



CBRE Research

2018 TECH-30

Measuring Tech Industry Impact on North American Office Markets

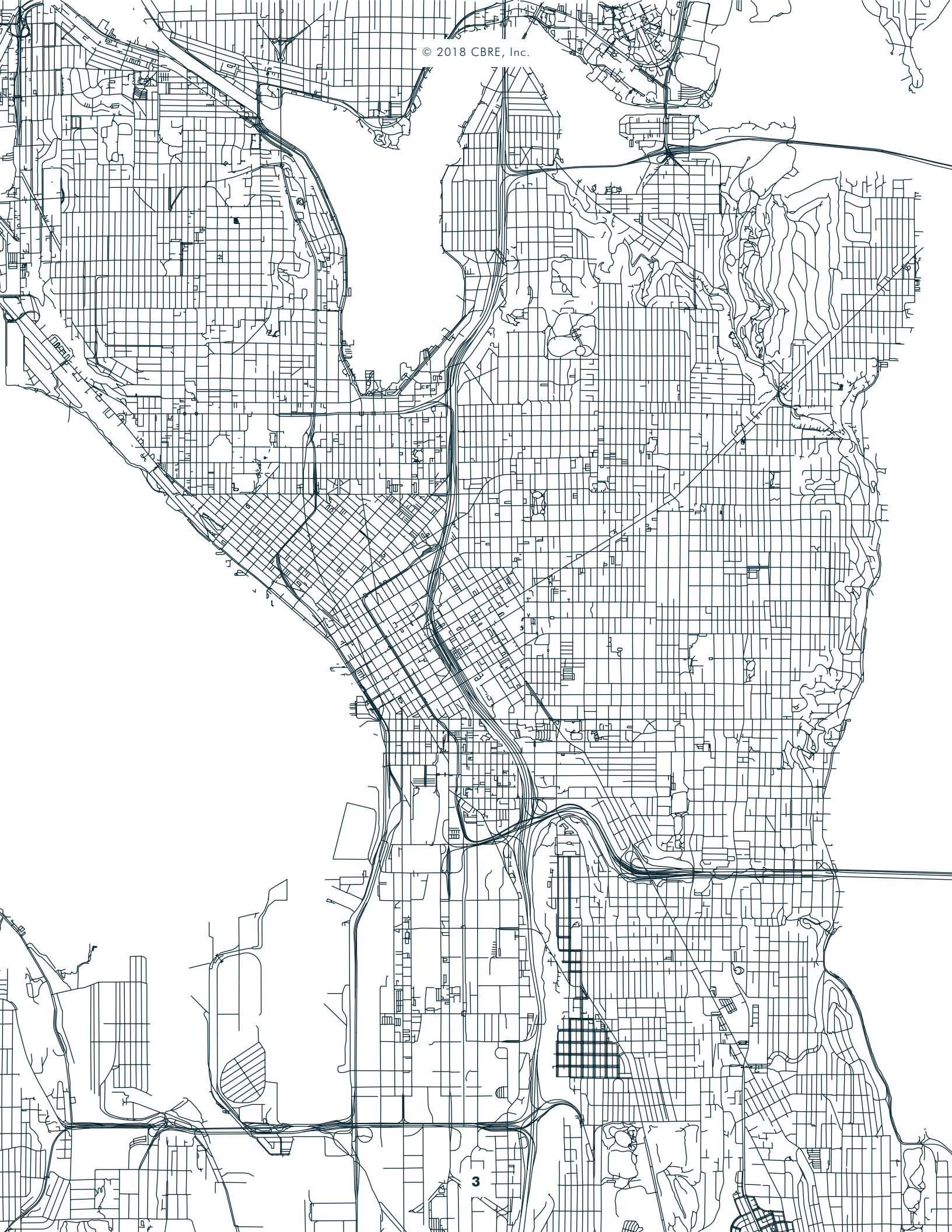
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Tech-30 is a comprehensive analysis of office markets in the U.S. and Canada that are influenced by the high-tech industry. The 30 markets were ranked according to high-tech industry job growth and analyzed to determine how the industry influences office market fundamentals.



EXECUTIVE SUMMARY

HOW IS THE **TECH INDUSTRY** PERFORMING?

The U.S. high-tech software/services industry created 1.1 million jobs since 2010 at an annual growth rate of 5%—a pace three times the national average. While the annual rate of tech industry job growth slowed to 4.1% in the first half of 2018, high-tech's share of major office leasing activity increased to 21% and remained the largest sector.

WHICH ARE THE **TOP-GROWTH** TECH CITIES?

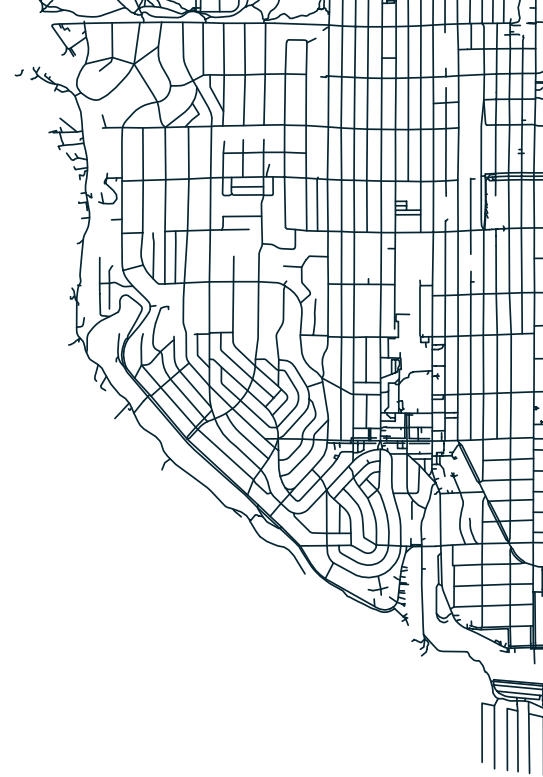
Seattle was the top Tech-30 market for high-tech job growth, surpassing San Francisco for the first time in seven years. Over the past two years, Seattle's high-tech job base grew 26% and its average asking rent increased 14%. St. Louis (23%), Montreal (22%) and San Francisco (22%) had the next highest job growth rates, with rent changes of 1.4%, -1% and 4%, respectively. Silicon Valley, Toronto, New York and Los Angeles all added more than 10,000 tech jobs.

WHICH ARE THE **MOMENTUM** MARKETS FOR HIGH-TECH INDUSTRY JOBS?

Nine markets gained momentum when the high-tech software/services job growth rate over the past two years is compared to the prior two-year period, led by Montreal (22%), St. Louis (21%) and Seattle (8%). Another 12 markets exceeded the 9.2% U.S. average of high-tech job growth in the past two years, although they did not gain any momentum over the previous two-year period.

HOW ARE TECH **OFFICE** MARKETS PERFORMING?

In aggregate, the Tech-30 markets saw increased net absorption and a muted level of available sublease space, suggesting strengthening market conditions ahead. Eight markets achieved double-digit rent growth over the past two years, led by Atlanta (16%), Los Angeles (16%) and Orange County (15%).



WHICH TECH **SUBMARKETS** OFFER RENT PREMIUMS/DISCOUNTS?

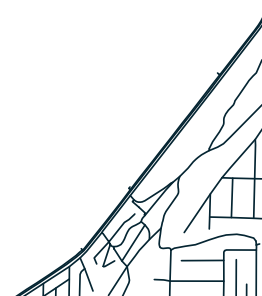
Rent premiums outpaced discounts in tech submarkets relative to their respective overall market average, resulting in an aggregate premium of 13%. The submarkets with the highest premiums were East Cambridge (150%), Santa Monica (78%) and Palo Alto (77%). Discounts were greatest in Northeast Charlotte (-18%), Reston/Herndon (-14%) and Hillsboro (-13%).

WHICH TECH MARKETS OFFER THE BEST **VALUE**?

Markets that are attractive to occupiers and offer the best combination of low office rents and a growing high-tech labor pool include Portland, Raleigh-Durham, Dallas/Ft. Worth, Charlotte and Nashville. From an investor's perspective, these markets have the greatest growth potential.

WHERE IS THE TECH INDUSTRY **HEADED**?

CBRE's forecast for the year ahead is for high-tech job growth above the national average, but slower than in years past due to tight labor market conditions. New revenue and jobs will be supported by steady consumer demand, the creation of new market opportunities via disruptive new technologies and more companies integrating technology into their business models. Commercial real estate investors should benefit from these trends that have given the tech industry greater stability and a wide economic base compared with previous economic cycles.





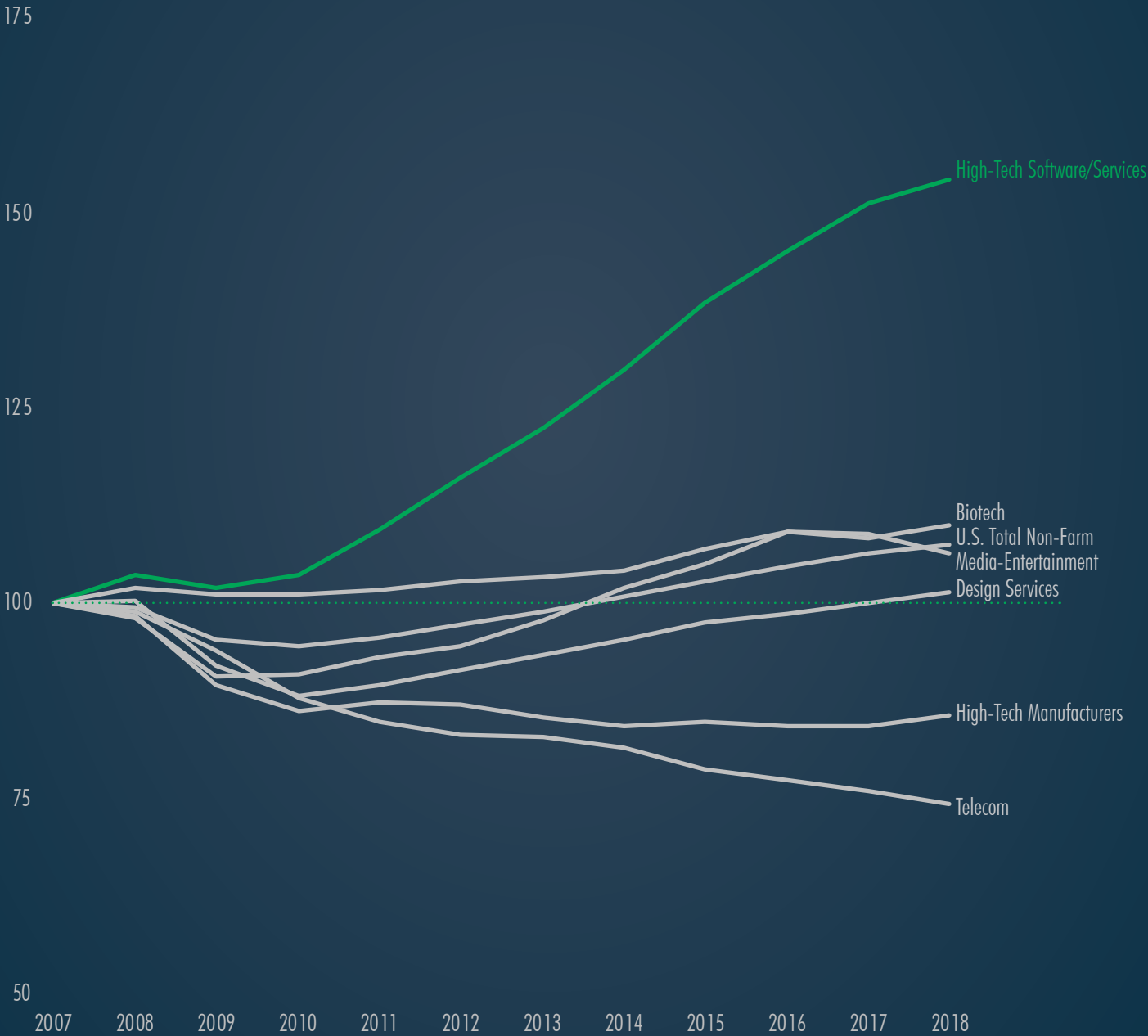
THE TECH-30 AND THE LABOR MARKET

The U.S. high-tech industry created 1.1 million jobs between 2010 and the first half of 2018. Accommodative capital markets and an ample labor supply helped the tech industry flourish in the aftermath of the Great Recession. From 2010 through 2017, total high-tech industry job growth of 6% annually was four times the U.S. national average (Figure 1). During 2018, tighter labor supply and sustained demand for technical skills from other industries slowed high-tech job growth to 4.1% on an annualized basis—still about twice the national average. Lower corporate taxes and favorable capital repatriation rules have helped put the tech industry on track to add 130,000 jobs this year.

Future growth faces a structural barrier since there is a limited pool of available talent for jobs that require specific skills, such as software development. Only 37% of all tech workers are employed in the high-tech industry, according to CBRE's *2018 Scoring Tech Talent* report, meaning tech companies must compete with the other industries that employ the remaining 63% of tech workers. In addition, the unemployment rate for college-educated workers is 2.3%, causing stiff competition among companies. This could ease slightly in the years ahead thanks to a 53% increase in college graduates with high-tech degrees over the past five years, with 292,000 new tech graduates in 2017.

FIGURE 1: U.S. JOB GROWTH FOR HIGH-TECH AND CREATIVE INDUSTRIES

INDEX = 2007
200



Source: U.S. Bureau of Labor Statistics, July 2018, CBRE Research, July 2018.

The high-tech industry has steadily leased office space despite slower job growth. Since 2013, the industry has accounted for the largest share of U.S. major office leasing activity,¹ with a 21% share in the first half of 2018, compared with 19% for all of 2017 and 18% for 2016. Much of the leasing activity was by larger firms and for future growth, an indicator of the tech industry's confidence.

While leasing activity remains steady, rent growth slowed in some office markets. This trend is most apparent in large markets where there is a lower concentration of tech companies, such as Washington, D.C., New York and Toronto—all three of which have seen slower high-tech hiring, mainly because of talent constraints rather than a lack of job openings. Conversely, in some less-established markets, like Philadelphia, Atlanta and Charlotte, rent growth outpaced the U.S. national average of 1.3% in the first half of 2018.

Within the Tech-30—the 30 leading technology markets in the U.S. and Canada—high-tech software/services job creation has overwhelmingly outperformed their respective national averages over the past two years (Figure 2). Among these markets, 20 exceeded the 9.2% U.S. high-tech job growth rate in 2016 and 2017. Seattle was the top high-tech job growth market at 26%. Comparing the latest two-year period (2016 and 2017) with the prior two-year period (2014 and 2015), eight markets posted faster growth, including Montreal, St. Louis and Seattle. In the 21 other markets, job creation during these comparison periods was still strong. Among these were San Francisco, New York, Silicon Valley, Toronto and Los Angeles—all of which had high-tech-sector growth of 10,000 jobs or more during 2016 and 2017.

Tech job creation correlates nicely with office market rent growth, with eight Tech-30 markets posting rent growth of 10% or more between Q2 2016 and Q2 2018. Atlanta was the top market for rent growth, followed by Los Angeles, Orange County and Seattle—large markets with a growing tech influence (Figure 3.1). Furthermore, office rents increased in 26 primary tech submarkets between Q2 2016 and Q2 2018. The highest rent growth during this period came from both established and up-and-coming tech submarkets (Figure 3.2), illustrating stiff competition among tenants to locate in areas rich in talent such as East Cambridge, Midtown Atlanta and South Orange County. The top submarkets for net absorption during this period were Tech Corridor in Salt Lake City, Downtown Nashville and Lake Union in Seattle (Figure 3.4).

¹ Includes the 25 largest transactions by sq. ft. each quarter for the 54 U.S. markets tracked by CBRE Research.

FIGURE 2: HIGH-TECH SOFTWARE/SERVICES JOB AND OFFICE RENT GROWTH, PAST TWO YEARS**HIGH-TECH SOFTWARE/SERVICES JOB GROWTH**

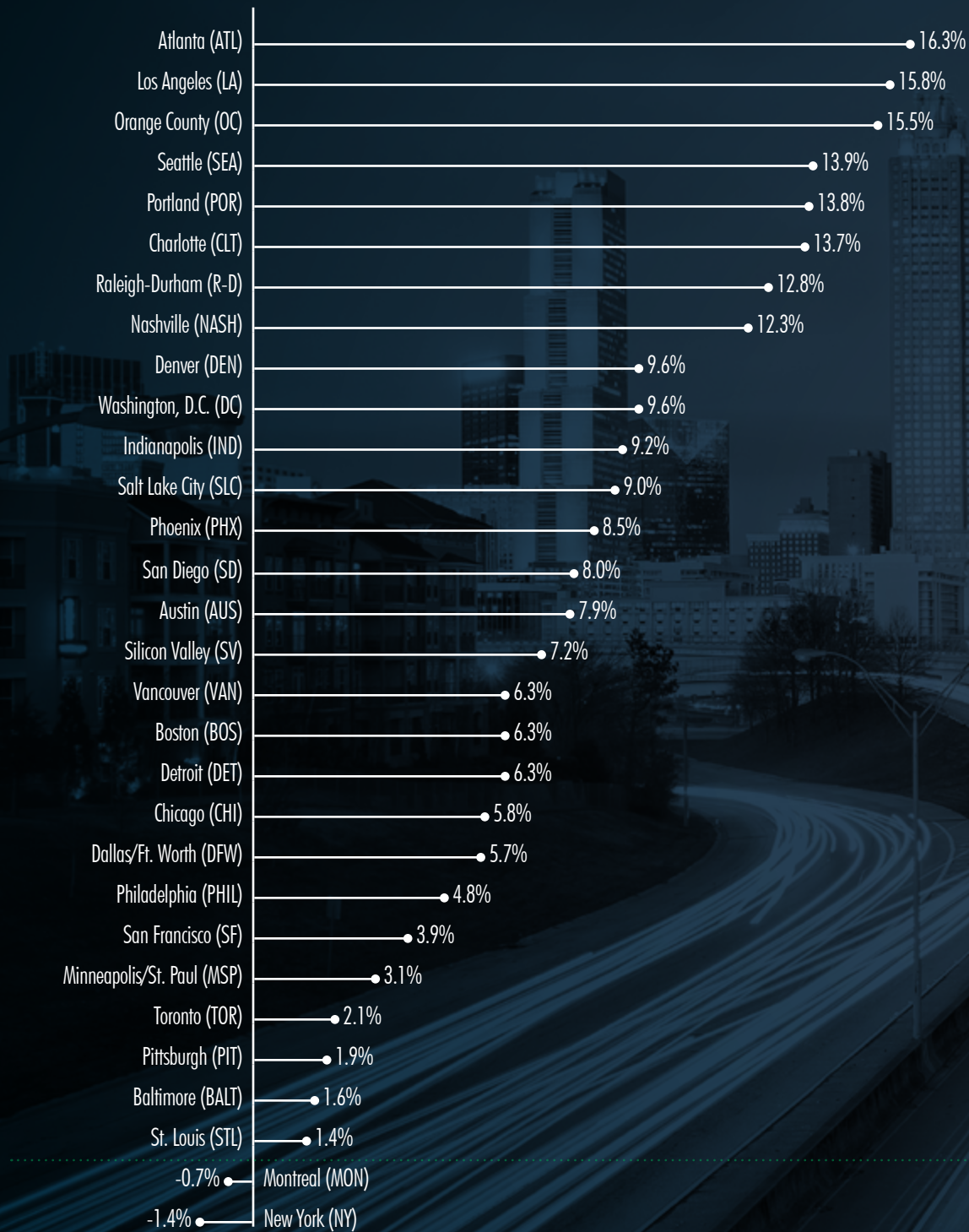
Market	GROWTH RATE		NEW HIGH-TECH JOBS	
	Current Period 2016 & 2017	Previous Period 2014 & 2015	New Jobs Added 2016 & 2017	As a % of New Office Jobs 2016 & 2017
1 Seattle	25.7%	17.5%	33,803	128.4%
2 St. Louis	23.3%	2.1%	4,738	133.3%
3 Montreal	22.3%	0.1%	16,400	44.8%
4 San Francisco	22.1%	47.3%	15,746	66.8%
5 Toronto	18.9%	25.8%	22,800	54.8%
6 Indianapolis	18.4%	24.8%	4,838	142.3%
7 Austin	17.1%	34.1%	7,492	43.0%
8 Charlotte	15.4%	32.6%	3,260	16.8%
9 Los Angeles	14.7%	13.5%	10,202	86.3%
10 Orange County	14.5%	13.7%	4,820	24.7%
11 Silicon Valley	13.9%	22.7%	24,971	69.1%
12 Portland	12.8%	12.3%	3,174	27.8%
13 Denver	12.5%	10.3%	7,323	36.2%
14 New York	12.4%	25.0%	11,988	22.8%
15 Nashville	12.3%	16.0%	1,629	8.8%
16 San Diego	12.3%	7.9%	3,593	47.5%
17 Phoenix	10.9%	36.3%	5,651	16.0%
18 Atlanta	10.7%	12.3%	7,909	17.0%
19 Raleigh-Durham	10.2%	16.0%	3,569	27.4%
20 Chicago	9.6%	22.1%	6,144	52.8%
21 Pittsburgh	8.9%	22.7%	1,823	218.6%
22 Salt Lake City	8.1%	14.2%	3,784	19.2%
23 Boston	7.7%	11.5%	8,528	26.2%
24 Detroit	5.4%	17.2%	2,857	31.8%
25 Baltimore	4.2%	4.8%	1,364	13.2%
26 Washington, D.C.	3.9%	3.7%	6,873	34.2%
27 Dallas/Ft. Worth	3.4%	18.1%	3,235	8.1%
28 Vancouver	2.7%	17.1%	1,300	2.7%
29 Minneapolis/St. Paul	1.3%	7.8%	628	5.4%
30 Philadelphia	-2.3%	4.1%	-1,059	-7.2%

OFFICE MARKET RENT GROWTH

Market	GROWTH RATE	
	Current Period Q2'16 vs. Q2'18	Previous Period Q2'14 vs. Q2'16
1 Atlanta	16.3%	11.4%
2 Los Angeles	15.8%	10.1%
3 Orange County	15.5%	24.3%
4 Seattle	13.9%	6.4%
5 Portland	13.8%	12.4%
6 Charlotte	13.7%	14.8%
7 Raleigh-Durham	12.8%	7.6%
8 Nashville	12.3%	18.1%
9 Denver	9.6%	-3.7%
10 Washington, D.C.	9.6%	12.0%
11 Indianapolis	9.2%	5.0%
12 Salt Lake City	9.0%	11.0%
13 Phoenix	8.5%	11.6%
14 San Diego	8.0%	13.7%
15 Austin	7.9%	15.3%
16 Silicon Valley	7.2%	28.4%
17 Vancouver	6.3%	9.8%
18 Boston	6.3%	12.7%
19 Detroit	6.3%	3.5%
20 Chicago	5.8%	5.7%
21 Dallas/Ft. Worth	5.7%	16.6%
22 Philadelphia	4.8%	4.4%
23 San Francisco	3.9%	22.7%
24 Minneapolis/St. Paul	3.1%	10.0%
25 Toronto	2.1%	-1.2%
26 Pittsburgh	1.9%	7.3%
27 Baltimore	1.6%	-0.5%
28 St. Louis	1.4%	1.1%
29 Montreal	-0.7%	3.3%
30 New York	-1.4%	11.6%

Source: U.S. Bureau of Labor Statistics, Statistics Canada, CBRE Research, Q2 2018.

**FIGURE 3.1: RENT GROWTH OVERALL MARKET
Q2 2016 VS. Q2 2018**



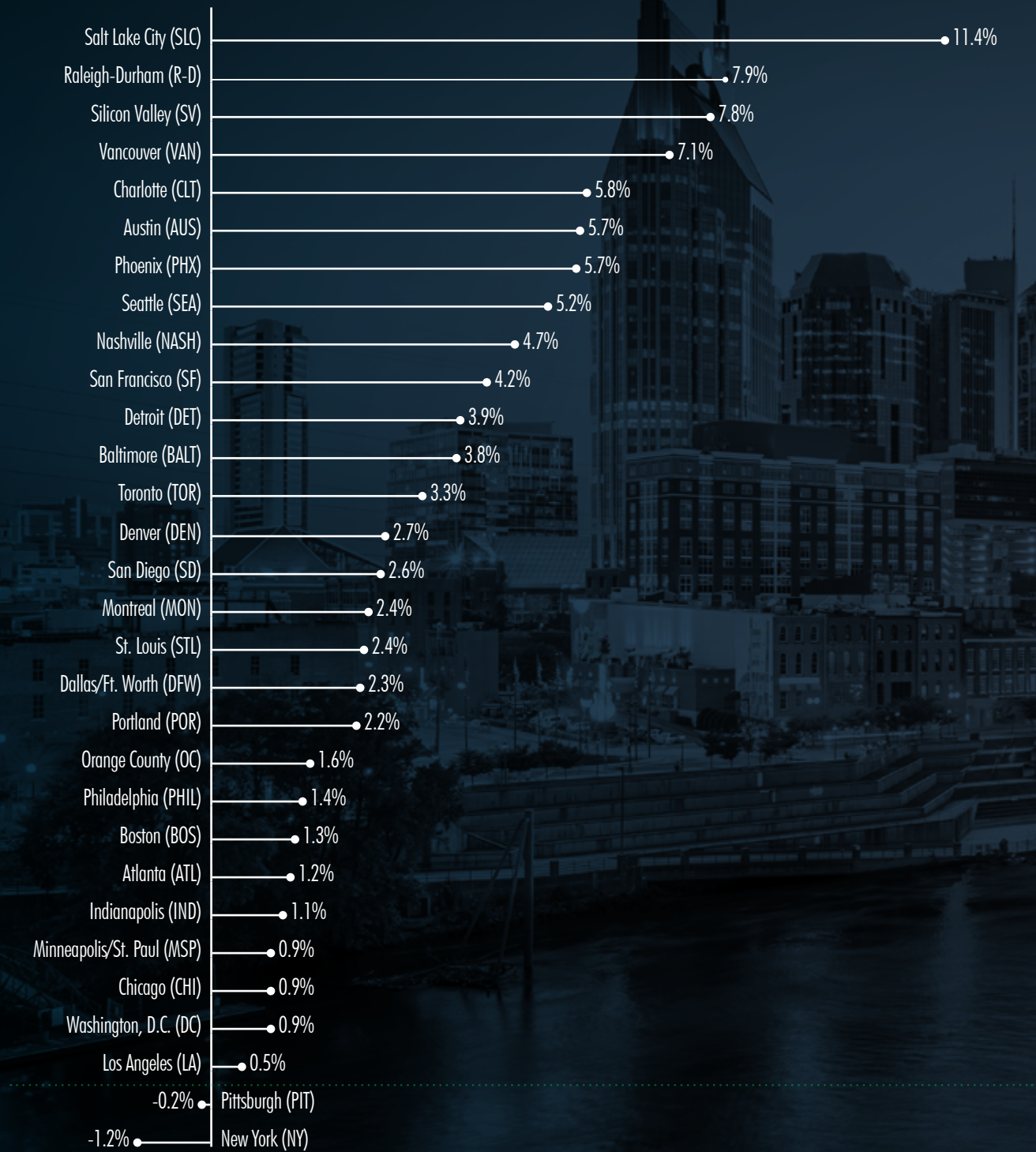
Source: CBRE Research, Q2 2018.

**FIGURE 3.2: RENT GROWTH TOP TECH SUBMARKET
Q2 2016 VS. Q2 2018**



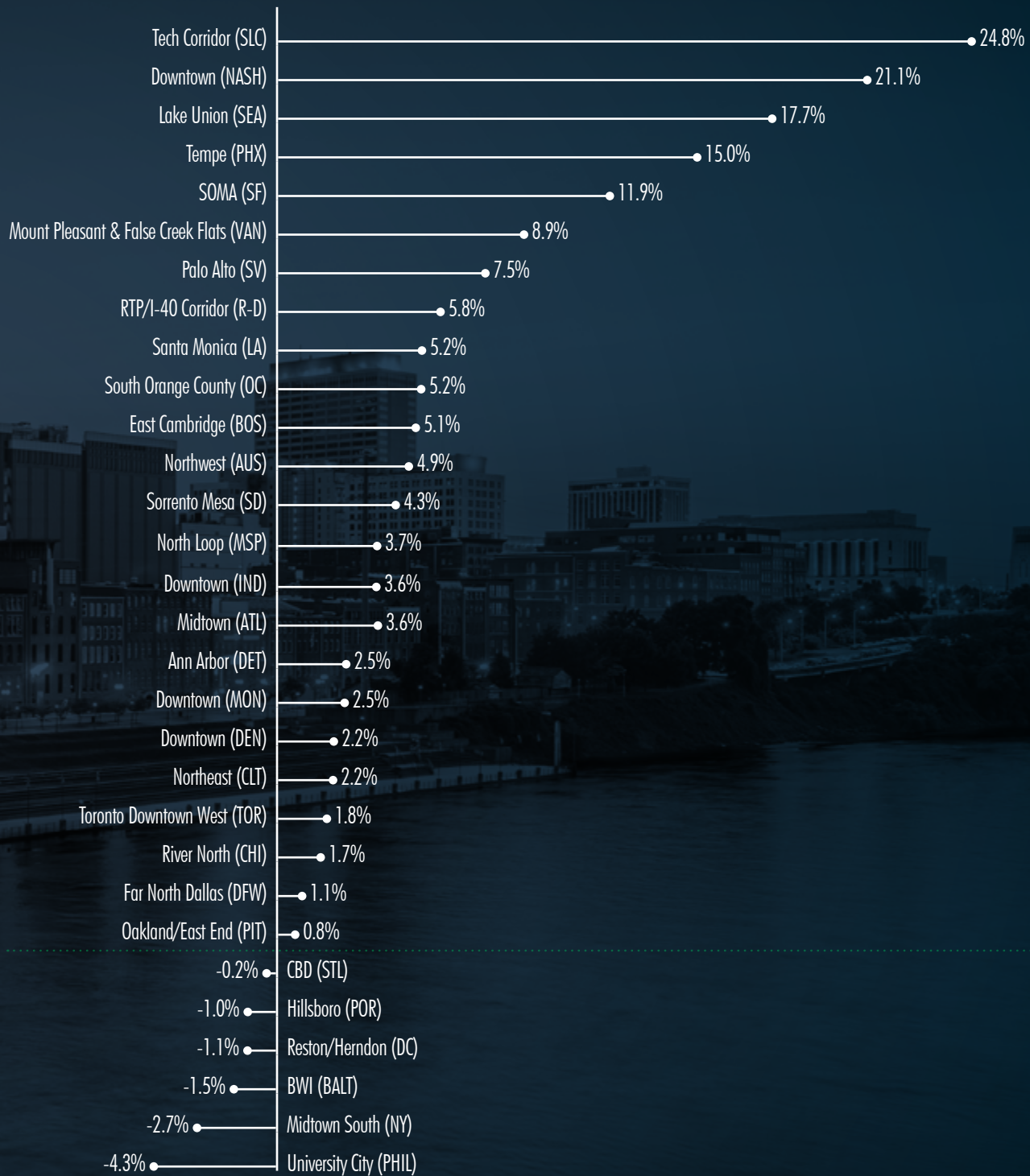
Source: CBRE Research, Q2 2018.

**FIGURE 3.3: NET ABSORPTION GROWTH OVERALL MARKET
Q3 2016 - Q2 2018 (% OF TOTAL BUILDING STOCK)**

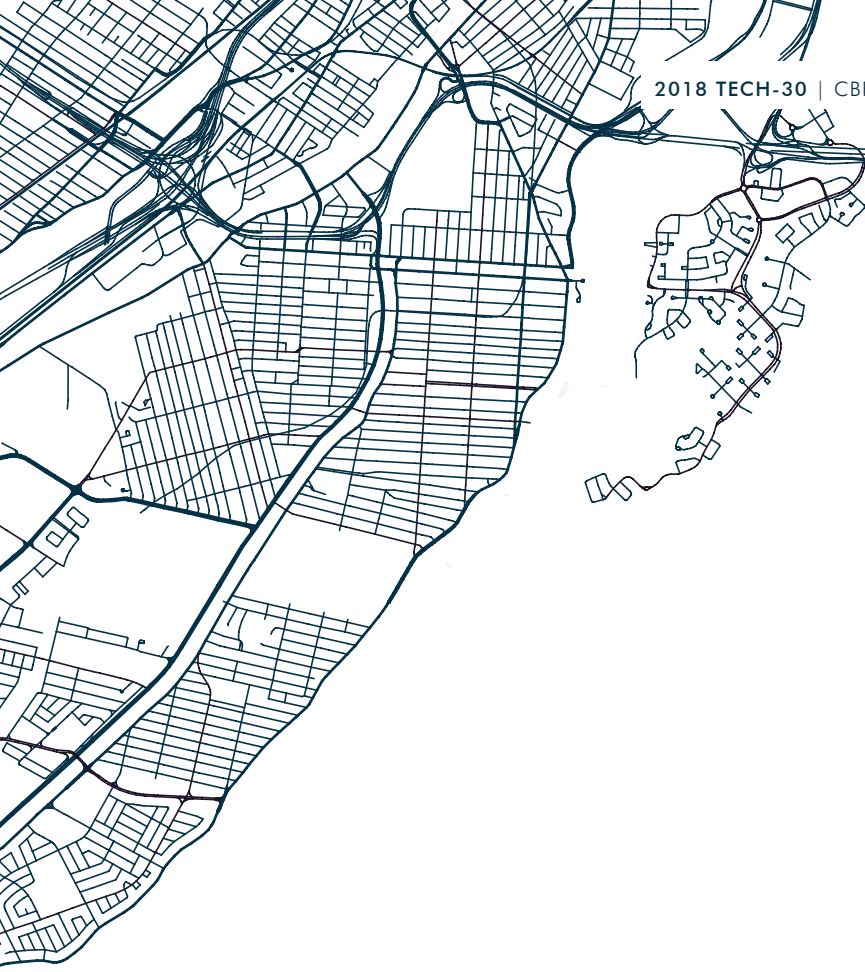


Source: CBRE Research, Q2 2018.

**FIGURE 3.4: NET ABSORPTION GROWTH TOP TECH SUBMARKET
Q3 2016 - Q2 2018 (% OF TOTAL BUILDING STOCK)**



Source: CBRE Research, Q2 2018.



SPREADING MARKET STRENGTH

The Tech-30 Power Diagram (Figure 4) illustrates the strength of each market's high-tech software/services job creation rate and office market performance, providing insight into where potential value and growth will likely occur. Generally, above-average high-tech software/services job growth coincides with above-average office market performance. Salt Lake City led in office market strength, but a lower concentration of tech within office-using jobs kept it in the Emerging Market quadrant. Seattle led in high-tech job creation, which combined with its strong office market, made it an outlier in the Growth Leaders quadrant. Four markets maintained their position in the Growth Leaders quadrant and were joined by Portland and Denver. Many lower-cost markets have seen office market fundamentals strengthen, in part because of labor diversification strategies by tech companies helped boost job creation.

FIGURE 4: TECH-30 MARKET POWER DIAGRAM



Source: U.S. Bureau of Labor Statistics, July 2018, Statistics Canada, CBRE Research, Q2 2018.

The Tech-30 Market Power Diagram measures the relative strength of each city's office market on a scale of 0 to 100. High-tech software/services job strength includes high-tech software/services job growth over the past two years and their current concentration within office-using job categories. Office market strength includes rent and net absorption growth over the past two years. The quadrant lines represent the 30-market aggregate average for each strength measure.

**FIGURE 5: TECH COMPANY EXPANSION INTO DIVERSIFIED U.S. MARKETS
Q1 2013 TO Q2 2018**



SPREADING GROWTH

Technology firms have significantly grown their presence across the U.S. over the past five years and are increasingly targeting markets away from their headquarters. The top four headquarters markets for tech firms exported more than 25 million sq. ft. of growth—the San Francisco Bay Area, Seattle, Boston and New York—to other markets. Bay Area-based tech firms led this charge, leasing 18 million sq. ft. of office space in 10 other markets. By expanding to new markets, these companies can access more tech talent and create a more geographically distributed workforce. Firms based in other markets are also expanding to the Bay Area for similar reasons, with the largest three metros spreading their growth being Seattle (1.9 million sq. ft.), Boston (853,000 sq. ft.) and New York (292,000 sq. ft.).

[Click to explore where companies in each market are growing their presence.](#)

Source: CBRE Research, includes lease transactions from the 25 largest deals in 54 markets across the U.S. from Q1 2013 to Q2 2018.

TECH SUBMARKETS OUTPERFORM

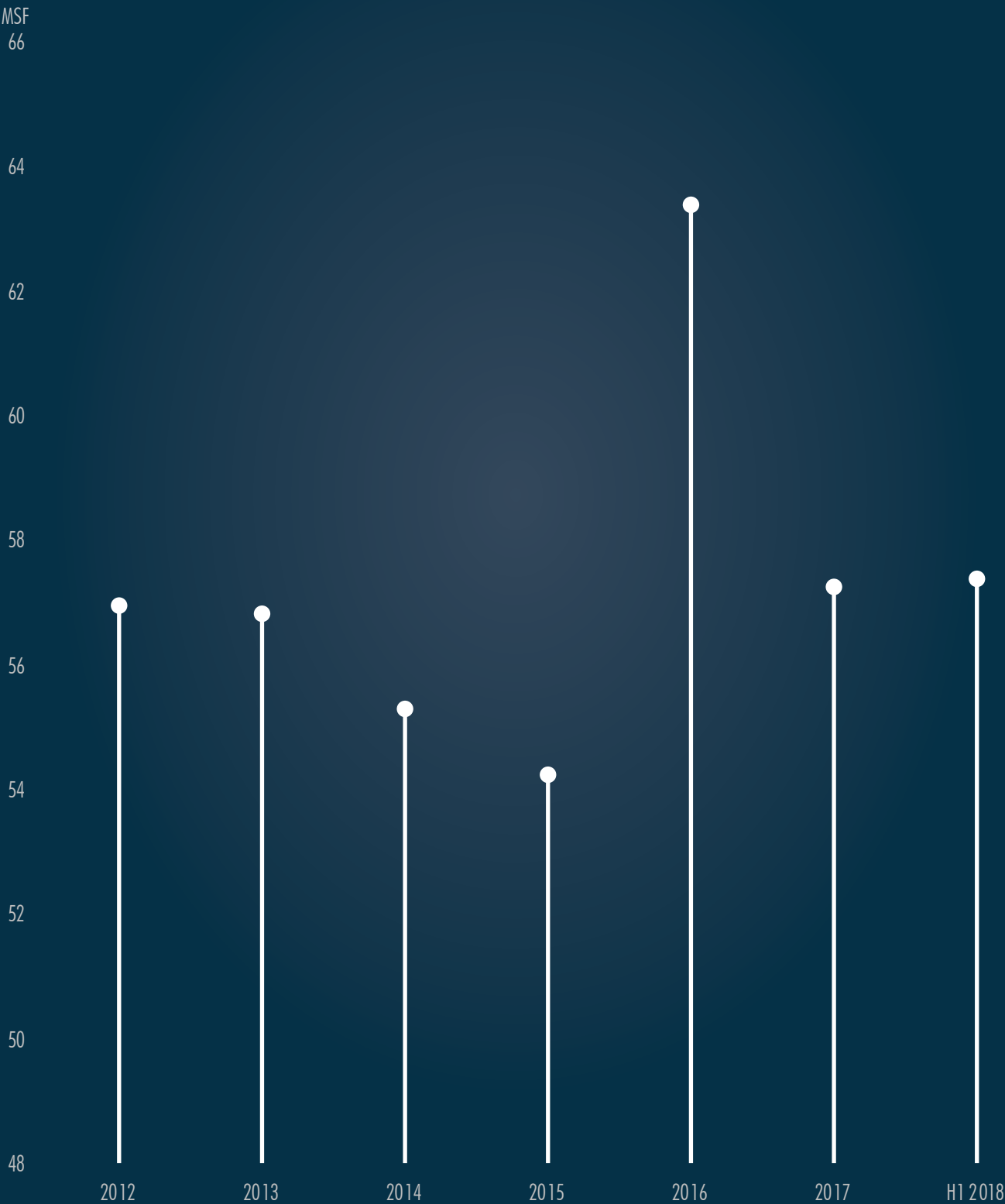
Leading tech submarkets often outperform the broader office markets in which they are located because tenants are willing to pay a premium in areas preferred by tech talent. Many of these submarkets have limited office availability and are located near leading universities. The top tech submarkets with the lowest vacancy rates as of Q2 2018 were East Cambridge (2.2%), Palo Alto (2.6%) and Toronto Downtown West (3.5%).

As the tech industry becomes more prominent in these submarkets, the office rent premium paid by tenants has widened (Figure 6). Average leasing rates for top tech submarkets increased faster than their broader markets since 2011 and, as of Q2 2018, have a 13% aggregate premium. Some markets are significantly higher, such as East Cambridge (150%), Santa Monica (78%) and Palo Alto (77%). Several emerging tech markets have rent discounts, such as Northeast Charlotte (-18%), Reston/Herndon (-14%) and Hillsboro, Oregon (-13%). Low vacancy in top tech submarkets creates challenges for companies looking to expand. This often forces larger users into adjacent submarkets or traditional office buildings in downtown submarkets, rather than the preferred brick-and-beam buildings generally occupied in top tech submarkets.

SUBLEASE SPACE MUTED

Office leasing by tech companies surged over the past five years, with tech's share of major leasing activity at 21% in 2018—nearly double that of early 2013. This growing share caused some concern that the tech industry has been over-leasing office space, just like the energy industry in 2014 and the financial services industry in 2007. Although not a concern at the moment given the tech industry's strong growth trajectory, this is a trend that will continue to be monitored. A large increase in sublease availability occurred across the Tech-30 markets during 2016, but has since decreased 10% to 57.4 million sq. ft. as of Q2 2018 (Figure 7). Tech firms accounted for 14% of available sublease space in Q2 2018, which is lower than in 2016 and concentrated in larger tech markets.

FIGURE 7: TECH-30 AGGREGATE AVAILABLE SUBLEASE OFFICE SPACE

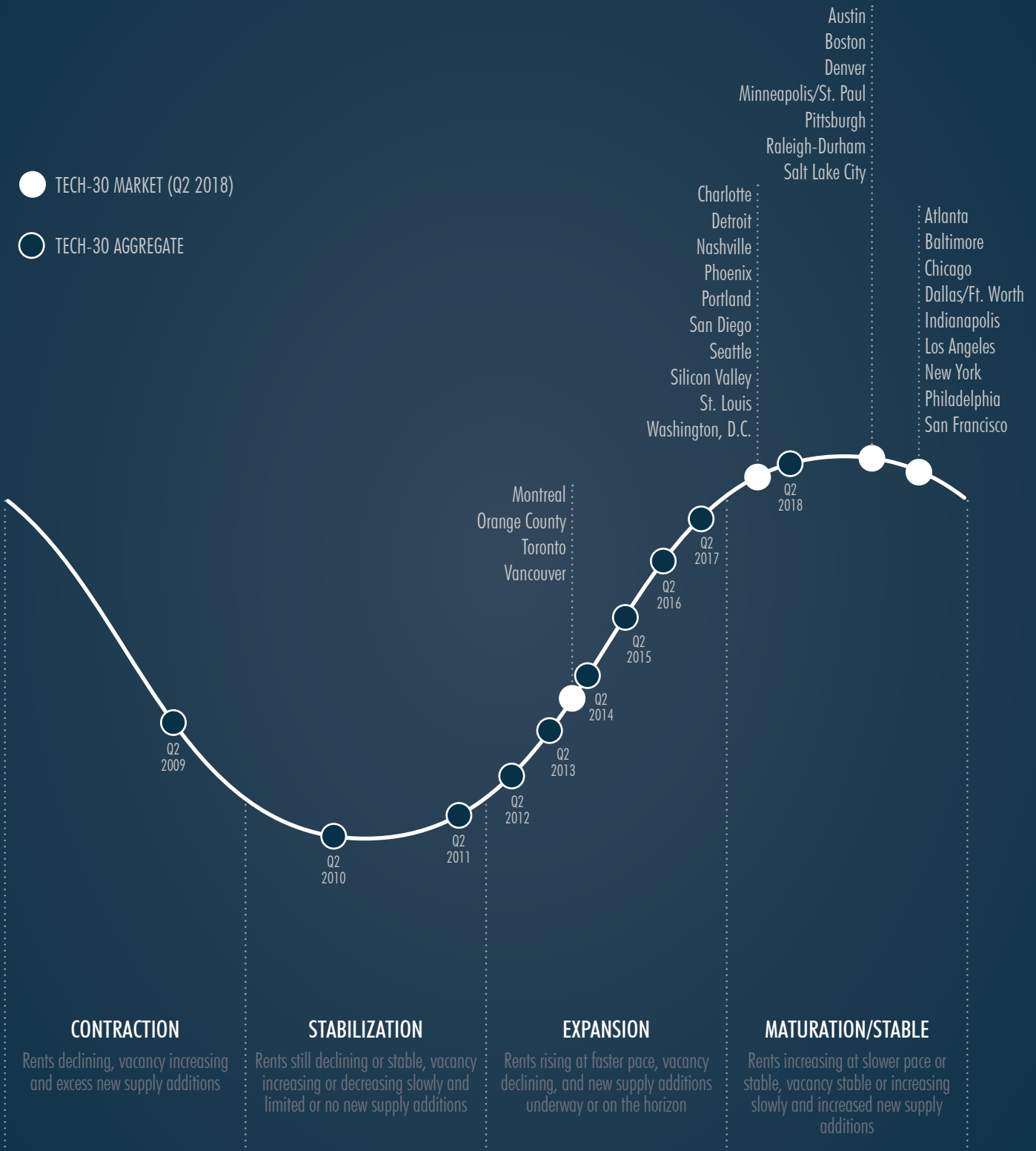


Source: CBRE Research, H1 2018.

MARKET CYCLE POSITIONING

Real estate cycle positions influence investment and occupancy decisions. Markets generally move across four cyclical phases at varying degrees, with some remaining in one cyclical phase for an extended period of time. In aggregate, the Tech-30 moved forward to the maturation phase of the office market cycle over the past 12 months (Figure 8). By market, positioning varied, with 26 markets in the maturation/stable phase of the cycle and four in the expansion phase. Orange County and the Canadian markets, while moving forward in the cycle during the past 12 months, lagged the other office markets and were in the expansion phase of the cycle.

FIGURE 8: TECH-30 OFFICE MARKET CYCLE



Source: CBRE Research, Q2 2018.

HIGH-TECH INDUSTRY OUTLOOK

The tech industry “pulse” indicates a strong national economy that should support the further expansion of tech firms, according to the San Francisco Federal Reserve’s Tech Pulse index, an economic measure of the U.S. information technology sector’s health (Figure 9). The pulse’s steady upward trend since 2016 indicates strong support for the services and expansion of tech firms. Continued growth in tech should generate additional jobs and bolster the real estate footprint of high-tech companies and high-tech office market clusters across North America.

FIGURE 9: U.S. TECH PULSE

INDEX: JAN 2000 = 100

90

85

80

75

70

65

60

2010

2011

2012

2013

2014

2015

2016

2017

2018*

*As of June 2018.

Source: U.S. Federal Reserve Board, June 2018.

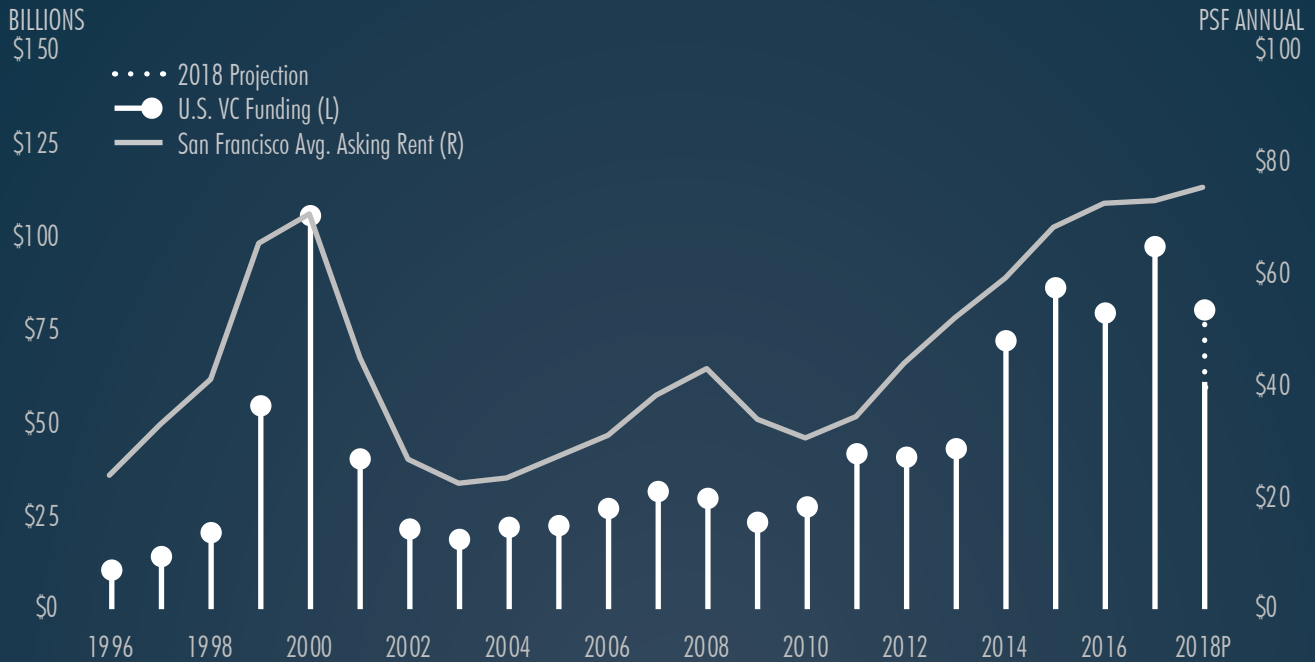
Tech startups, and increasingly larger private tech companies, often rely on venture capital to scale their businesses before becoming self-sufficient and, ultimately, public. The availability and flow of capital into these firms is a key component fueling employment growth for the tech industry. While venture capital is still ample and available, it has become more focused on larger deals to the most promising companies, according to CB Insights. Funding in the U.S. has been on an upward trend since 2010, reaching almost \$100 billion in 2017 (Figure 10). Funding to the software, internet and mobile subsectors account for about half of all venture capital and is concentrated in more established firms. Investors' willingness to fund technology companies at rising valuations will be critical for continued growth in high-tech hiring and office demand in primary tech markets.

Public market indices such as the Shiller S&P 500 Cyclically Adjusted Price-to-Earnings (CAPE) ratio also reflect rising valuations (Figure 11). The CAPE ratio is a measurement of the broader equity market and is an important metric for gauging the overall health of the economy and the financing environment. Historically, an above-average ratio has preceded significant financial market corrections. The current CAPE ratio exceeds the long-term average and has surpassed the level preceding the 2007 financial crisis. However, it is at about 75% of the dot-com peak level. In addition, the Nasdaq is more than 60% above the dot-com peak, with gains driven by a small number of large tech firms. Strong earnings by major tech companies are driving increased valuations. These firms are major consumers of office space, which suggests the office market is on stronger footing than in previous cycles.

Overall, national indicators show economic fundamentals in the U.S. remain steady. Our outlook is for continued tech and economic growth into 2020. The high-tech industry's expansion at an above-average rate for more than seven years, coupled with the large rise in tech firm valuations, has increased concern over how sustainable the sector's growth is, especially given the shortage in tech-talent labor and the potential for volatility in financial markets. However, we appear to be in the early stages of a technology super-cycle, with new revenue and job creation supported by steady consumer demand for tech products and services. New market opportunities arising from innovations that disrupt existing industries and the continued push by companies to integrate technology into their business models also support an optimistic outlook for continued growth ahead. Lower corporate tax rates and incentives to repatriate offshore cash has enhanced investment and M&A activity, leading to further tech industry growth.

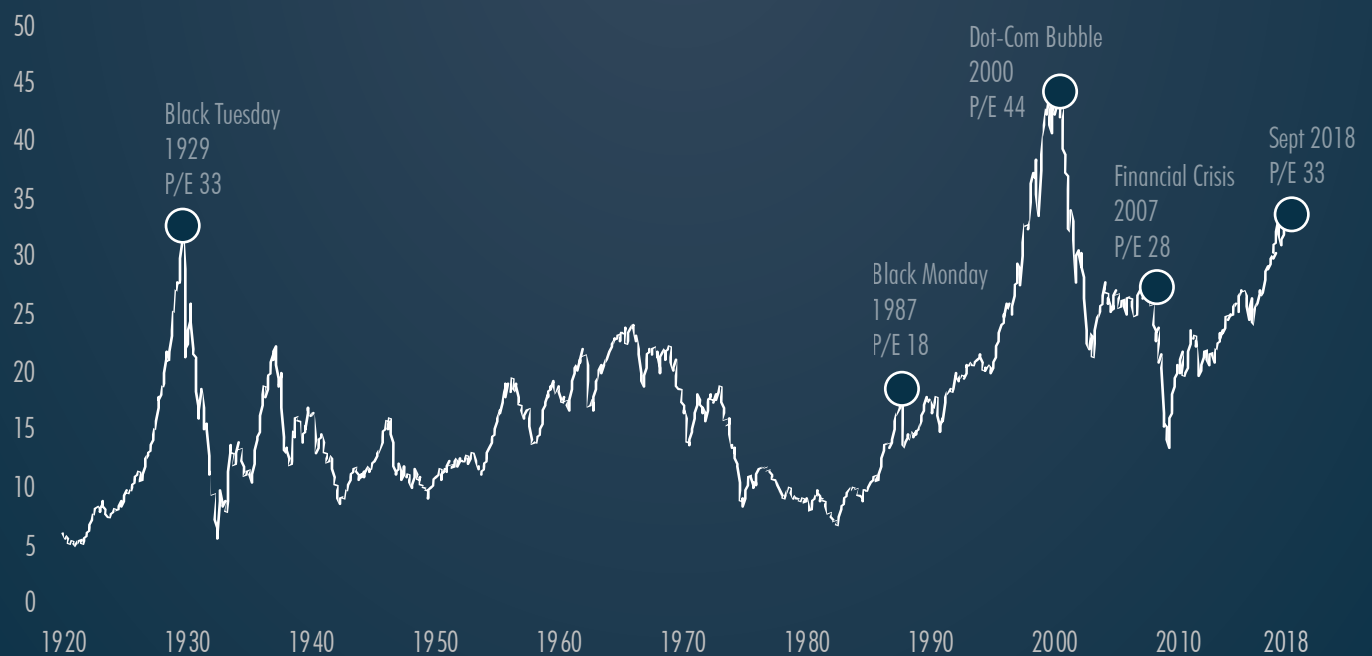
A downturn will eventually occur, and real estate investors should manage their risk and exposure to the most volatile sectors of the tech industry. Tech-30 office markets should expand further in the near term, albeit at a slower pace. Realistic growth expectations, valuations and viable exit strategies by tech firms could protect commercial real estate investors from some of the potential losses that were unforeseen during the last tech cycle.

FIGURE 10: U.S. VENTURE CAPITAL VS. SAN FRANCISCO OFFICE AVERAGE ASKING RENT



Source: PwC/CBInsights MoneyTree and CBRE Research, September 2018.

FIGURE 11: SHILLER S&P 500 CYCLICALLY ADJUSTED PRICE-TO-EARNINGS RATIO (CAPE RATIO)



Source: Shiller PE Ratio, September 2018.

THE NEXT 10 MARKETS

As tech firms seek innovative and creative cultures to attract and retain talent, they are expanding into secondary and tertiary markets (Figure 12). These 10 markets have a growing tech industry and affordable business costs—a compelling alternative to larger, pricier markets.

FIGURE 12: THE NEXT 10 TECH MARKETS TO WATCH

Market	High-Tech Services Employment	Average Asking Office Rent (Q2 2018)	Market	High-Tech Services Employment	Average Asking Office Rent (Q2 2018)
Miami	39,309	\$37.86	Sacramento	13,359	\$22.53
Ottawa*	36,300	\$31.66	Milwaukee	11,831	\$18.65
Kansas City	34,579	\$19.50	Las Vegas	11,377	\$25.08
Tampa	29,317	\$22.52	Colorado Springs	8,915	\$20.97
Norfolk	14,315	\$19.46	New Orleans	4,350	\$19.35

* Ottawa rents represented in CAD.

Source: U.S. Bureau of Labor Statistics, Statistics Canada, CBRE Research, Q2 2018.

APPENDIX:

TECH-30 MARKET PROFILES



QUICK STATS



HOT TOPICS



TECH EMPLOYMENT



**MAJOR OFFICE LEASE
TRANSACTIONS**



MARKET RANKINGS



CHARTS

EMPLOYMENT CATEGORIES



Bio-Tech includes scientific research and development services, medical equipment and supplies, pharmaceuticals and medicines, and medical and diagnostic laboratories.



High-Tech Services includes computer systems design and related services, software publishing, data processing, hosting and related services, electronic shopping and electronic auctions, and internet publishing and broadcasting and web search portals.



Design Services includes architectural and engineering services, and specialized design services.



Office-Using Jobs includes professional and business services, financial activities and information.



High-Tech Manufacturing includes computer and electronic products, electrical equipment, and other electrical equipment and components.



Telecom includes telecommunications.



Media-Entertainment includes motion picture and video production, and advertising and related services.

Data sources used in this report include industry employment data from the U.S. Bureau of Labor Statistics, Statistics Canada, the PriceWaterhouseCoopers/National Venture Capital Association Moneytree Report, the Shiller S&P 500 Cyclically Adjusted PE Ratio (CAPE Ratio), Consumer Electronics Association, and CBRE Research.

SEATTLE (#1)

QUICK STATS

OFFICE MARKET STATS, Q2 2018

Average Asking Rent Direct FS/YR	\$34.97
Vacancy Rate	10.4%
Supply Under Construction	5.6 MSF
Sublease Available	2.0 MSF
Top Tech Submarket Rents/Vacancy	Lake Union \$41.5/3.6%

HIGH-TECH INDUSTRY STATS, 2017

Employment	165,264
High-Tech Software/Services	
Employment Clustering % of Office-Using Jobs	42.0%
Educational Attainment Residents w/ BA or higher	46.2%
Labor Cost (MSA) Software Engineer	\$130,915

SIGNIFICANT OFFICE LEASE DEALS, 2018

Amazon	333 108th Ave NE	400,000 SF
Google	Westlake Ave N and Mercer St	322,000 SF
Mindtree	3265 160th Ave SE	93,800 SF

Source: CBRE Research, Q2 2018.

HOT TOPICS

- The top submarkets of Downtown Seattle and the Eastside are extremely tight due to limited new supply in the last decade, which has pushed out some cost-conscious companies.
- Tenant improvement costs have grown tremendously in the last three years, rising as much as 40%, causing tenants to reengineer their plans in order to find savings.
- With no increase in supply in the short term, landlords in the submarkets desired by tech tenants are pushing rents to all-time highs.

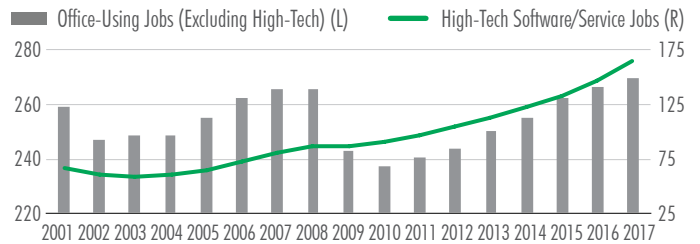
HIGH-TECH SOFTWARE/SERVICES JOB AND OFFICE RENT GROWTH

Rank	Market	High-Tech Job Growth		Office Market Rent Growth	
		Current Period 2016 & 2017	Prior Period 2014 & 2015	Current Period Q2'16 vs Q2'18	Prior Period Q2'14 vs Q2'16
1	Seattle	25.7%	17.5%	13.9%	6.4%
2	St. Louis	23.3%	2.1%	1.4%	1.1%
3	Montreal	22.3%	0.1%	-0.7%	3.3%
4	San Francisco	22.1%	47.3%	3.9%	22.7%
5	Toronto	18.9%	25.8%	2.1%	-1.2%
6	Indianapolis	18.4%	24.8%	9.2%	5.0%
7	Austin	17.1%	34.1%	7.9%	15.3%
8	Charlotte	15.4%	32.6%	13.7%	14.8%
9	Los Angeles	14.7%	13.5%	15.8%	10.1%
10	Orange County	14.5%	13.7%	15.5%	24.3%
11	Silicon Valley	13.9%	22.7%	7.2%	28.4%
12	Portland	12.8%	12.3%	13.8%	12.4%
13	Denver	12.5%	10.3%	9.6%	12.0%
14	New York	12.4%	25.0%	-1.4%	11.6%
15	Nashville	12.3%	16.0%	12.3%	18.1%
16	San Diego	12.3%	7.9%	8.0%	13.7%
17	Phoenix	10.9%	36.3%	8.5%	11.6%
18	Atlanta	10.7%	12.3%	16.3%	11.4%
19	Raleigh-Durham	10.2%	16.0%	12.8%	7.6%
20	Chicago	9.6%	22.1%	5.8%	5.7%
21	Pittsburgh	8.9%	22.7%	1.9%	7.3%
22	Salt Lake City	8.1%	14.2%	9.0%	11.0%
23	Boston	7.7%	11.5%	6.3%	12.7%
24	Detroit	5.4%	17.2%	6.3%	3.5%
25	Baltimore	4.2%	4.8%	1.6%	-0.5%
26	Washington, D.C.	3.9%	3.7%	10.8%	-3.7%
27	Dallas/Ft. Worth	3.4%	18.1%	5.7%	16.6%
28	Vancouver	2.7%	17.1%	6.3%	9.8%
29	Minneapolis/St. Paul	1.3%	7.8%	3.1%	10.0%
30	Philadelphia	-2.3%	4.1%	4.8%	4.4%

Ranked by high-tech job growth rate.

Source: U.S. Bureau of Labor Statistics, Statistics Canada, CBRE Research, Q2 2018.

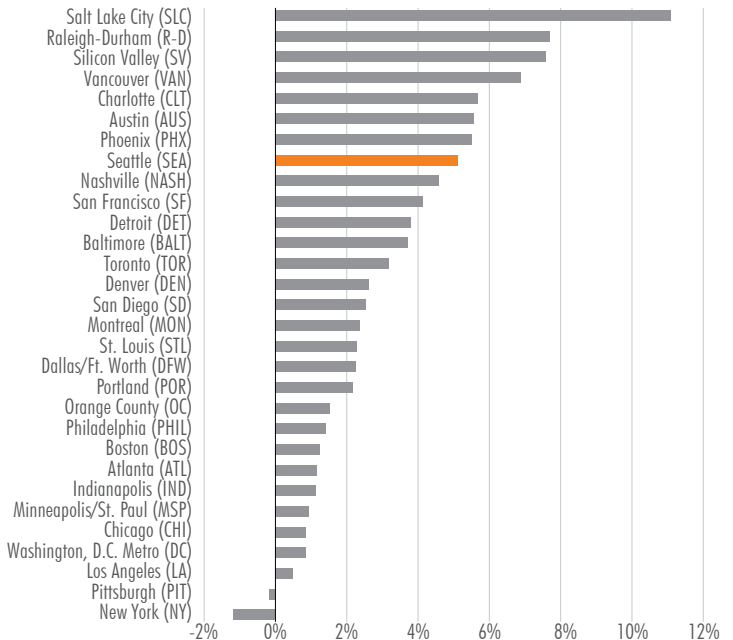
HIGH-TECH SOFTWARE/SERVICES VS. OFFICE-USING JOBS (THOUSANDS)



Source: CBRE Research, Q2 2018 and U.S. Bureau of Labor Statistics, July 2018.

NET ABSORPTION GROWTH

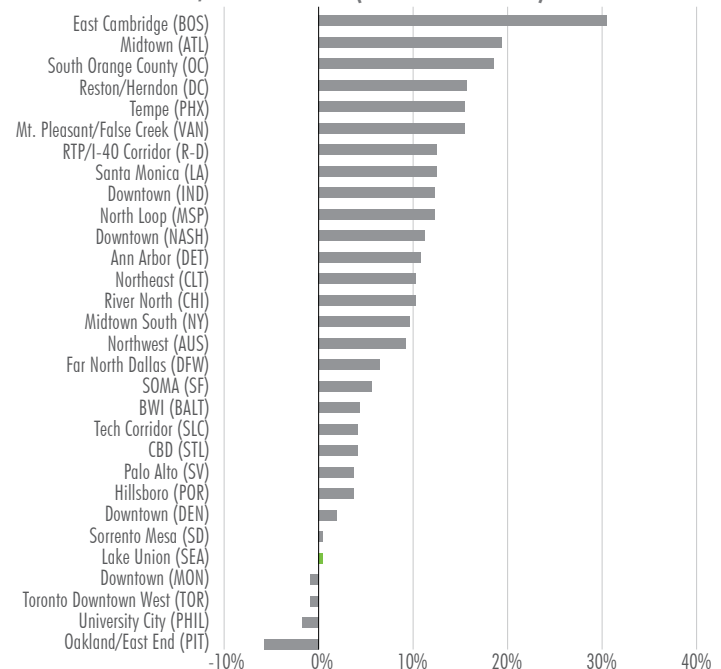
OVERALL MARKET, PAST TWO YEARS (Q3 2016 - Q2 2018)



Source: CBRE Research, Q2 2018.

RENT GROWTH

TOP TECH SUBMARKET, PAST TWO YEARS (Q2 2016 vs. Q2 2018)



Source: CBRE Research, Q2 2018.

ST. LOUIS (#2)

QUICK STATS

OFFICE MARKET STATS, Q2 2018

Average Asking Rent	\$18.98
Direct FS/YR	
Vacancy Rate	11.6%
Supply	
Under Construction	0.9 MSF
Sublease Available	0.6 MSF
Top Tech Submarket	CBD
Rents/Vacancy	\$16.64/18.2%

HIGH-TECH INDUSTRY STATS, 2017

Employment	25,111
High-Tech Software/Services	
Employment Clustering	9.6%
% of Office-Using Jobs	
Educational Attainment	34.1%
Residents w/ BA or higher	
Labor Cost (MSA)	\$102,242
Software Engineer	

SIGNIFICANT OFFICE LEASE DEALS, 2018

KnowledgeLake	6 Cityplace Dr	24,000 SF
Ultimate Software	940 Westport Plz	17,200 SF
Multiply	3700 Forest Park Ave	15,000 SF

Source: CBRE Research, Q2 2018.

HOT TOPICS

- The National Geospatial Intelligence Agency is preparing a new \$1.75 billion campus, moving from South City to North City, adding over 700,000 sq. ft. of high-tech Class A office space.
- A new MetroLink light rail stop, among other infrastructure improvements, opened at the Cortex Innovation District, a hub of tech employment in St. Louis.
- The ever-expanding biotech segment in St. Louis continues to bring more new jobs to the area, with tech, biotech and agtech companies taking up office and R&D/Flex facilities.

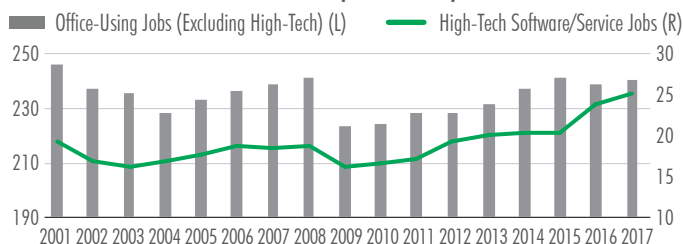
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3	Montreal	22.3%	0.1%	-0.7%	3.3%
4	San Francisco	22.1%	47.3%	3.9%	22.7%
5	Toronto	18.9%	25.8%	2.1%	-1.2%
6	Indianapolis	18.4%	24.8%	9.2%	5.0%
7	Austin	17.1%	34.1%	7.9%	15.3%
8	Charlotte	15.4%	32.6%	13.7%	14.8%
9	Los Angeles	14.7%	13.5%	15.8%	10.1%
10	Orange County	14.5%	13.7%	15.5%	24.3%
11	Silicon Valley	13.9%	22.7%	7.2%	28.4%
12	Portland	12.8%	12.3%	13.8%	12.4%
13	Denver	12.5%	10.3%	9.6%	12.0%
14	New York	12.4%	25.0%	-1.4%	11.6%
15	Nashville	12.3%	16.0%	12.3%	18.1%
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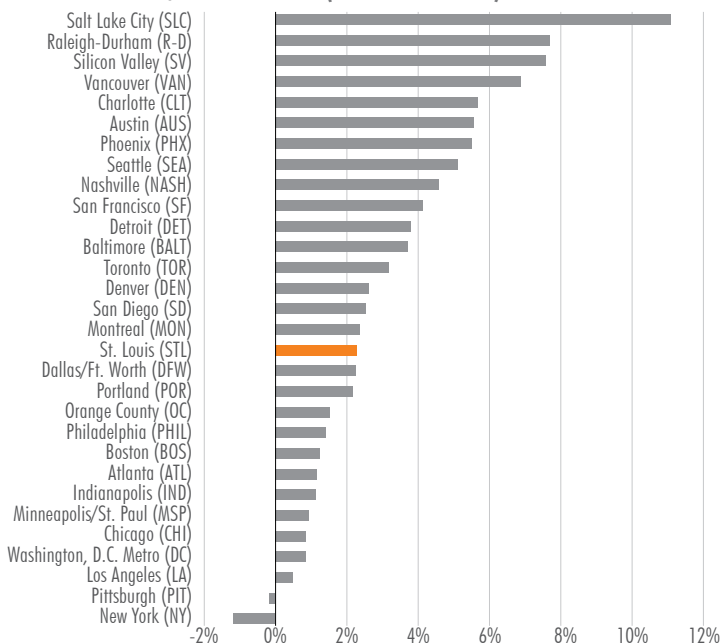
HIGH-TECH SOFTWARE/SERVICES VS. OFFICE-USING JOBS (THOUSANDS)



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NET ABSORPTION GROWTH

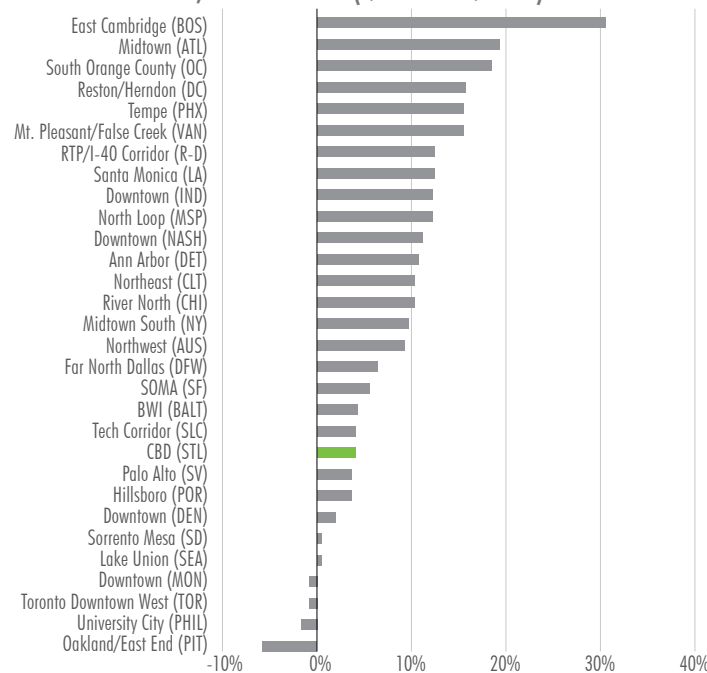
OVERALL MARKET, PAST TWO YEARS (Q3 2016 - Q2 2018)



Source: CBRE Research, Q2 2018.

RENT GROWTH

TOP TECH SUBMARKET, PAST TWO YEARS (Q2 2016 vs. Q2 2018)



Source: CBRE Research, Q2 2018.

MONTREAL (#3)

QUICK STATS

OFFICE MARKET STATS, Q2 2018

Average Asking Rent	\$31.56
Direct FS/YR	CAD
Vacancy Rate	13.0%
Supply	
Under Construction	1.8 MSF
Sublease Available	1.1 MSF
Top Tech Submarket	Downtown
Rents/Vacancy	\$38.06 CAD/9.6%

HIGH-TECH INDUSTRY STATS, 2017

Employment	89,900
High-Tech Software/Services	
Employment Clustering	18.6%
% of Office-Using Jobs	
Educational Attainment	29.4%
Residents w/ BA or higher	
Labor Cost (MSA)	\$68,702
Software Engineer	CAD

SIGNIFICANT OFFICE LEASE DEALS, 2018

GSoft	1751 Richardson St	81,000 SF
MILA	6666 St-Urbain St	63,600 SF
eSignLive	1100 des-Canadiens-de-Montreal Ave	56,000 SF

Source: CBRE Research, Q2 2018.

HOT TOPICS

- Montreal's strong education pipeline, relatively low labor costs and affordable rental housing market is attracting large tech companies working to advance AI science.
- The Montreal Institute for Learning Algorithms (MILA) expanded to a new location to accommodate recent growth and develop machine learning.
- Quebec is one of the world's largest centers for video game development, with existing companies growing and new companies entering the market to take advantage of the province's 10,000 full-time video game workers, most of whom are in Montreal.

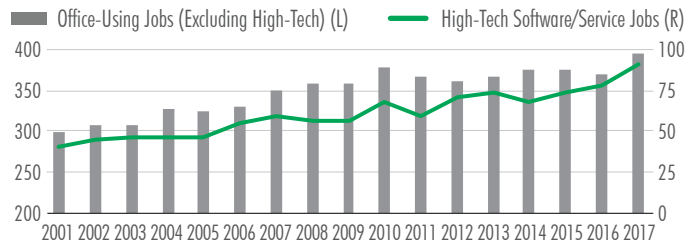
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Ranked by high-tech job growth rate.

Source: U.S. Bureau of Labor Statistics, Statistics Canada, CBRE Research, Q2 2018.

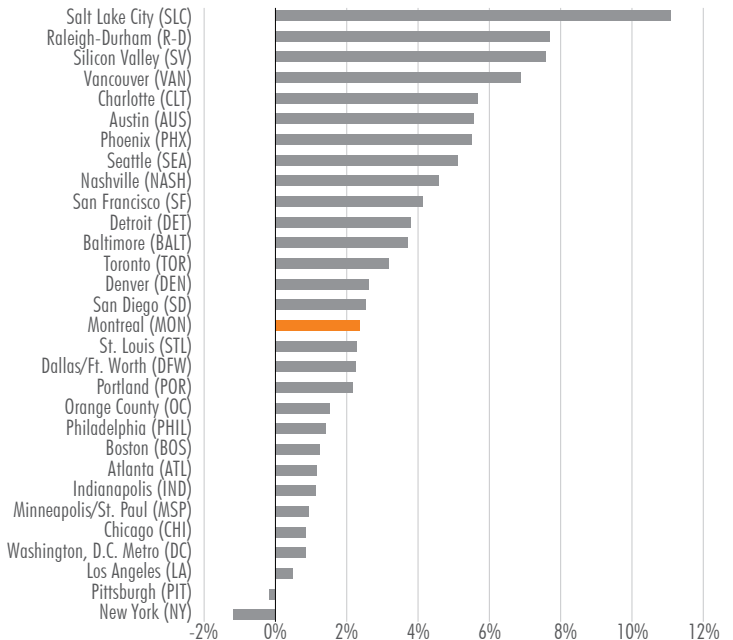
HIGH-TECH SOFTWARE/SERVICES VS. OFFICE-USING JOBS (THOUSANDS)



Source: CBRE Research, Q2 2018 and Statistics Canada August 2018.

NET ABSORPTION GROWTH

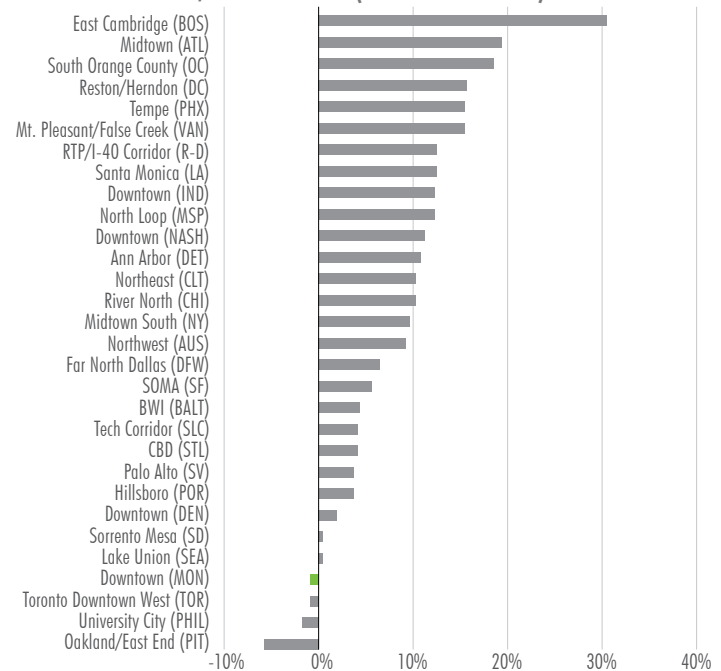
OVERALL MARKET, PAST TWO YEARS (Q3 2016 - Q2 2018)



Source: CBRE Research, Q2 2018.

RENT GROWTH

TOP TECH SUBMARKET, PAST TWO YEARS (Q2 2016 vs. Q2 2018)



Source: CBRE Research, Q2 2018.

SAN FRANCISCO (# 4)

QUICK STATS

OFFICE MARKET STATS, Q2 2018

Average Asking Rent	\$75.54
Direct FS/YR	
Vacancy Rate	5.2%
Supply	
Under Construction	4.9 MSF
Sublease Available	1.9 MSF
Top Tech Submarket	SOMA
Rents/Vacancy	\$76.96/4.8%

HIGH-TECH INDUSTRY STATS, 2017

Employment	87,023
High-Tech Software/Services	
Employment Clustering	30.3%
% of Office-Using Jobs	
Educational Attainment	54.2%
Residents w/ BA or higher	
Labor Cost (MSA)	\$145,012
Software Engineer	

SIGNIFICANT OFFICE LEASE DEALS, 2018

Facebook	250 Howard St	756,000 SF
Cruise Automation	301, 333, 345 Brannan St	375,000 SF
Twitter	1355 Market St	215,000 SF

Source: CBRE Research, Q2 2018.

HOT TOPICS

- Since 2010, tech companies in the City of San Francisco have added more than 40,000 jobs to the market and accounted for more than 50% of leasing activity.
- Tenant demand, boosted by tech, has consistently outpaced supply during the past 18 months, leading to tight supply within existing buildings and no supply within new construction buildings scheduled for delivery through 2019.
- Through September 2018, there have been nine tech transactions over 100,000 sq. ft., totaling 2.3 million sq. ft. of activity.

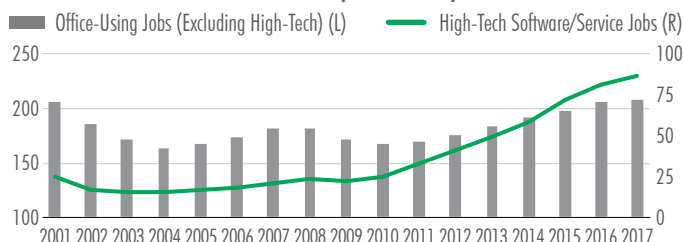
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Ranked by high-tech job growth rate.

Source: U.S. Bureau of Labor Statistics, Statistics Canada, CBRE Research, Q2 2018.

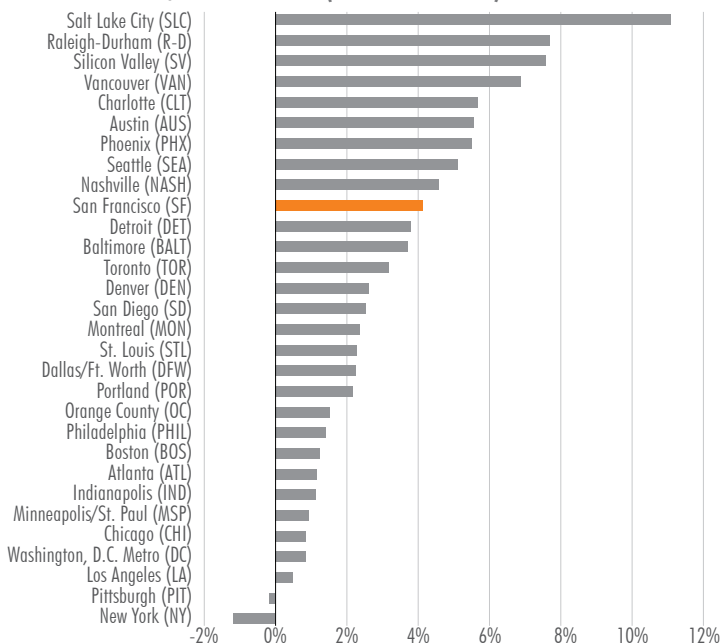
HIGH-TECH SOFTWARE/SERVICES VS. OFFICE-USING JOBS (THOUSANDS)



Source: CBRE Research, Q2 2018 and U.S. Bureau of Labor Statistics, July 2018.

NET ABSORPTION GROWTH

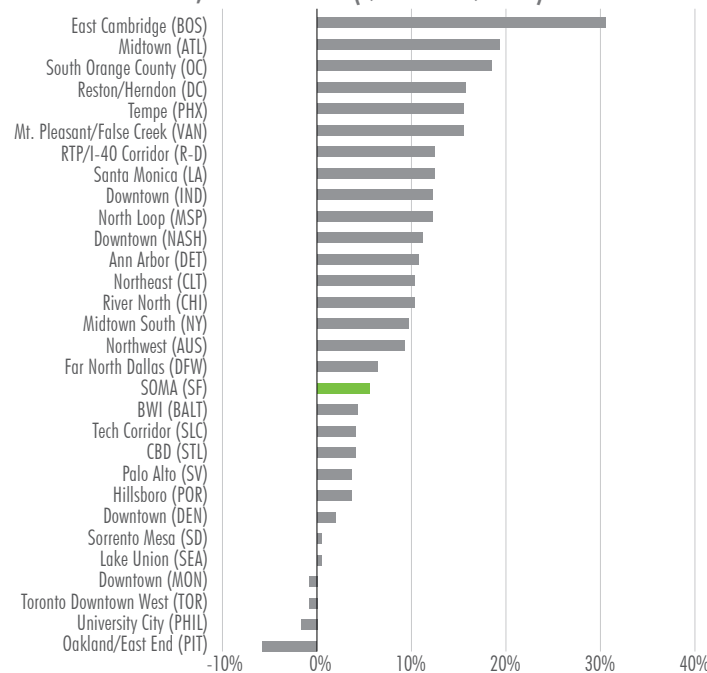
OVERALL MARKET, PAST TWO YEARS (Q3 2016 - Q2 2018)



Source: CBRE Research, Q2 2018.

RENT GROWTH

TOP TECH SUBMARKET, PAST TWO YEARS (Q2 2016 vs. Q2 2018)



Source: CBRE Research, Q2 2018.

TORONTO (#5)

QUICK STATS

OFFICE MARKET STATS, Q2 2018

Average Asking Rent	\$34.66
Direct FS/YR	CAD
Vacancy Rate	8.1%
New Supply	
Under Construction	5.1 MSF
Sublease Available	1.6 MSF
Top Tech Submarket	Toronto Downtown West
Rents/Vacancy	\$42.61 CAD/3.5%

HIGH-TECH INDUSTRY STATS, 2017

Employment	143,600
High-Tech Software/Services	
Employment Clustering	15.9%
% of Office-Using Jobs	
Educational Attainment	36.2%
Residents w/ BA or higher	
Labor Cost (MSA)	\$84,656
Software Engineer	CAD

SIGNIFICANT OFFICE LEASE DEALS, 2018

Shopify	8 Spadina Ave	434,000 SF
OpenText	38 Leek Cres	100,000 SF
Confidential	111 Richmond St W	89,100 SF

Source: CBRE Research, Q2 2018.

HOT TOPICS

- Thanks to innovations from the University of Toronto—one of the world's largest institutions focused on AI research—the city is attracting hundreds of millions of dollars in investments from major tech firms looking to join the growing hub.
- The MaRS Discovery District, one of the largest urban innovation hubs in the world, is set to expand its offices by leasing space at the Waterfront Innovation Centre as demand swells from its growing portfolio of startup companies.
- A notable amount of tech tenants have been expanding and relocating to be more centrally located in order to attract and retain talent. This demand has driven vacancy rates to all-time lows and placed upward pressure on pricing, particularly in the brick-and-beam space.

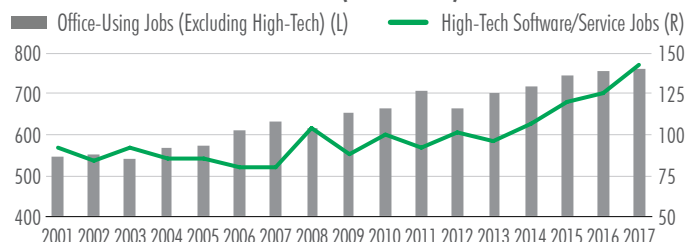
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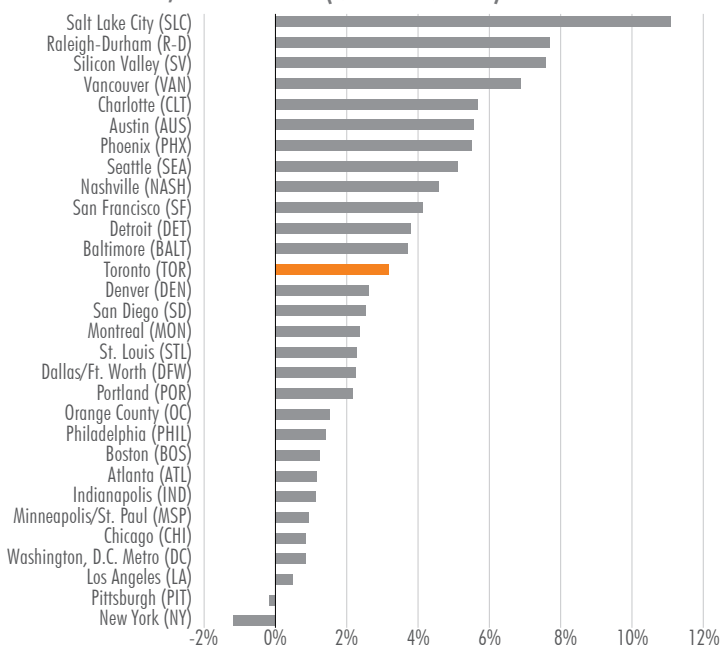
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NET ABSORPTION GROWTH

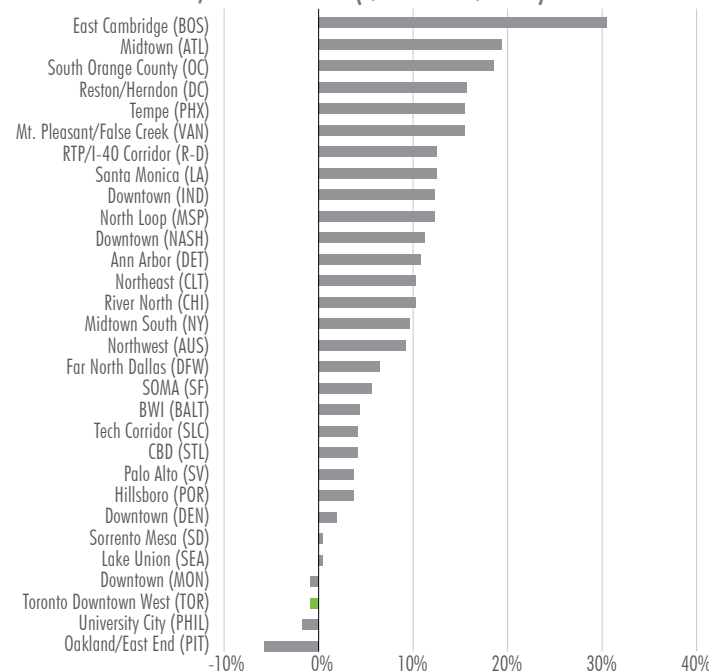
OVERALL MARKET, PAST TWO YEARS (Q3 2016 - Q2 2018)



Source: CBRE Research, Q2 2018.

RENT GROWTH

TOP TECH SUBMARKET, PAST TWO YEARS (Q2 2016 vs. Q2 2018)



Source: CBRE Research, Q2 2018.

INDIANAPOLIS (#6)

QUICK STATS

OFFICE MARKET STATS, Q2 2018

Average Asking Rent	\$19.76
Direct FS/YR	
Vacancy Rate	16.2%
New Supply	
Under Construction	0.4 MSF
Sublease Available	0.2 MSF
Top Tech Submarket	Downtown
Rents/Vacancy	\$21.77/13.5%

HIGH-TECH INDUSTRY STATS, 2017

Employment	31,192
High-Tech Software/Services	
Employment Clustering	13.7%
% of Office-Using Jobs	
Educational Attainment	33.8%
Residents w/ BA or higher	
Labor Cost (MSA)	\$86,676
Software Engineer	

SIGNIFICANT OFFICE LEASE DEALS, 2018

ANGI Homeservices	130 E Washington St	65,500 SF
Healthx	9225 Priority Way West Dr	30,700 SF
Baker Hill Solutions	1320 City Center Dr	26,400 SF

Source: CBRE Research, Q2 2018.

HOT TOPICS

- Boosted by the tech industry, Downtown's average asking rent commands a 10% premium over the market-wide average rate and is up 15% since the start of 2016.
- The IT services sector in Indianapolis is growing, with one company expanding by 786,000 sq. ft. to add an additional 3,000 workers by 2023.
- Tech accelerators and venture capitalists are investing in the market.

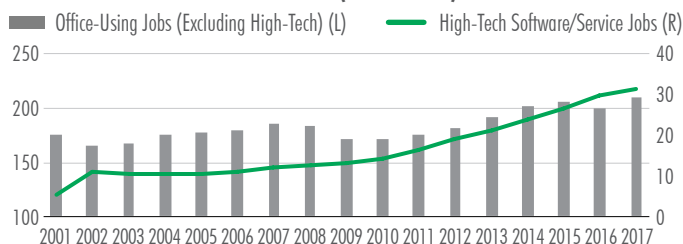
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5	Toronto	18.9%	25.8%	2.1%	-1.2%
6	Indianapolis	18.4%	24.8%	9.2%	5.0%
7	Austin	17.1%	34.1%	7.9%	15.3%
8	Charlotte	15.4%	32.6%	13.7%	14.8%
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12	Portland	12.8%	12.3%	13.8%	12.4%
13	Denver	12.5%	10.3%	9.6%	12.0%
14	New York	12.4%	25.0%	-1.4%	11.6%
15	Nashville	12.3%	16.0%	12.3%	18.1%
16	San Diego	12.3%	7.9%	8.0%	13.7%
17	Phoenix	10.9%	36.3%	8.5%	11.6%
18	Atlanta	10.7%	12.3%	16.3%	11.4%
19	Raleigh-Durham	10.2%	16.0%	12.8%	7.6%
20	Chicago	9.6%	22.1%	5.8%	5.7%
21	Pittsburgh	8.9%	22.7%	1.9%	7.3%
22	Salt Lake City	8.1%	14.2%	9.0%	11.0%
23	Boston	7.7%	11.5%	6.3%	12.7%
24	Detroit	5.4%	17.2%	6.3%	3.5%
25	Baltimore	4.2%	4.8%	1.6%	-0.5%
26	Washington, D.C.	3.9%	3.7%	10.8%	-3.7%
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29	Minneapolis/St. Paul	1.3%	7.8%	3.1%	10.0%
30	Philadelphia	-2.3%	4.1%	4.8%	4.4%

Ranked by high-tech job growth rate.

Source: U.S. Bureau of Labor Statistics, Statistics Canada, CBRE Research, Q2 2018.

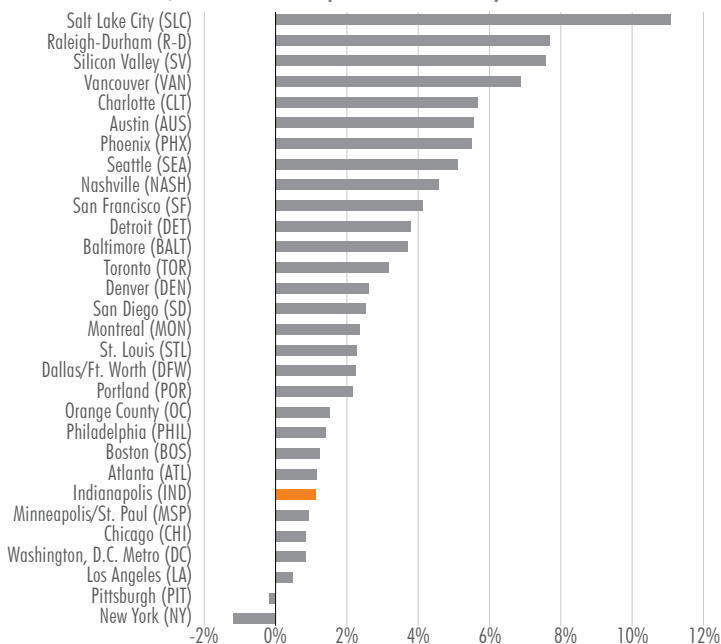
HIGH-TECH SOFTWARE/SERVICES VS. OFFICE-USING JOBS (THOUSANDS)



Source: CBRE Research, Q2 2018 and U.S. Bureau of Labor Statistics, July 2018.

NET ABSORPTION GROWTH

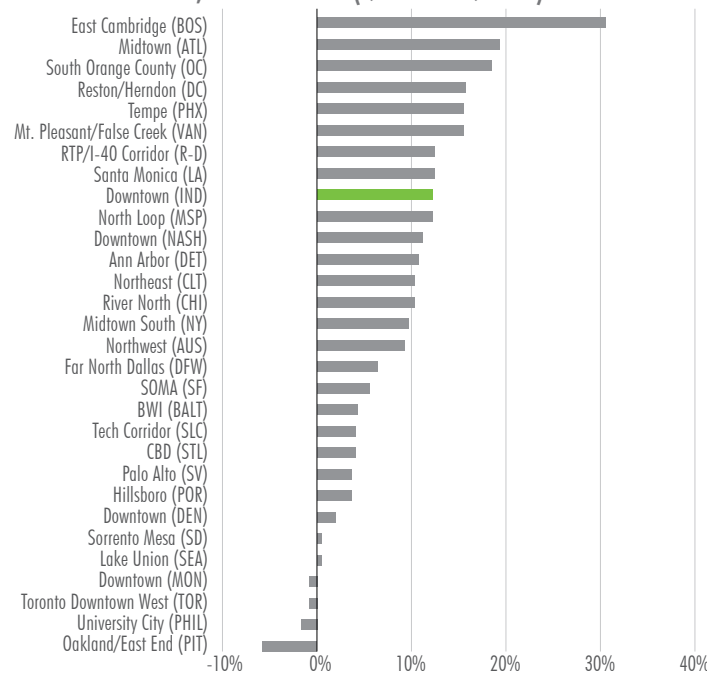
OVERALL MARKET, PAST TWO YEARS (Q3 2016 - Q2 2018)



Source: CBRE Research, Q2 2018.

RENT GROWTH

TOP TECH SUBMARKET, PAST TWO YEARS (Q2 2016 vs. Q2 2018)



Source: CBRE Research, Q2 2018.

AUSTIN (#7)

QUICK STATS

OFFICE MARKET STATS, Q2 2018

Average Asking Rent	\$35.84
Direct FS/YR	
Vacancy Rate	10.7%
Supply	
Under Construction	4.2 MSF
Sublease Available	1.5 MSF
Top Tech Submarket	Northwest
Rents/Vacancy	\$36.16/10.2%

HIGH-TECH INDUSTRY STATS, 2017

Employment	51,243
High-Tech Software/Services	
Employment Clustering	20.6%
% of Office-Using Jobs	
Educational Attainment	42.8%
Residents w/ BA or higher	
Labor Cost (MSA)	\$105,218
Software Engineer	

SIGNIFICANT OFFICE LEASE DEALS, 2018

Indeed	200 W 6th St	307,800 SF
SailPoint Technologies	11120 Four Points Dr	165,000 SF
Confidential	7700 Pramer Ln	124,000 SF

Source: CBRE Research, Q2 2018.

HOT TOPICS

- The most walkable areas and most sought-after locales for tech companies in Austin are the Domain, a micro-market located in the Northwest Austin submarket, and the CBD.
- Tech tenants accounted for 28% of office lease transactions from Q3 2017 to Q2 2018, as citywide average asking rates climbed to a historic high of \$35.84 per sq. ft.
- Class A office space is limited, and developers are working to increase supply as quickly as possible, with 4.2 million sq. ft. under construction.
- Austin attracts top tech talent thanks to a relatively lower cost of living and a business-friendly climate.

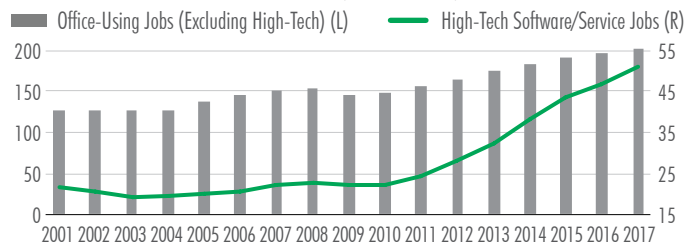
HIGH-TECH SOFTWARE/SERVICES JOB AND OFFICE RENT GROWTH

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Ranked by high-tech job growth rate.

Source: U.S. Bureau of Labor Statistics, Statistics Canada, CBRE Research, Q2 2018.

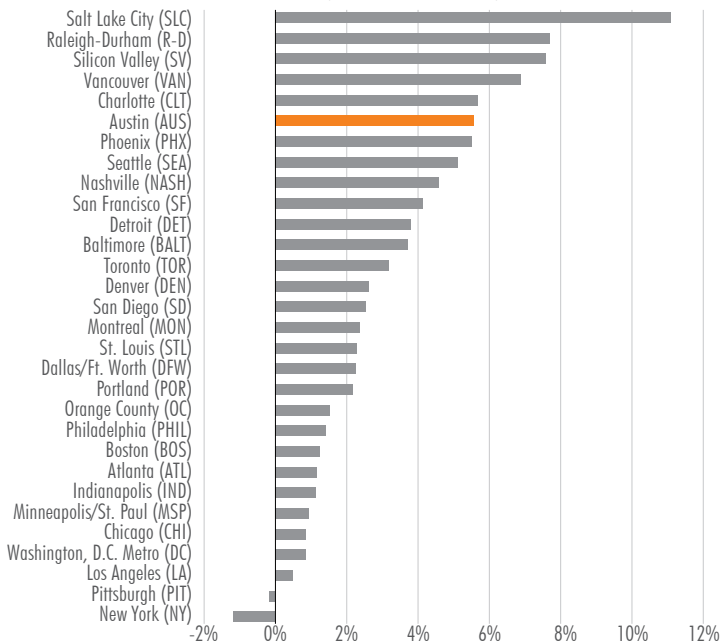
HIGH-TECH SOFTWARE/SERVICES VS. OFFICE-USING JOBS (THOUSANDS)



Source: CBRE Research, Q2 2018 and U.S. Bureau of Labor Statistics, July 2018.

NET ABSORPTION GROWTH

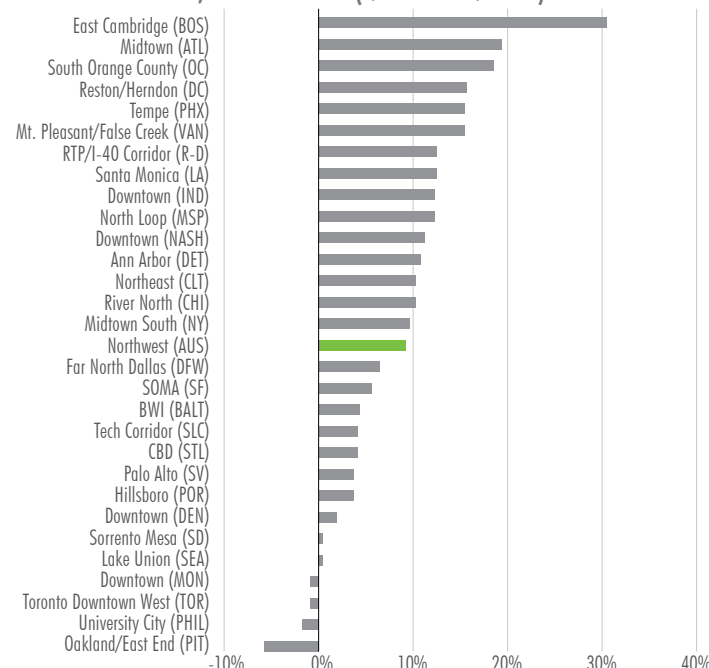
OVERALL MARKET, PAST TWO YEARS (Q3 2016 - Q2 2018)



Source: CBRE Research, Q2 2018.

RENT GROWTH

TOP TECH SUBMARKET, PAST TWO YEARS (Q2 2016 vs. Q2 2018)



Source: CBRE Research, Q2 2018.

CHARLOTTE (#8)

QUICK STATS

OFFICE MARKET STATS, Q2 2018

Average Asking Rent	\$26.64
Direct FS/YR	
Vacancy Rate	7.0%
New Supply	
Under Construction	2.5 MSF
Sublease Available	0.1 MSF
Top Tech Submarket	Northeast
Rents/Vacancy	\$21.72/5.2%

HIGH-TECH INDUSTRY STATS, 2017

Employment	24,464
High-Tech Software/Services	
Employment Clustering	10.1%
% of Office-Using Jobs	
Educational Attainment	34.4%
Residents w/ BA or higher	
Labor Cost (MSA)	\$106,855
Software Engineer	

SIGNIFICANT OFFICE LEASE DEALS, 2018

Global Payments	3540 Toringdon Way	75,700 SF
Midrex	3735 Glen Lake Dr	46,300 SF
Level	101 N Tryon St	24,200 SF

Source: CBRE Research, Q2 2018.

HOT TOPICS

- Charlotte is teaming up with major financial players in the city to start the Charlotte Fintech Initiative, which will bring new crops of innovative financial services startups to its rapidly growing fintech sector.
- Charlotte's population and job growth, spurred by a combination of affordability and a high quality of life, have outpaced the U.S. over the past five years.
- Charlotte is the fastest tech talent growth market in the past five years, according to CBRE's Scoring Tech Talent report, with tech and non-tech companies growing and actively searching for available space and talent.

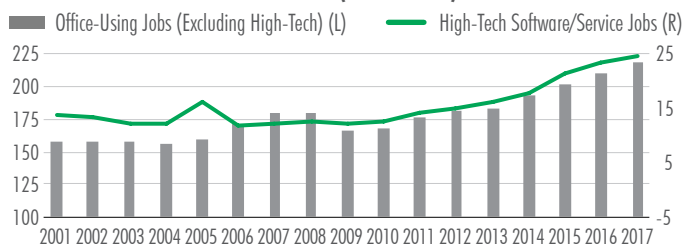
HIGH-TECH SOFTWARE/SERVICES JOB AND OFFICE RENT GROWTH

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Ranked by high-tech job growth rate.

Source: U.S. Bureau of Labor Statistics, Statistics Canada, CBRE Research, Q2 2018.

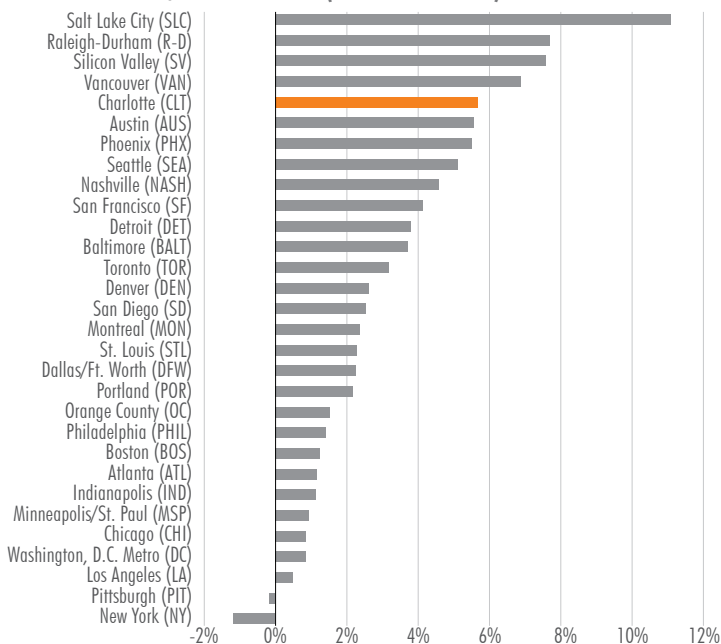
HIGH-TECH SOFTWARE/SERVICES VS. OFFICE-USING JOBS (THOUSANDS)



Source: CBRE Research, Q2 2018 and U.S. Bureau of Labor Statistics, July 2018.

NET ABSORPTION GROWTH

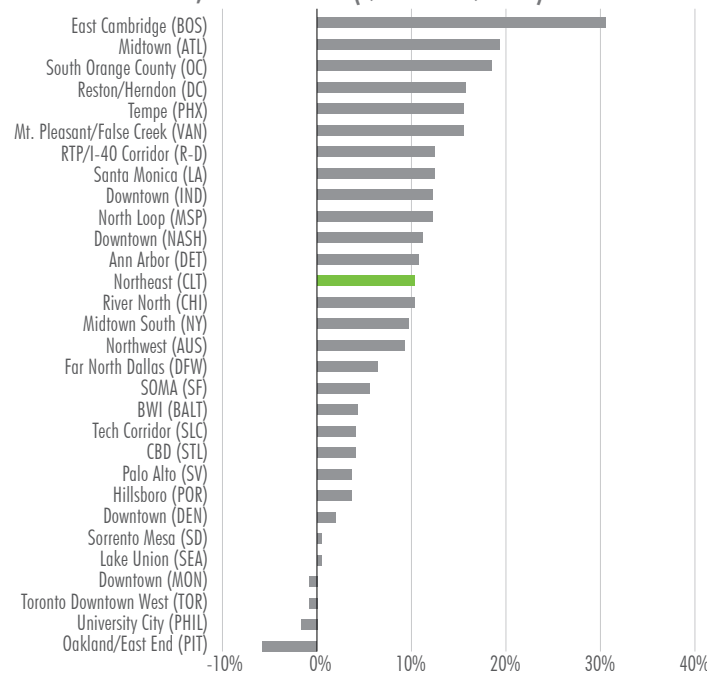
OVERALL MARKET, PAST TWO YEARS (Q3 2016 - Q2 2018)



Source: CBRE Research, Q2 2018.

RENT GROWTH

TOP TECH SUBMARKET, PAST TWO YEARS (Q2 2016 vs. Q2 2018)



Source: CBRE Research, Q2 2018.

LOS ANGELES (#9)

QUICK STATS

OFFICE MARKET STATS, Q2 2018

Average Asking Rent	\$40.56
Direct FS/YR	
Vacancy Rate	14.5%
New Supply	
Under Construction	2.7 MSF
Sublease Available	2.3 MSF
Top Tech Submarket	Santa Monica
Rents/Vacancy	\$72.28/11.1%

HIGH-TECH INDUSTRY STATS, 2017

Employment	79,593
High-Tech Software/Services	
Employment Clustering	7.3%
% of Office-Using Jobs	
Educational Attainment	31.5%
Residents w/ BA or higher	
Labor Cost (MSA)	\$116,137
Software Engineer	

SIGNIFICANT OFFICE LEASE DEALS, 2018

Honey	963 E 4th St	130,000 SF
Spotify	555 Mateo St	110,000 SF
Cornerstone OnDemand	1601 Cloverfield Blvd	94,000 SF

Source: CBRE Research, Q2 2018.

HOT TOPICS

- The convergence of tech, media and entertainment drives growth throughout the region.
- In Santa Monica, firms are exploring alternatives, from coworking to converting retail space to office, due to the limited amount of available product.
- With vacancy extremely tight and rents approaching \$100 per sq. ft. in coastal areas, locations near public transportation rail lines are attracting both developers and tenants.

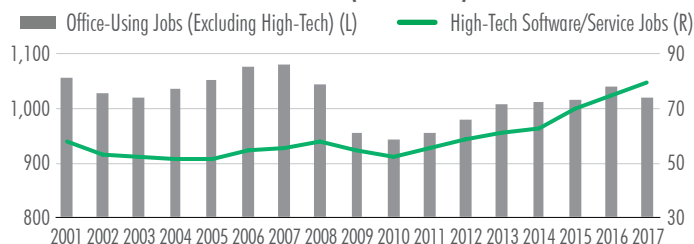
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Source: U.S. Bureau of Labor Statistics, Statistics Canada, CBRE Research, Q2 2018.

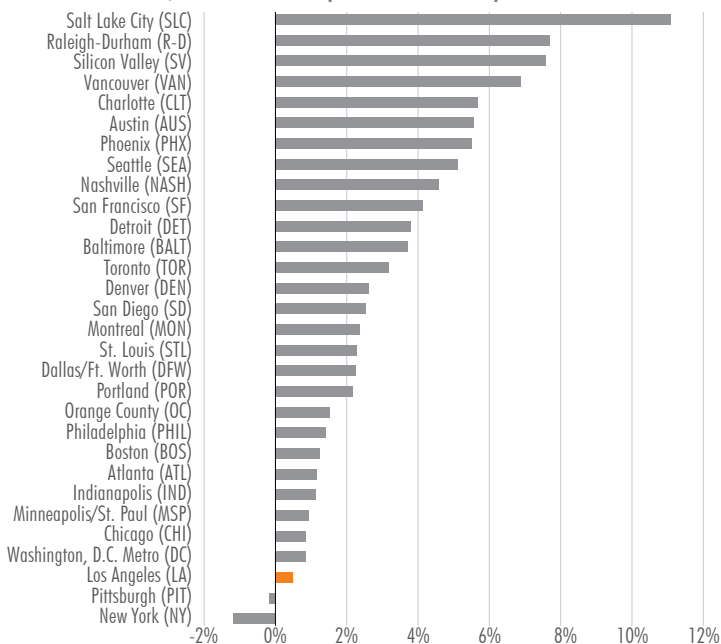
HIGH-TECH SOFTWARE/SERVICES VS. OFFICE-USING JOBS (THOUSANDS)



Source: CBRE Research, Q2 2018 and U.S. Bureau of Labor Statistics, July 2018.

NET ABSORPTION GROWTH

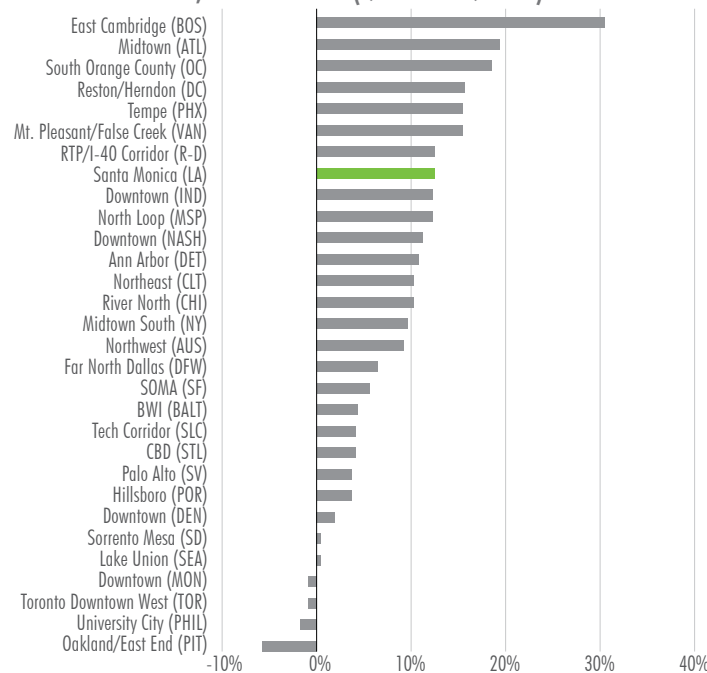
OVERALL MARKET, PAST TWO YEARS (Q3 2016 - Q2 2018)



Source: CBRE Research, Q2 2018.

RENT GROWTH

TOP TECH SUBMARKET, PAST TWO YEARS (Q2 2016 vs. Q2 2018)



Source: CBRE Research, Q2 2018.

ORANGE COUNTY (#10)

QUICK STATS

OFFICE MARKET STATS, Q2 2018

Average Asking Rent Direct FS/YR	\$34.80
Vacancy Rate	10.7%
New Supply	
Under Construction	1.2 MSF
Sublease Available	2.2 MSF
Top Tech Submarket	South Orange County
Rents/Vacancy	\$36.84/9.1%

HIGH-TECH INDUSTRY STATS, 2017

Employment	38,014
High-Tech Software/Services	
Employment Clustering	8.6%
% of Office-Using Jobs	
Educational Attainment	25.9%
Residents w/ BA or higher	
Labor Cost (MSA)	\$119,006
Software Engineer	

SIGNIFICANT OFFICE LEASE DEALS, 2018

Anduril	2722 Michelson Dr	155,000 SF
Ghost Management Group	41 & 43 Discovery	76,200 SF
Yardi Systems, Inc.	3 Hutton Centre	53,500 SF

Source: CBRE Research, Q2 2018.

HOT TOPICS

- Leasing activity by tech companies is strong, accounting for 26% of all deals in 2017.
- The total square footage leased by tech companies grew an average of 2% annually since 2012.
- Tech employment grew 10,500 over the past 10 years, an increase of 38%.

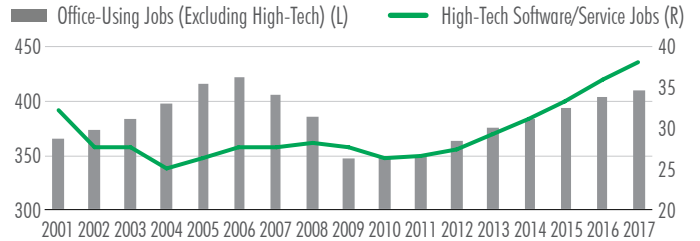
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Ranked by high-tech job growth rate.

Source: U.S. Bureau of Labor Statistics, Statistics Canada, CBRE Research, Q2 2018.

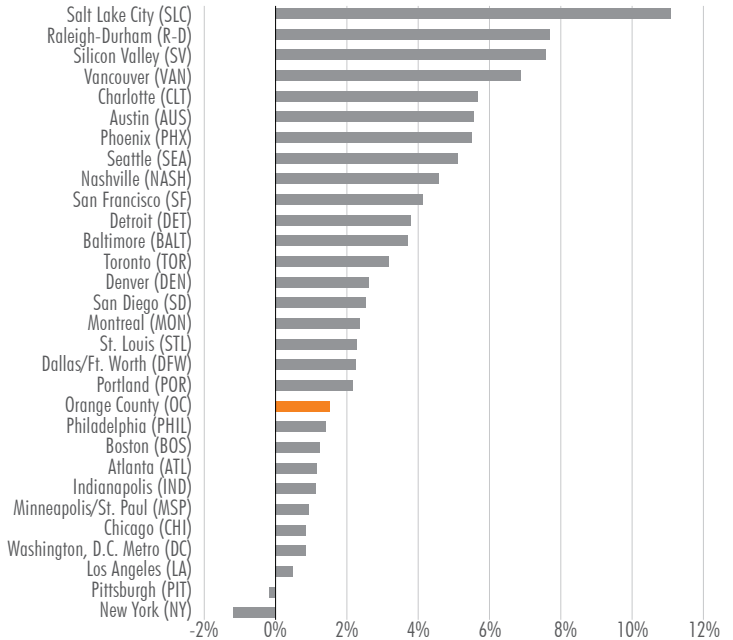
HIGH-TECH SOFTWARE/SERVICES VS. OFFICE-USING JOBS (THOUSANDS)



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NET ABSORPTION GROWTH

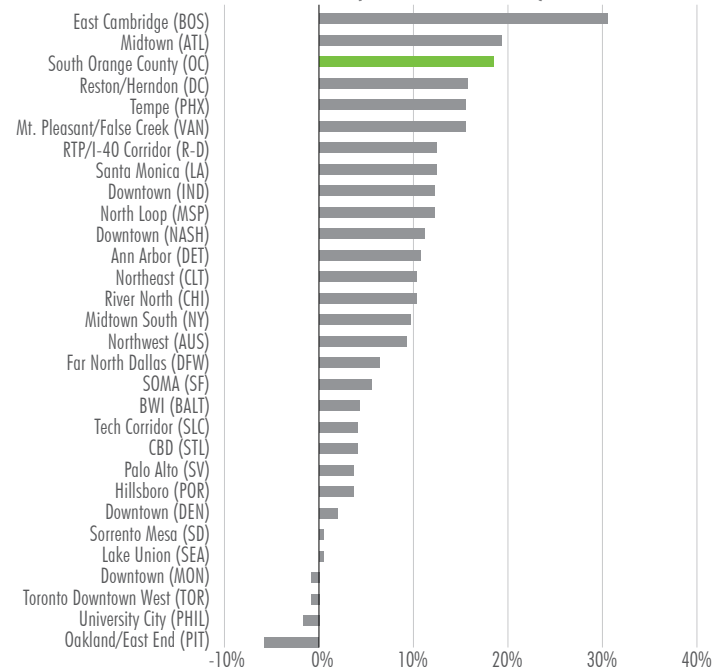
OVERALL MARKET, PAST TWO YEARS (Q3 2016 - Q2 2018)



Source: CBRE Research, Q2 2018.

RENT GROWTH

TOP TECH SUBMARKET, PAST TWO YEARS (Q2 2016 vs. Q2 2018)



Source: CBRE Research, Q2 2018.

SILICON VALLEY (#11)

QUICK STATS

OFFICE MARKET STATS, Q2 2018

Average Asking Rent	\$59.04
Direct FS/YR	
Vacancy Rate	8.8%
Supply	
Under Construction	4.3 MSF
Sublease Available	2.9 MSF
Top Tech Submarket	Palo Alto
Rents/Vacancy	\$104.28/2.6%

HIGH-TECH INDUSTRY STATS, 2017

Employment	205,242
High-Tech Software/Services	
Employment Clustering	42.4%
% of Office-Using Jobs	
Educational Attainment	50.1%
Residents w/ BA or higher	
Labor Cost (MSA)	\$134,381
Software Engineer	

SIGNIFICANT OFFICE LEASE DEALS, 2018

Facebook	1180,1190 Discovery Way/900 Fifth Ave	1,005,000 SF
Micron	110-130 Holger Wy	603,700 SF
Roku	Coleman Ave	472,000 SF

Source: CBRE Research, Q2 2018.

HOT TOPICS

- Silicon Valley was the nation's top market for office net absorption through the first half of 2018, with more than 3 million sq. ft., or 3.9% of the office building stock, absorbed in the past six months.
- The 10 largest leases during the first half of 2018 were completed by tech companies, totaling nearly 5 million sq. ft. of space.
- Both tech and non-tech tenants are seeking amenity-rich, transit-oriented space to differentiate themselves and attract and retain talent.

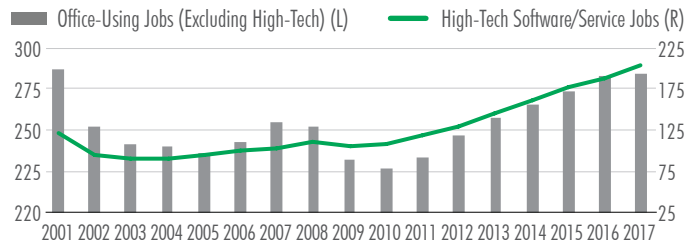
HIGH-TECH SOFTWARE/SERVICES JOB AND OFFICE RENT GROWTH

Rank	Market	High-Tech Job Growth		Office Market Rent Growth	
		Current Period 2016 & 2017	Prior Period 2014 & 2015	Current Period Q2'16 vs Q2'18	Prior Period Q2'14 vs Q2'16
1	Seattle	25.7%	17.5%	13.9%	6.4%
2	St. Louis	23.3%	2.1%	1.4%	1.1%
3	Montreal	22.3%	0.1%	-0.7%	3.3%
4	San Francisco	22.1%	47.3%	3.9%	22.7%
5	Toronto	18.9%	25.8%	2.1%	-1.2%
6	Indianapolis	18.4%	24.8%	9.2%	5.0%
7	Austin	17.1%	34.1%	7.9%	15.3%
8	Charlotte	15.4%	32.6%	13.7%	14.8%
9	Los Angeles	14.7%	13.5%	15.8%	10.1%
10	Orange County	14.5%	13.7%	15.5%	24.3%
11	Silicon Valley	13.9%	22.7%	7.2%	28.4%
12	Portland	12.8%	12.3%	13.8%	12.4%
13	Denver	12.5%	10.3%	9.6%	12.0%
14	New York	12.4%	25.0%	-1.4%	11.6%
15	Nashville	12.3%	16.0%	12.3%	18.1%
16	San Diego	12.3%	7.9%	8.0%	13.7%
17	Phoenix	10.9%	36.3%	8.5%	11.6%
18	Atlanta	10.7%	12.3%	16.3%	11.4%
19	Raleigh-Durham	10.2%	16.0%	12.8%	7.6%
20	Chicago	9.6%	22.1%	5.8%	5.7%
21	Pittsburgh	8.9%	22.7%	1.9%	7.3%
22	Salt Lake City	8.1%	14.2%	9.0%	11.0%
23	Boston	7.7%	11.5%	6.3%	12.7%
24	Detroit	5.4%	17.2%	6.3%	3.5%
25	Baltimore	4.2%	4.8%	1.6%	-0.5%
26	Washington, D.C.	3.9%	3.7%	10.8%	-3.7%
27	Dallas/Ft. Worth	3.4%	18.1%	5.7%	16.6%
28	Vancouver	2.7%	17.1%	6.3%	9.8%
29	Minneapolis/St. Paul	1.3%	7.8%	3.1%	10.0%
30	Philadelphia	-2.3%	4.1%	4.8%	4.4%

Ranked by high-tech job growth rate.

Source: U.S. Bureau of Labor Statistics, Statistics Canada, CBRE Research, Q2 2018.

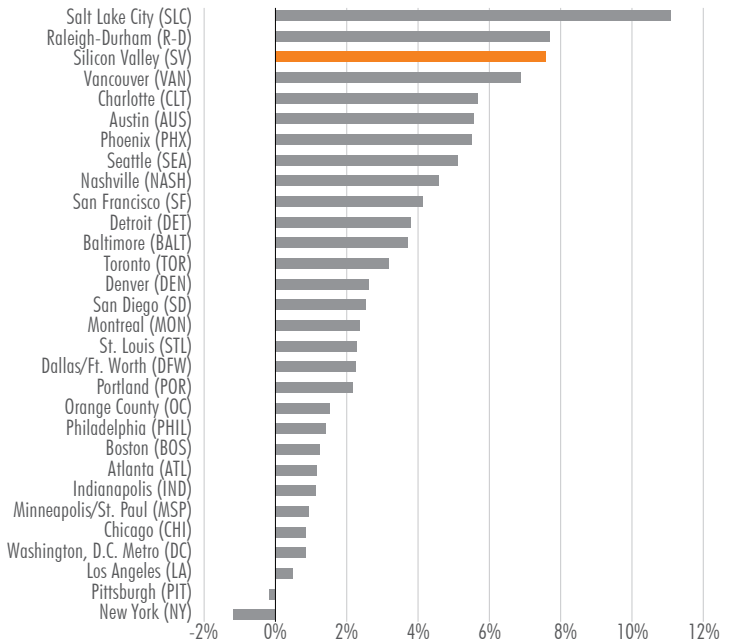
HIGH-TECH SOFTWARE/SERVICES VS. OFFICE-USING JOBS (THOUSANDS)



Source: CBRE Research, Q2 2018 and U.S. Bureau of Labor Statistics, July 2018.

NET ABSORPTION GROWTH

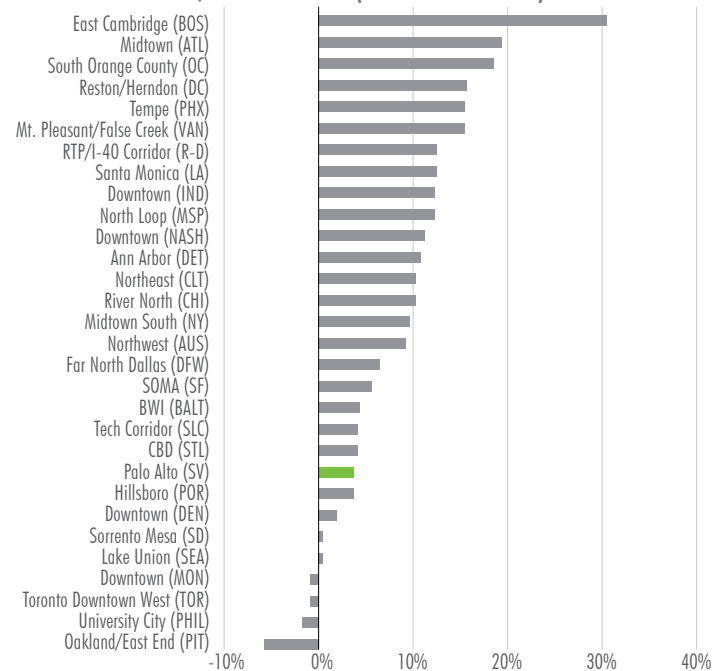
OVERALL MARKET, PAST TWO YEARS (Q3 2016 - Q2 2018)



Source: CBRE Research, Q2 2018.

RENT GROWTH

TOP TECH SUBMARKET, PAST TWO YEARS (Q2 2016 vs. Q2 2018)



Source: CBRE Research, Q2 2018.

PORTLAND (#12)

QUICK STATS

OFFICE MARKET STATS, Q2 2018

Average Asking Rent	\$27.40
Direct FS/YR	
Vacancy Rate	11.7%
Supply	
Under Construction	1.1 MSF
Sublease Available	0.8 MSF
Top Tech Submarket	Hillsboro
Rents/Vacancy	\$23.95/20.7%

HIGH-TECH INDUSTRY STATS, 2017

Employment	27,895
High-Tech Software/Services	
Employment Clustering	12.2%
% of Office-Using Jobs	
Educational Attainment	38.9%
Residents w/ BA or higher	
Labor Cost (MSA)	\$107,417
Software Engineer	

SIGNIFICANT OFFICE LEASE DEALS, 2018

Fiserv	8500 SW Creekside	65,000 SF
Vacasa	1200 NW Kearney	61,000 SF
Confidential	920 SW 6th Ave	32,000 SF

Source: CBRE Research, Q2 2018.

HOT TOPICS

- Portland is a hub for entrepreneurs and is conveniently located between the larger—and more expensive—markets of San Francisco and Seattle.
- Though rents are rising for space in creative and tech-based office buildings, tech companies still find Portland a more cost-effective option, attracting tech talent to the downtown area.
- Oregon tech startups have attracted \$510 million of venture capital funding over the past five years, allowing the industry to grow at a faster pace.

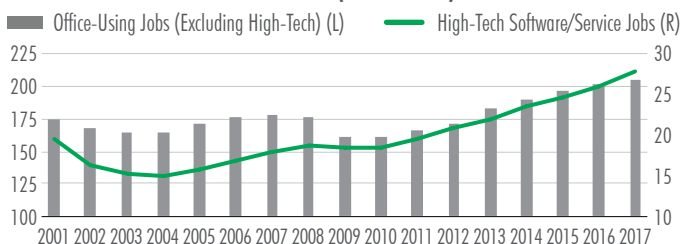
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Ranked by high-tech job growth rate.

Source: U.S. Bureau of Labor Statistics, Statistics Canada, CBRE Research, Q2 2018.

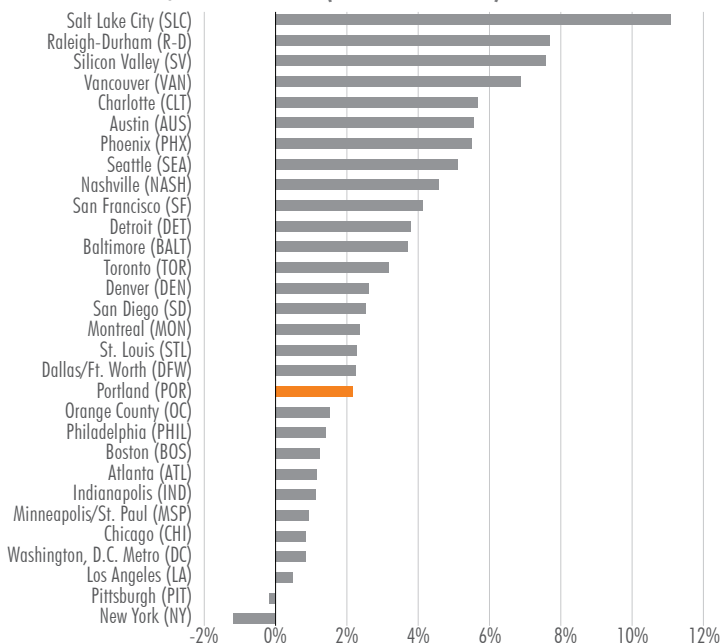
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NET ABSORPTION GROWTH

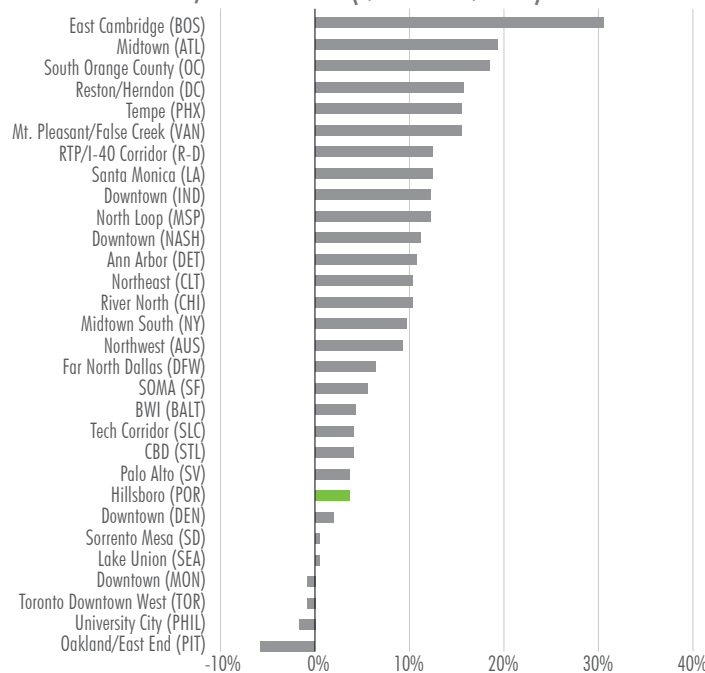
OVERALL MARKET, PAST TWO YEARS (Q3 2016 - Q2 2018)



Source: CBRE Research, Q2 2018.

RENT GROWTH

TOP TECH SUBMARKET, PAST TWO YEARS (Q2 2016 vs. Q2 2018)



Source: CBRE Research, Q2 2018.

DENVER (#13)

QUICK STATS

OFFICE MARKET STATS, Q2 2018

Average Asking Rent	\$27.66
Direct FS/YR	
Vacancy Rate	14.6%
Supply	
Under Construction	3.2 MSF
Sublease Available	2.3 MSF
Top Tech Submarket	Downtown
Rents/Vacancy	\$34.94/16.8%

HIGH-TECH INDUSTRY STATS, 2017

Employment	66,005
High-Tech Software/Services	
Employment Clustering	14.7%
% of Office-Using Jobs	
Educational Attainment	42.5%
Residents w/ BA or higher	
Labor Cost (MSA)	\$110,746
Software Engineer	

SIGNIFICANT OFFICE LEASE DEALS, 2018

Webroot	Interlocken Cres (Broomfield)	123,200 SF
Confidential	3333 Walnut St (Boulder)	96,800 SF
AppExtremes (Congo)	13601 Via Varra RD (Broomfield)	88,300 SF

Source: CBRE Research, Q2 2018.

HOT TOPICS

- Downtown Denver has the region's fastest-growing tech presence—its share of office space dedicated to the tech sector jumped from 5.9% to 7.8% between Q3 2017 and Q2 2018.
- Tech companies absorbed 849,000 sq. ft. of space over the past four quarters, more than double the previous year's level. The epicenter of this is Greater Downtown Denver, which accounted for more than half of the tech sector's net absorption.
- Flexible office space offers opportunities for tech startups and new-to-market tech companies to grow and accounts for about 2.0 million sq. ft. in metro Denver, with nearly 800,000 sq. ft. more coming online in the near term.

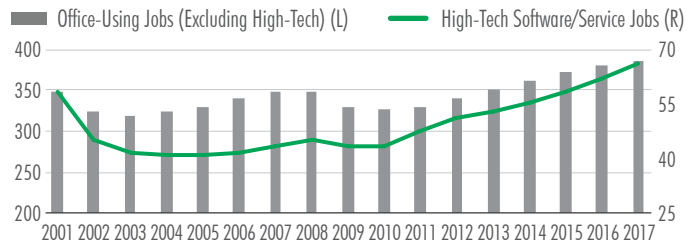
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Ranked by high-tech job growth rate.

Source: U.S. Bureau of Labor Statistics, Statistics Canada, CBRE Research, Q2 2018.

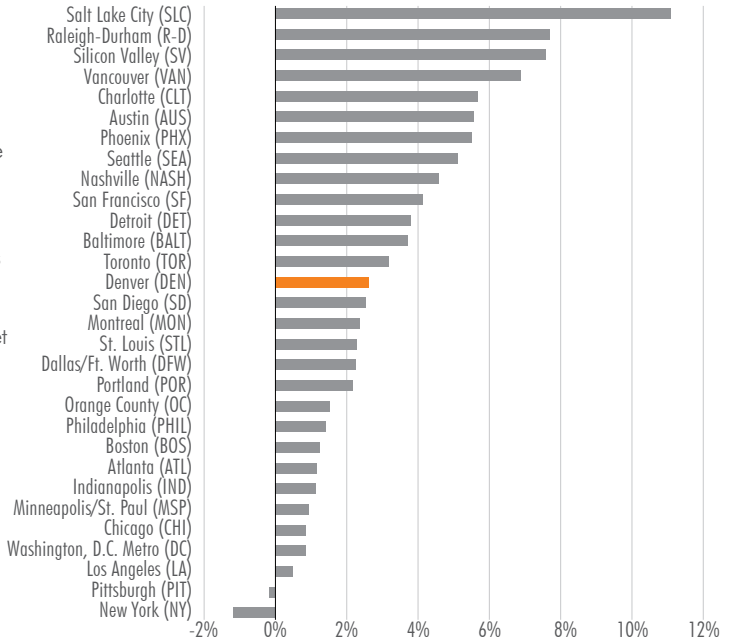
HIGH-TECH SOFTWARE/SERVICES VS. OFFICE-USING JOBS (THOUSANDS)



Source: CBRE Research, Q2 2018 and U.S. Bureau of Labor Statistics, July 2018.

NET ABSORPTION GROWTH

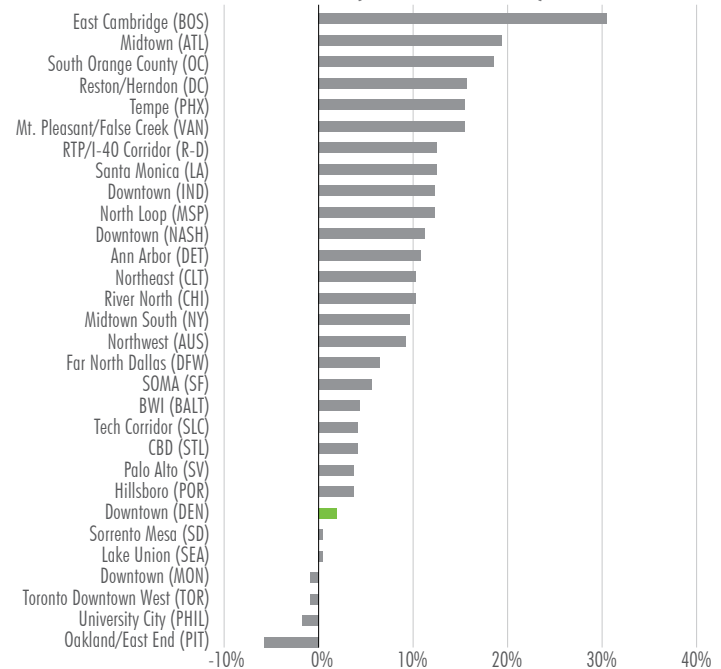
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Source: CBRE Research, Q2 2018.

RENT GROWTH

TOP TECH SUBMARKET, PAST TWO YEARS (Q2 2016 vs. Q2 2018)



Source: CBRE Research, Q2 2018.

NEW YORK (#14)

QUICK STATS

OFFICE MARKET STATS, Q2 2018

Average Asking Rent	\$74.35
Direct FS/YR	
Vacancy Rate	7.6%
Supply	
Under Construction	16.7 MSF
Sublease Available	10.7 MSF
Top Tech Submarket	Midtown South
Rents/Vacancy	\$80.02/6.3%

HIGH-TECH INDUSTRY STATS, 2017

Employment*	108,613
High-Tech Software/Services	
Employment Clustering	9.7%
% of Office-Using Jobs	
Educational Attainment	22.6%
Residents w/ BA or higher	
Labor Cost (MSA)	\$118,572
Software Engineer	
* New York County	

SIGNIFICANT OFFICE LEASE DEALS, 2018

Google	75 Ninth Ave (Purchase)	1,188,500* SF
Facebook	770 Broadway	319,400 SF
Flatiron Health	161 Avenue of the Americas	104,200 SF

* this footage represents the entire building
Source: CBRE Research, Q2 2018.

HOT TOPICS

- Manhattan's tech leasing velocity surpassed 1 MSF for the ninth consecutive year. Demand from tech companies remains robust as competition among creative tenants continues to be fierce, especially for requirements of 50,000 sq. ft. or larger.
- Midtown South, the most desirable location for tech, remains supply constrained, pushing tech taking rents to an average of \$88 per sq. ft. as of Q2 2018, a 27% premium over the overall Midtown South average taking rent.
- Supply in Midtown South remains limited, which combined with strong demand from start-up, mid-sized and the most sophisticated tech companies, and continued competition for larger blocks, makes market conditions favorable for landlords.

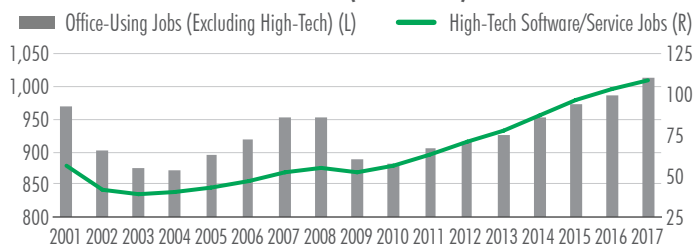
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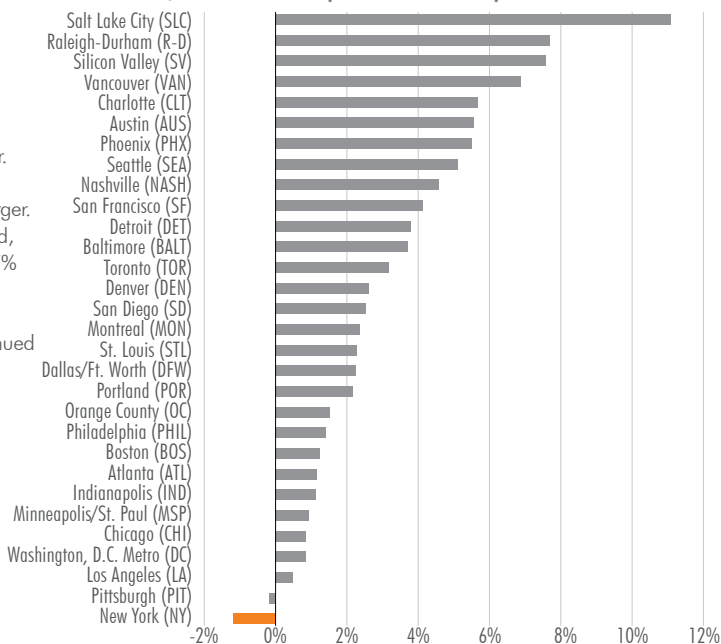
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NET ABSORPTION GROWTH

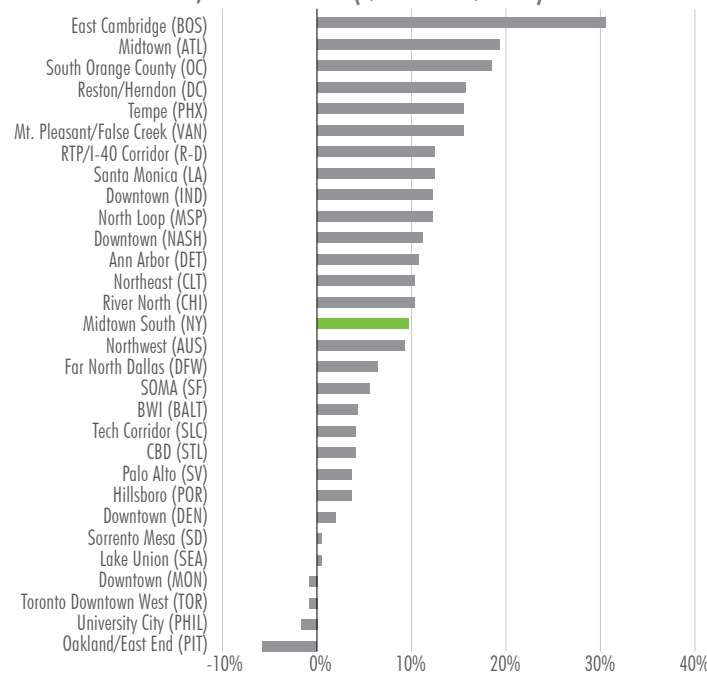
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Source: CBRE Research, Q2 2018.

RENT GROWTH

TOP TECH SUBMARKET, PAST TWO YEARS (Q2 2016 vs. Q2 2018)



Source: CBRE Research, Q2 2018.

NASHVILLE (#15)

QUICK STATS

OFFICE MARKET STATS, Q2 2018

Average Asking Rent	\$25.76
Direct FS/YR	
Vacancy Rate	9.9%
Supply	
Under Construction	2.4 MSF
Sublease Available	0.7 MSF
Top Tech Submarket	Downtown
Rents/Vacancy	\$28.28/8.9%

HIGH-TECH INDUSTRY STATS, 2017

Employment	14,908
High-Tech Software/Services	
Employment Clustering	7.7%
% of Office-Using Jobs	
Educational Attainment	34.2%
Residents w/ BA or higher	
Labor Cost (MSA)	\$91,605
Software Engineer	

SIGNIFICANT OFFICE LEASE DEALS, 2018

Inovalon Corporation	443 Donelson Pike	40,600 SF
Snapworx	1573 Mallory Ln	28,800 SF

Source: CBRE Research, Q2 2018.

HOT TOPICS

- The tech sector in Nashville is expanding, and, with rents increasing, creative office buildings are being utilized for coworking spaces and incubators, as new supply lags.
- Nashville's average office asking rent presents a cost-saving advantage for both established tech companies and startups, which combined with a low cost of living and a highly-skilled workforce, makes the market an alternative to large coastal tech hubs.
- Construction in Nashville's urban core is attributable to both the demand for more space and the preferences of tech talent for properties with full amenity packages, abundant natural light and open layouts.

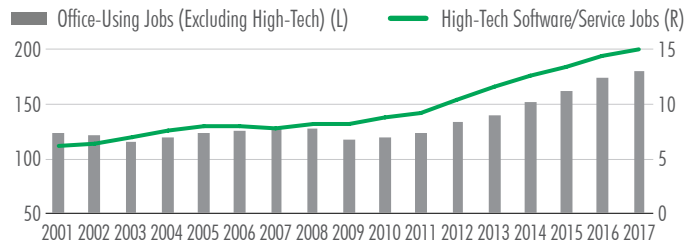
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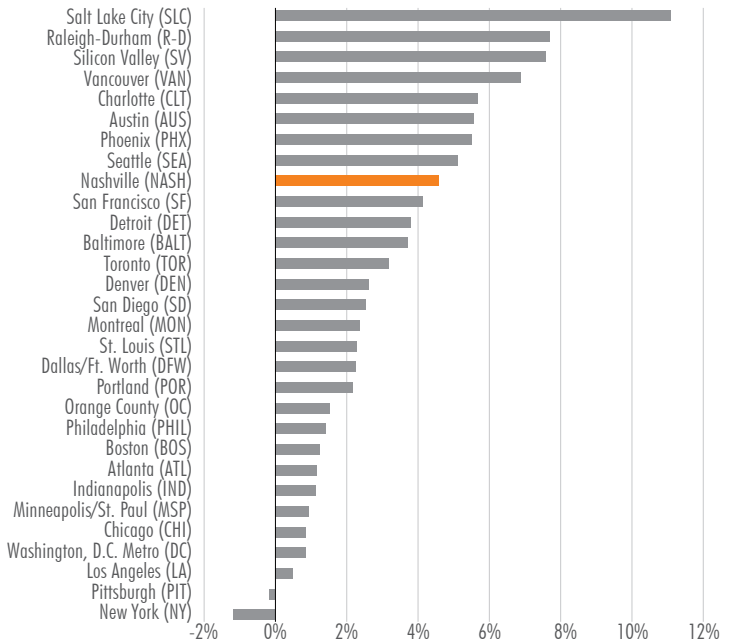
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Source: CBRE Research, Q2 2018 and U.S. Bureau of Labor Statistics, July 2018.

NET ABSORPTION GROWTH

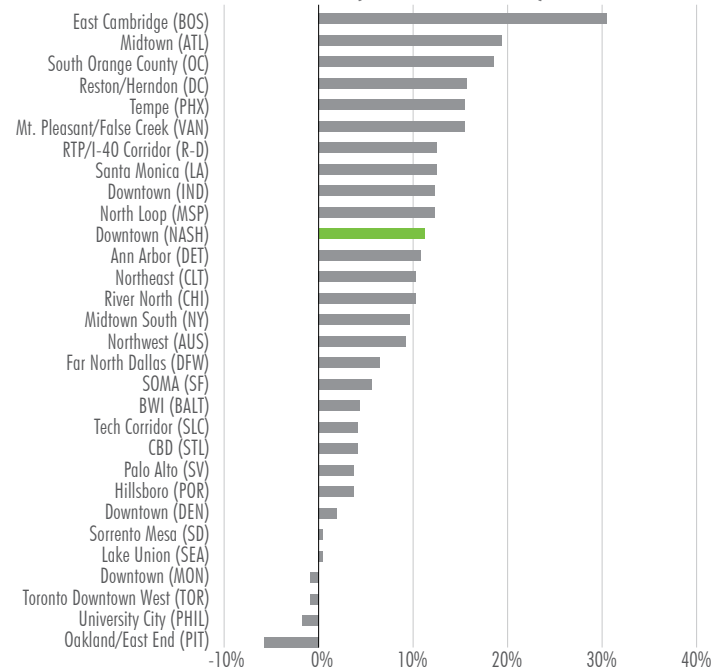
OVERALL MARKET, PAST TWO YEARS (Q3 2016 - Q2 2018)



Source: CBRE Research, Q2 2018.

RENT GROWTH

TOP TECH SUBMARKET, PAST TWO YEARS (Q2 2016 vs. Q2 2018)



Source: CBRE Research, Q2 2018.

SAN DIEGO (#16)

QUICK STATS

OFFICE MARKET STATS, Q2 2018

Average Asking Rent	\$35.43
Direct FS/YR	
Vacancy Rate	10.6%
Supply	
Under Construction	0.7 MSF
Sublease Available	0.4 MSF
Top Tech Submarket	Sorrento Mesa
Rents/Vacancy	\$36.30/14.0%

HIGH-TECH INDUSTRY STATS, 2017

Employment	32,910
High-Tech Software/Services	
Employment Clustering	10.0%
% of Office-Using Jobs	
Educational Attainment	37.4%
Residents w/ BA or higher	
Labor Cost (MSA)	\$109,882
Software Engineer	

SIGNIFICANT OFFICE LEASE DEALS, 2018

Boff Holding	4350 La Jolla Village Dr	1,336,000 SF
Sony	9645 Scranton Rd	119,000 SF
Brain Corp	10182 Telesis Ct	59,300 SF

Source: CBRE Research, Q2 2018.

HOT TOPICS

- Venture capital investment in San Diego-based robotics, automation and machine learning companies over the past year has been high.
- San Diego's dense concentration of wireless technology companies and systems design talent positions the region on the cutting edge of automation and IoT.
- The relatively low cost of office space and competitive labor costs compared to other coastal markets is leading to expansion interest from large tech companies seeking a Southwestern presence.

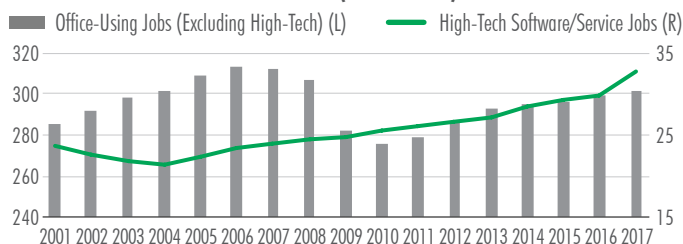
HIGH-TECH SOFTWARE/SERVICES JOB AND OFFICE RENT GROWTH

Rank	Market	High-Tech Job Growth		Office Market Rent Growth	
		Current Period 2016 & 2017	Prior Period 2014 & 2015	Current Period Q2'16 vs Q2'18	Prior Period Q2'14 vs Q2'16
1	Seattle	25.7%	17.5%	13.9%	6.4%
2	St. Louis	23.3%	2.1%	1.4%	1.1%
3	Montreal	22.3%	0.1%	-0.7%	3.3%
4	San Francisco	22.1%	47.3%	3.9%	22.7%
5	Toronto	18.9%	25.8%	2.1%	-1.2%
6	Indianapolis	18.4%	24.8%	9.2%	5.0%
7	Austin	17.1%	34.1%	7.9%	15.3%
8	Charlotte	15.4%	32.6%	13.7%	14.8%
9	Los Angeles	14.7%	13.5%	15.8%	10.1%
10	Orange County	14.5%	13.7%	15.5%	24.3%
11	Silicon Valley	13.9%	22.7%	7.2%	28.4%
12	Portland	12.8%	12.3%	13.8%	12.4%
13	Denver	12.5%	10.3%	9.6%	12.0%
14	New York	12.4%	25.0%	-1.4%	11.6%
15	Nashville	12.3%	16.0%	12.3%	18.1%
16	San Diego	12.3%	7.9%	8.0%	13.7%
17	Phoenix	10.9%	36.3%	8.5%	11.6%
18	Atlanta	10.7%	12.3%	16.3%	11.4%
19	Raleigh-Durham	10.2%	16.0%	12.8%	7.6%
20	Chicago	9.6%	22.1%	5.8%	5.7%
21	Pittsburgh	8.9%	22.7%	1.9%	7.3%
22	Salt Lake City	8.1%	14.2%	9.0%	11.0%
23	Boston	7.7%	11.5%	6.3%	12.7%
24	Detroit	5.4%	17.2%	6.3%	3.5%
25	Baltimore	4.2%	4.8%	1.6%	-0.5%
26	Washington, D.C.	3.9%	3.7%	10.8%	-3.7%
27	Dallas/Ft. Worth	3.4%	18.1%	5.7%	16.6%
28	Vancouver	2.7%	17.1%	6.3%	9.8%
29	Minneapolis/St. Paul	1.3%	7.8%	3.1%	10.0%
30	Philadelphia	-2.3%	4.1%	4.8%	4.4%

Ranked by high-tech job growth rate.

Source: U.S. Bureau of Labor Statistics, Statistics Canada, CBRE Research, Q2 2018.

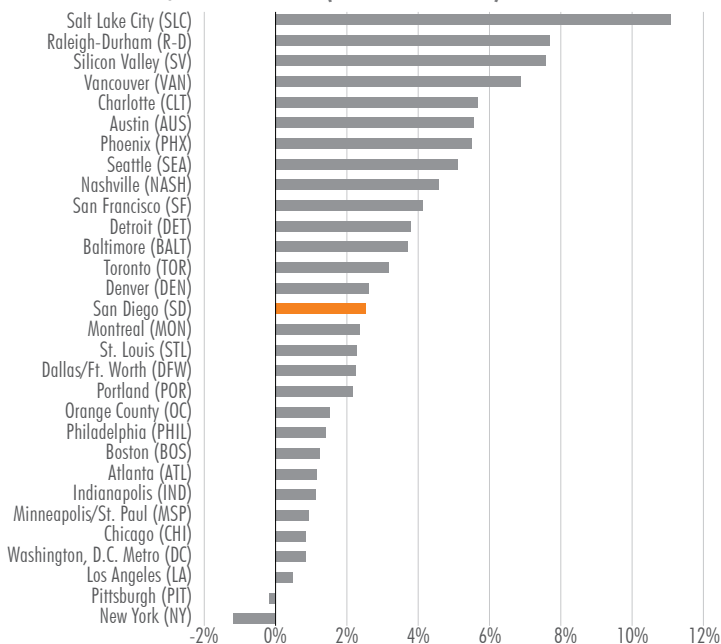
HIGH-TECH SOFTWARE/SERVICES VS. OFFICE-USING JOBS (THOUSANDS)



Source: CBRE Research, Q2 2018 and U.S. Bureau of Labor Statistics, July 2018.

NET ABSORPTION GROWTH

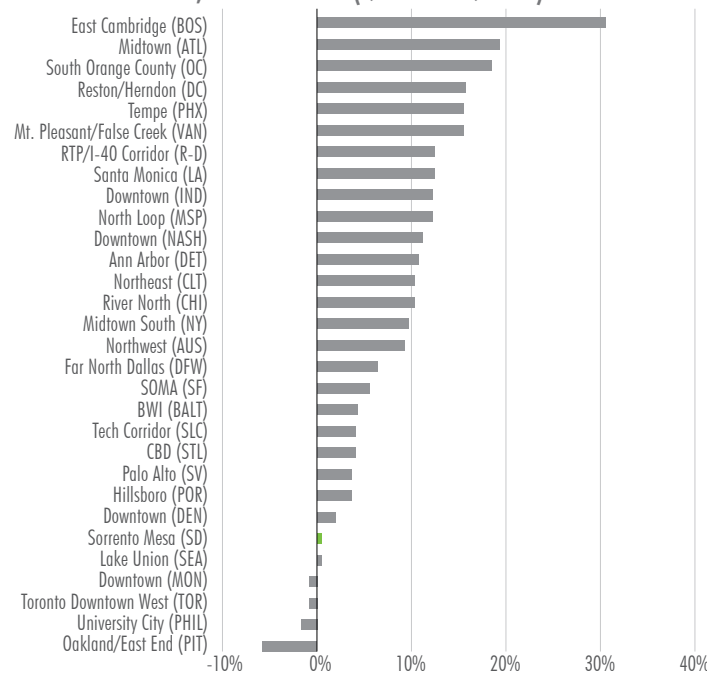
OVERALL MARKET, PAST TWO YEARS (Q3 2016 - Q2 2018)



Source: CBRE Research, Q2 2018.

RENT GROWTH

TOP TECH SUBMARKET, PAST TWO YEARS (Q2 2016 vs. Q2 2018)



Source: CBRE Research, Q2 2018.

PHOENIX (#17)

QUICK STATS

OFFICE MARKET STATS, Q2 2018

Average Asking Rent	\$25.61
Direct FS/YR	
Vacancy Rate	16.2%
Supply	
Under Construction	2.9 MSF
Sublease Available	1.9 MSF
Top Tech Submarket	Tempe
Rents/Vacancy	\$29.81/4.8%

HIGH-TECH INDUSTRY STATS, 2017

Employment	57,311
High-Tech Software/Services	
Employment Clustering	10.5%
% of Office-Using Jobs	
Educational Attainment	30.8%
Residents w/ BA or higher	
Labor Cost (MSA)	\$99,822
Software Engineer	

SIGNIFICANT OFFICE LEASE DEALS, 2018

Vets First Choice	20401 N 29th Ave	100,200 SF
OfferPad	2150 E Germann Rd	38,500 SF
Arm	3075 W Ray Rd	19,800 SF

Source: CBRE Research, Q2 2018.

HOT TOPICS

- The three central submarkets for tech are Tempe, South Scottsdale and Downtown Phoenix, with some companies looking also to Chandler due to limits in South Scottsdale and Tempe for both talent and space.
- In Phoenix, there is still a preference for shorter lease terms, as new-to-market companies prefer a "tip-toe" approach into the market. More established companies, however, are more willing to commit to lease terms of five years or longer.
- Demand for tech space is split between large Fortune 1000 companies expanding from other markets and small- to medium-sized innovators.

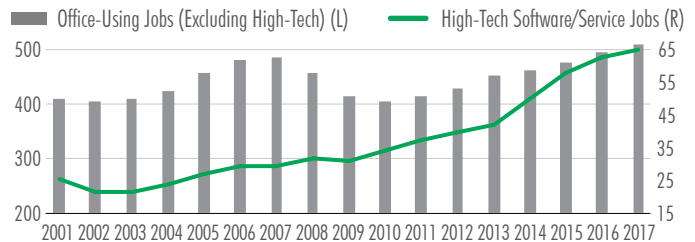
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15	Nashville	12.3%	16.0%	12.3%	18.1%
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30	Philadelphia	-2.3%	4.1%	4.8%	4.4%

Ranked by high-tech job growth rate.

Source: U.S. Bureau of Labor Statistics, Statistics Canada, CBRE Research, Q2 2018.

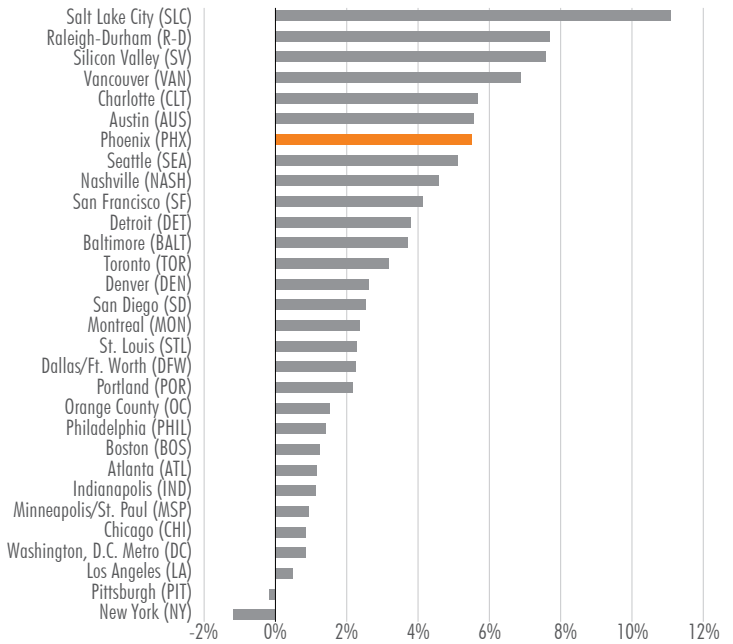
HIGH-TECH SOFTWARE/SERVICES VS. OFFICE-USING JOBS (THOUSANDS)



Source: CBRE Research, Q2 2018 and U.S. Bureau of Labor Statistics, July 2018.

NET ABSORPTION GROWTH

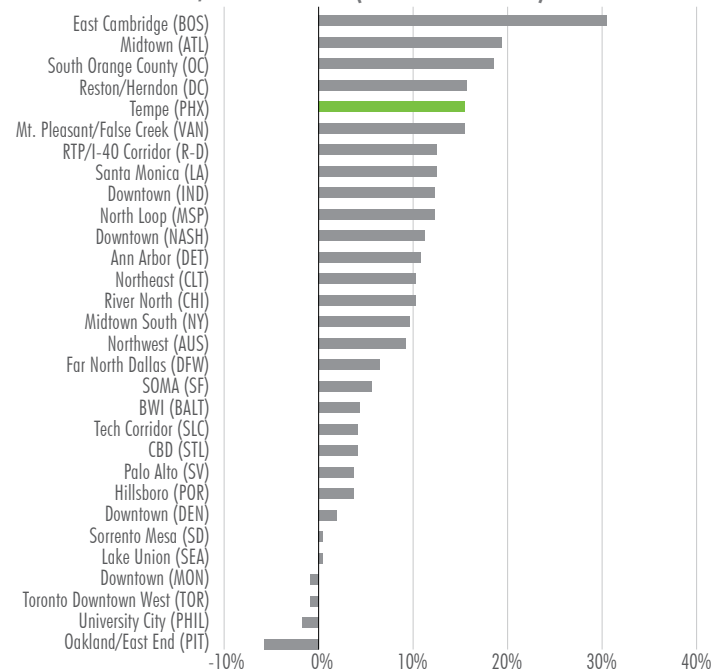
OVERALL MARKET, PAST TWO YEARS (Q3 2016 - Q2 2018)



Source: CBRE Research, Q2 2018.

RENT GROWTH

TOP TECH SUBMARKET, PAST TWO YEARS (Q2 2016 vs. Q2 2018)



Source: CBRE Research, Q2 2018.

ATLANTA (#18)

QUICK STATS

OFFICE MARKET STATS, Q2 2018

Average Asking Rent	\$26.57
Direct FS/YR	
Vacancy Rate	17.3%
Supply	
Under Construction	1.4 MSF
Sublease Available	3.1 MSF
Top Tech Submarket	Midtown
Rents/Vacancy	\$33.67/13.1%

HIGH-TECH INDUSTRY STATS, 2017

Employment	81,482
High-Tech Software/Services	
Employment Clustering	11.4%
% of Office-Using Jobs	
Educational Attainment	37.7%
Residents w/ BA or higher	
Labor Cost (MSA)	\$104,038
Software Engineer	

SIGNIFICANT OFFICE LEASE DEALS, 2018

Veeam Software	2550 Northwinds Pkwy	90,000 SF
OneTrust	1200 Abernathy Rd NE	72,900 SF
CallRail	100 Peachtree St NW	71,200 SF

Source: CBRE Research, Q2 2018.

HOT TOPICS

- The tech sector is becoming a leading driver of office demand in Atlanta, accounting for more than 9.5 million sq. ft. of activity since 2013.
- Atlanta's tech talent labor pool increased 34.7% over the past five years, the third fastest pace among all 50 markets, according to CBRE's 2018 Scoring Tech Talent report, and faster than the San Francisco Bay Area, which had a growth rate of 31%.
- Atlanta is among the top 10 regions in North America for producing tech talent, with more than 6,000 tech degrees completed in 2016.

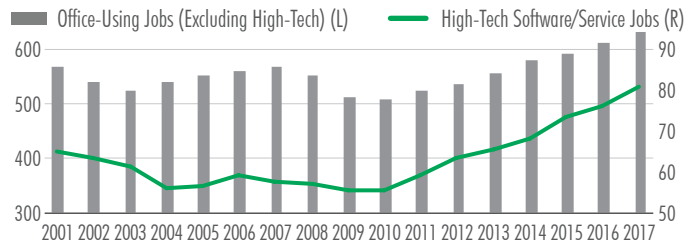
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Ranked by high-tech job growth rate.

Source: U.S. Bureau of Labor Statistics, Statistics Canada, CBRE Research, Q2 2018.

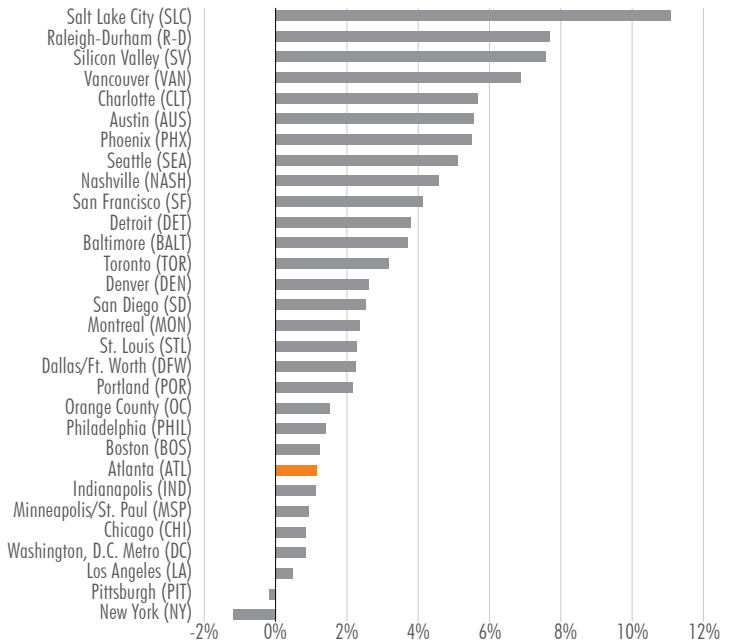
HIGH-TECH SOFTWARE/SERVICES VS. OFFICE-USING JOBS (THOUSANDS)



Source: CBRE Research, Q2 2018 and U.S. Bureau of Labor Statistics, July 2018.

NET ABSORPTION GROWTH

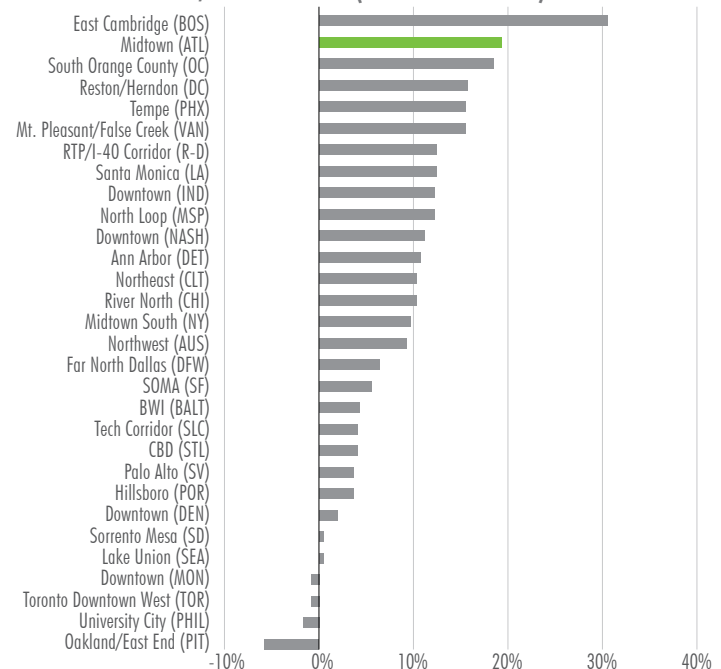
OVERALL MARKET, PAST TWO YEARS (Q3 2016 - Q2 2018)



Source: CBRE Research, Q2 2018.

RENT GROWTH

TOP TECH SUBMARKET, PAST TWO YEARS (Q2 2016 vs. Q2 2018)



Source: CBRE Research, Q2 2018.

RALEIGH-DURHAM (#19)

QUICK STATS

OFFICE MARKET STATS, Q2 2018

Average Asking Rent	\$24.13
Direct FS/YR	
Vacancy Rate	9.8%
Supply	
Under Construction	2.7 MSF
Sublease Available	0.9 MSF
Top Tech Submarket	RTP/I-40 Corridor
Rents/Vacancy	\$22.38/15.5%

HIGH-TECH INDUSTRY STATS, 2017

Employment	38,482
High-Tech Software/Services	
Employment Clustering	17.6%
% of Office-Using Jobs	
Educational Attainment	47.1%
Residents w/ BA or higher	
Labor Cost (MSA)	\$101,366
Software Engineer	

SIGNIFICANT OFFICE LEASE DEALS, 2018

Analog Devices	223 S West St	26,500 SF
Qualys	4020 Westchase Blvd	15,400 SF
WalkMe	555 Fayetteville St	10,900 SF

Source: CBRE Research, Q2 2018.

HOT TOPICS

- Raleigh-Durham's labor force boasts a 49.4% educational attainment rate, as the region retains talent from its three major universities and attracts talent from other areas.
- Raleigh-Durham is significantly more affordable than competing coastal markets, with the average Class A office rent at \$26.63 per sq. ft.
- The lower cost of living and innovative environment has spurred a 16% increase in millennials over the past five years, many of which are attracted to the area's growing tech industry.

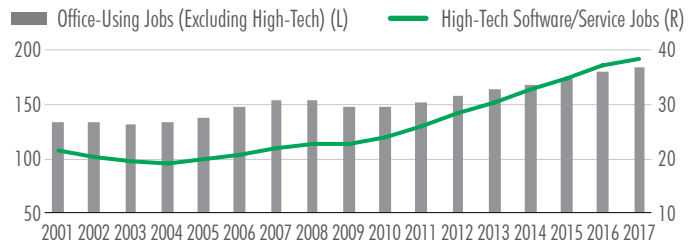
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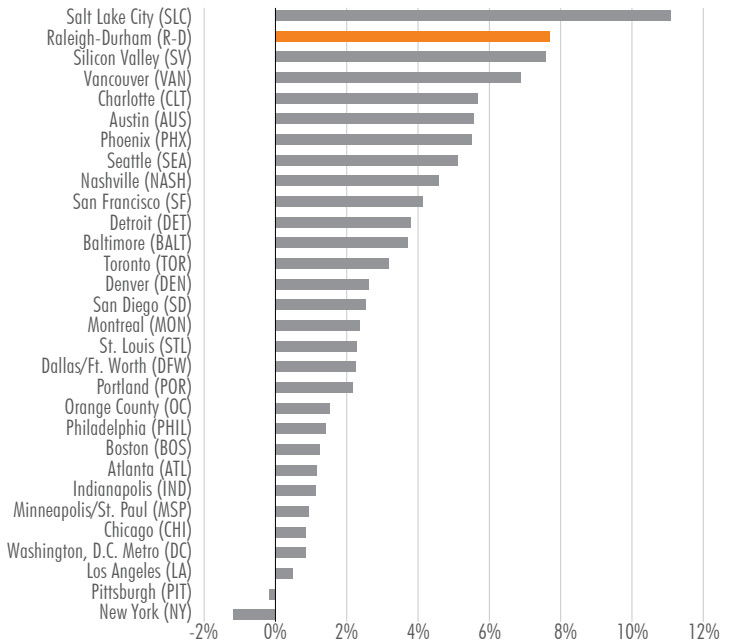
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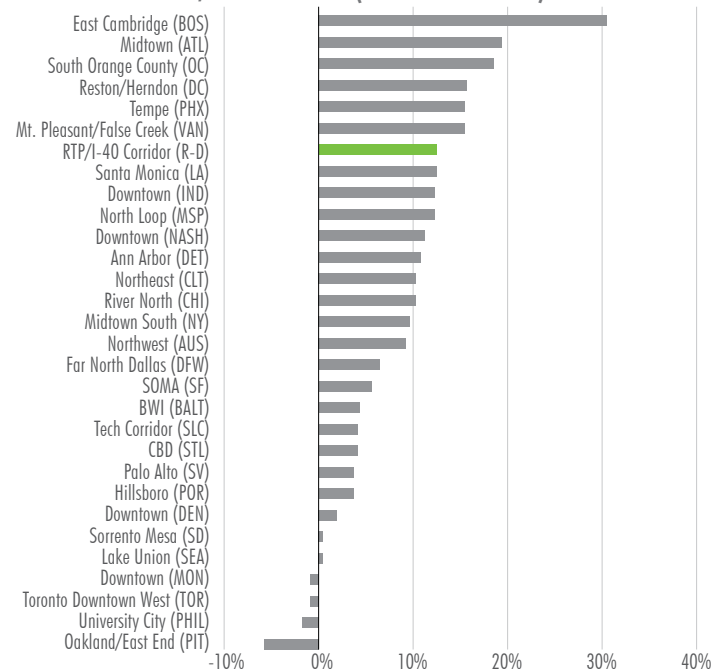
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Source: CBRE Research, Q2 2018.

RENT GROWTH

TOP TECH SUBMARKET, PAST TWO YEARS (Q2 2016 vs. Q2 2018)



Source: CBRE Research, Q2 2018.

CHICAGO (#20)

QUICK STATS

OFFICE MARKET STATS, Q2 2018

Average Asking Rent	\$30.67
Direct FS/YR	
Vacancy Rate	15.6%
Supply	
Under Construction	2.5 MSF
Sublease Available	2.1 MSF
Top Tech Submarket	River North
Rents/Vacancy	\$42.41/7.5%

HIGH-TECH INDUSTRY STATS, 2017

Employment	70,194
High-Tech Software/Services	
Employment Clustering	8.0%
% of Office-Using Jobs	
Educational Attainment	37.2%
Residents w/ BA or higher	
Labor Cost (MSA)	\$100,178
Software Engineer	

SIGNIFICANT OFFICE LEASE DEALS, 2018

Facebook	151 N Franklin St	263,000 SF
CareerBuilder	200 N LaSalle Dr	100,000 SF
ActiveCampaign	1 N Dearborn St	52,000 SF

Source: CBRE Research, Q2 2018.

HOT TOPICS

- With operating costs more affordable than other tech hubs in the U.S., established coastal tech companies continue to expand their Midwestern footprint in Chicago.
- The Chicago CBD tech market has nearly doubled its footprint since 2014 and now occupies 13.5 million sq. ft. of office space.
- Twenty-six subsectors of tech were identified in Chicago, including gaming and fintech, infiltrating many traditional office industries. In addition, about half of Chicago-based tech exits produce a 10x return to investors, outpacing any other city in the U.S.

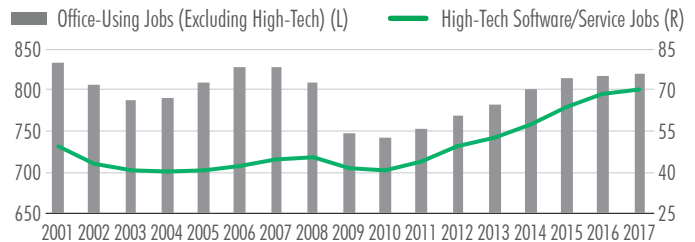
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23	Boston	7.7%	11.5%	6.3%	12.7%
24	Detroit	5.4%	17.2%	6.3%	3.5%
25	Baltimore	4.2%	4.8%	1.6%	-0.5%
26	Washington, D.C.	3.9%	3.7%	10.8%	-3.7%
27	Dallas/Ft. Worth	3.4%	18.1%	5.7%	16.6%
28	Vancouver	2.7%	17.1%	6.3%	9.8%
29	Minneapolis/St. Paul	1.3%	7.8%	3.1%	10.0%
30	Philadelphia	-2.3%	4.1%	4.8%	4.4%

Ranked by high-tech job growth rate.

Source: U.S. Bureau of Labor Statistics, Statistics Canada, CBRE Research, Q2 2018.

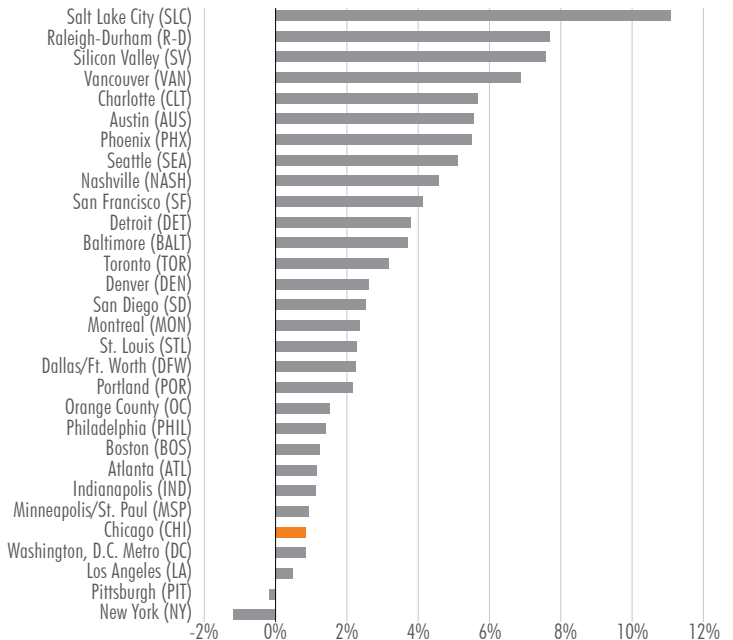
HIGH-TECH SOFTWARE/SERVICES VS. OFFICE-USING JOBS (THOUSANDS)



Source: CBRE Research, Q2 2018 and U.S. Bureau of Labor Statistics, July 2018.

NET ABSORPTION GROWTH

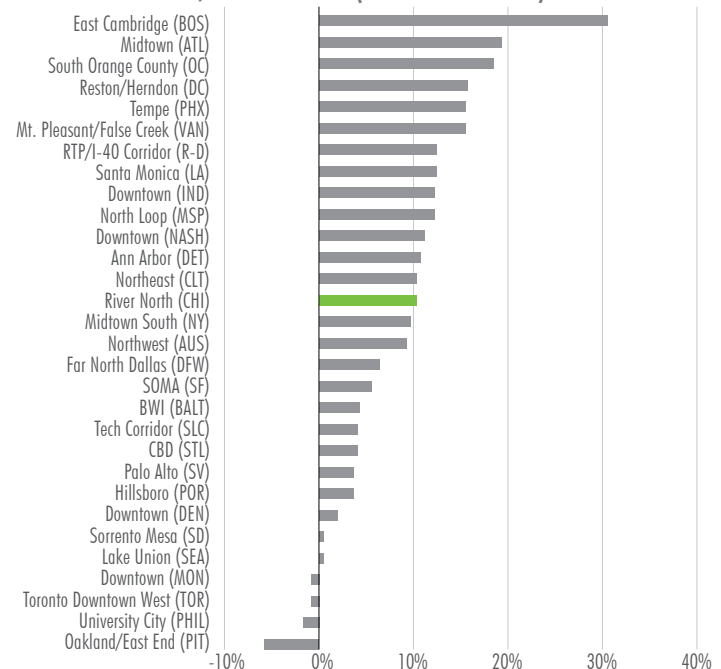
OVERALL MARKET, PAST TWO YEARS (Q3 2016 - Q2 2018)



Source: CBRE Research, Q2 2018.

RENT GROWTH

TOP TECH SUBMARKET, PAST TWO YEARS (Q2 2016 vs. Q2 2018)



Source: CBRE Research, Q2 2018.

PITTSBURGH (#21)

QUICK STATS

OFFICE MARKET STATS, Q2 2018

Average Asking Rent	\$22.17
Direct FS/YR	
Vacancy Rate	13.7%
Supply	
Under Construction	0.7 MSF
Sublease Available	1.3 MSF
Top Tech Submarket	Oakland/East End
Rents/Vacancy	\$19.64/8.1%

HIGH-TECH INDUSTRY STATS, 2017

Employment	22,276
High-Tech Software/Services	
Employment Clustering	8.8%
% of Office-Using Jobs	
Educational Attainment	34.6%
Residents w/ BA or higher	
Labor Cost (MSA)	\$88,255
Software Engineer	

SIGNIFICANT OFFICE LEASE DEALS, 2018

Philips Sleep & Respiratory Care	6501 Living Pl	205,500 SF
ADP	1000 GSK Dr	123,800 SF
Facebook	15th St and Smallman St	105,000 SF

Source: CBRE Research, Q2 2018.

HOT TOPICS

- A surge of smaller tech firms seeking flexible space options in downtown submarkets is feeding the growing coworking industry, leading to a 50% increase in the amount of coworking space during the past two years.
- Pittsburgh's leading universities are providing a continuous supply of top tech talent with experience in specialties such as robotics and AI.
- Strong demand, combined with a limited supply pipeline, has tightened Class A Vacancy to 2.3% and pushed Class A lease rates to over \$40.00 per sq. ft. in Oakland/East End, Pittsburgh's predominant tech submarket.

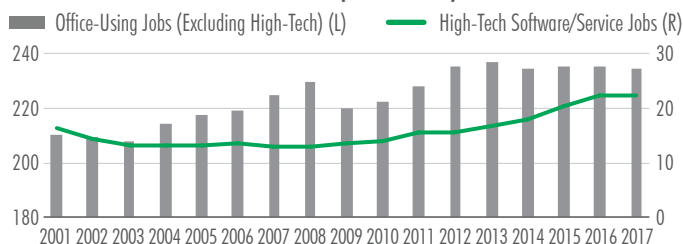
HIGH-TECH SOFTWARE/SERVICES JOB AND OFFICE RENT GROWTH

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2	St. Louis	23.3%	2.1%	1.4%	1.1%
3	Montreal	22.3%	0.1%	-0.7%	3.3%
4	San Francisco	22.1%	47.3%	3.9%	22.7%
5	Toronto	18.9%	25.8%	2.1%	-1.2%
6	Indianapolis	18.4%	24.8%	9.2%	5.0%
7	Austin	17.1%	34.1%	7.9%	15.3%
8	Charlotte	15.4%	32.6%	13.7%	14.8%
9	Los Angeles	14.7%	13.5%	15.8%	10.1%
10	Orange County	14.5%	13.7%	15.5%	24.3%
11	Silicon Valley	13.9%	22.7%	7.2%	28.4%
12	Portland	12.8%	12.3%	13.8%	12.4%
13	Denver	12.5%	10.3%	9.6%	12.0%
14	New York	12.4%	25.0%	-1.4%	11.6%
15	Nashville	12.3%	16.0%	12.3%	18.1%
16	San Diego	12.3%	7.9%	8.0%	13.7%
17	Phoenix	10.9%	36.3%	8.5%	11.6%
18	Atlanta	10.7%	12.3%	16.3%	11.4%
19	Raleigh-Durham	10.2%	16.0%	12.8%	7.6%
20	Chicago	9.6%	22.1%	5.8%	5.7%
21	Pittsburgh	8.9%	22.7%	1.9%	7.3%
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Source: U.S. Bureau of Labor Statistics, Statistics Canada, CBRE Research, Q2 2018.

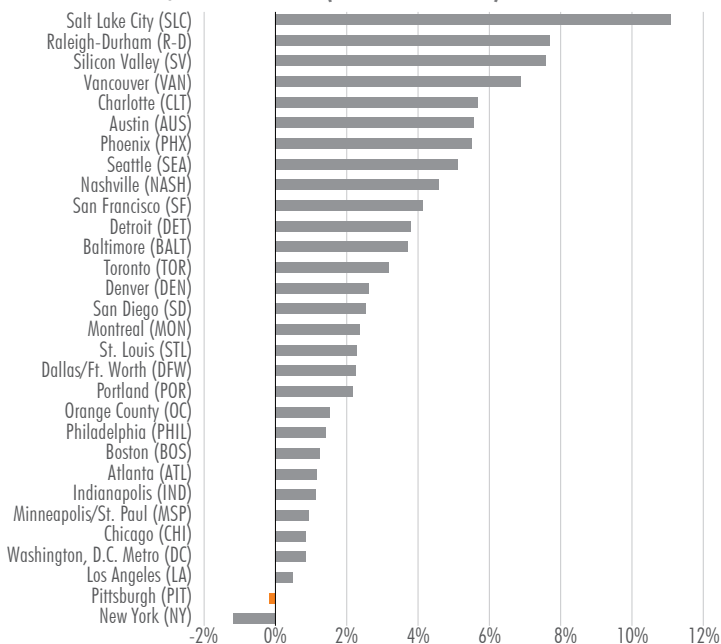
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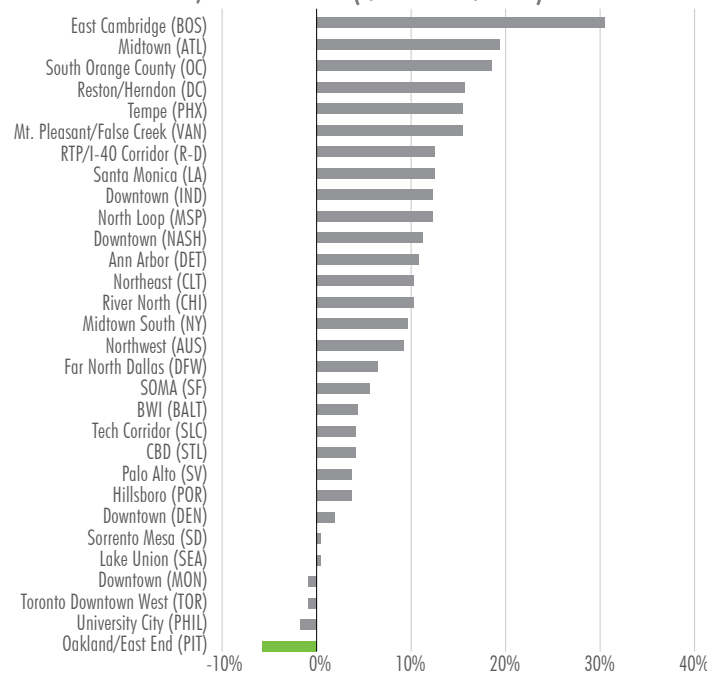
OVERALL MARKET, PAST TWO YEARS (Q3 2016 - Q2 2018)



Source: CBRE Research, Q2 2018.

RENT GROWTH

TOP TECH SUBMARKET, PAST TWO YEARS (Q2 2016 vs. Q2 2018)



Source: CBRE Research, Q2 2018.

SALT LAKE CITY (#22)

QUICK STATS

OFFICE MARKET STATS, Q2 2018

Average Asking Rent Direct FS/YR	\$23.96
Vacancy Rate	10.5%
Supply	
Under Construction	1.9 MSF
Sublease Available	0.8 MSF
Top Tech Submarket	Tech Corridor
Rents/Vacancy	\$24.81/7.0%

HIGH-TECH INDUSTRY STATS, 2017

Employment	50,305
High-Tech Software/Services	
Employment Clustering	17.3%
% of Office-Using Jobs	
Educational Attainment	33.0%
Residents w/ BA or higher	
Labor Cost (MSA)	\$102,483
Software Engineer	

SIGNIFICANT OFFICE LEASE DEALS, 2018

Pluralsight	65 E Highland Dr	350,000 SF
Ivanti	10400 S South Jordan Gtwy	160,900 SF
DealerTrack	13705 S 200 W	112,900 SF

Source: CBRE Research, Q2 2018.

HOT TOPICS

- The Salt Lake City market is headquarters to two "unicorns" (private companies valued at \$1 billion-plus) and two former-unicorns, who have since gone public. One company recently broke ground on a new 350,000-sq.-ft. campus in the Tech Corridor.
- Despite accounting for only 38% of the total suburban market in both Salt Lake and Utah Counties, the Tech Corridor accounted for 67% of total absorption since 2017. Large tenants are drawn to the area because of low costs, availability of new product and access to talent.
- Vacancy in the suburbs is in the single digits, and development, especially in the Tech Corridor, is strong, with two-thirds of new construction in the suburbs already pre-leased.

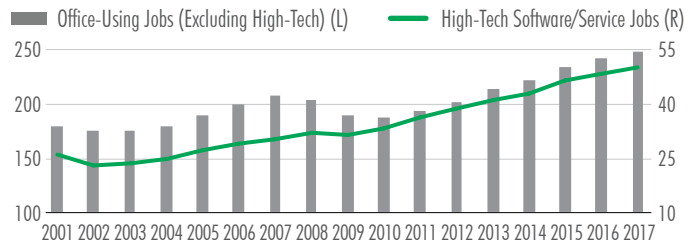
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Ranked by high-tech job growth rate.

Source: U.S. Bureau of Labor Statistics, Statistics Canada, CBRE Research, Q2 2018.

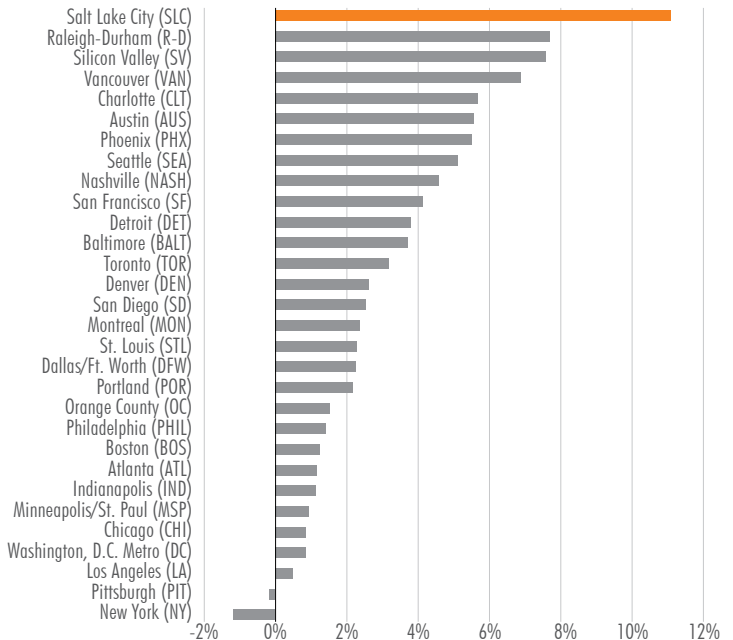
HIGH-TECH SOFTWARE/SERVICES VS. OFFICE-USING JOBS (THOUSANDS)



Source: CBRE Research, Q2 2018 and U.S. Bureau of Labor Statistics, July 2018.

NET ABSORPTION GROWTH

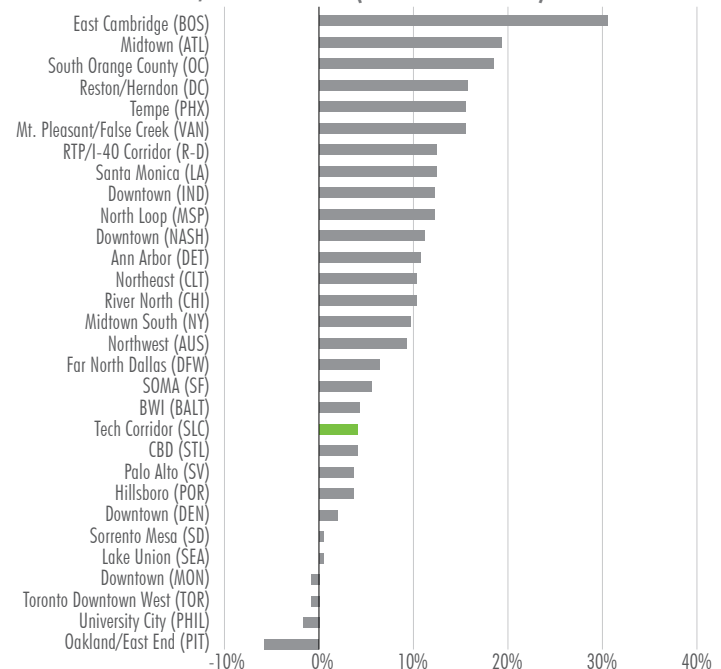
OVERALL MARKET, PAST TWO YEARS (Q3 2016 - Q2 2018)



Source: CBRE Research, Q2 2018.

RENT GROWTH

TOP TECH SUBMARKET, PAST TWO YEARS (Q2 2016 vs. Q2 2018)



Source: CBRE Research, Q2 2018.

BOSTON (#23)

QUICK STATS

OFFICE MARKET STATS, Q2 2018

Average Asking Rent	\$38.24
Direct FS/YR	
Vacancy Rate	13.4%
Supply	
Under Construction	3.9 MSF
Sublease Available	4.4 MSF
Top Tech Submarket	East Cambridge
Rents/Vacancy	\$95.26/2.2%

HIGH-TECH INDUSTRY STATS, 2017

Employment	119,312
High-Tech Software/Services	
Employment Clustering	17.9%
% of Office-Using Jobs	
Educational Attainment	46.9%
Residents w/ BA or higher	
Labor Cost (MSA)	\$108,477
Software Engineer	

SIGNIFICANT OFFICE LEASE DEALS, 2018

Oath	100 Causeway St	440,000 SF
Amazon	Seaport Sq, Parcel LF	430,000 SF
Wayfair	222 Berkley St/500 Boylston St	395,000 SF

Source: CBRE Research, Q2 2018.

HOT TOPICS

- Tech tenants are a primary driver of office space demand in Boston, with TAMI companies making up more than 40% of tenants in the market.
- The e-commerce industry is making waves, with both rapidly expanding and homegrown firms expanding in the area.
- The CBD, Back Bay and the Seaport are attracting the largest leases by tech firms, while smaller firms are increasingly heading to downtown fringe markets such as Fenway/Kenmore and North Station.
- East Cambridge's stratospheric rents are limiting new entrants to credit-worthy, high revenue companies.

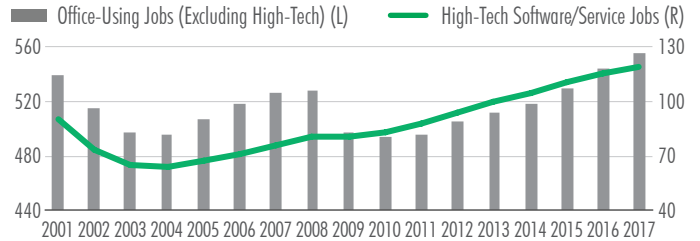
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Ranked by high-tech job growth rate.

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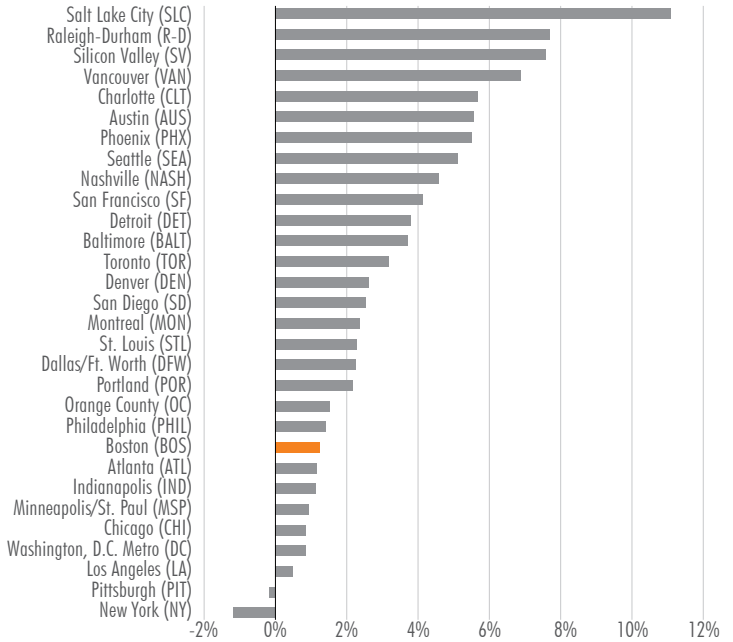
HIGH-TECH SOFTWARE/SERVICES VS. OFFICE-USING JOBS (THOUSANDS)



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NET ABSORPTION GROWTH

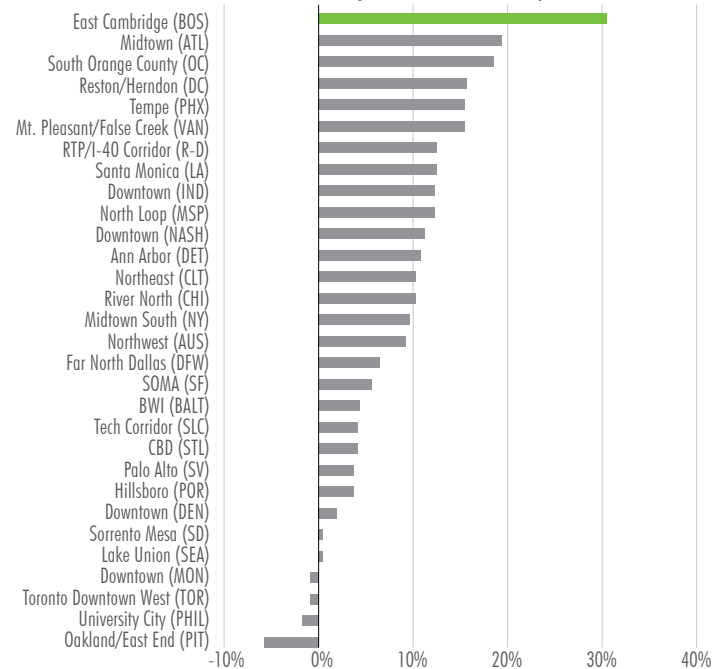
OVERALL MARKET, PAST TWO YEARS (Q3 2016 - Q2 2018)



Source: CBRE Research, Q2 2018.

RENT GROWTH

TOP TECH SUBMARKET, PAST TWO YEARS (Q2 2016 vs. Q2 2018)



Source: CBRE Research, Q2 2018.

DETROIT (#24)

QUICK STATS

OFFICE MARKET STATS, Q2 2018

Average Asking Rent	\$18.94
Direct FS/YR	
Vacancy Rate	15.7%
Supply	
Under Construction	0.7 MSF
Sublease Available	0.8 MSF
Top Tech Submarket	Ann Arbor
Rents/Vacancy	\$24.32/7.9%

HIGH-TECH INDUSTRY STATS, 2017

Employment	56,112
High-Tech Software/Services	
Employment Clustering	10.1%
% of Office-Using Jobs	
Educational Attainment	30.4%
Residents w/ BA or higher	
Labor Cost (MSA)	\$93,212
Software Engineer	

SIGNIFICANT OFFICE LEASE DEALS, 2018

LinkedIn	1523 Woodward Ave	74,500 SF
Tata Technologies Inc	6001 Cass Ave	21,700 SF
CoStar	3000 Town Center	19,300 SF

Source: CBRE Research, Q2 2018.

HOT TOPICS

- Depending on their size, growth, and number of employees, most tech tenants are not deterred by higher asking rates, and prefer choice locations in expensive areas or spaces.
- Tech tenants prefer urban, connected and walkable spaces with nearby amenities, but are also gaining a heightened sense of security regarding either their employees (physical) or business practices and privacy (information), prompting them to be more selective.
- Desirable spaces and locations that include built-in amenities like day care, restaurants and gated parking are taking prevalence in Detroit to retain and attract talent.

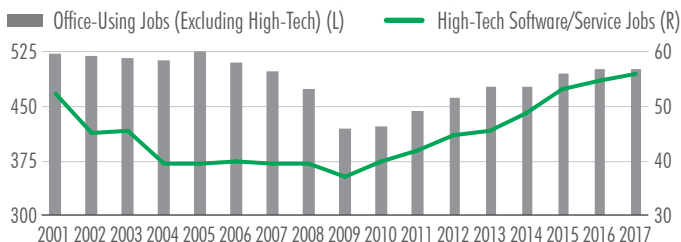
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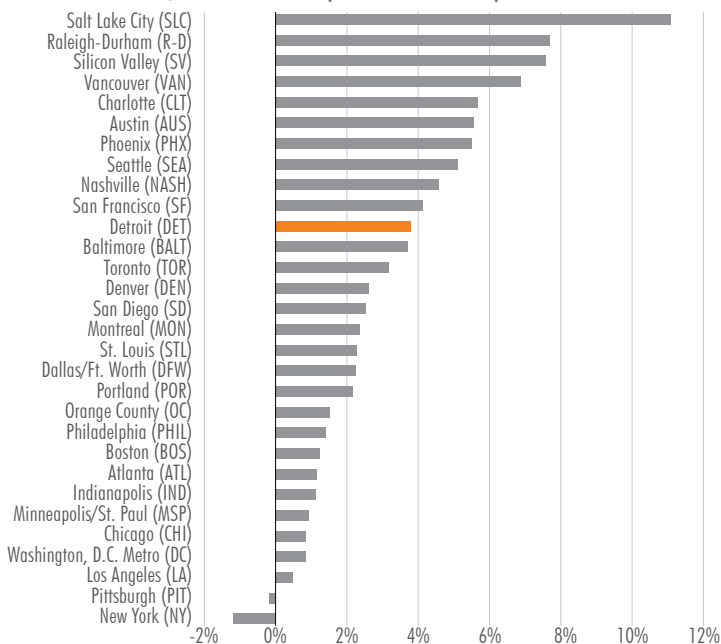
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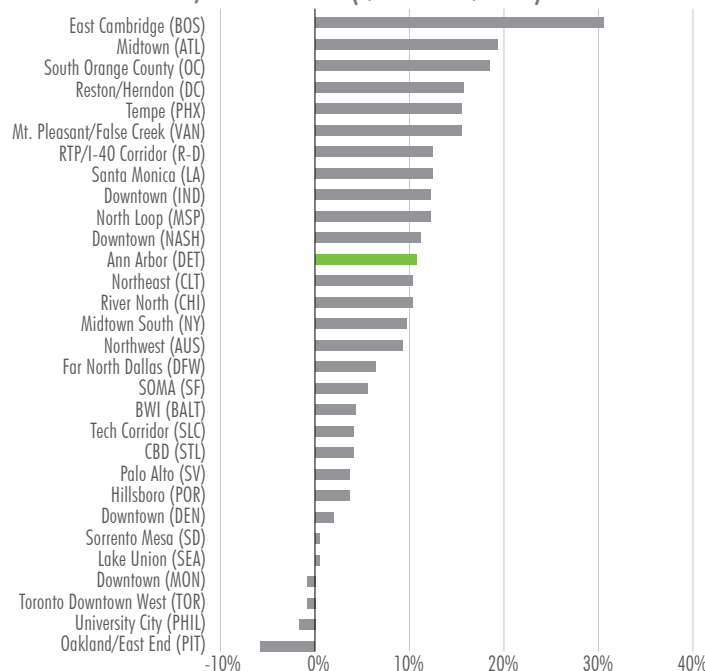
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Source: CBRE Research, Q2 2018.

RENT GROWTH

TOP TECH SUBMARKET, PAST TWO YEARS (Q2 2016 vs. Q2 2018)



Source: CBRE Research, Q2 2018.

BALTIMORE (#25)

QUICK STATS

OFFICE MARKET STATS, Q2 2018

Average Asking Rent	\$22.64
Direct FS/YR	
Vacancy Rate	14.4%
Supply	
Under Construction	1.1 MSF
Sublease Available	1.0 MSF
Top Tech Submarket	BWI
Rents/Vacancy	\$26.94/16.1%

HIGH-TECH INDUSTRY STATS, 2017

Employment	33,884
High-Tech Software/Services	
Employment Clustering	11.5%
% of Office-Using Jobs	
Educational Attainment	39.5%
Residents w/ BA or higher	
Labor Cost (MSA)	\$113,255
Software Engineer	

SIGNIFICANT OFFICE LEASE DEALS, 2018

CallRevu	10 North Park Ave	21,100 SF
FedData	7055 Samuel Morse Dr	20,400 SF

Source: CBRE Research, Q2 2018.

HOT TOPICS

- The Baltimore metro is home to one of the largest and most concentrated cybertech workforces in the county, with over 75,000 employees and more than 13,000 current openings.
- Although Baltimore is attracting cybertech companies from outside the region, delayed U.S. government contracts may stagnate demand for space during the rest of 2018.
- Private, product-based cybertech organizations are expected to increase their footprints in the BWI and Columbia submarkets to tap the area's robust talent base.

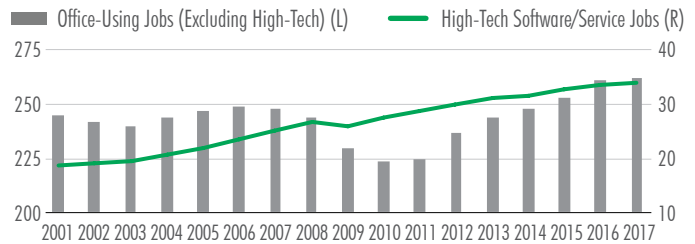
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9	Los Angeles	14.7%	13.5%	15.8%	10.1%
10	Orange County	14.5%	13.7%	15.5%	24.3%
11	Silicon Valley	13.9%	22.7%	7.2%	28.4%
12	Portland	12.8%	12.3%	13.8%	12.4%
13	Denver	12.5%	10.3%	9.6%	12.0%
14	New York	12.4%	25.0%	-1.4%	11.6%
15	Nashville	12.3%	16.0%	12.3%	18.1%
16	San Diego	12.3%	7.9%	8.0%	13.7%
17	Phoenix	10.9%	36.3%	8.5%	11.6%
18	Atlanta	10.7%	12.3%	16.3%	11.4%
19	Raleigh-Durham	10.2%	16.0%	12.8%	7.6%
20	Chicago	9.6%	22.1%	5.8%	5.7%
21	Pittsburgh	8.9%	22.7%	1.9%	7.3%
22	Salt Lake City	8.1%	14.2%	9.0%	11.0%
23	Boston	7.7%	11.5%	6.3%	12.7%
24	Detroit	5.4%	17.2%	6.3%	3.5%
25	Baltimore	4.2%	4.8%	1.6%	-0.5%
26	Washington, D.C.	3.9%	3.7%	10.8%	-3.7%
27	Dallas/Ft. Worth	3.4%	18.1%	5.7%	16.6%
28	Vancouver	2.7%	17.1%	6.3%	9.8%
29	Minneapolis/St. Paul	1.3%	7.8%	3.1%	10.0%
30	Philadelphia	-2.3%	4.1%	4.8%	4.4%

Ranked by high-tech job growth rate.

Source: U.S. Bureau of Labor Statistics, Statistics Canada, CBRE Research, Q2 2018.

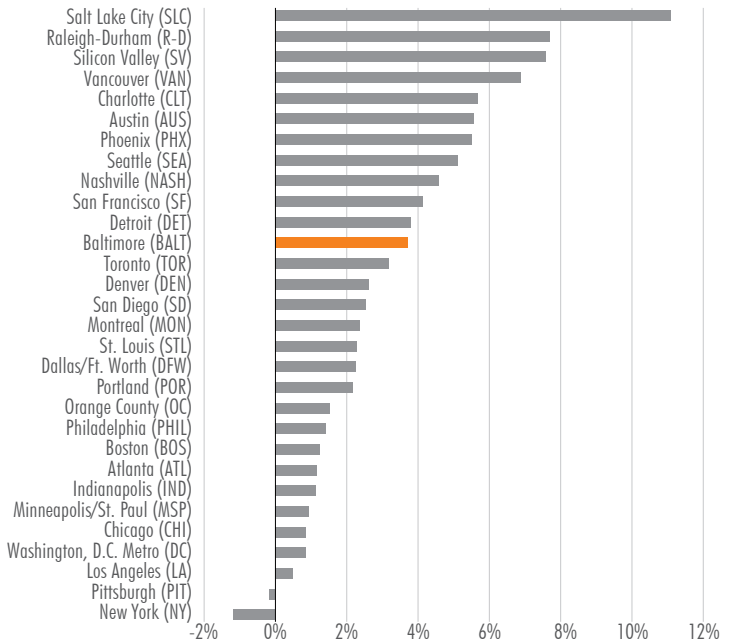
HIGH-TECH SOFTWARE/SERVICES VS. OFFICE-USING JOBS (THOUSANDS)



Source: CBRE Research, Q2 2018 and U.S. Bureau of Labor Statistics, July 2018.

NET ABSORPTION GROWTH

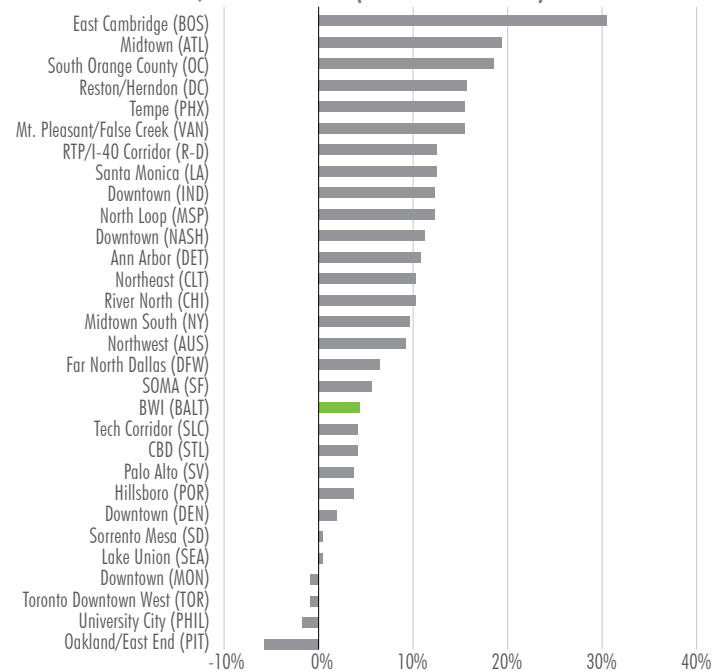
OVERALL MARKET, PAST TWO YEARS (Q3 2016 - Q2 2018)



Source: CBRE Research, Q2 2018.

RENT GROWTH

TOP TECH SUBMARKET, PAST TWO YEARS (Q2 2016 vs. Q2 2018)



Source: CBRE Research, Q2 2018.

WASHINGTON, D.C. (#26)

QUICK STATS

OFFICE MARKET STATS, Q2 2018

Average Asking Rent	\$39.56
Direct FS/YR	
Vacancy Rate	17.2%
Supply	
Under Construction	7.9 MSF
Sublease Available	6.7 MSF
Top Tech Submarket	Reston/Herndon
Rents/Vacancy	\$34.23/16.9%

HIGH-TECH INDUSTRY STATS, 2017

Employment	183,172
High-Tech Software/Services	
Employment Clustering	21.1%
% of Office-Using Jobs	
Educational Attainment	50.2%
Residents w/ BA or higher	
Labor Cost (MSA)	\$120,200
Software Engineer	

SIGNIFICANT OFFICE LEASE DEALS, 2018

Leidos Holdings	1750 Presidents St (Reston)	257,800 SF
MicroStrategy	1850 Towers Crescent Plz (Tysons)	213,100 SF
Appian	7950 Jones Branch Dr (Tysons)	205,000 SF

Source: CBRE Research, Q2 2018.

HOT TOPICS

- Technology users continue to drive growth in downtown D.C., contributing to 157,000 sq. ft. of net absorption in the District during the first half of 2018.
- Tech tenants were also the most active industry sector in Northern Virginia this year, accounting for 21% of gross leasing activity and 238,000 sq. ft. of net absorption during the first half of 2018.
- Leasing activity in the aerospace and defense sector has slowed, but still accounted for 11% of Northern Virginia's leasing volume through Q2 2018.

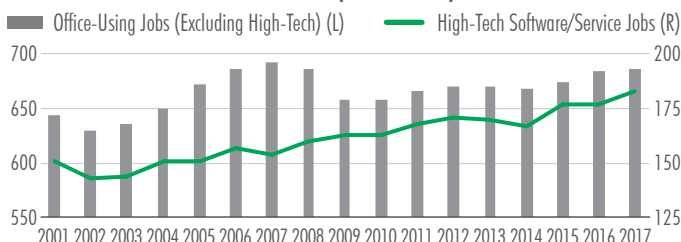
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Ranked by high-tech job growth rate.

Source: U.S. Bureau of Labor Statistics, Statistics Canada, CBRE Research, Q2 2018.

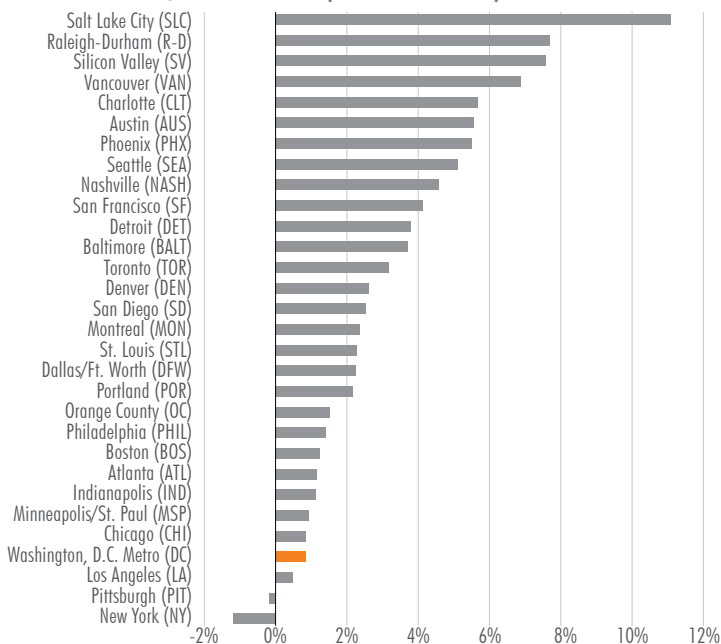
HIGH-TECH SOFTWARE/SERVICES VS. OFFICE-USING JOBS (THOUSANDS)



Source: CBRE Research, Q2 2018 and U.S. Bureau of Labor Statistics, July 2018.

NET ABSORPTION GROWTH

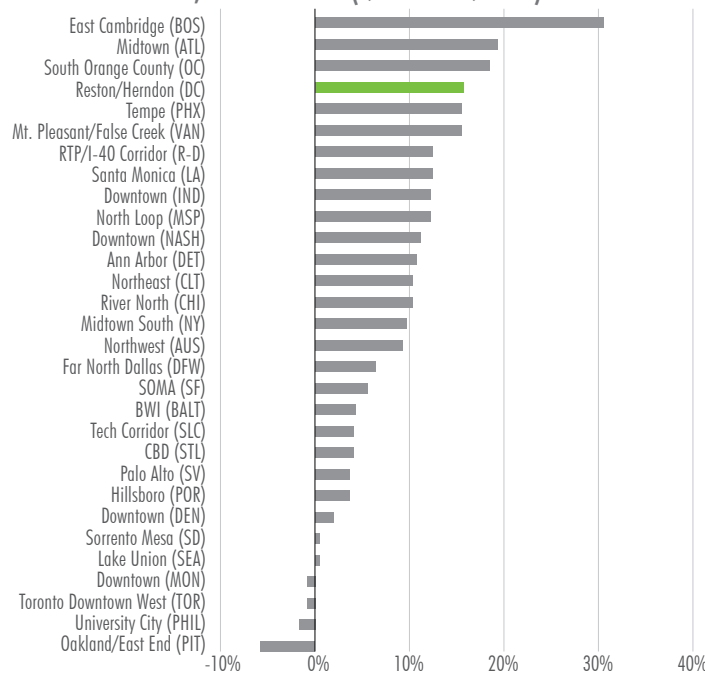
OVERALL MARKET, PAST TWO YEARS (Q3 2016 - Q2 2018)



Source: CBRE Research, Q2 2018.

RENT GROWTH

TOP TECH SUBMARKET, PAST TWO YEARS (Q2 2016 vs. Q2 2018)



Source: CBRE Research, Q2 2018.

DALLAS/FT. WORTH (#27)

QUICK STATS

OFFICE MARKET STATS, Q2 2018

Average Asking Rent	\$24.73
Direct FS/YR	
Vacancy Rate	20.9%
Supply	
Under Construction	5.1 MSF
Sublease Available	6.3 MSF
Top Tech Submarket	Far North Dallas
Rents/Vacancy	\$26.29/20.8%

HIGH-TECH INDUSTRY STATS, 2017

Employment	98,168
High-Tech Software/Services	
Employment Clustering	10.9%
% of Office-Using Jobs	
Educational Attainment	33.9%
Residents w/ BA or higher	
Labor Cost (MSA)	\$109,556
Software Engineer	

SIGNIFICANT OFFICE LEASE DEALS, 2018

Infosys	2400 Glenville	86,000 SF
Simpli.fi	122-124 East Exchange Ave	77,000 SF
Spok	3000 Technology Dr	63,800 SF

Source: CBRE Research, Q2 2018.

HOT TOPICS

- With more than 160,000 tech workers, Dallas/Ft. Worth has a deep tech labor pool, which combined with affordable wage levels and housing, helps attract companies seeking tech talent to the region.
- Many tech clients are considering agile solutions to solve temporary needs and placing less importance on occupancy cost and more emphasis on amenities and location to attract and retain talent.
- In Q3 2018, tech/information leases accounted for 36% of all YTD transactions.

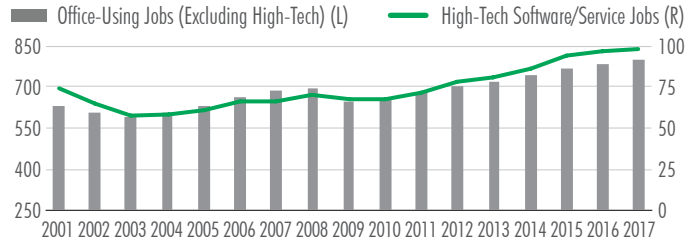
HIGH-TECH SOFTWARE/SERVICES JOB AND OFFICE RENT GROWTH

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Ranked by high-tech job growth rate.

Source: U.S. Bureau of Labor Statistics, Statistics Canada, CBRE Research, Q2 2018.

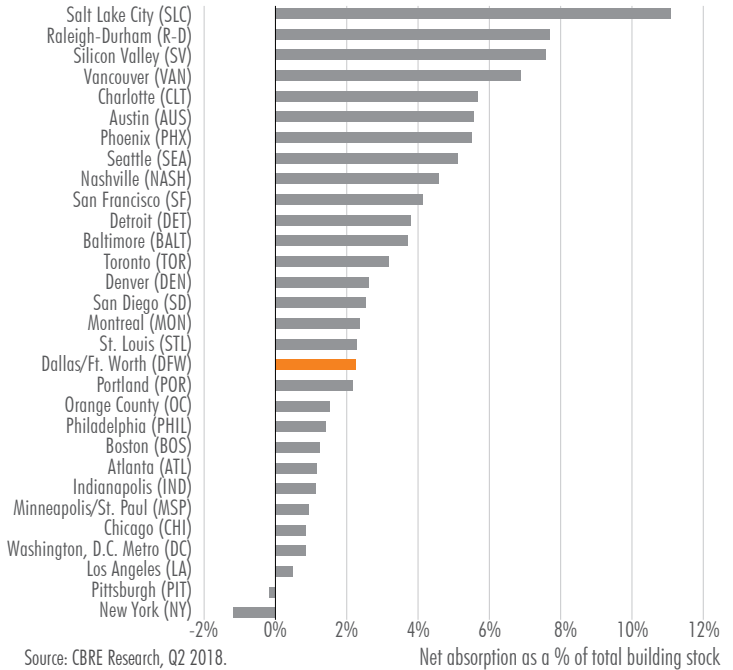
HIGH-TECH SOFTWARE/SERVICES VS. OFFICE-USING JOBS (THOUSANDS)



Source: CBRE Research, Q2 2018 and U.S. Bureau of Labor Statistics, July 2018.

NET ABSORPTION GROWTH

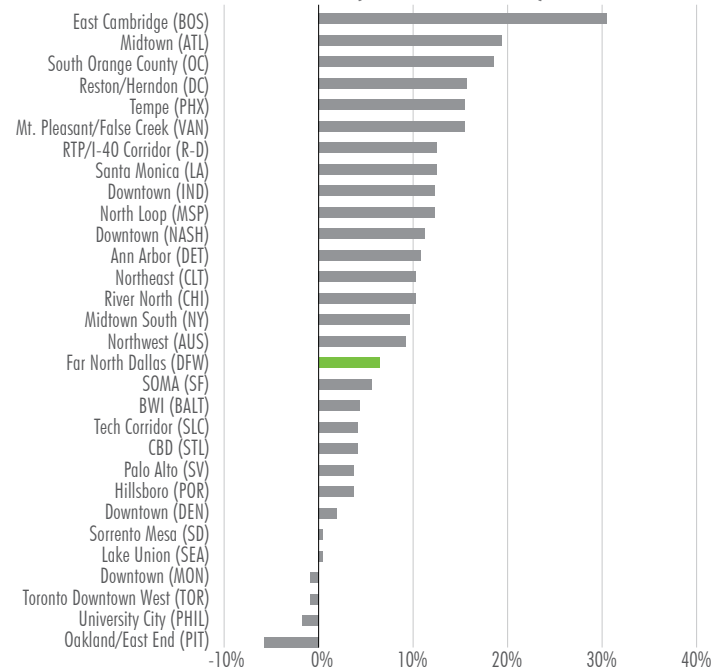
OVERALL MARKET, PAST TWO YEARS (Q3 2016 - Q2 2018)



Source: CBRE Research, Q2 2018.

RENT GROWTH

TOP TECH SUBMARKET, PAST TWO YEARS (Q2 2016 vs. Q2 2018)



Source: CBRE Research, Q2 2018.

VANCOUVER (#28)

QUICK STATS

OFFICE MARKET STATS, Q2 2018

Average Asking Rent	\$42.77
Direct FS/YR	CAD
Vacancy Rate	6.1%
Supply	
Under Construction	2.2 MSF
Sublease Available	0.5 MSF
Top Tech Submarket	Mount Pleasant & False Creek Flats
Rents/Vacancy	\$45.62 CAD/3.8%

HIGH-TECH INDUSTRY STATS, 2017

Employment	48,600
High-Tech Software/Services	
Employment Clustering	14.4%
% of Office-Using Jobs	
Educational Attainment	34.2%
Residents w/ BA or higher	
Labor Cost (MSA)	\$71,926
Software Engineer	CAD

SIGNIFICANT OFFICE LEASE DEALS, 2018

Amazon	349 West Georgia St	416,000 SF
Arista Networks	9100 Glenlyon Pkwy	61,800 SF
Sage Software Canada Ltd	13833 Wireless Wy	40,900 SF

Source: CBRE Research, Q2 2018.

HOT TOPICS

- Vancouver boasts one of the lowest downtown office vacancy rates in North America, driven by robust tech tenant growth—particularly among virtual and augmented reality firms.
- Technology tenants lead market activity and account for the largest share of users in the market seeking space, primarily concentrated within the downtown core and the Mount Pleasant & False Creek Flats area.
- Vancouver has CA\$1.4 billion of investments and 50,000 tech-related jobs committed over the next 10 years through the federal government's Innovation Supercluster Initiative.

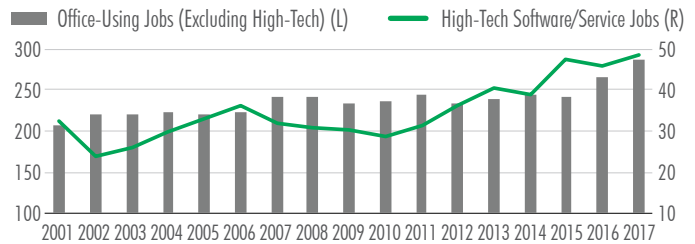
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Ranked by high-tech job growth rate.

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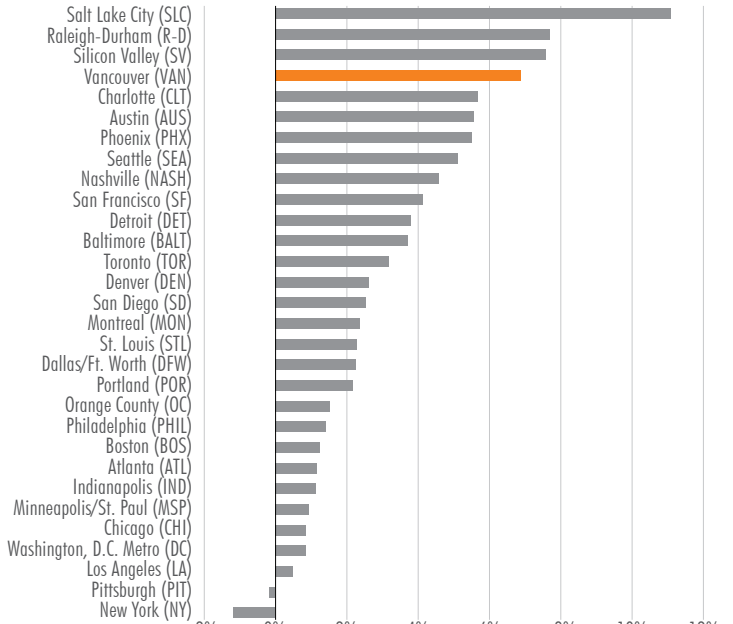
HIGH-TECH SOFTWARE/SERVICES VS. OFFICE-USING JOBS (THOUSANDS)



Source: CBRE Research, Q2 2018 and Statistics Canada August 2018.

NET ABSORPTION GROWTH

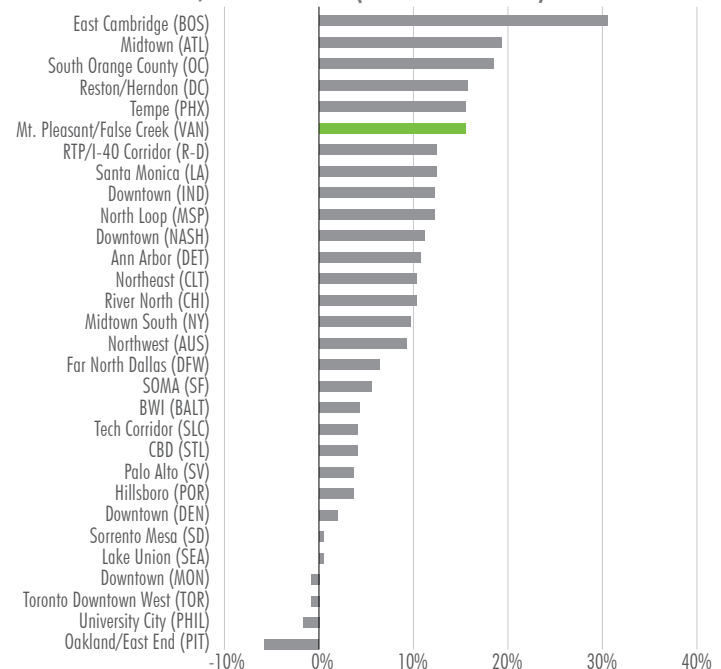
OVERALL MARKET, PAST TWO YEARS (Q3 2016 - Q2 2018)



Source: CBRE Research, Q2 2018.

RENT GROWTH

TOP TECH SUBMARKET, PAST TWO YEARS (Q2 2016 vs. Q2 2018)



Source: CBRE Research, Q2 2018.

MINNEAPOLIS/ST. PAUL (#29)

QUICK STATS

OFFICE MARKET STATS, Q2 2018

Average Asking Rent	\$27.18
Direct FS/YR	
Vacancy Rate	17.7%
Supply	
Under Construction	0.6 MSF
Sublease Available	0.5 MSF
Top Tech Submarket	North Loop
Rents/Vacancy	\$28.62/13.8%

HIGH-TECH INDUSTRY STATS, 2017

Employment	47,773
High-Tech Software/Services	
Employment Clustering	10.1%
% of Office-Using Jobs	
Educational Attainment	40.5%
Residents w/ BA or higher	
Labor Cost (MSA)	\$100,628
Software Engineer	

SIGNIFICANT OFFICE LEASE DEALS, 2018

Atomic Data	250 Marquette Ave	35,000 SF
Total Expert	1600 Utica Ave	28,400 SF
When I Work	420 N 5th St	27,800 SF

Source: CBRE Research, Q2 2018.

HOT TOPICS

- New amenity packages and spec suites available in some Minneapolis CBD buildings have lured many growing tech companies into the downtown core from the North Loop and Northeast. The buildings that have had success in landing these companies tend to also have flexible terms that often include fully furnished spaces.
- Coworking locations continue to expand within the Twin Cities because they are able to offer tenants shorter-term deals with spaces that are fully furnished and have additional amenities, which can attract tech users and larger corporations looking for additional/swing space.
- Landlords are renovating smaller, historic buildings to attract tech companies that are drawn to exposed brick and large windows and access to parking.

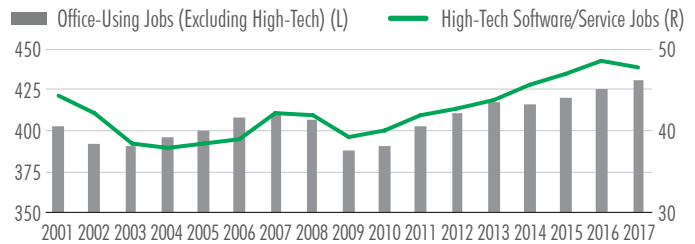
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Ranked by high-tech job growth rate.

Source: U.S. Bureau of Labor Statistics, Statistics Canada, CBRE Research, Q2 2018.

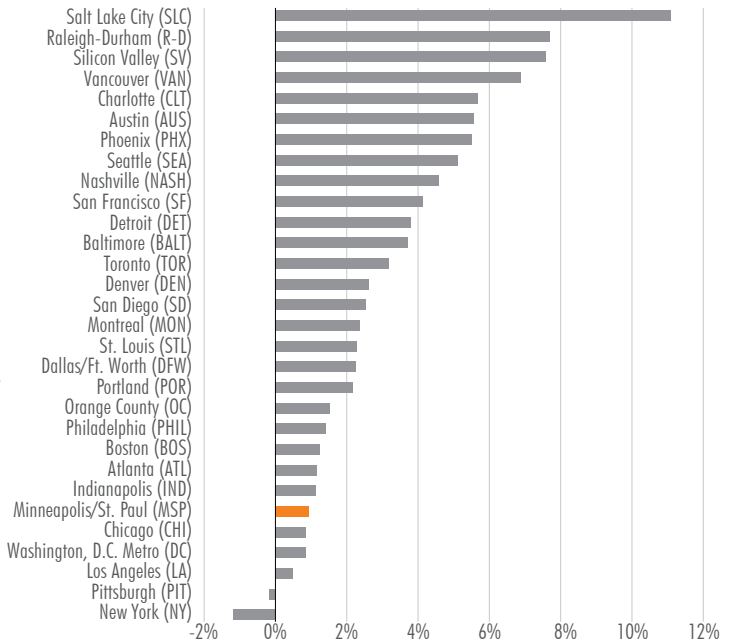
HIGH-TECH SOFTWARE/SERVICES VS. OFFICE-USING JOBS (THOUSANDS)



Source: CBRE Research, Q2 2018 and U.S. Bureau of Labor Statistics, July 2018.

NET ABSORPTION GROWTH

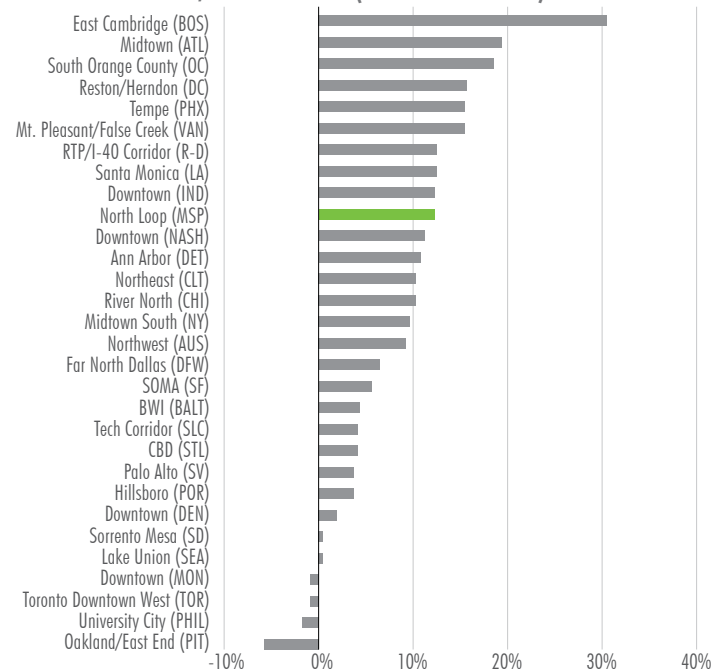
OVERALL MARKET, PAST TWO YEARS (Q3 2016 - Q2 2018)



Source: CBRE Research, Q2 2018.

RENT GROWTH

TOP TECH SUBMARKET, PAST TWO YEARS (Q2 2016 vs. Q2 2018)



Source: CBRE Research, Q2 2018.

PHILADELPHIA (#30)

QUICK STATS

OFFICE MARKET STATS, Q2 2018

Average Asking Rent	\$28.01
Direct FS/YR	
Vacancy Rate	14.3%
Supply	
Under Construction	2.3 MSF
Sublease Available	1.9 MSF
Top Tech Submarket	University City
Rents/Vacancy	\$40.72/9.1%

HIGH-TECH INDUSTRY STATS, 2017

Employment	44,101
High-Tech Software/Services	
Employment Clustering	9.4%
% of Office-Using Jobs	
Educational Attainment	36.7%
Residents w/ BA or higher	
Labor Cost (MSA)	\$106,313
Software Engineer	

SIGNIFICANT OFFICE LEASE DEALS, 2018

OSIsoft	1700 Market St	60,100 SF
Astea International	240 Gibraltar Rd	24,000 SF
EPAM Systems	41 University Dr	17,000 SF

Source: CBRE Research, Q2 2018.

HOT TOPICS

- Market East is the top destination for startups, with more established tech companies focusing on Center City, University City or the suburbs.
- University City, which has the highest rents in the MSA, continues to evolve into a hub for life sciences and tech, including medtech, biotech and healthcare tech companies.
- Philadelphia's many universities have strong entrepreneurship programs, create seed funds, and provide mentorship and venture capital consultation, all of which helps foster and expand the area's tech environment.

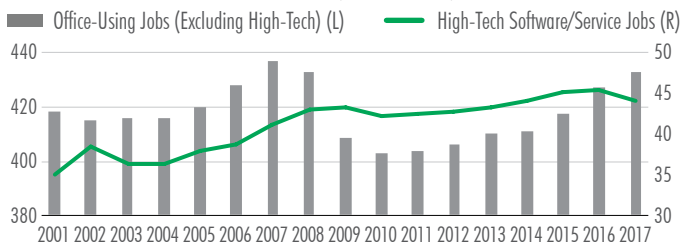
HIGH-TECH SOFTWARE/SERVICES JOB AND OFFICE RENT GROWTH

Rank	Market	High-Tech Job Growth		Office Market Rent Growth	
		Current Period 2016 & 2017	Prior Period 2014 & 2015	Current Period Q2'16 vs Q2'18	Prior Period Q2'14 vs Q2'16
1	Seattle	25.7%	17.5%	13.9%	6.4%
2	St. Louis	23.3%	2.1%	1.4%	1.1%
3	Montreal	22.3%	0.1%	-0.7%	3.3%
4	San Francisco	22.1%	47.3%	3.9%	22.7%
5	Toronto	18.9%	25.8%	2.1%	-1.2%
6	Indianapolis	18.4%	24.8%	9.2%	5.0%
7	Austin	17.1%	34.1%	7.9%	15.3%
8	Charlotte	15.4%	32.6%	13.7%	14.8%
9	Los Angeles	14.7%	13.5%	15.8%	10.1%
10	Orange County	14.5%	13.7%	15.5%	24.3%
11	Silicon Valley	13.9%	22.7%	7.2%	28.4%
12	Portland	12.8%	12.3%	13.8%	12.4%
13	Denver	12.5%	10.3%	9.6%	12.0%
14	New York	12.4%	25.0%	-1.4%	11.6%
15	Nashville	12.3%	16.0%	12.3%	18.1%
16	San Diego	12.3%	7.9%	8.0%	13.7%
17	Phoenix	10.9%	36.3%	8.5%	11.6%
18	Atlanta	10.7%	12.3%	16.3%	11.4%
19	Raleigh-Durham	10.2%	16.0%	12.8%	7.6%
20	Chicago	9.6%	22.1%	5.8%	5.7%
21	Pittsburgh	8.9%	22.7%	1.9%	7.3%
22	Salt Lake City	8.1%	14.2%	9.0%	11.0%
23	Boston	7.7%	11.5%	6.3%	12.7%
24	Detroit	5.4%	17.2%	6.3%	3.5%
25	Baltimore	4.2%	4.8%	1.6%	-0.5%
26	Washington, D.C.	3.9%	3.7%	10.8%	-3.7%
27	Dallas/Ft. Worth	3.4%	18.1%	5.7%	16.6%
28	Vancouver	2.7%	17.1%	6.3%	9.8%
29	Minneapolis/St. Paul	1.3%	7.8%	3.1%	10.0%
30	Philadelphia	-2.3%	4.1%	4.8%	4.4%

Ranked by high-tech job growth rate.

Source: U.S. Bureau of Labor Statistics, Statistics Canada, CBRE Research, Q2 2018.

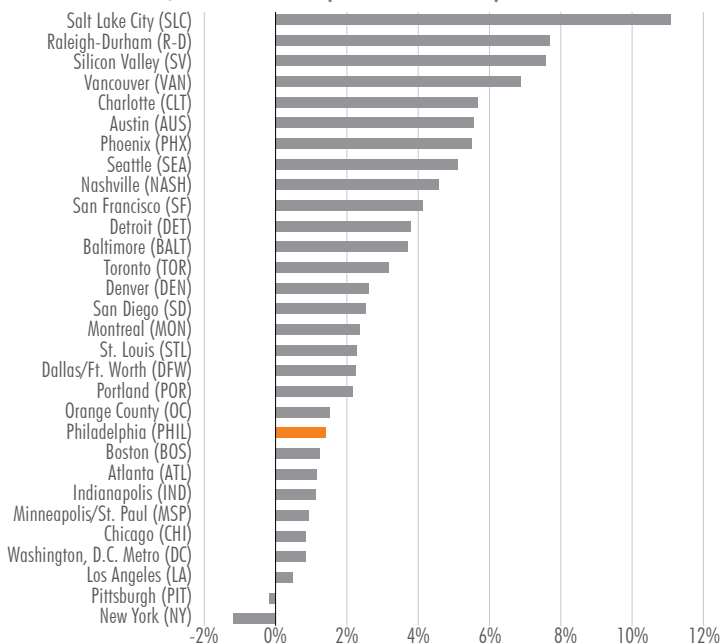
HIGH-TECH SOFTWARE/SERVICES VS. OFFICE-USING JOBS (THOUSANDS)



Source: CBRE Research, Q2 2018 and U.S. Bureau of Labor Statistics, July 2018.

NET ABSORPTION GROWTH

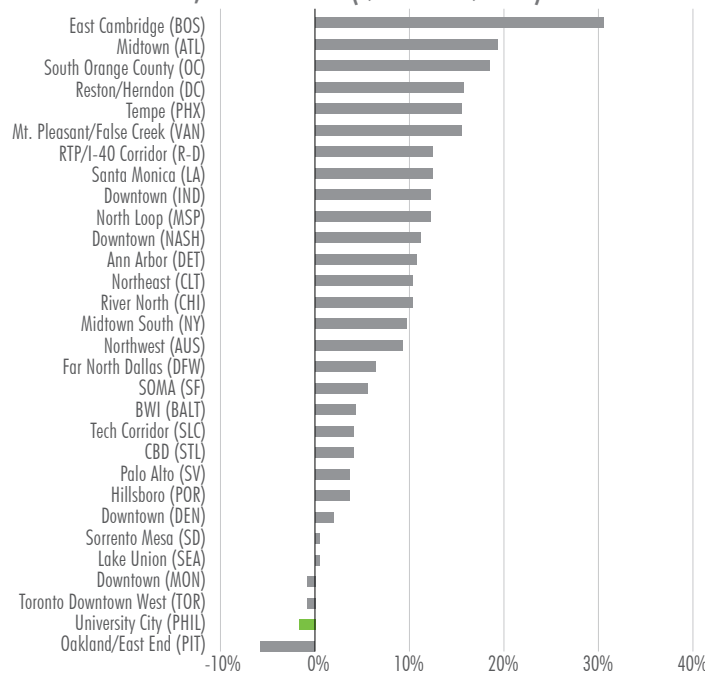
OVERALL MARKET, PAST TWO YEARS (Q3 2016 - Q2 2018)



Source: CBRE Research, Q2 2018.

RENT GROWTH

TOP TECH SUBMARKET, PAST TWO YEARS (Q2 2016 vs. Q2 2018)



Source: CBRE Research, Q2 2018.

CONTACTS

To learn more about CBRE Research, or to access additional research reports, please visit www.cbre.com/research-and-reports. Additional U.S. Research from CBRE can be found [here](#).

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WANT TO KNOW MORE ABOUT SCORING TECH TALENT?

CBRE Research recently released a comprehensive report on tech talent across the U.S. The report, identifies the top markets for tech talent using a proprietary scoring system, explains what tech talent markets look like, and identifies the top tech talent momentum and innovation markets and corresponding operating costs. **Download *Scoring Tech Talent: Influencing Innovation, Economic and Real Estate Growth in 50 U.S. and Canadian Markets*.**

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