the following areas:

Written Media

Film

Broadcasting

Crafts

Performing Arts

Visual Arts

Architecture

Photography

Design

Advertising

Sound Recording & Music Publishing

Museums & Art Galleries

Libraries & Archives

Culture Education

Software and Internet Publishing

The following four slides list all 6-digit NAICS codes included in this updated report.

Measuring Boston's Creative Economy

- Creative employment in 2014 totaled 29,762 jobs in business establishments. This was 5.4% of Boston's total private sector payroll employment.
- An additional 6,483 people were self-employed in the creative industries. Including self-employment, Boston's Creative Economy totals 36,254 workers.
- The 29,762 workers on payrolls took home over 2.4 billion dollars combined, averaging \$81,179 in annual wages.

Boston's Creative Economy: Applied Arts

Industry Snapshot (2014)		Change in Employment (2002-2014)	
Employment	4,034		
Recent Growth (2011-2014)	13.4%		
Number of Establishments	363		
Average Wage	\$87,370		
Location Quotient	3.00		
<p>The Location Quotient (LQ) measures how the share of Boston's employment in an industry compares to the US average. An LQ over 1 means that an industry has a higher than average concentration in Boston.</p>			
Detailed Industry Employment (2014)		Industry Trends	
<ul style="list-style-type: none"> ■ Architectural Services ■ Interior Design Services ■ Graphic Design Services ■ Landscape Architectural Services ■ Industrial Design Services ■ Other Specialized Design Services ■ Drafting Services 		<ul style="list-style-type: none"> • Applied Arts (LQ of 3.00) is one of the Creative Industries most heavily concentrated in Boston. This is driven particularly by Architectural Services (LQ of 4.37) • Interior Design and Graphic Design also have strong presences in Boston. 	

Boston's Creative Economy: Heritage

Industry Snapshot (2014)		Change in Employment (2002-2014)	
Employment	2,414		
Recent Growth (2011-2014)	10.0%		
Number of Establishments	44		
Average Wage	\$40,201		
Location Quotient	3.70		
<p>The Location Quotient (LQ) measures how the share of Boston's employment in an industry compares to the US average. An LQ over 1 means that an industry has a higher than average concentration in Boston.</p>			
Detailed Industry Employment (2014)		Industry Trends	
		<ul style="list-style-type: none"> • Boston's share of employment in Heritage institutions is 3.7 times the national level. • Museums and Historical Sites are at the heart of Boston's tourism economy, and employment has grown in both industries. 	

Boston's Creative Economy: Performing Arts

Industry Snapshot (2014)		Change in Employment (2002-2014)	
Employment	3,329		
Recent Growth (2011-2014)	7.3%		
Number of Establishments	118		
Average Wage	\$36,825		
Location Quotient	2.15		
<p>The Location Quotient (LQ) measures how the share of Boston's employment in an industry compares to the US average. An LQ over 1 means that an industry has a higher than average concentration in Boston.</p>			
Detailed Industry Employment (2014)		Industry Trends	
		<ul style="list-style-type: none"> • Boston's Performing Arts attractions are headlined by Theater Companies, Musical Groups, and Dance Companies. • Promoters also make up a large share of employment in the sector, and most are associated with specific facilities, a change from a decade ago. 	

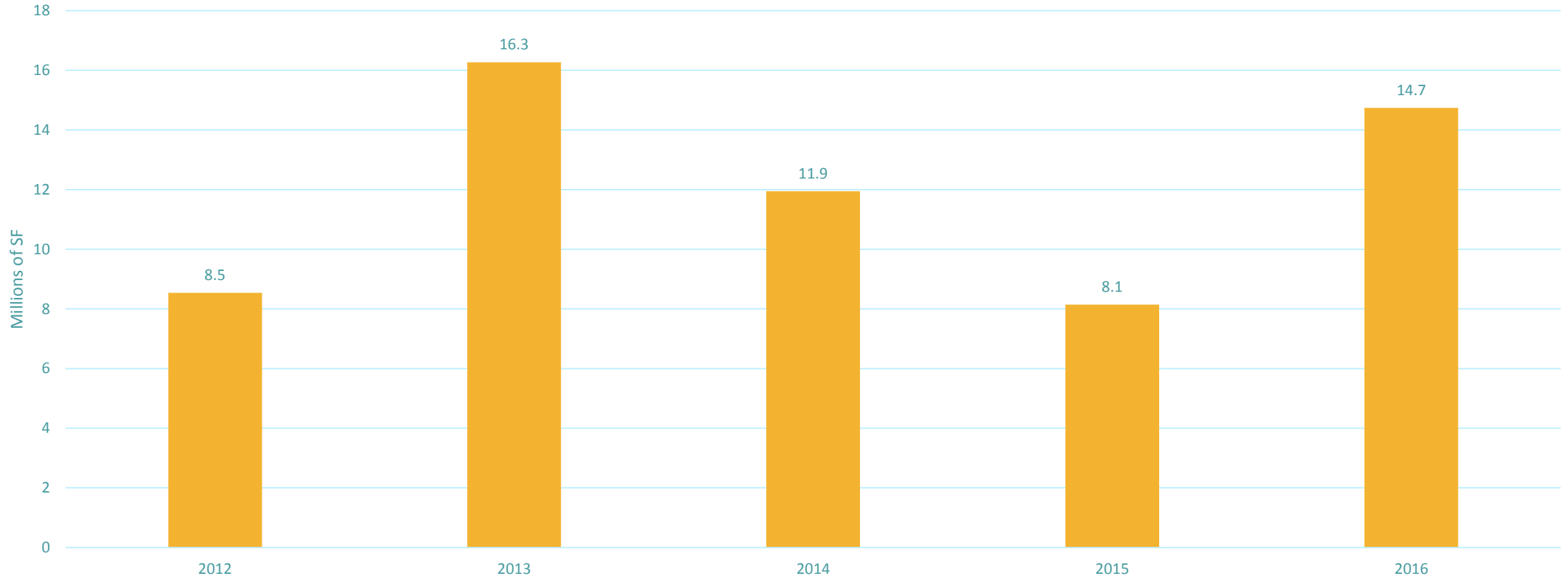
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Boston's Building Boom



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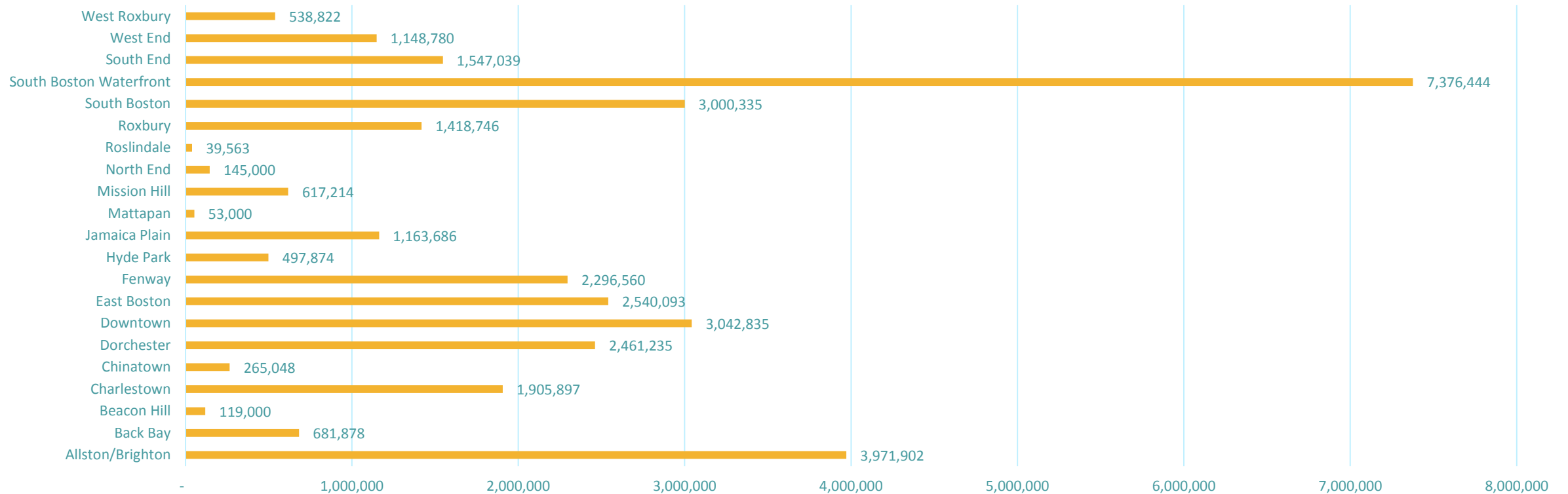
BPDA Board Approved Projects



Source: Boston Planning and Development Agency Project Pipeline, BPDA Research Division Analysis.

BPDA Board Approved Projects by Neighborhood

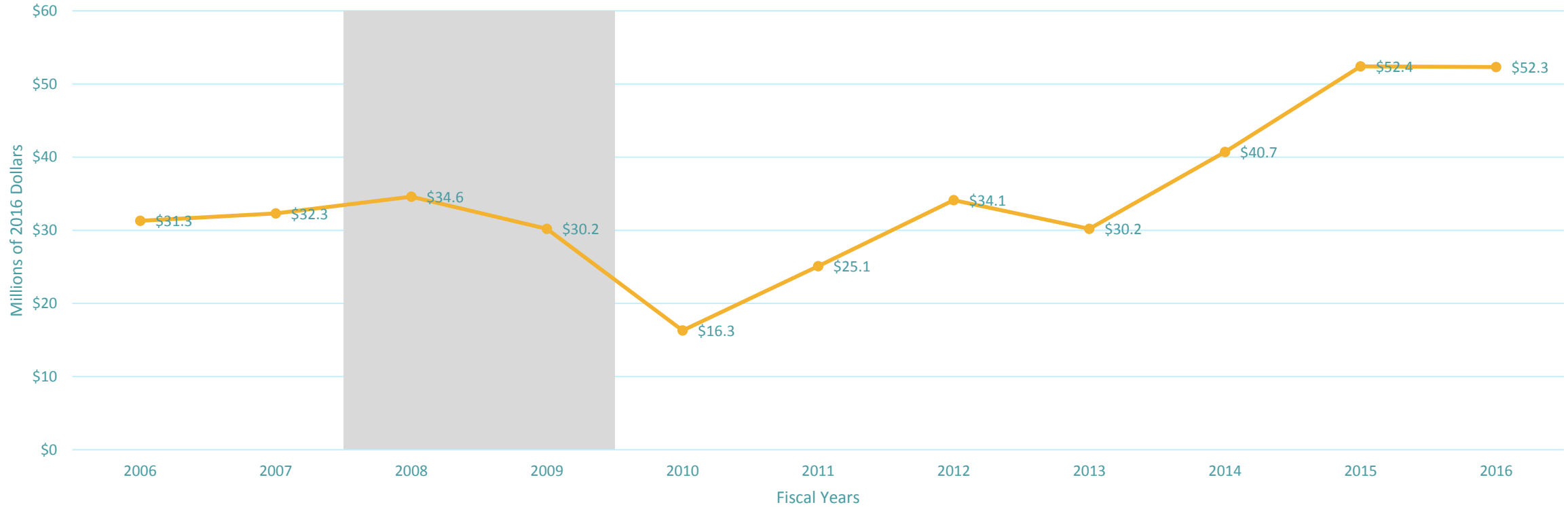
Total SF of Development, 2014 - 2016



Source: Boston Planning and Development Agency Project Pipeline, BPDA Research Division Analysis.

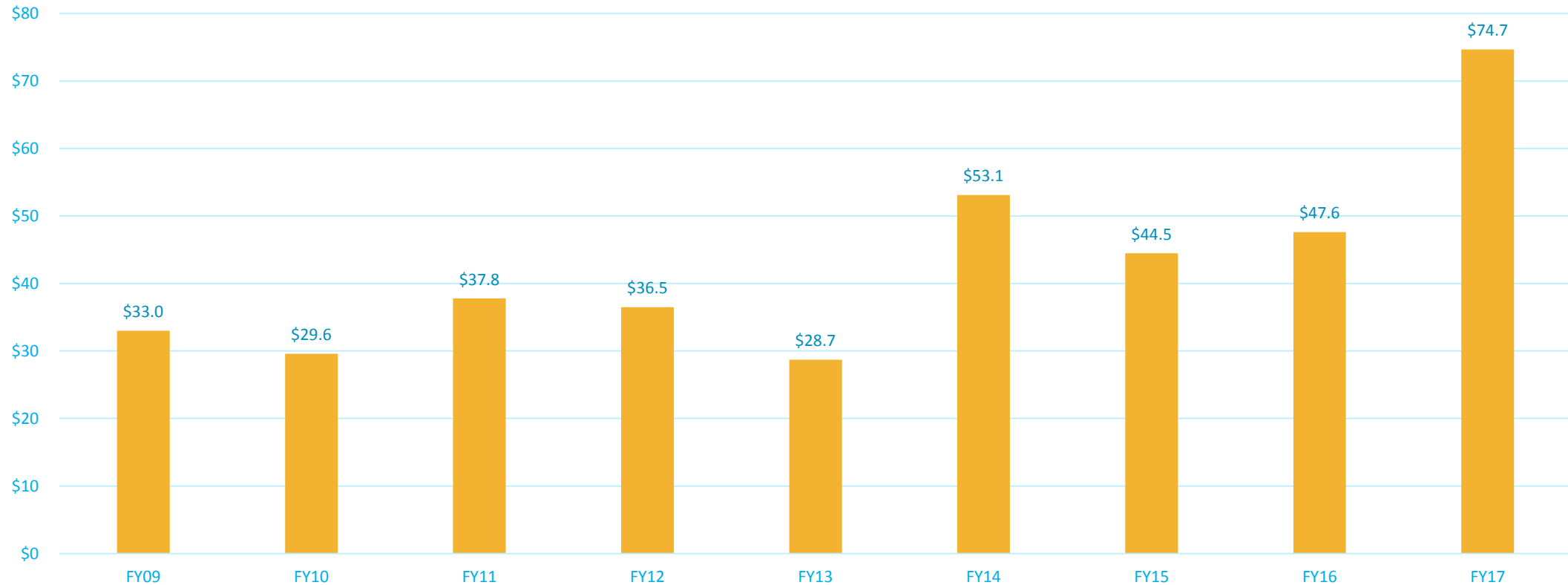
Building Permit Revenue

Building Permit Revenue



Source: City of Boston Bond Issue 2017, BPDA Research Division Analysis.

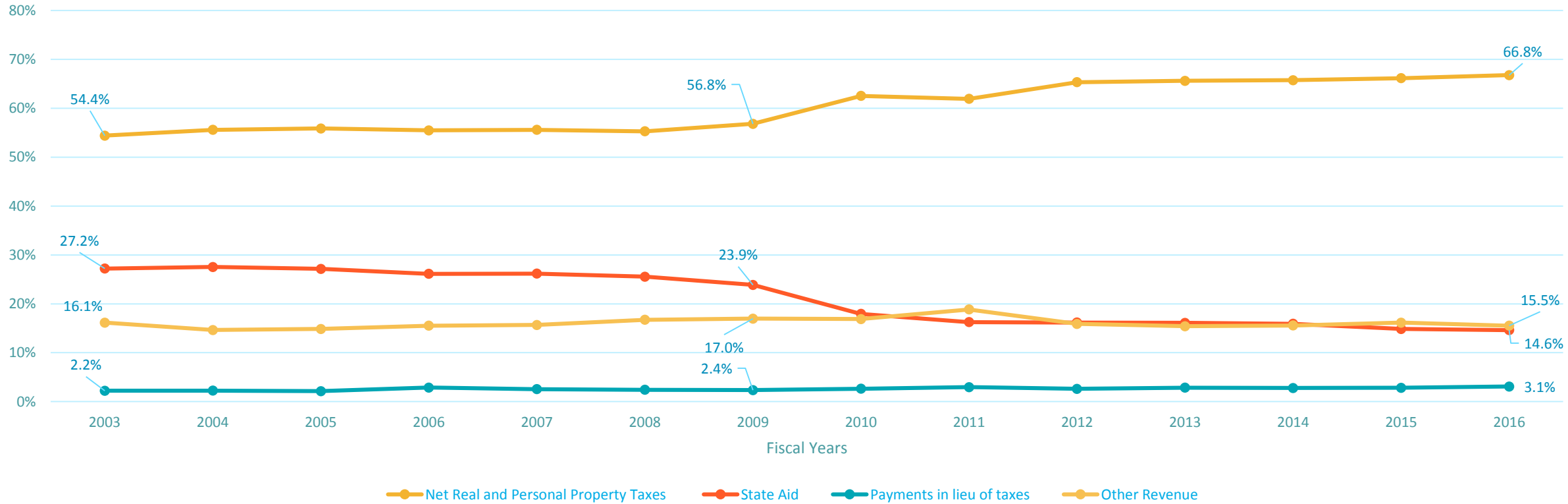
New Property Tax Levy Growth



Source: City of Boston Assessing Department, "Property Tax Facts and Figures: Fiscal Years 2009 to 2017"

City of Boston Revenues

City of Boston Revenue, 2003 - 2016



Source: City of Boston, Comprehensive Annual Financial Reports, 2000 - 2016, BPDA Research Division Analysis.