



Boston's Economy 2019

Annual Report Produced by BPDA Research Division



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I.

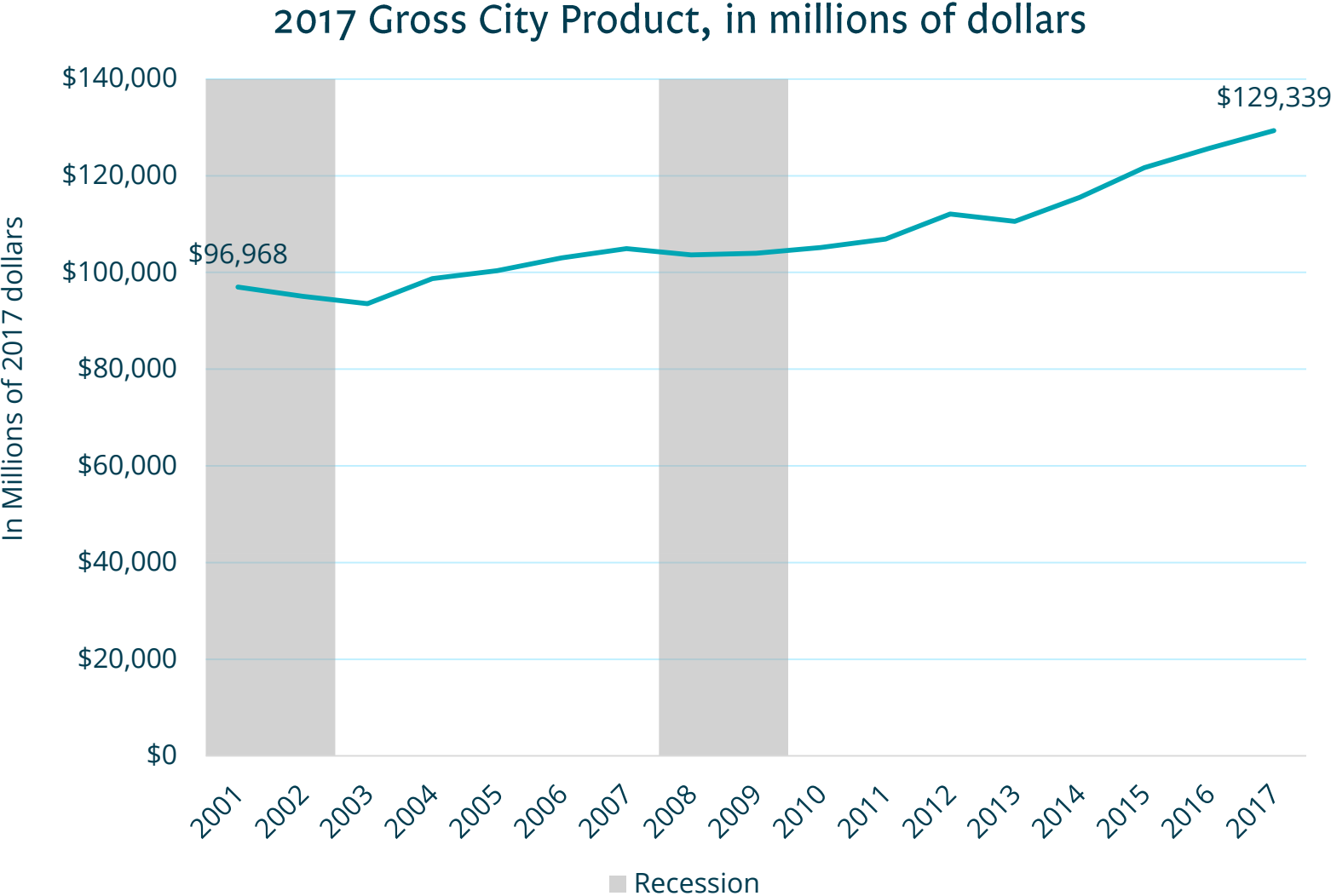
Economic Overview



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Boston generated \$129 billion in Gross City Product (GCP) in 2017

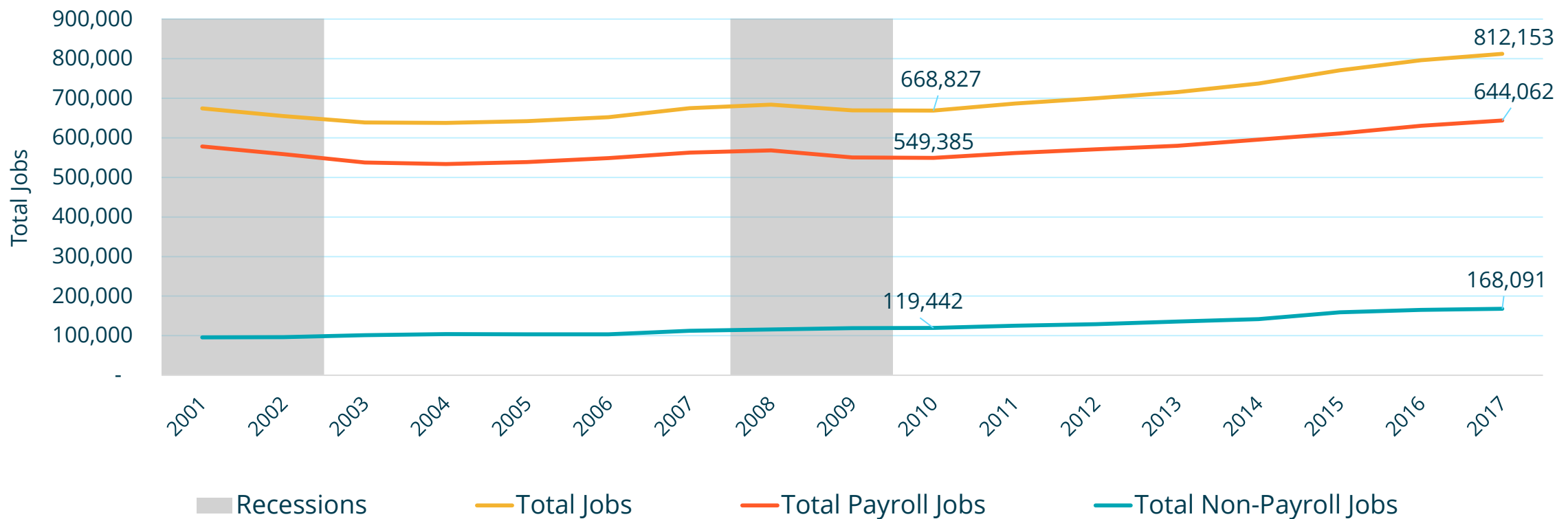
- GCP is a measure of the value of all goods and services produced in Boston.
- Boston’s economy grew 2.9% from 2016 to 2017, higher than Massachusetts (2.6%) and the U.S. (2.2%).
- Boston’s share of statewide economic output increased from 21.7% in 2010 to 23.8% in 2017



Jobs in Boston top 800,000

- Since 2010, Boston has added 143,000 jobs, including almost 95,000 payroll jobs
- Non-payroll jobs grew on average by 5.0% a year since 2010, while payroll jobs grew by 2.3%

Boston Payroll and Non-Payroll Jobs, 2001 to 2017



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

Health care, professional services, and finance employ the most people

- Almost 1 in 5 jobs located in Boston are in health care
- Health care, professional services, finance and insurance, and government make up over 50% of all jobs
- Educational services employment is driven by college and university labor demand

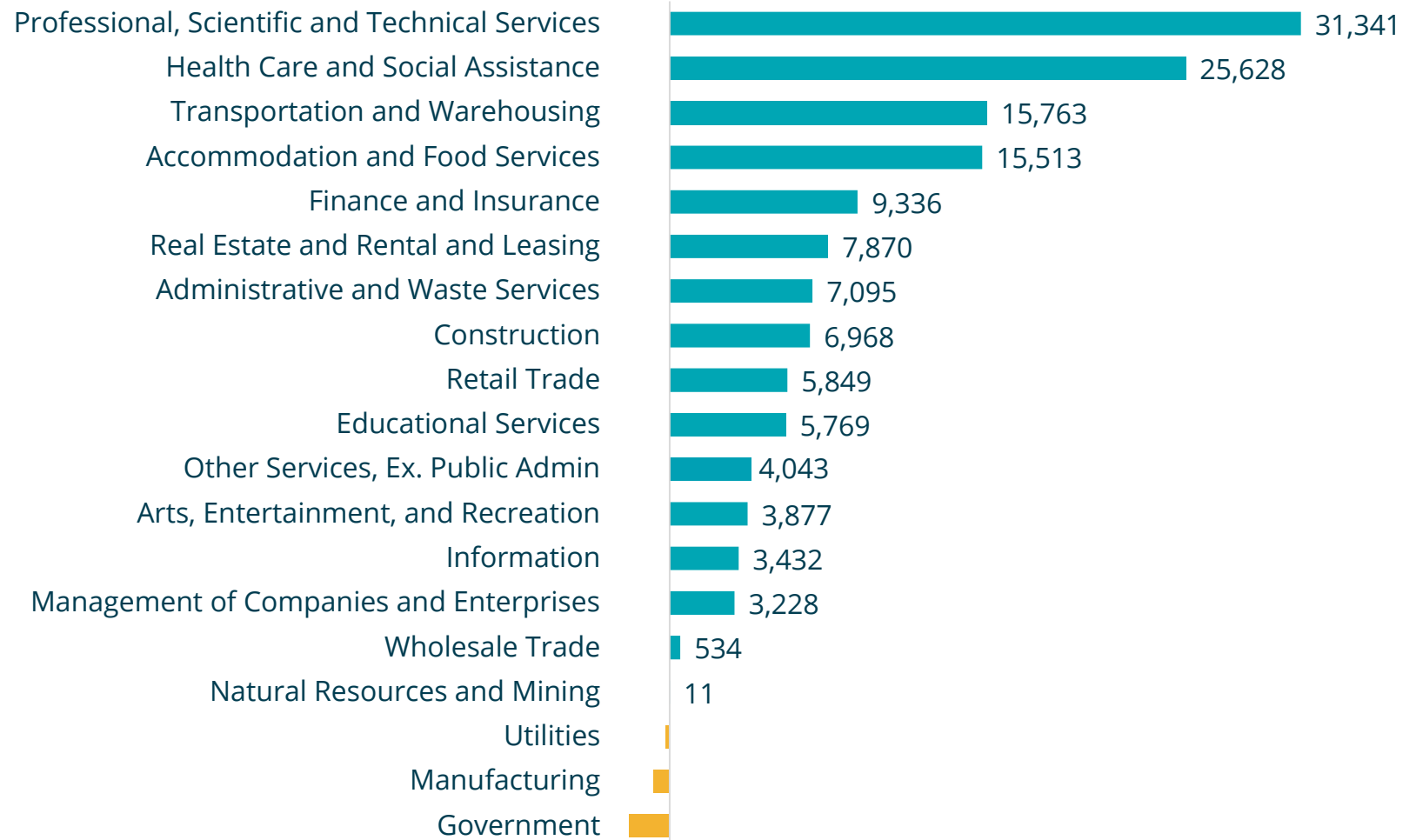
Industry	Number of Jobs	Percent of Total
Health Care and Social Assistance	148,328	18.3%
Professional, Scientific, and Technical Services	101,413	12.5%
Finance and Insurance	94,329	11.6%
Government	75,807	9.3%
Accommodation and Food Services	64,897	8.0%
Educational Services	57,845	7.1%
Administrative and Waste Services	40,272	5.0%
Real Estate and Rental and Leasing	36,927	4.5%
Retail Trade	35,744	4.4%
Transportation and Warehousing	34,273	4.2%
Other Services	33,414	4.1%
Construction	20,817	2.6%
Information	19,439	2.4%
Arts, Entertainment, and Recreation	18,245	2.2%
Wholesale Trade	9,821	1.2%
Management of Companies and Enterprises	9,687	1.2%
Manufacturing	8,289	1.0%
Utilities	2,249	0.3%
Natural Resources and Mining	349	0.04%
Total	812,153	100%

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

New jobs found in both high and low wage industries

- Since 2010, professional services, health care, accommodation/food services, and transportation have accounted for 62% of new jobs
- Around 1 in 5 new jobs were in professional, science and technical services
- Government lost more than 2,500 jobs

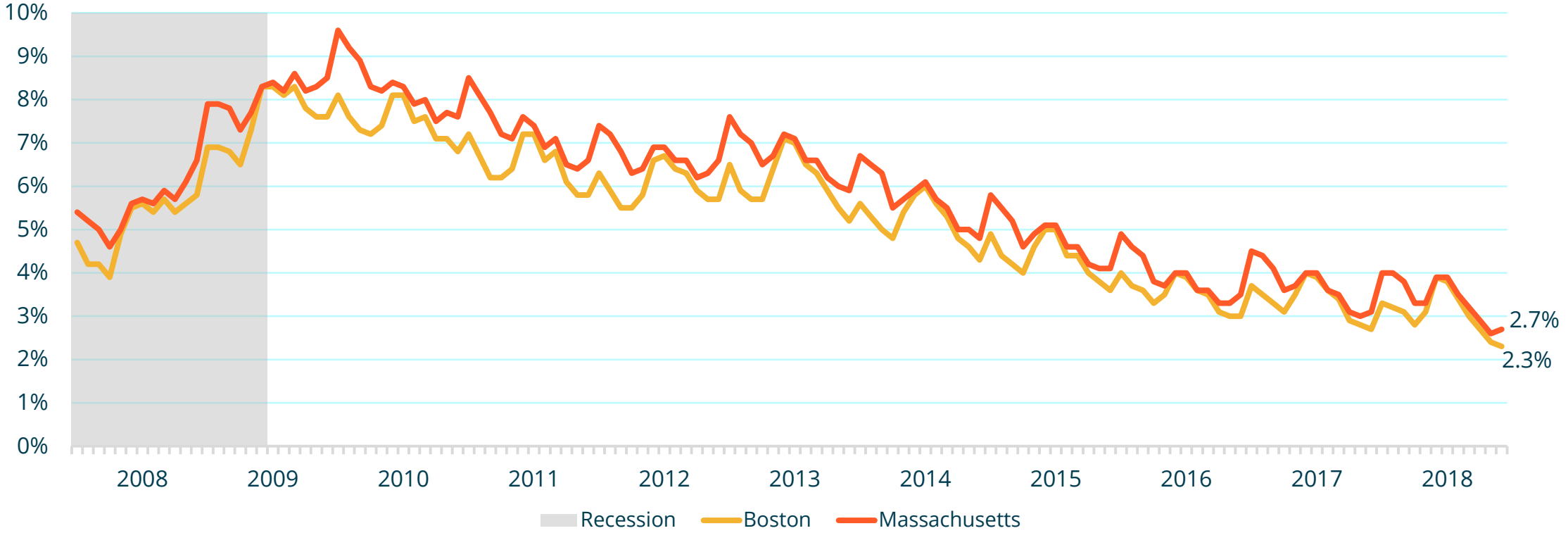
Boston's Total Job Growth, 2010 to 2017



New jobs contribute to record low unemployment

- Boston had an annual unemployment rate of 3.4 % in 2018.
- In June 2019 Boston unemployment rate was 3.1%, while U.S. unemployment rate was 3.7%

Monthly Unemployment Rate in Boston and MA, Jan. 2008- Dec. 2018

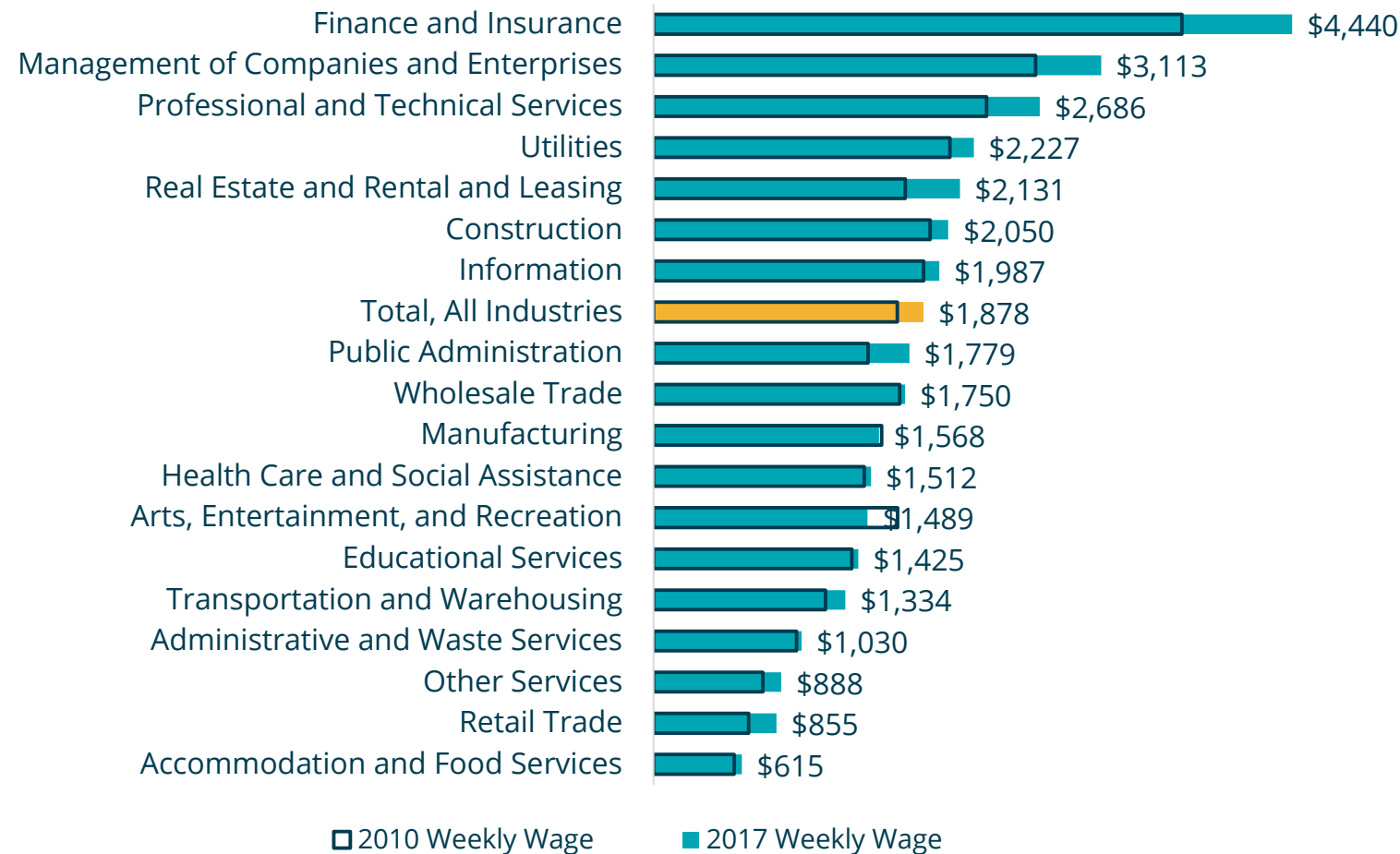


Source: Labor Force and Unemployment Data, Executive Office of Labor and Workforce Development (EOLWD), BPDA Research Division Analysis.

Wage growth has been unequal

- From 2010 to 2017, the average annual growth rate of wages grew was 1.5 percent
- From 2016 to 2017, average real wages rose by 2.5% to \$1,878 / week or \$97,656 annually
 - * Top earners skew average earnings higher
- Finance, real estate and management both gained more than \$200 per week or \$10,400 annually from 2010 to 2017
- Median annual earnings for full-time, full year workers working in Suffolk County were \$68,000

Average Weekly Wages by Industry for 2010 and 2017 (in 2017\$)



Source: Executive Office of Labor and Workforce Development (EOLWD), Employment and Wages Report (ES-202), BPDA Research Division Analysis.

Weekly Wage Includes bonuses, stock options, severance pay, travel reimbursement, tips and other gratuities, and employer contributions to certain deferred compensation plans, such as 401(k) plans. Median annual earnings from 2017 1-Year American Community Survey.

II.

Real Estate Market Trends and the Development Pipeline



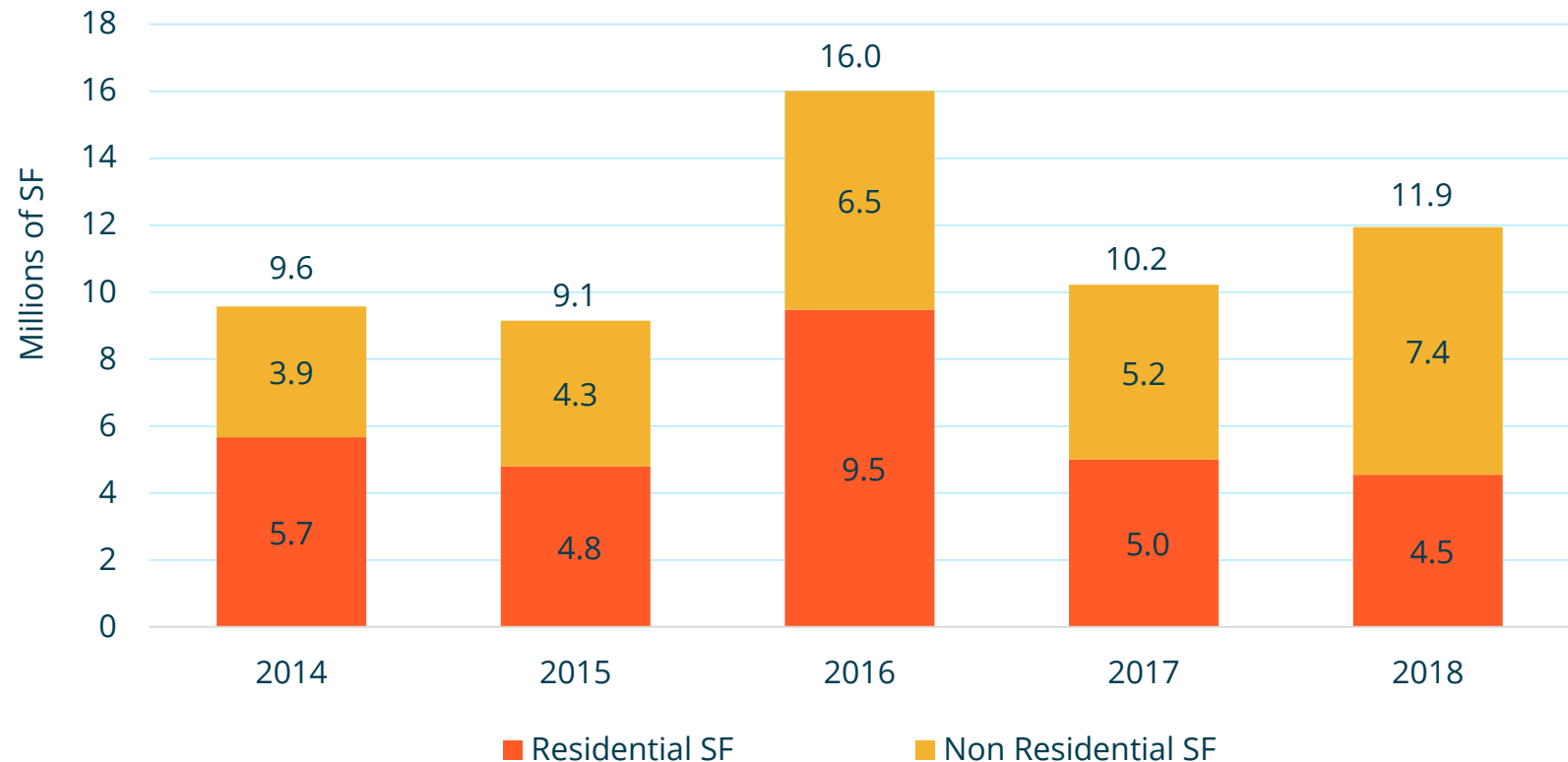
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11.9 million square feet approved in 2018

Approvals January 2014 to December 2018:

- 56.8 million SF of total projects
- 29.5 million residential SF
- 27.3 million retail, office and institutional SF
- 4,363 residential units are expected to be built of the projects approved in 2018

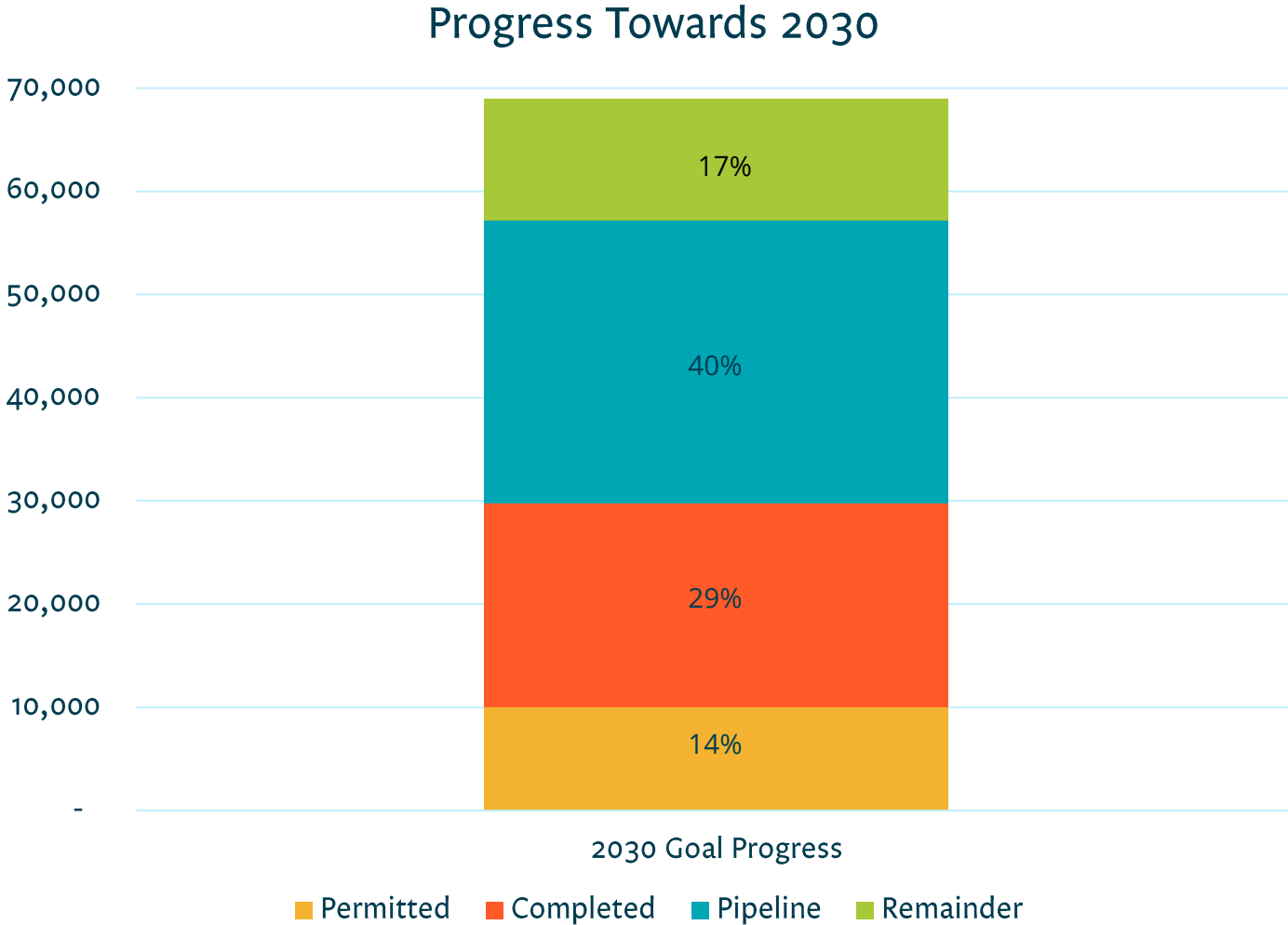
Article 80 BPDA Development Pipeline Approvals, 2014-2018



Source: BPDA Pipeline Database, BPDA Research Division Analysis

Housing supply is growing, but vacancy remains low

- The city is on track to build 69,000 housing units as presented in the Housing Boston 2030 Plan
- 3,733 new housing units were built in Boston in 2018
- In 2017 city-wide rental vacancy was 2.8 percent and owner vacancy was 1.8 percent

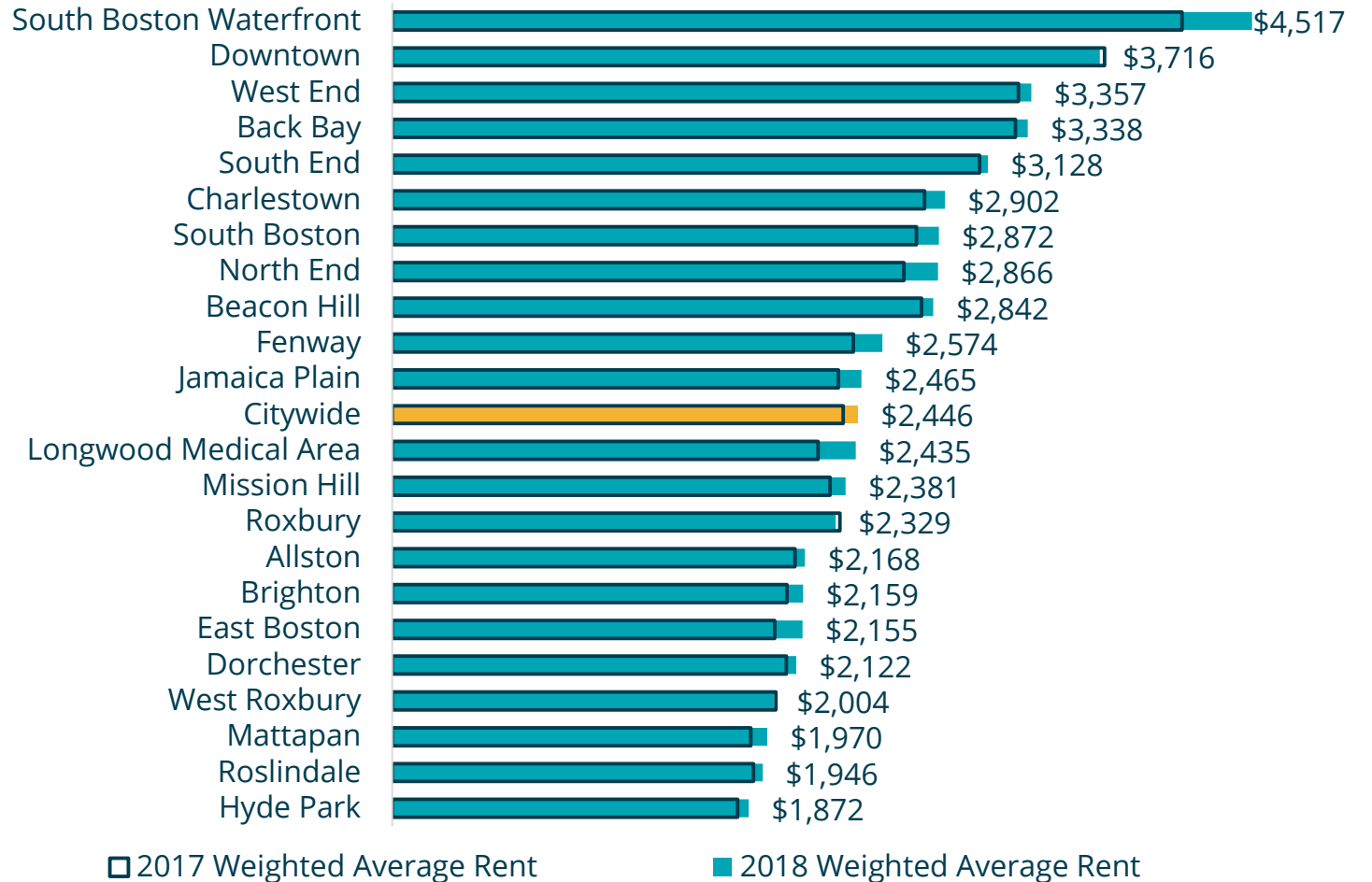


Source: City of Boston, Department of Neighborhood Development, U.S. Census Bureau, 2003-2017 1-year American Community Surveys, BPDA Research Division Analysis

Housing costs have increased

- In 2017 median citywide rent for existing tenants was \$1,774, and monthly weighted average advertised rent was \$2,446
- Monthly weighted average advertised rents increased 3.3% from 2017 to 2018
- Single family housing prices increased 4.9% in real dollars per year from 2010 to 2018 (median \$600,000)
- Condo prices increased 5.5% per year in real dollars from 2010 to 2018 (median \$635,000)
- Sales prices have increased 6.3% in real dollars for single-family and 7.9% for condos from 2017 to 2018

Monthly Weighted Average Advertised Rent



Source: City of Boston, Department of Neighborhood Development using Multiple Listing Service (MLS) and Rental Beast, January 2019. MLS rental listings are created by local real estate agents and the system helps to market and manage property listings. Rental Beast is an online database of current rental listings. Rental vacancy rate from U.S. Census Bureau, 2013-2017 5-Year American Community Surveys, BPDA Research Division Analysis

Office inventory is growing

Boston's Inventory of Commercial Office Real Estate by Neighborhood 2014-2018

- Citywide inventory grew by 6.8 million SF from 2014 to 2018
- The Financial District is home to 48.5 million SF of office space, the most of any Boston neighborhood
- Seaport grew the most from 2014 to 2018 adding nearly 3 million SF

Neighborhood	Existing Stock SF, 2018	Completed Construction SF, 2014 to 2018	Percent of Existing Stock Completed from 2014 to 2018
Allston & Brighton	3,177,500	2,145,900	68%
Back Bay	17,565,600	-	0%
Charlestown & East Boston	4,167,400	370,000	9%
Downtown	48,453,900	235,700	1%
Jamaica Plain & Roslindale & Mattapan	954,400	13,000	1%
Longwood & Fenway	8,417,800	508,200	6%
North End	2,218,500	187,200	8%
West End & Beacon Hill	6,082,400	191,700	3%
Roxbury & Dorchester	3,882,300	83,900	2%
South Boston Waterfront	13,890,600	2,978,700	21%
South Boston	486,100	-	0%
South End	3,693,000	160,000	4%
Boston Total	112,989,400	6,874,400	6%

Source: CoStar Office Statistics, BPDA Pipeline Database Research Division 2019.

Office vacancy rates are stabilizing

- Vacancy rates decreased from 10.9% in 2014 to 6.7% in 2017 before stabilizing
- Vacancy is currently lowest in Charlestown and highest in the Financial District
- Major new leases include Wayfair and DraftKings (Back Bay)

Boston’s Neighborhood Office Vacancy Rates 2018

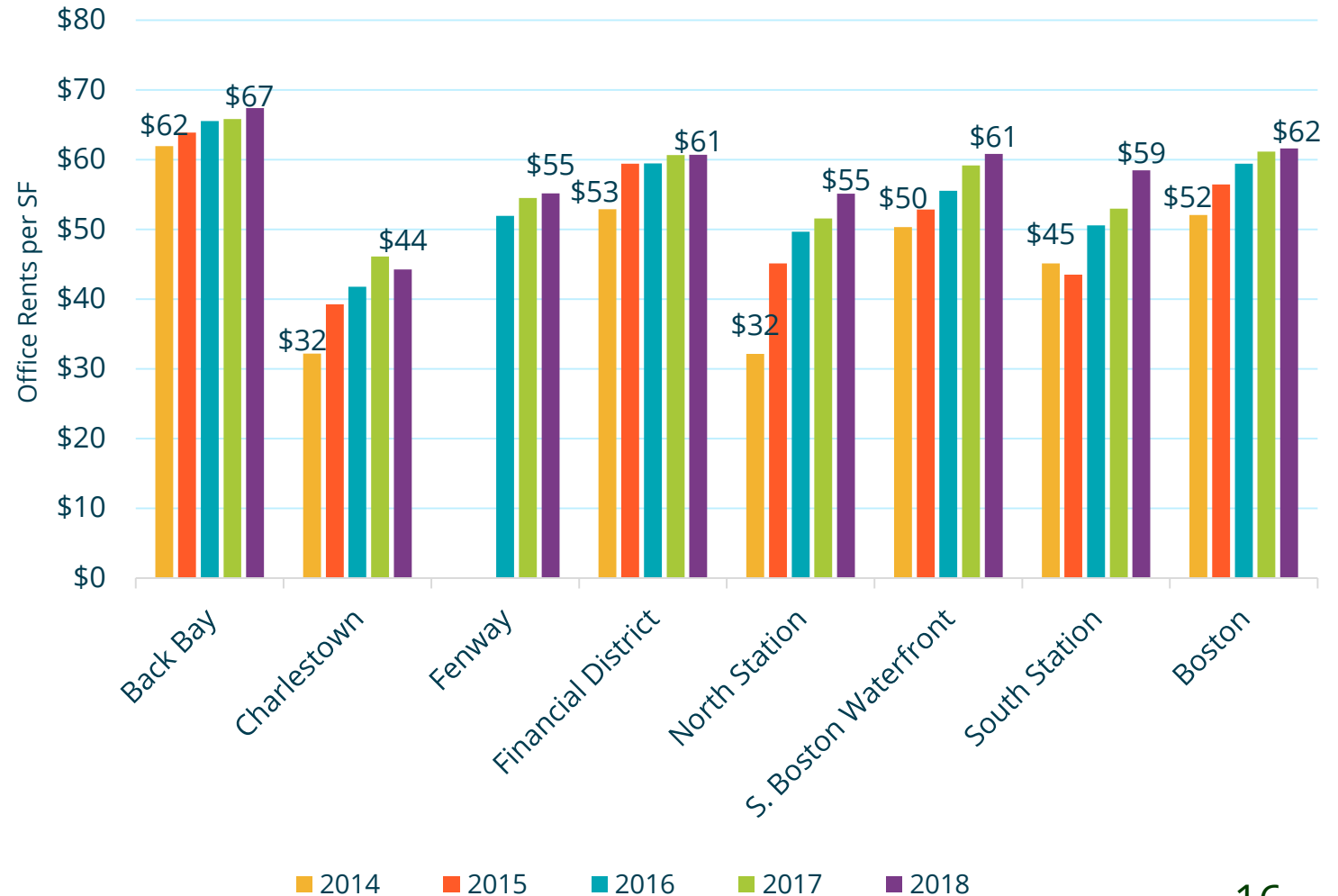
Neighborhood	2014	2015	2016	2017	2018
Back Bay	11.2%	11.0%	7.0%	8.7%	7.0%
Charlestown	11.9%	5.8%	3.7%	3.3%	0.7%
Fenway	5.5%	14.5%	2.6%	1.4%	7.1%
Financial District	12.7%	8.8%	8.8%	7.5%	7.7%
North Station	4.5%	4.3%	4.3%	2.7%	1.5%
South Boston Waterfront	7.3%	7.3%	7.3%	5.5%	6.6%
South Station	6.9%	7.4%	2.7%	2.7%	4.0%
Total Boston	10.9%	8.9%	7.5%	6.7%	6.8%

Source: 2014 and 2015 data from Colliers Meredith & Grew Market Snapshot Fourth Quarter 2014 and Colliers International Market Snapshot Fourth Quarter 2014. Crosstown Neighborhood include in Colliers data not shown here for consistency, so 2014 and 2015 neighborhoods do not sum to total. 2016 and 2017 data from Office Statistics: Boston, Jones Lang LaSalle Q4 2016, Q4 2017 and Q3 2018, BPDA Research Division Analysis.

Office rents are rising

- Average asking rents have risen \$10/SF since 2014 to \$62 citywide
- Back Bay commands the highest asking price at \$67/SF
- Charlestown has the lowest rents at \$44/SF
- North Station saw the largest increase in rent since 2014
- Cambridge average asking rent is \$86/SF

Office Asking Rents by Neighborhood 2018 Dollars



III.

Spotlight: Higher Education Industry

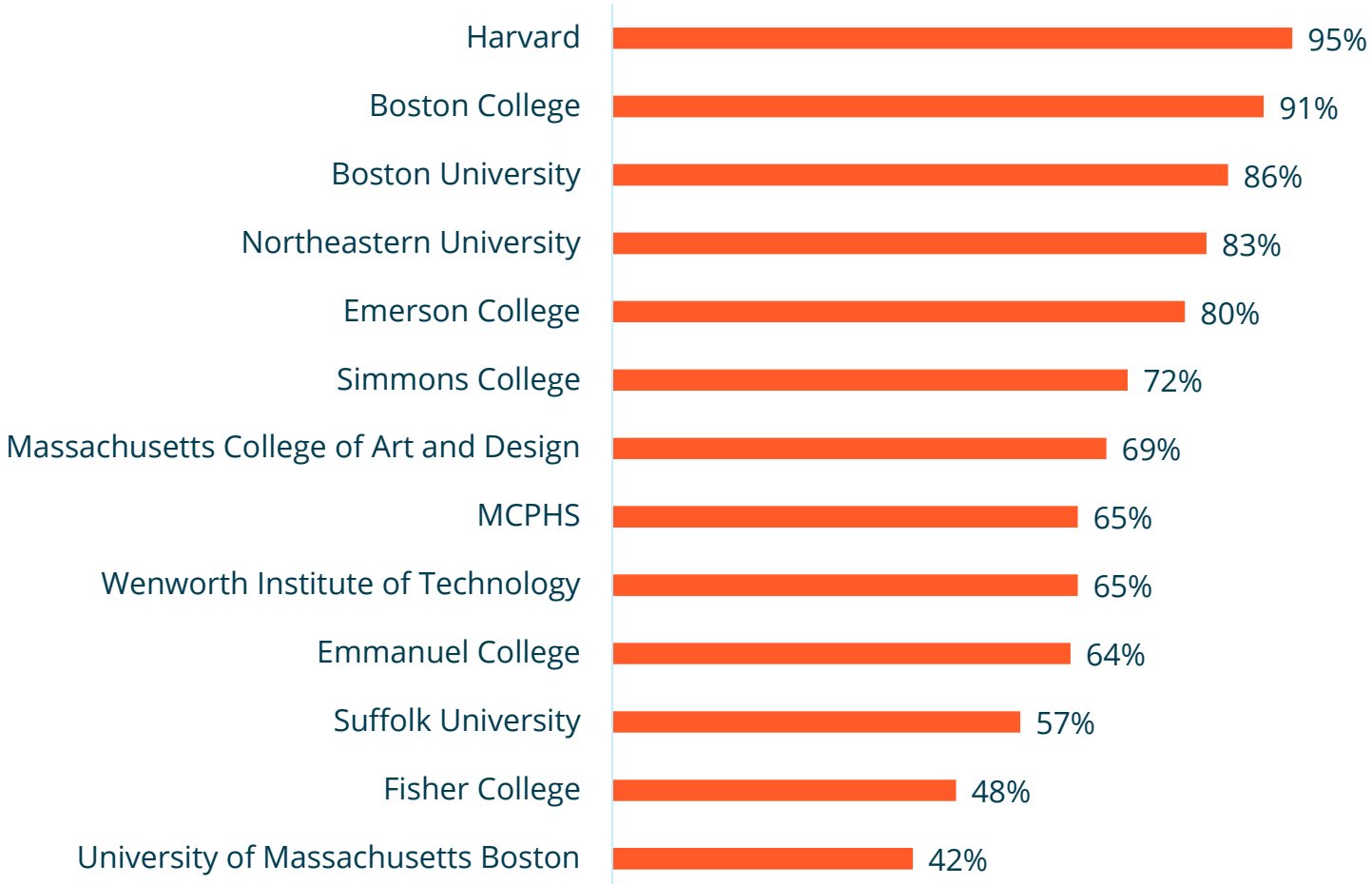


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Boston's higher education industry

- More than 30 degree-granting institutions
- Contributed \$4.6 billion or 4% of Boston's GCP in 2017

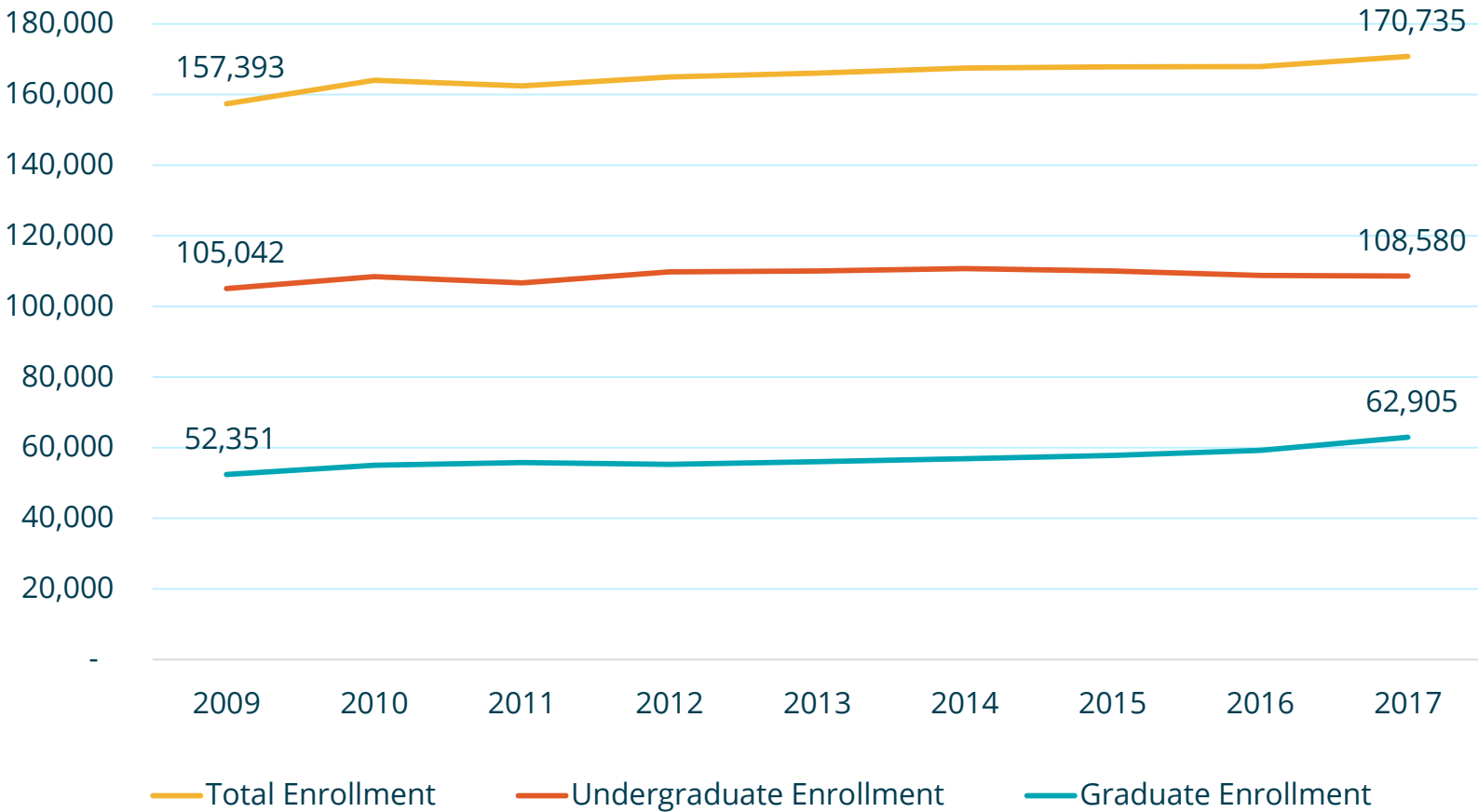
Graduation Rates for Boston 4-Year Colleges and Universities



Graduate and undergraduate enrollment

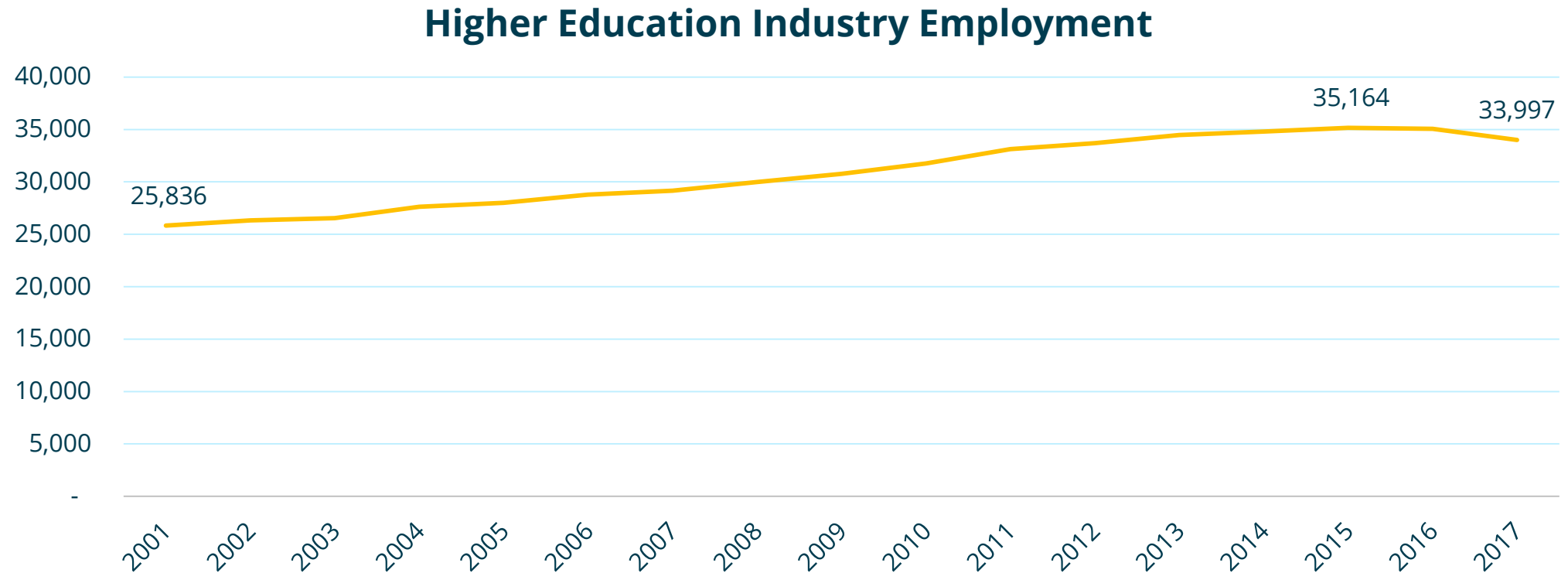
- Total enrollment in Boston has increased 8.4% from 2009 to 2017 to 170,735 students
- Undergraduate enrollment has grown 3.3% from 2009 to 2017
- Graduate enrollment has grown 20.2% from 2009 to 2017

Graduate and Undergraduate Enrollment in Boston



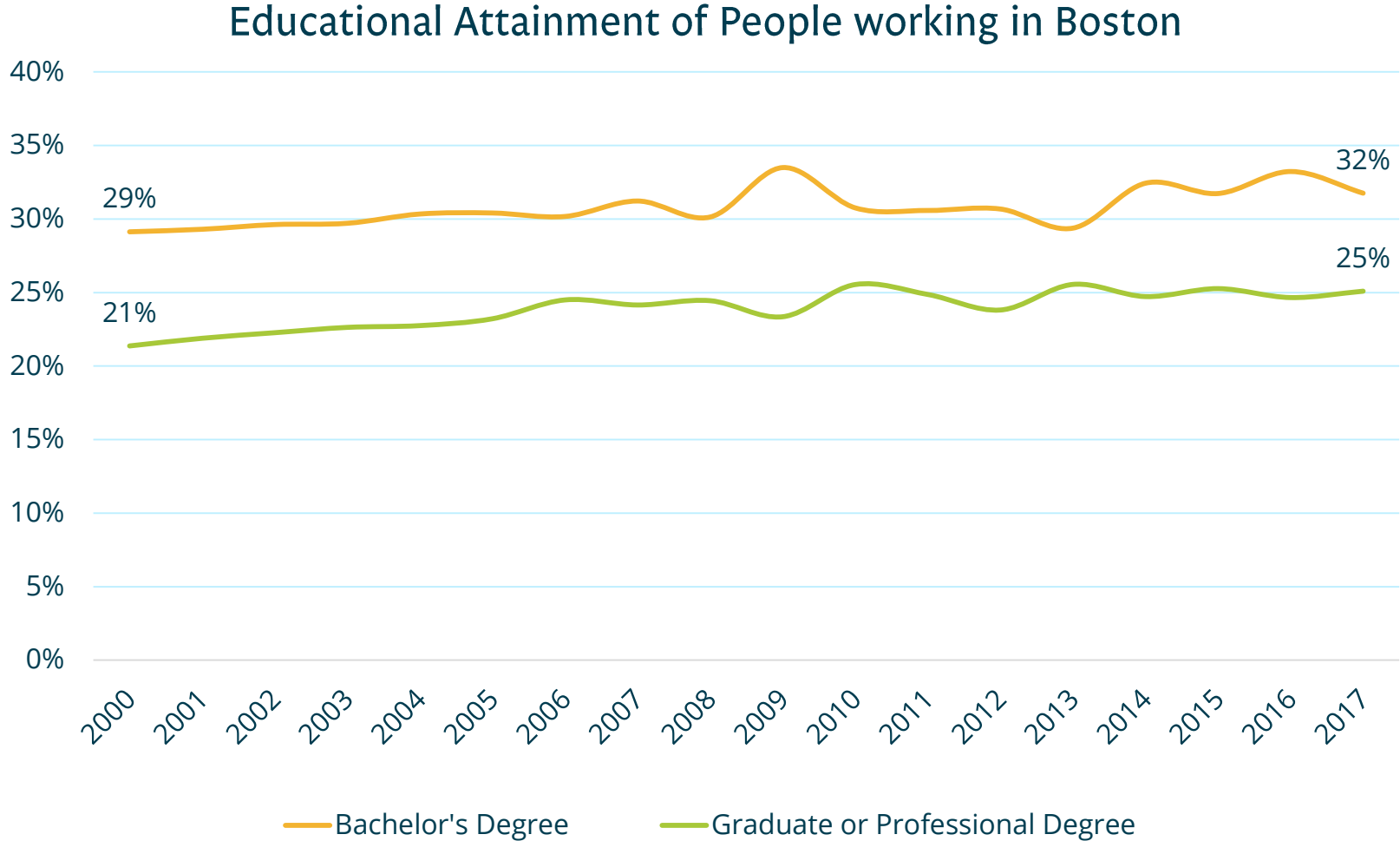
Higher education industry employment

- Boston colleges and universities employ 34,000 people (8% of total jobs)
- Employment increased 36% from 2001 to 2015 before declining 3% from 2015 to 2017



Educational attainment of Boston workers

- Boston colleges and universities contribute to the high educational attainment of Boston's workforce
- The share of workers with a Bachelor's degree or higher increased from 50% to 57% from 2000 to 2017



Source: U.S. Census Bureau, ACS 1-year estimates 2006 to 2017, PUMS, BPDA Research Division Analysis. Note: Massachusetts residents only. 2012 to 2017 data include those working in all of Suffolk County. Values 2001 to 2005 are interpolated.

Future of higher education industry in Boston

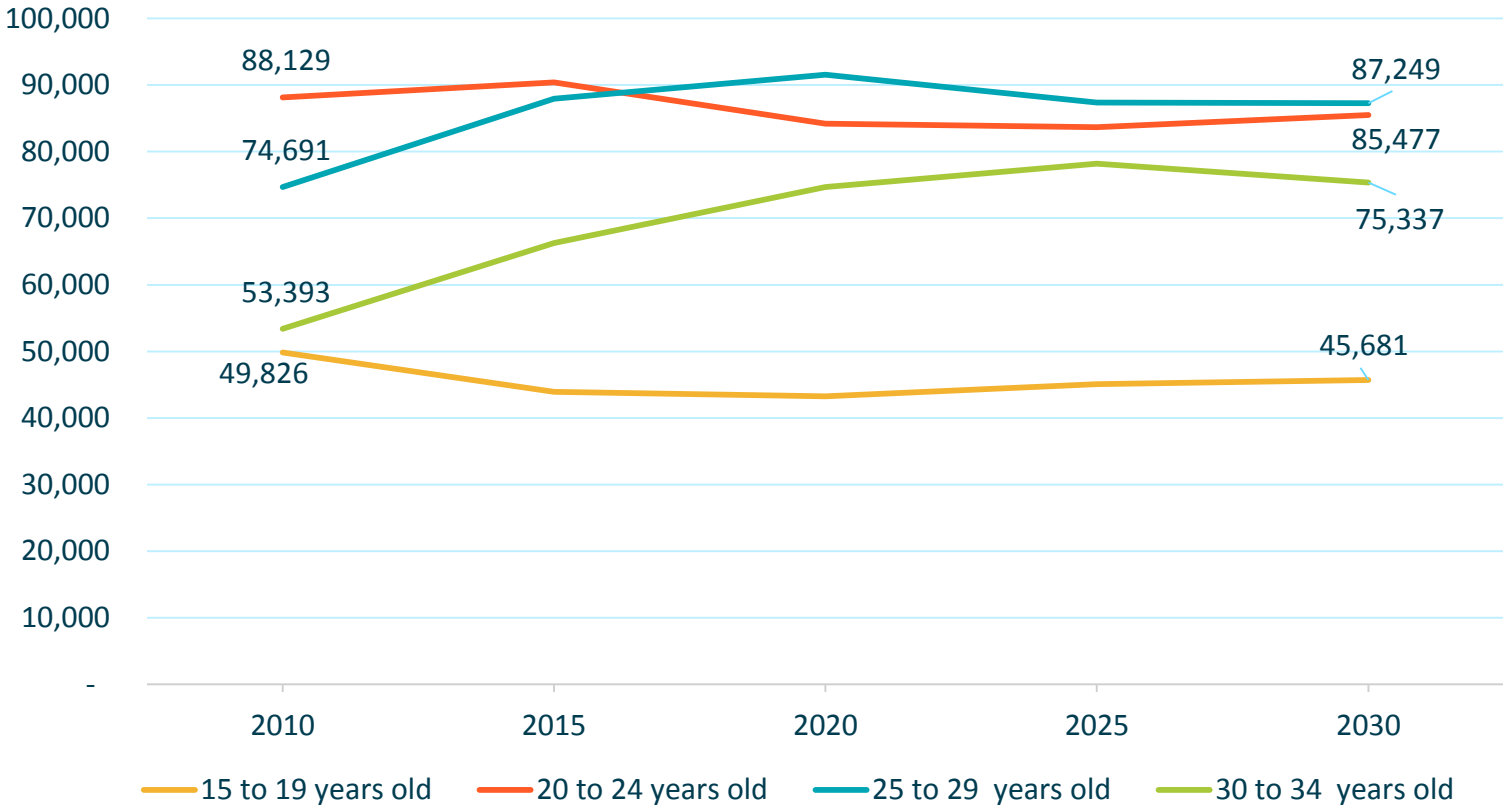
- **Challenges**

- Demographic trends decrease population base for student enrollment
- Decline in international students coming to the U.S.
- Flattening tuition and declining public appropriations

Demographic trends may decrease college enrollment

- Birth rates are down nationally and especially in New England
- Births from 2014 to 2017 in Massachusetts were 12 percent lower than from 1999 to 2002.
- Number of 15 to 24 year olds in Boston is expected to decline 5 percent from 2010 to 2030.

Projected Boston Population by Age Group

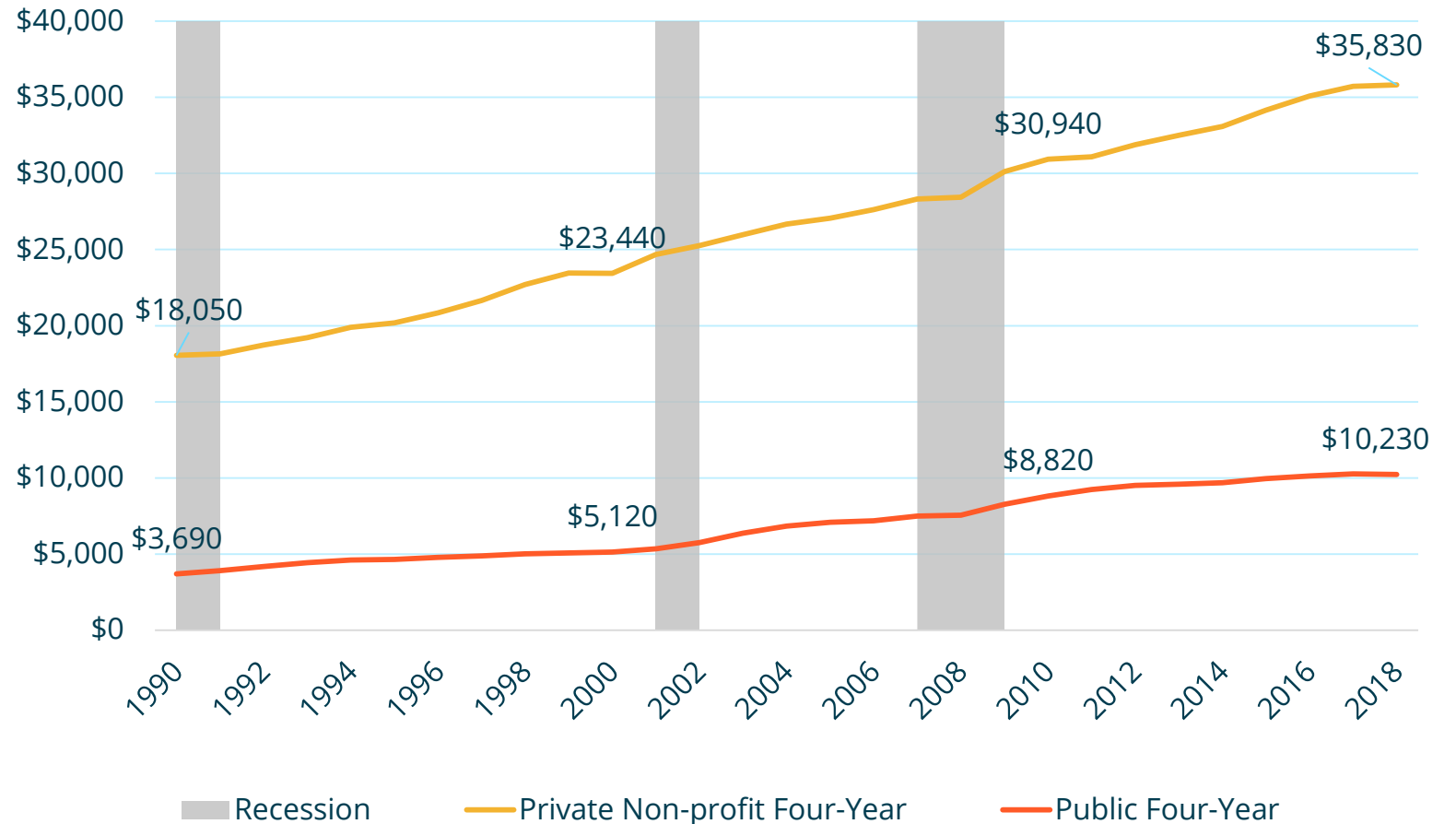


Source: U.S. Census Bureau, 2010 Census, BPDA Research Division Population Projection Model.

Tuition and public appropriations

- From 2010 to 2018 average private and public school tuitions increased by 16% in real terms. However, tuition has been flat over the past several years.
- From 2008 to 2018 appropriations for public colleges and universities decreased 13% per student in Massachusetts.
- Flat tuitions & declining appropriations may put financial pressure on universities.

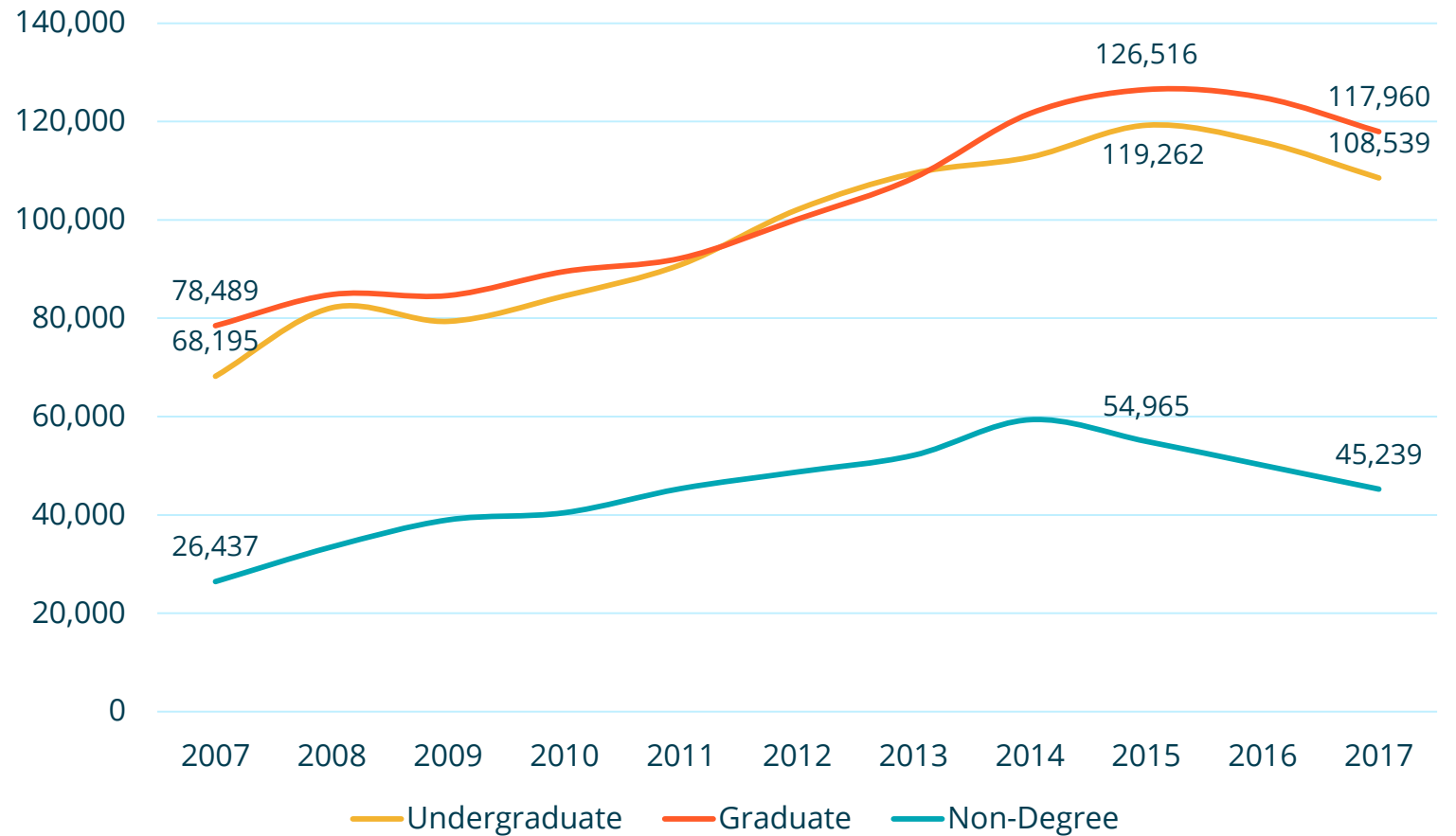
Average Tuition and Fees at U.S. Universities – Fixed 2018 Dollars



Decline in international students

- Arrivals of new international students to U.S. are down in recent years.
- However, Boston schools are particularly attractive for international students:
- Northeastern is 3rd in nation with ~15,000 international students and Optional Practical Training (OPT) workers.
- BU is 10th in nation with ~10,000 international students and OPT workers.

New International Student Enrollment, United States



Future of higher education industry in Boston

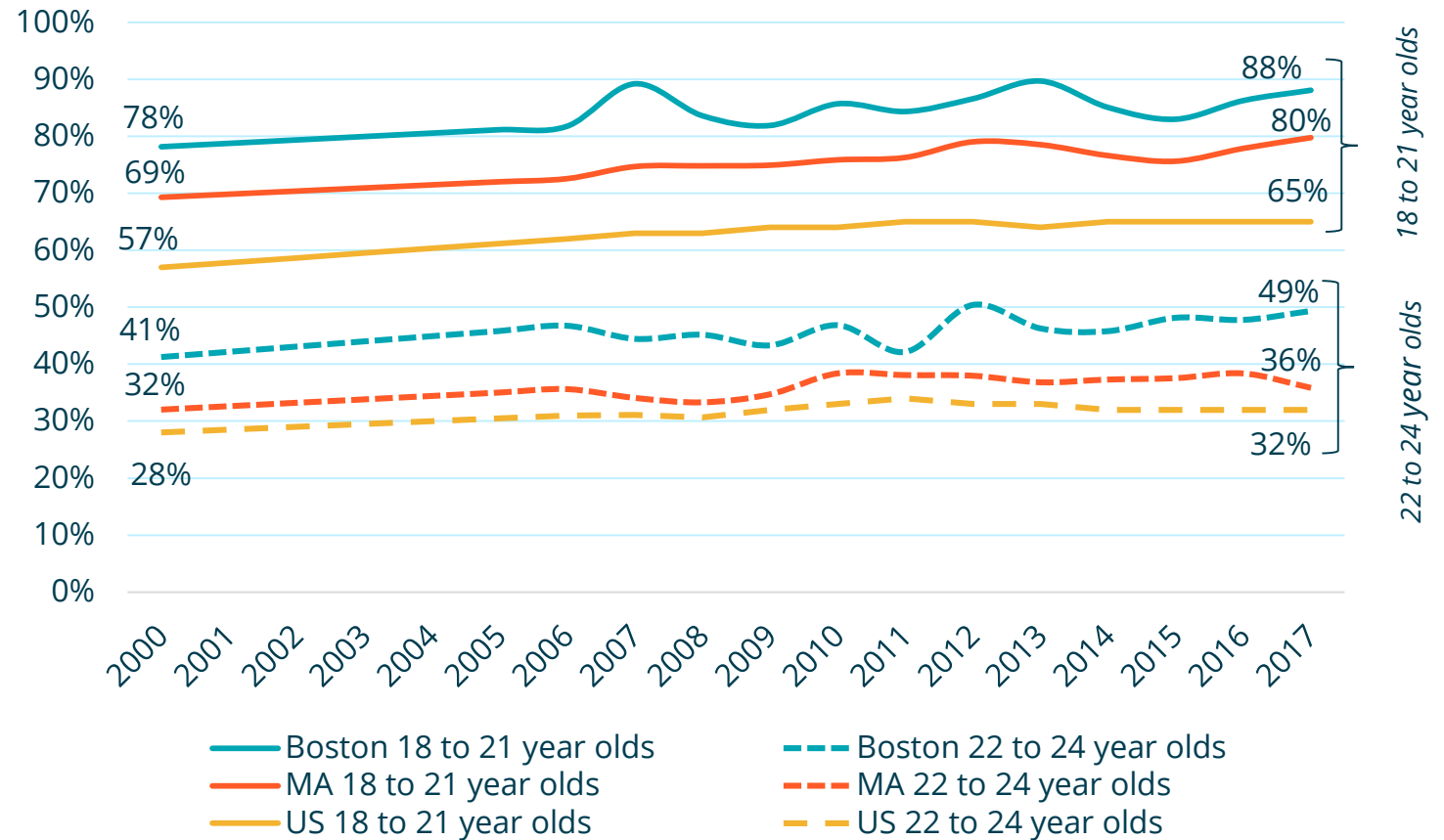
- **Strengths**

- World-renowned institutions that attract students from around the country and world
- Increasing share of young adults attending college and graduate school
- Valuable real estate
- Diversification into on-line education

Growing share of young adults enrolled in school

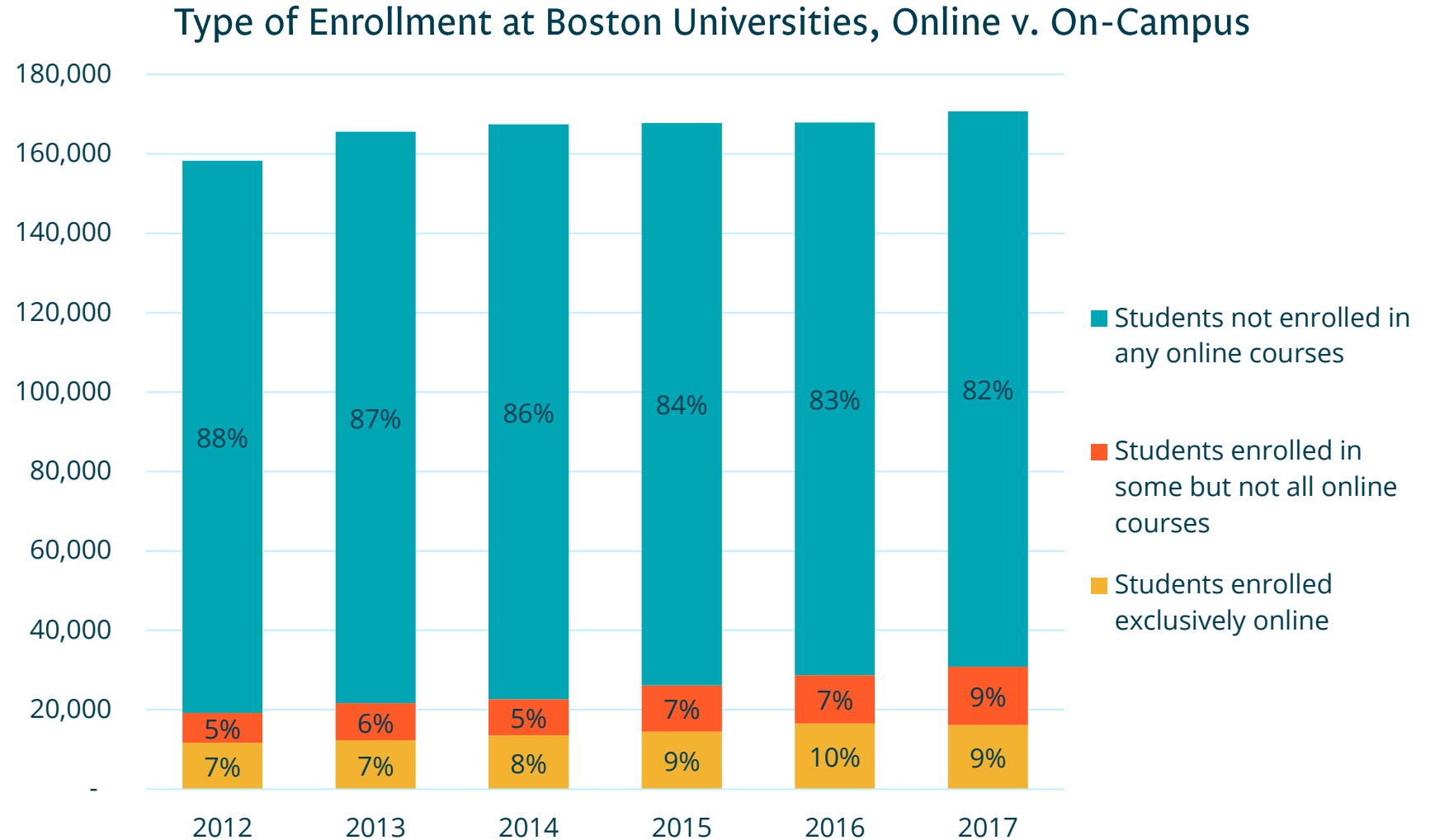
- From 2000 to 2017 the share of 18 to 24 year olds enrolled in school has increased steadily
- Boston's share of 18-24 years olds enrolled in school is higher than the share for Massachusetts and the US
- Growing rates of college enrollment may mitigate demographic trends.

Enrollment Rates by Age Group



Diversification into online education

- Boston institutions are branching out into online education to reach more students and increase revenue.
- For example, Simmons University nearly doubled its total annual revenue since 2014 with expanded online Masters programs.



IV.

Employment Growth Projections



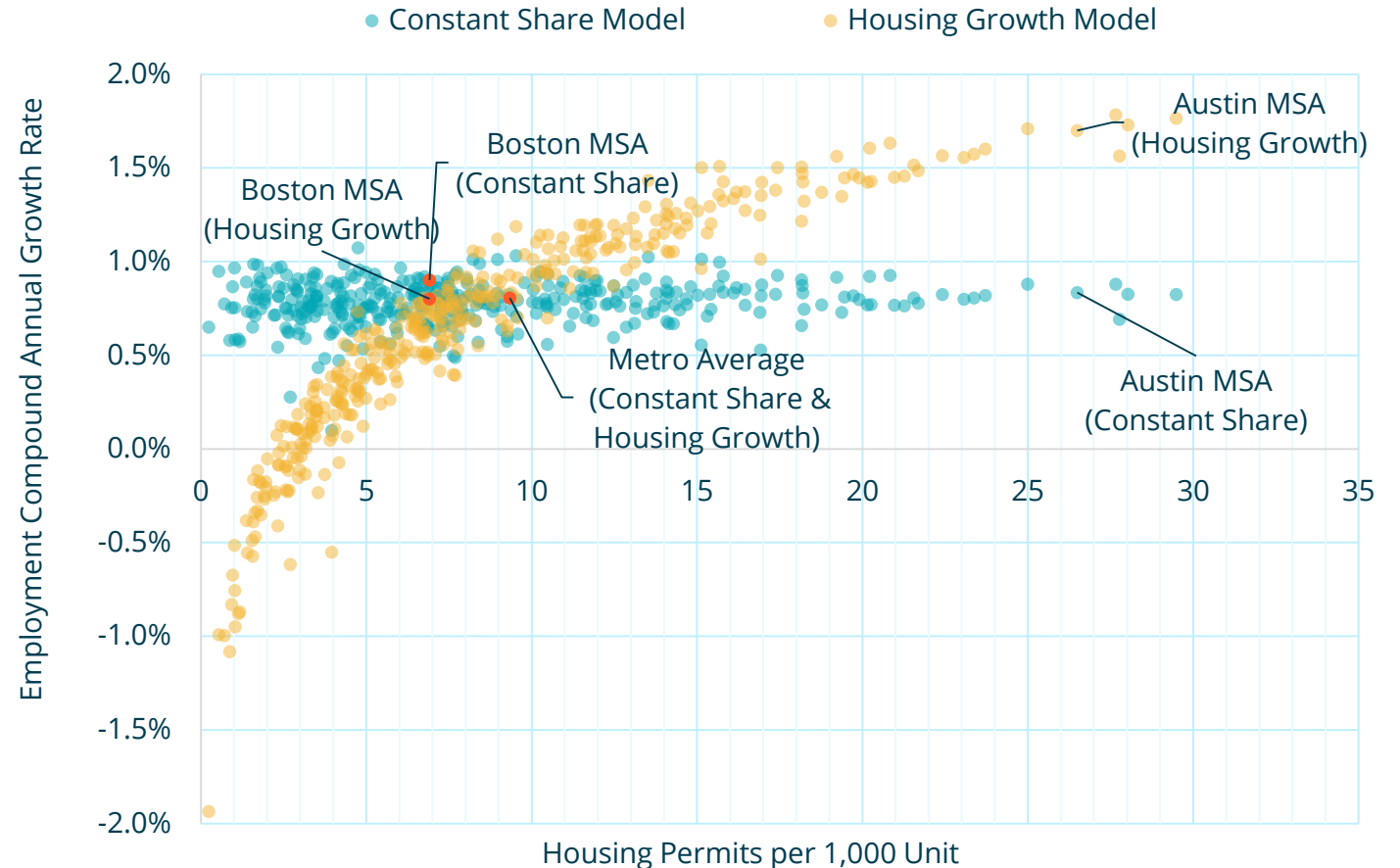
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Boston employment projections

- Boston added 143,328 jobs from 2010 to 2017
- To project future job growth the BPDA developed three models to forecast local employment growth
 - Constant Share: each industry will grow at national industry growth rate
 - Housing Growth: employment growth is tied to the growth in regional housing permitting
 - Educated City: employment growth is tied to the supply of an educated workforce
- All three models predict continued job growth across all industries except manufacturing

Constant share & housing growth models

- Growth rates projected by BLS differ by industry – health care, education, professional and technical services & construction expected to grow quickly; manufacturing, wholesale and retail trade shrinking or growing slowly
- Industry composition across metro areas similar enough that this variation alone does not produce much difference across areas in projected growth rate
- Including housing permitting in the model results in far more substantial variation – now some areas are projected to grow much more quickly



Educated city growth model



- The Boston area has benefitted from trend in labor demand in the direction of large urban agglomerations with highly educated workers
- Size nor education alone have explained recent growth – the interaction between the two has been key
- Educated City model assumes these trends continue – top panel shows upward sloping relationship between projected growth and with BA share in large cities; lower panel shows same relationship not present in smaller cities

Boston MSA projected growth rates by industry 2016-2026

Industry	Constant Share Model	Housing Growth Model	Educated City Model
Utilities	0.6%	-0.2%	0.9%
Construction	12.9%	11.2%	21.3%
Manufacturing	-6.0%	-6.1%	-4.6%
Wholesale Trade	2.5%	1.5%	2.4%
Retail Trade	2.6%	1.6%	5.3%
Transportation and Warehousing	7.3%	6.2%	7.1%
Information	1.9%	0.6%	7.7%
Finance and Insurance	5.8%	4.6%	10.1%
Real Estate, Rental and Leasing	5.9%	4.4%	8.3%
Professional and Technical Services	13.3%	11.7%	19.6%
Management of Companies and Enterprises	6.1%	5.0%	13.8%
Administrative and Waste Services	9.3%	8.2%	7.2%
Educational Services	14.2%	13.4%	24.4%
Health Care and Social Assistance	21.0%	20.0%	24.3%
Arts, Entertainment, and Recreation	8.9%	7.6%	13.8%
Accommodation and Food Services	8.4%	7.2%	13.5%
Other Services, except Public Administration	5.5%	4.4%	14.0%
Total Private Payroll Employment	9.4%	8.3%	13.7%
Compound Annual Growth Rate, Total Private Payroll Employment	0.9%	0.8%	1.3%

- City projected to add 107,000 to 150,000 new jobs by 2026
- Industries with projected growth of over 10% from 2016 to 2026 are construction, health care and social assistance, professional and technical services and education services
- Only industry expected to decline from 2016 to 2026 is manufacturing
- The educated city model projects the highest percent increases of overall job growth from 2016 to 2026

Boston growth projections

- Each scenario predicts the job growth rate will be higher in Boston than the nation but slower than the 2.8% annual rate than the past 7 years
- Moderating job growth is in line with BPDA's projections and partly reflects cyclical economic conditions and the probability of a downturn during the remaining portion of the projected period is high although population is expected to continue growing through 2030
- Building adequate housing is crucial to accommodate a growing labor force. Housing construction in the city is on pace to meet the goal of 69,000 new units set out by the Housing Boston 2030 Plan. Sluggish growth in the rest of the region is a concern.

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Questions



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