



# Silicon Valley Competitiveness and Innovation Project - 2019 Update

A Dashboard and Policy Scorecard for a  
Shared Agenda of Prosperity and Opportunity



[svcip.com](http://svcip.com)

## About the SVCIP partners

The **Silicon Valley Leadership Group**, founded in 1978 by David Packard of Hewlett-Packard, represents more than 300 of Silicon Valley's most respected employers on issues, programs and campaigns that affect the economic health and quality of life in Silicon Valley. The Leadership Group strives to advance proactive solutions in the areas of energy, transportation, education, housing, health care, taxation, economic vitality and the environment. Leadership Group members collectively provide nearly one of every three private sector jobs in Silicon Valley and have more than \$3 trillion in annual revenue.

**Silicon Valley Community Foundation** advances innovative philanthropic solutions to challenging problems. We engage donors and corporations from Silicon Valley, across the country and around the globe to make our region and world better for all. Our passion for helping people and organizations achieve their philanthropic dreams has created a global philanthropic enterprise committed to the belief that possibilities start here.

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**Collaborative Economics (COECON)** is a strategic advisory and consulting firm that works with clients to create breakthrough solutions for regions and communities. COECON has extensive experience helping states and regions develop innovation strategies.  
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## A Letter from the SVCIP Partners

February 2019

Dear Friends,

In 2014, Silicon Valley Community Foundation and the Silicon Valley Leadership Group committed to bringing a quantitative rigor to the greatest challenges facing our Valley, as a way of galvanizing our communities to do the hard work of finding solutions together. From that commitment came the Silicon Valley Competitiveness and Innovation Project (SVCIP). Each year, the SVCIP has reviewed our region's economic achievements as well as policy successes that help improve our quality of life – while also comparing our region to other U.S. tech hubs.

Over the last five years, we have seen an economic expansion that is the envy of many regions, but we've not developed our housing and transportation infrastructure adequately along the way. As job growth in Silicon Valley equaled or outpaced other U.S. tech hubs in 2017, the average housing price in Silicon Valley rose to \$1.25 million and increased three times faster than any of the regions against which we benchmark ourselves. Our commute times continued to increase, though at a slower rate than in recent years.

Meanwhile, we have seen steady improvement in the performance of our third graders, but the percentage of our eleventh grade students meeting or exceeding state standards in Math and English declined in 2017 after several years of progress. Yawning gaps in student performance across racial and ethnic groups persist. These issues continue to require our attention and comprehensive solutions.

Yet, as you'll see in the Policy Scorecard Progress section of this report, we have also accomplished remarkable successes together. In just the last year, we have worked together to pass \$4.5 billion in regional transportation improvements, and \$6 billion in bonds at the state level to help house our veterans, the mentally ill, and other vulnerable populations. We have worked together to preserve more than \$50 billion in state funding for maintenance of our transportation system, and supported our state legislators as they have crafted new systems to encourage additional housing. We have a long way to go especially when it comes to meeting our region's housing crisis, but we are optimistic.

This year's update also brings for the first time a glimpse of the future, as seen through the eyes of Silicon Valley business leaders. Despite the challenges we've noted above, a strong majority of respondents expect their workforce in the Valley to grow over the next five years. Their responses also underscore the reality that the economic vitality of our region need not come at the expense of others. Indeed, our country is at its best when prosperity is broadly shared.

We hope you will join our two organizations and the many communities across this Valley that share this vision. Please visit us at [svcip.com](http://svcip.com) for updates on our progress and opportunities to contribute.

Sincerely,



Carl Guardino  
President and CEO  
Silicon Valley Leadership Group



Nicole Taylor  
President and CEO  
Silicon Valley Community Foundation

## SVCIP Indicator Dashboard

### 2019 Update

			Strong and Gaining Ground	Trending positively, but still a critical area for improvement	Critical need for attention, and/or trending down	Change from SVCIP 2018
INNOVATION ASSETS	Talent	High-Tech STEM Talent Pool	●			■
		STEM Degrees Conferred		●		■
		International Talent	●			○
		Talent Migration			●	×
OUTCOMES & PROSPERITY	Quality of Life	Home and Rent Values			●	×
		Traffic Congestion			●	×
	Access to Opportunity	Third Grade English and Math Proficiency		●		■
		Eleventh Grade English and Math Proficiency			●	×
	Jobs	Jobs in Innovation Industries	●			○

■	Some improvement
○	Remained the same
×	Conditions worsened

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## Executive Summary

In 2015, the Silicon Valley Leadership Group and Silicon Valley Community Foundation joined together to develop the Silicon Valley Competitiveness and Innovation Project (SVCIP) to proactively identify a data-driven, overarching economic strategy to enhance and reinforce the Silicon Valley region's competitive advantages in innovation, and ensure that Silicon Valley residents have access to the job opportunities and prosperity linked to growth in key industries. Guided by an advisory council and a series of discussions with legislators and business and civic leaders, the SVCIP team developed an Indicator Dashboard and public policy agenda to evaluate and promote the health of Silicon Valley's innovation ecosystem.

The 2019 report takes a different approach than in years past. It provides an annual update of selected indicators (i.e., employment in innovation industries, STEM degrees conferred per capita, migration flows, median home price, median rent, commute times, and eleventh grade student achievement), and revisits indicators that were in earlier reports (i.e., STEM talent pool, international talent, and third grade student achievement). It provides a partial update of the Indicator Dashboard (a tool we use to track change over time) and summarizes progress on the public policy agenda. This year we also include results of a survey of Silicon Valley executives on their views about the future. As in previous years, to the extent available, data from Silicon Valley is juxtaposed with comparable data for key innovation regions, including the New York metro area, Boston, Southern California, Seattle, and Austin. This year, we examine the growth of innovation industries in four "regions on the rise" (including Portland, Denver/Boulder, Research Triangle, and Salt Lake City). These communities are generally smaller than our primary comparison regions but have shown marked gains in specific innovation industries. The Silicon Valley region is defined as Santa Clara, San Mateo, and San Francisco Counties.

### Key findings:

Silicon Valley's innovation industry job growth continued in 2017 at the same rate as the year prior, and at a faster rate than any other U.S. innovation region except Austin.

**Silicon Valley's innovation industries continue to set the pace for job growth nationally, at 5% in 2017.** Austin surged from a 1% growth rate in 2016 to 5% in 2017, but growth slowed in Seattle (4% to 2%), Southern California (3% to 1%), and New York City (2% to 0.5%). As in 2016, Boston grew at 3% in 2017.

For the second year in a row, more people left Silicon Valley than moved in.

**A net average of 165 residents left the Valley each month in 2017, an increase from the net average of 42 per month who departed in 2016.** The last two years are a sharp reversal from 2015, when the region gained a net average of 1,962 net new residents per month through migration. The primary reason for the accelerating net negative migration numbers is domestic out-migration: in 2015, Silicon Valley was losing on average 832 residents per month to other locations in the United States, but in 2016 that figure jumped to 2,548, and in 2017 grew higher still to 3,051.

However, more people from other countries relocated to Silicon Valley in 2017.

**Monthly average foreign in-migration rose from 2,506 in 2016 to 2,887 in 2017, an increase of 15%.** Every innovation region experienced a net gain in foreign in-migration in 2017: net migration from abroad increased most in Austin (19%), with Southern California (14%), Boston (12%), New York City (12%), and Seattle (9%) also posting substantial gains.

The median home price in Silicon Valley grew much faster than other innovation regions, rising to nearly \$1.25 million in 2018.

**Silicon Valley's median home price rose 15%, compared to gains of only 2-5% in other innovation regions.**

Between October 2017 and October 2018, every innovation region but Silicon Valley experienced slower growth in median home prices.

Silicon Valley's High-Tech STEM talent pool has been growing faster than other innovation regions, expanding 30% between 2012 and 2017.

**This growth was largely driven by employment in occupations related to computer, web and telecommunications, which rose 38% during this period.**

Austin, with a much smaller High-Tech STEM workforce, grew 24%. Other regions grew much more slowly: New York City (13%), Seattle (9%), Southern California (9%), and Boston (4%).

Silicon Valley has experienced the largest increase in commute time since 2010 among innovation regions (+21%).

**Most recently, commute times rose in the region, but at a slower rate than past years.**

Nonetheless, Silicon Valley commuters spend an average of 73 minutes commuting round trip to work, second among innovation regions behind only the New York City metro area.

More Silicon Valley third graders tested proficient in English Language Arts and Mathematics, but fewer eleventh graders did so, and large disparities among ethnic groups remain.

**The percentage of third grade students who achieved proficiency in English Language Arts rose from 52% to 59%, and in Mathematics from 56% to 62% between the 2014-15 and 2017-18 academic years.**

Yet the 64% of Silicon Valley eleventh grade students who met or exceeded standards in English Language Arts in 2018 was down from 69% in 2017, and even lower than in 2015. In addition, just 47% of eleventh grade students were proficient in Mathematics in 2018, down from 48% in 2017. The gap in eleventh grade student test scores by ethnicity in Silicon Valley remains stark, and more substantial than the rest of California. While Black and Latino students perform better in Silicon Valley than in the state as a whole, for example, there was a 60-point gap between the share of Asian eleventh grade students (78%) and the share of Hispanic and Latino eleventh grade students (18%) that met or exceeded state standards in Mathematics.

Despite the region's challenges, Silicon Valley executives remain bullish on the Valley—and beyond.

**More than 56% of executives surveyed expect to grow their headcount in Silicon Valley between now and 2025.**

Yet large majorities of respondents also plan to grow elsewhere in the U.S., with much of that growth coming outside of traditional tech hubs. This underscores the fact that innovation economy job growth is not a zero sum game, and suggests that the impact of technology job growth is broadening across the country.

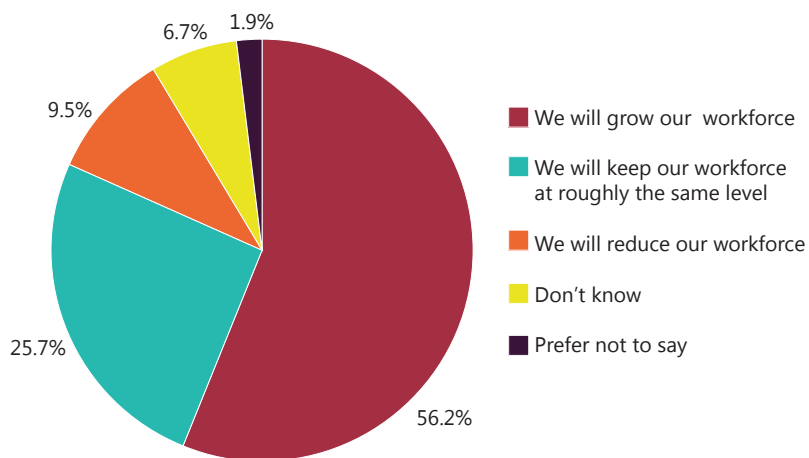
The last two years we speculated that our region's ability to sustain its post-recession growth may be eroding. This year's update does not settle the speculation. The region's innovation industries continued to grow at the same rate in 2017 as in 2016, though at a slower pace than in 2015. Even more people are moving out of our still prosperous but increasingly congested and expensive region. On critical quality of life indicators – median home prices and commute times – Silicon Valley continued to lose ground to other innovation regions.

Despite this erosion, the Valley's High-Tech STEM talent pool remains an engine of innovation, growth, and competitiveness. It is both substantially bigger on an absolute basis than most other innovation regions, and much larger on a per capita basis than all five of the nation's leading innovation regions that we use as comparisons. And, between 2012 and 2017, Silicon Valley further extended its advantage, with High-Tech STEM jobs growing 30% compared to increases of just 4% to 24% in the other innovation regions. In short, despite very real challenges, there is little to suggest that one of Silicon Valley's most fundamental advantages, our talent base, is weakening—yet.

## Executive Survey

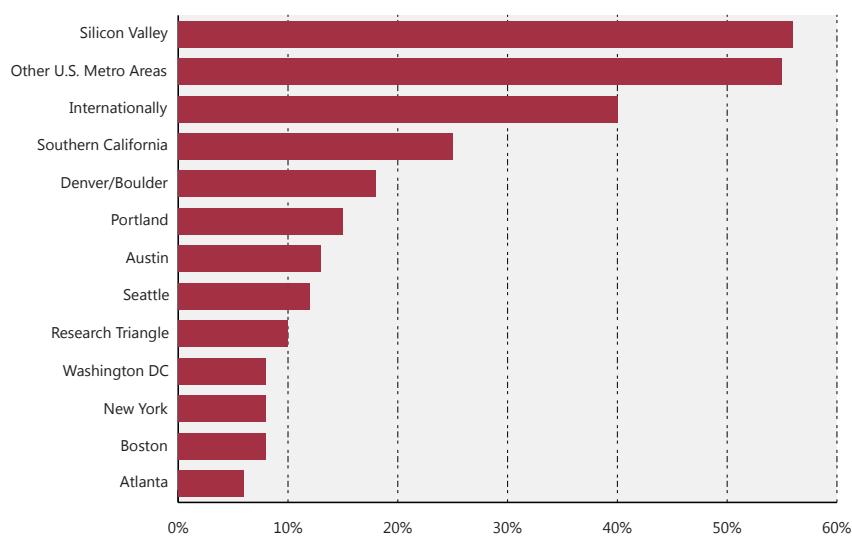
*This project is by its nature retrospective. It is intended to help us understand our present and future by using the freshest information about the trajectory of our region in recent years, and how it compares with our key competitor regions. This year we have added a prospective element: Results of a survey of Silicon Valley business leaders regarding their workforce plans in our region in the coming years. The survey was conducted in December 2018, with 105 respondents from among the Silicon Valley Leadership Group's 330 member employers.*

### How Will Your Silicon Valley Workforce Look in 2025



Silicon Valley business leaders see steady job growth in the coming years—both in the Valley and beyond. Majorities of respondents are expecting to grow their employee headcounts both in Silicon Valley and in other U.S. tech hubs—unsurprising for what are in many cases global companies.

### Plans for Growth in Silicon Valley and Other Regions



From a job creation perspective, the innovation economy is not a zero-sum game. Not only are Silicon Valley executives bullish both in the Valley and in its primary U.S. competitor regions, but they are also looking to grow their presence beyond the nation's coasts and traditional technology hubs.

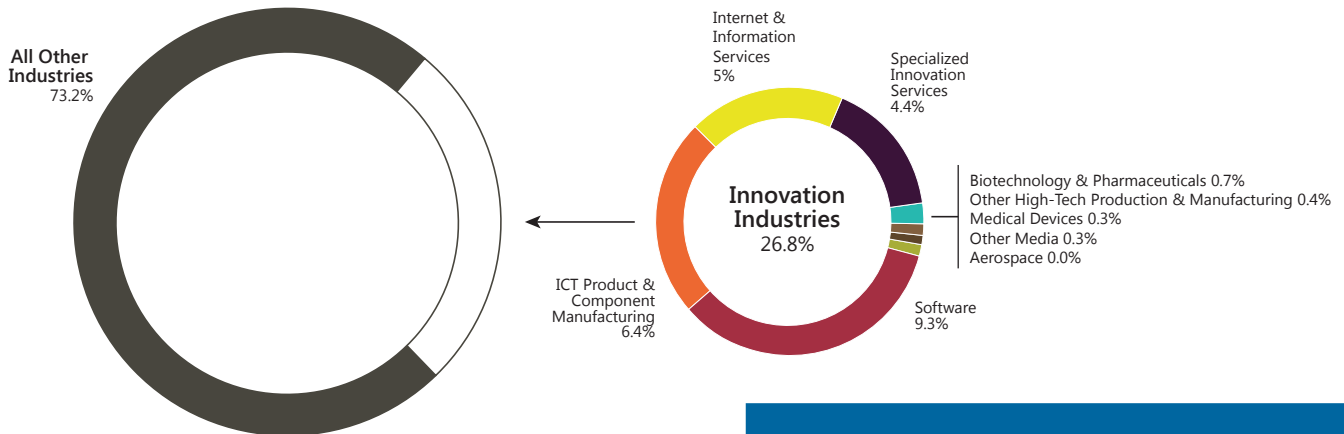
Note: respondents were asked if they planned to grow in any of the following regions: Silicon Valley, specific regions listed in the chart, all other U.S. regions not listed in the chart, and all international regions. Thus, percentages reflect that many respondents chose multiple regions.



# Innovation Industries Overview

## Silicon Valley Employment

Detailed Innovation Industries and All Other Industries, 2017

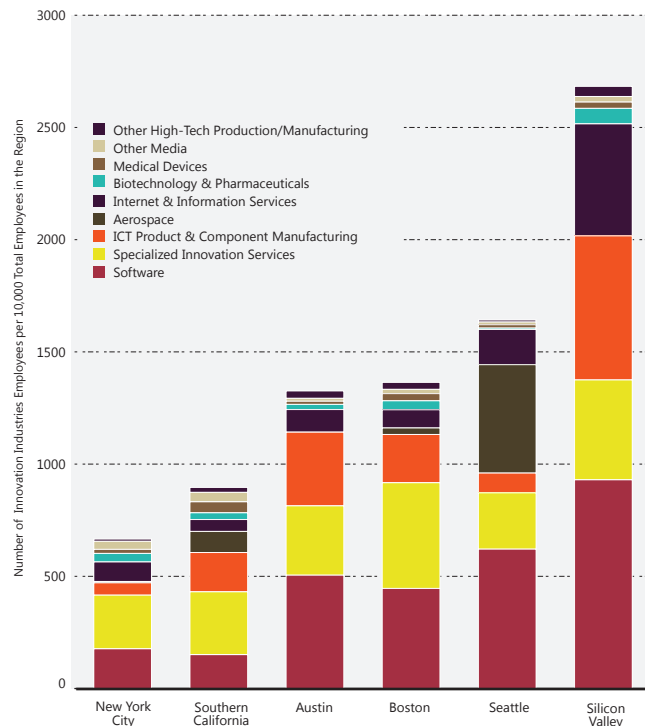


Data Source: Bureau of Labor Statistics, Quarterly Census of Employment and Wages  
Analysis: Collaborative Economics

Silicon Valley's employment in innovation industries as a share of total jobs has continued to rise. About 27% of the region's jobs were in innovation industries, compared to 26% in 2016 and 2015, and 25% in 2014. Software, which continues to represent the largest share of innovation industry jobs, rose from 9.0% to 9.3%. Internet and Information Services increased from 4.5% to 5%. Other industries remained the same as a percentage of total jobs in 2017 compared to the prior year, except for ICT Product and Component Manufacturing, which edged down from 6.5% to 6.4%.

## Employment in Innovation Industries by Region

Per 10,000 Workers in Overall Economy  
Innovation Regions, 2017



Data Source: Bureau of Labor Statistics, Quarterly Census of Employment and Wages  
Analysis: Collaborative Economics

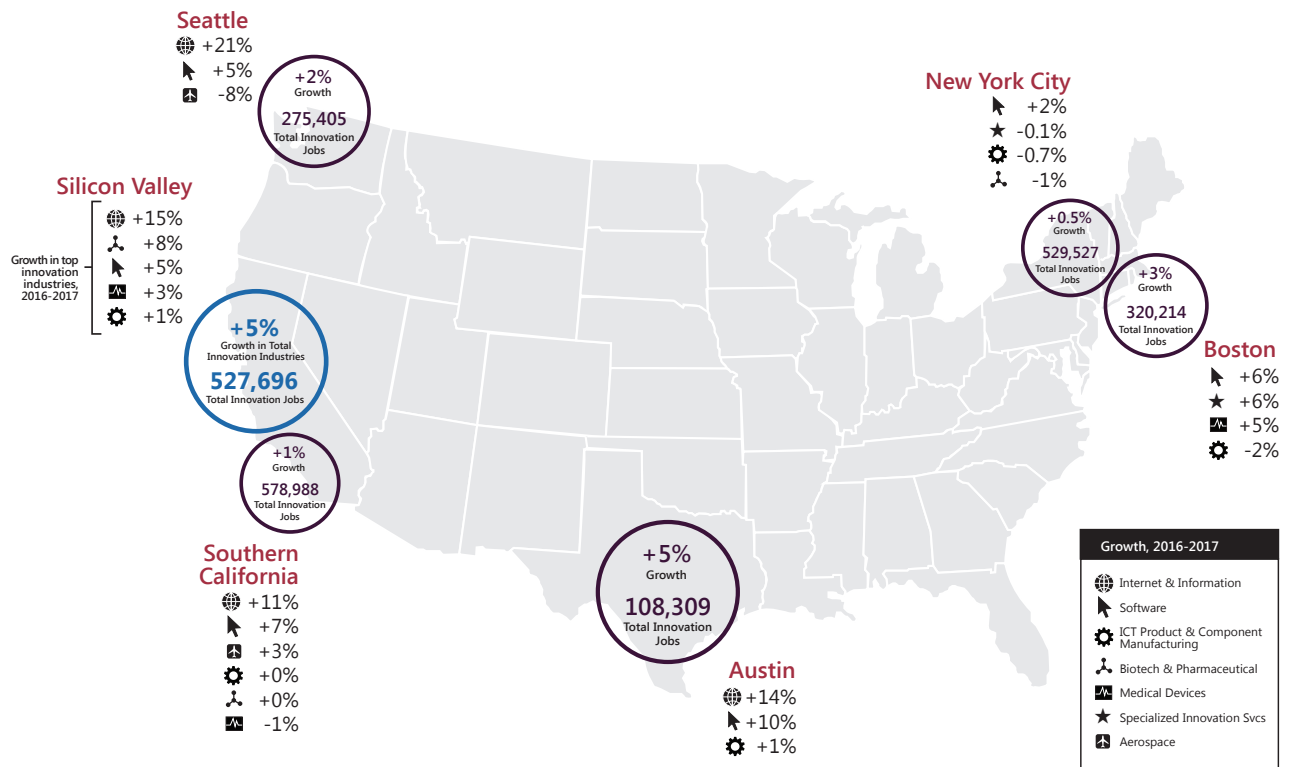
Silicon Valley continues to have the highest share of workers in innovation industries among U.S. innovation regions. Seattle (16%), Boston (14%), Austin (13%), Southern California (9%), and New York City (7%) all rank well behind Silicon Valley (27%) in the share of total workers in innovation industries.

Over the past decade (2007-2017), innovation industry jobs grew 64% in the Valley, far outpacing other innovation regions. Austin was a distant second (up 48% from a smaller base), followed by Seattle (32%), Boston (22%), New York City (14%) and Southern California (8%).

In 2017, only Austin matched Silicon Valley's 5% growth rate in innovation industry jobs, while other innovation regions fell further behind. Seattle and Southern California experienced declines in growth rate from 4% to 2% and 3% to 1%, respectively, while New York City's rate fell from 2% to 0.5%. Boston maintained its 3% growth rate, while Austin rebounded strongly from 1% growth in innovation industry jobs in 2016 to 5% growth in 2017.

What drove changes in growth rates in 2017? Silicon Valley maintained its 5% overall growth rate in large part because Internet and Information Services jobs increased 15%, up from 11% in 2016. Austin's fast rise in 2017 was fueled by a 10% increase in Software industry jobs, up from 6% growth in 2016, as well as a turnaround in ICT Product and Component Manufacturing, which rose 1% after experiencing an 11% decline in 2016. The drop in Seattle's overall innovation industry growth rate was driven by accelerating job losses in Aerospace, down 8% in 2017 on top of a 3% decline in 2016, even as the region continued to add Internet and Information Services industry jobs at the fastest rate of any innovation region (21% in 2017, 20% in 2016).

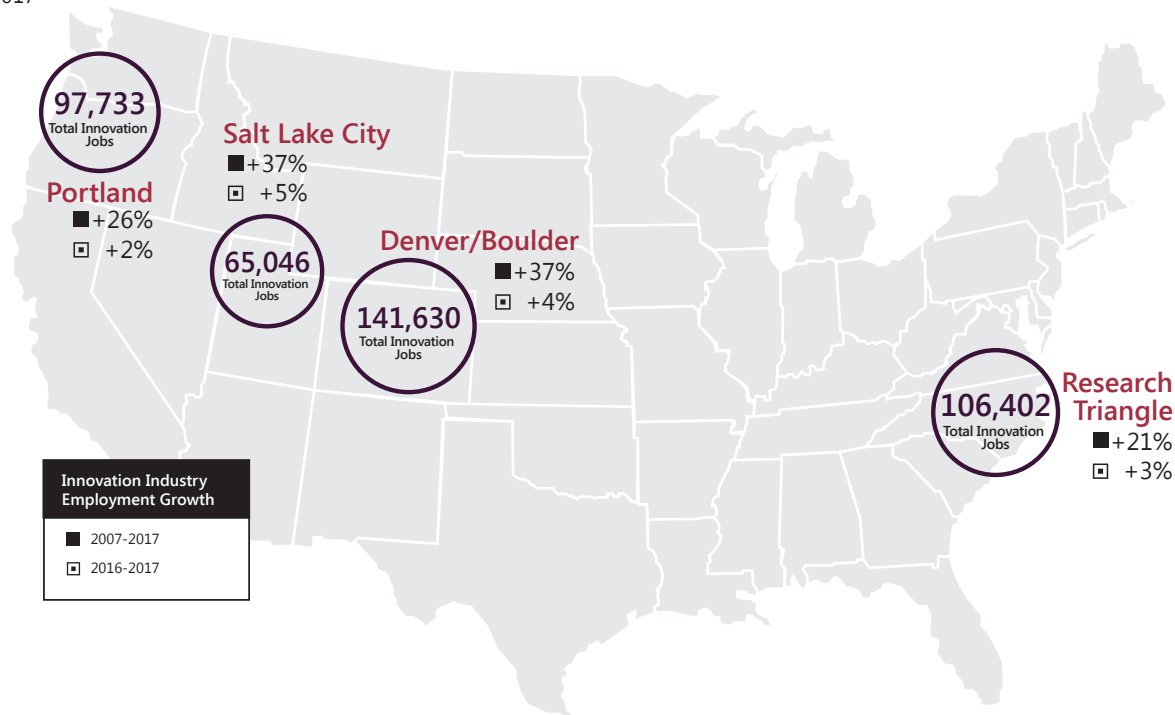
## Employment Growth in Top Innovation Industries 2016-2017



Source: Bureau of Labor Statistics, Quarterly Census of Employment and Wages  
Analysis: Collaborative Economics

## Employment in Innovation Industries in Four Regions on the Rise

2017



Source: Bureau of Labor Statistics, Quarterly Census of Employment & Wages  
Analysis: Collaborative Economics

This year's SVCIP Update also looks at a second group of regions that have experienced substantial innovation industry growth over the past decade. While generally not as large as the innovation regions that have served as comparisons for Silicon Valley in this and earlier reports, between 2007 and 2017, Denver/Boulder (37%), Salt Lake City (37%), Portland (26%), and Research Triangle (21%) added innovation industry jobs at a faster rate than New York City (14%) and Southern California (8%).

While these "regions on the rise" gained on some of the established innovation regions over the past decade, they lost ground to others. Silicon Valley (64%) was both much larger and faster-growing in innovation industry employment than all of the "regions on the rise." Seattle (32%) was also much larger and faster-growing than Portland and Research Triangle. Austin (47%), whose base of innovation industry jobs is comparable to that of Research Triangle and smaller than that of Denver/Boulder, nonetheless added innovation industry jobs at a faster rate than all of the "regions on the rise."

In 2017, the performance of "regions on the rise" was mixed compared to established innovation regions. Salt Lake City (5%) and Denver/Boulder (4%) exceeded the growth rates of the established innovation regions with the exception of Silicon Valley (5%) and Austin (5%). Slower growing Research Triangle (3%) and Portland (2%) were close to Boston (3%) and Seattle (2%), but exceeded Southern California (1%) and New York City (0.5%).

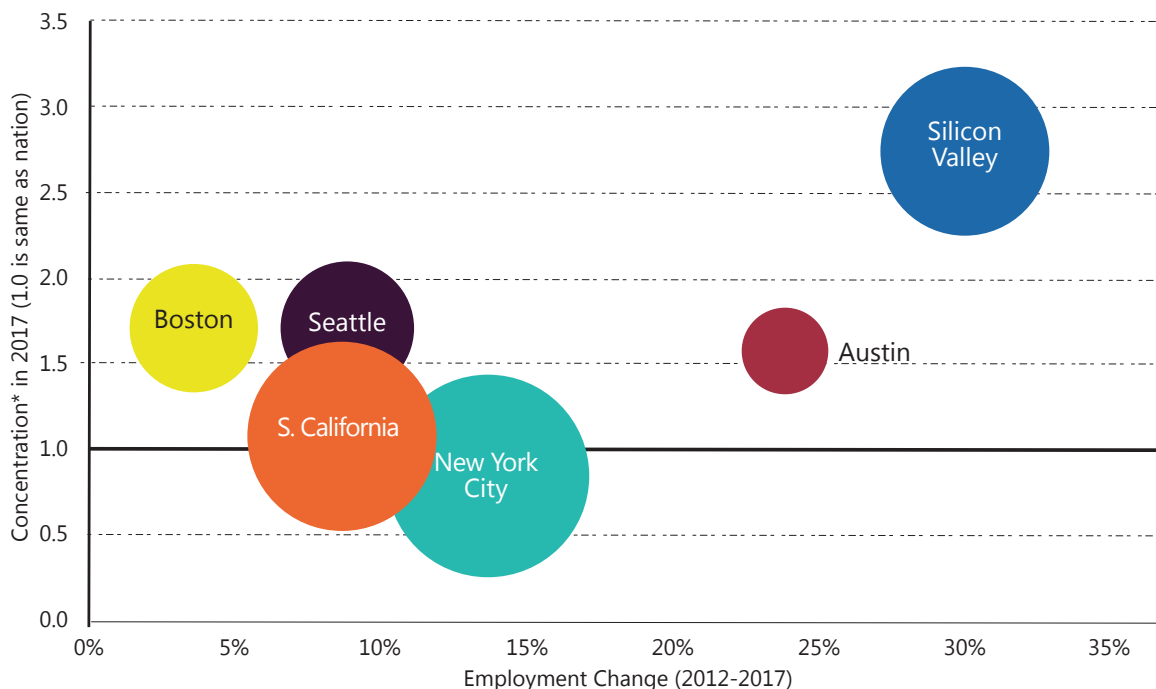
Looking more closely at the activity of these regions, we see that specific innovation industries are helping to drive growth. For example, in 2017, Internet and Information Services industry jobs rose 23% in Portland, 12% in Research Triangle, 8% in Salt Lake City, and 6% in Denver/Boulder. Other High-Tech Manufacturing grew 16% in Portland, while Software expanded 6% in Denver/Boulder.

## Innovation Assets: Talent

For innovation regions like Silicon Valley, the size and growth of its Science, Technology, Engineering, and Math (STEM) talent pool is a critical ingredient of economic success. People with STEM skills are essential in researching, developing, improving, and scaling innovative technologies, businesses, and processes.

### High-Tech STEM Talent Pool for Innovation Industries

Employment 2017, Change in Employment 2012-2017, and Employment Concentration\* 2017



\* Concentration is calculated as (Regional High-Tech Emp/Regional Total Emp) / (National High-Tech Emp/National Total Emp)

\*\* Size of bubble reflects the number of High-Tech STEM Employees

Data Source: Bureau of Labor Statistics

Analysis: Collaborative Economics

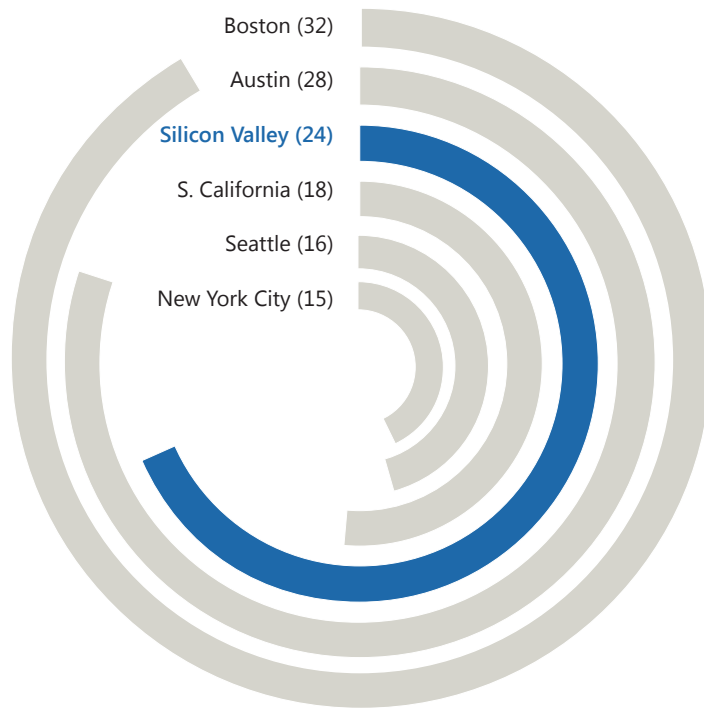
In 2017, Silicon Valley had 354,990 High-Tech STEM workers, substantially more than most other innovation regions. Silicon Valley's STEM talent pool is almost four-times larger than that of Austin (91,470), and substantially larger than both Seattle (199,780) and Boston (186,670). Of the SVCIP comparison regions, only the megaregions of New York City and Southern California have more High-Tech STEM workers.

Silicon Valley has a much higher concentration of High-Tech STEM talent than other innovation regions—that is, the proportion of High-Tech STEM workers in the overall workforce relative to the national average. High concentration is important, indicating a strong specialization in High-Tech STEM talent-driven industries in the regional economy. Some regions have larger absolute numbers but lower concentrations (e.g., Southern California, New York City region), while others have higher concentrations but lower absolute numbers (e.g., Seattle, Boston, Austin).

Silicon Valley in recent years has been extending its lead: between 2012 and 2017, High-Tech STEM jobs grew 30% in the region. Austin, with a much smaller High-Tech STEM workforce, grew 24%. Other regions grew much more slowly: New York City (13%), Seattle (9%), Southern California (9%), and Boston (4%). Unsurprisingly, Silicon Valley's growth was largely driven by employment in occupations related to computer, web, and telecommunications, which rose 38% during this period.

**STEM Degrees Conferred Per 10,000 Residents**

Innovation Regions, 2016-2017 School Year\*



STEM degrees conferred indicates the availability of homegrown, highly-skilled talent. Although Silicon Valley ranks behind Boston and Austin in terms of the number of STEM degrees conferred per capita, the region increased its STEM degree production almost twice as much as Austin (32% vs. 17%) between 2012 and 2017. However, other innovation regions have been closing the gap with Silicon Valley. The New York City region (51%), as well as Seattle (38%) and Southern California (38%) all experienced bigger per capita gains between 2012 and 2017. Moreover, Boston (39%) has extended its advantage over Silicon Valley during this period.

\* Data are preliminary; extracted 10.16.2018; Degrees included are based on first major and include bachelor's, master's and doctorate degrees.  
Data Source: National Center for Educational Statistics, IPEDS  
Analysis: Collaborative Economics

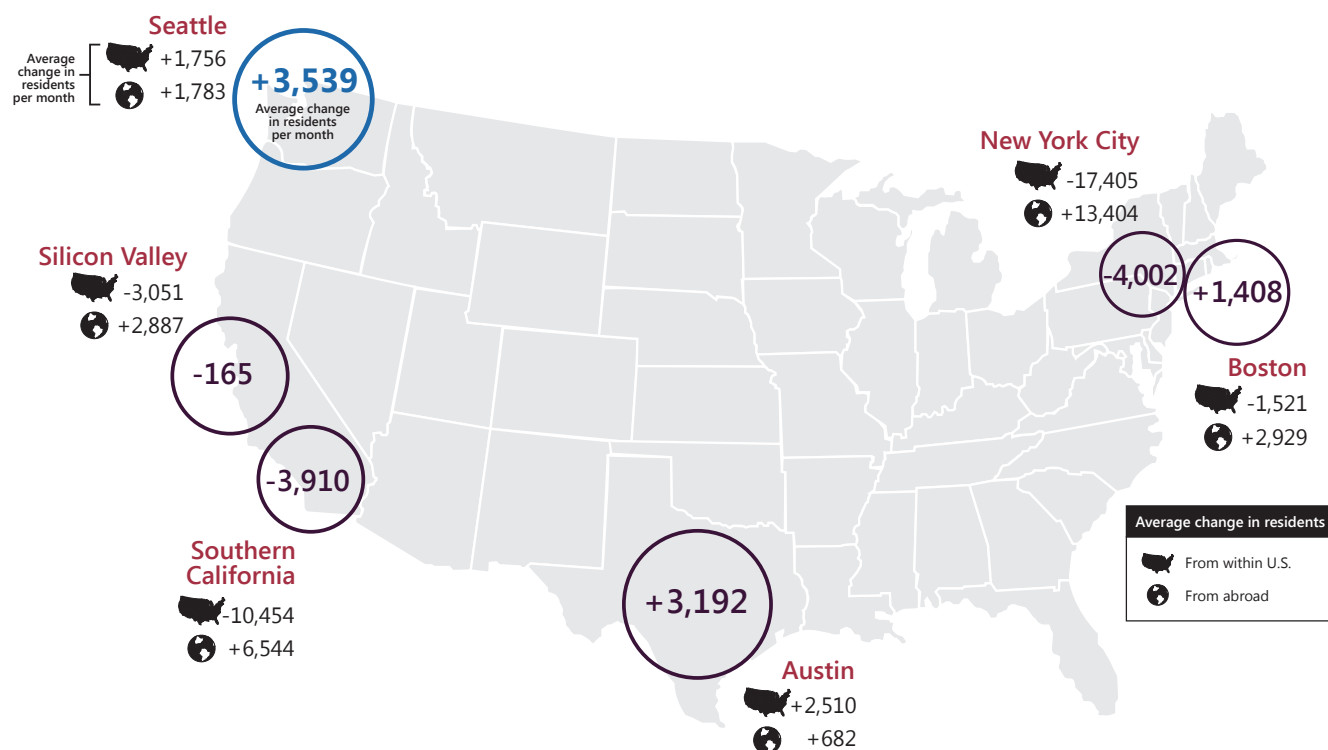
**Growth in STEM Degrees Conferred  
2012-2017\***

New York City	51%
Boston	39%
Southern California	38%
Seattle	38%
Silicon Valley	32%
Austin	17%

While STEM degrees per capita have continued to grow in innovation regions over time, the rate of growth slowed in each innovation region except Seattle during the 2016-2017 academic year. Silicon Valley's growth rate dropped from 15% in 2015-2016 to 5% in 2016-2017. Similarly, Austin's growth rate declined from 7% to 1%, Boston's from 10% to 5%, New York City's from 10% to 8%, and Southern California's from 11% to 9%. Seattle experienced a modest rise from 5% to 7%.

\* Data are preliminary; extracted 10.16.2018; Degrees included are based on first major and include bachelor's, master's and doctorate degrees.  
Data Source: National Center for Educational Statistics, IPEDS  
Analysis: Collaborative Economics



**Migration Flows**Average Net New Residents Per Month  
Innovation Regions, 2017Data Source: US Census, Population Estimates  
Analysis: Collaborative Economics

For the second year in a row, Silicon Valley had a net out-migration of residents in 2017—and the rate of departures accelerated. According to comparable year-to-year U.S. Census population estimates, an average of 165 residents left the Valley monthly in 2017, an increase from an average of 42 who departed monthly in 2016. The last two years are a sharp reversal from 2015, when population estimates showed the region was gaining an average of 1,962 net new residents per month. The primary reason for the accelerating loss of residents is domestic out-migration: in 2015, Silicon Valley was losing on average 832 residents per month to other locations in the United States, but in 2016 that figure jumped to 2,548, and in 2017 grew higher still to 3,051.

In contrast, Silicon Valley experienced increasing foreign in-migration in 2017. Monthly average foreign in-migration rose from 2,506 in 2016 to 2,887 in 2017, an increase of 15%. This reversed a modest one-year decline in foreign in-migration from 2,793 in 2015 to 2,506 in 2016. Every innovation region experienced a net gain in foreign in-migration in 2017: Austin (19%) and Southern California (14%) experienced the largest increases in 2017, while Boston (12%), New York City (12%), and Seattle (9%) also posted substantial gains.

Innovation regions are experiencing varying migration flows. In 2017, Austin and Seattle recorded a net gain of residents, based on gains in both domestic and foreign in-migration. Boston balanced its domestic out-migration with greater foreign in-migration, resulting in a net overall gain. Silicon Valley, Southern California, and New York City experienced substantial foreign in-migration, but not enough to offset substantial domestic out-migration of residents.

**International Talent**

STEM Workers with a Bachelor's Degree or Higher by Place of Origin, 2017

	Foreign Born	In-State Born	Out-Of-State Domestic Born
<b>Silicon Valley</b>	<b>60%</b>	<b>19%</b>	<b>21%</b>
New York City	46%	39%	15%
Boston	35%	30%	35%
Southern California	45%	31%	24%
Austin	30%	32%	38%
Seattle	39%	16%	45%

Data Source: U.S. Census Bureau, PUMS  
Analysis: Collaborative Economics

Silicon Valley relies much more on STEM workers who were born in other countries (60%) than do other innovation regions (ranging from 30% to 46%). The percentage of a region's innovation talent that comes from other parts of the country and world demonstrates how good a region is at creating and retaining homegrown talent. It also has implications for how likely people from elsewhere are to put down roots in a community and be long-term employees.

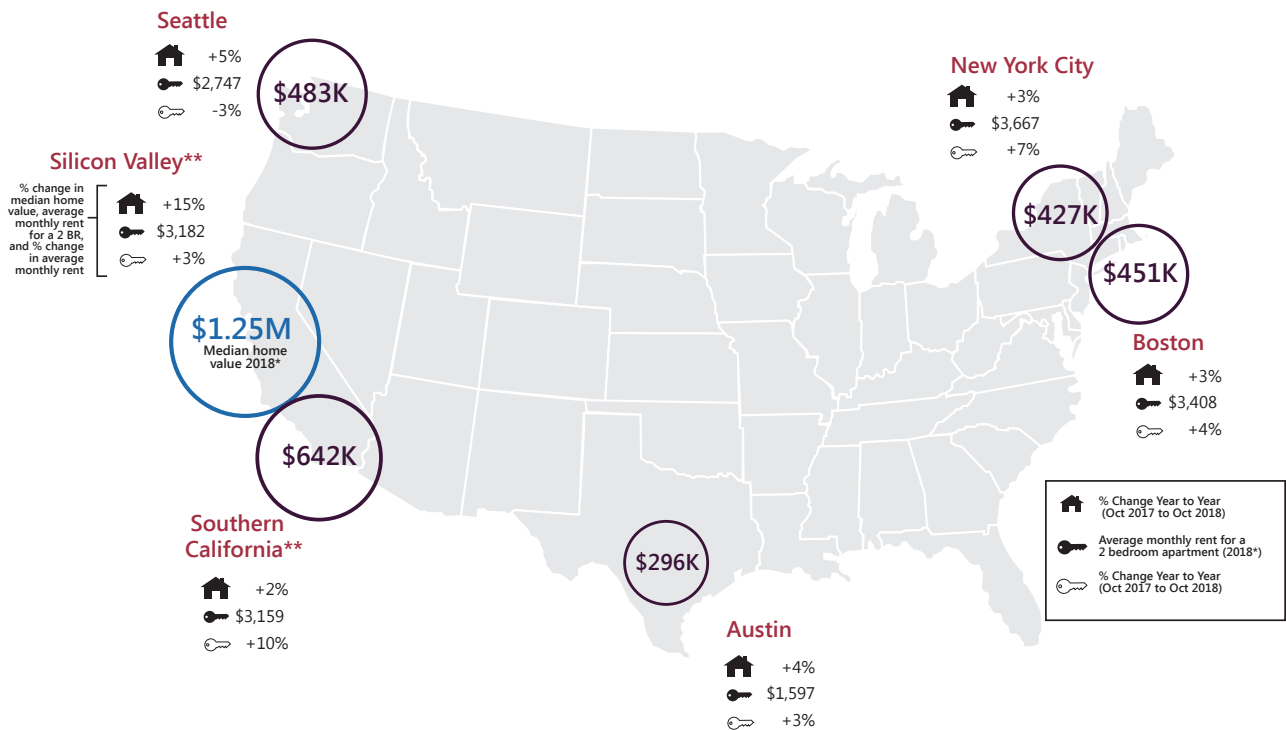
Only Seattle has a comparable share of STEM workers who were born in another country or U.S. state. Among innovation regions, Austin has the largest share of U.S. born STEM talent (70%).

# Outcomes and Prosperity: Quality of Life

*Housing costs and commutes are key factors influencing residents' quality of life, which affect innovation regions' ability to attract and retain talent.*

## Housing Costs in Innovation Regions

Median Home Values and Average Monthly Rent, 2018\*



\*Average for 2018, through October

\*\*Traditional Silicon Valley proxied by San José Metro Region, Southern California by Los Angeles Metro Region, New York City is New York Metro Region

Data Source: Zillow, Rent Jungle

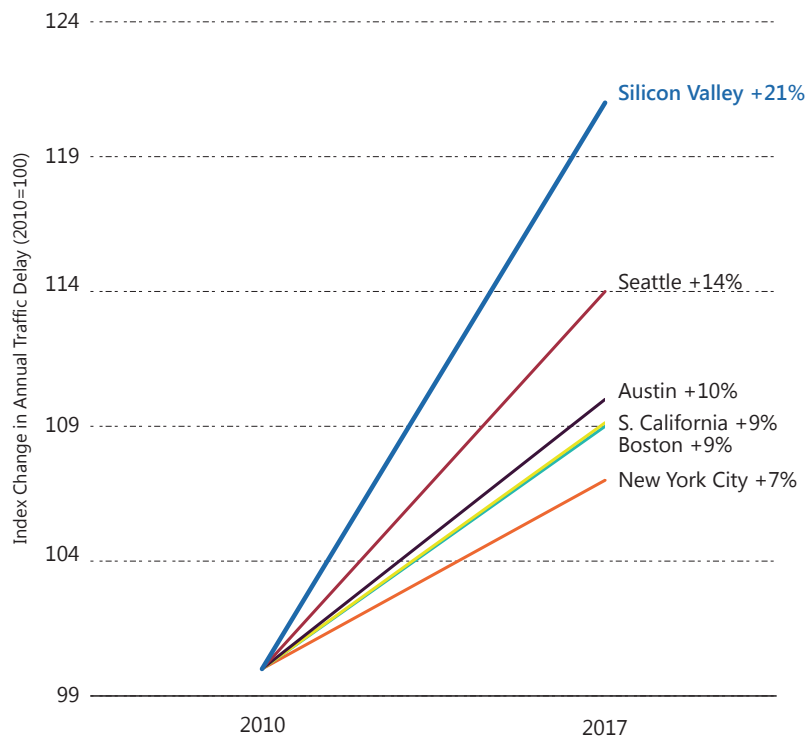
Analysis: Collaborative Economics

Using the San José Metropolitan Statistical Area (MSA) to represent Silicon Valley home prices, the median home price reached almost \$1.25 million in 2018. Looking at MSAs for both San José and San Francisco, we see the median home price remained substantially higher in both (\$1,248,730 in San José and \$942,920 in San Francisco) than in other innovation regions (ranging from \$296,310 in Austin to \$641,860 in Southern California). Moreover, the gap is growing—the median home price rose 15% in the San José MSA and 7% in the San Francisco MSA in 2018, compared to increases of 2-5% in other innovation regions. In addition, every innovation region but Silicon Valley experienced slower growth in median home price from October 2017 to October 2018, compared to the prior 12-month period. Seattle's growth rate dropped the most: from 9% to 5% over the two-year period.

Average monthly rent for a two-bedroom apartment in 2018 rose 3% in the San José MSA, while dropping 3% in the San Francisco MSA. Average monthly rent in the San Francisco MSA remains higher than that of the San José MSA and all of the other innovation regions. The San José MSA's 3% rise in 2018 followed a 4% drop in 2017, while the San Francisco MSA continued its trend of lower rents, after a 4% decline in 2017. In contrast to 2017, when average rent dropped between 1-6% in other innovation regions, in 2018 every region except Seattle experienced increases in average rent, ranging from 3-10%. Thus, in terms of relative rental affordability, Silicon Valley gained modest ground on its competitor regions in 2018, with the exception of Seattle (where rents dropped) and Austin (where rents matched Silicon Valley's 3% increase). Both Austin and Seattle remain considerably less expensive places to live than Silicon Valley.

**Change in Average Commute Time**

Innovation Regions, 2010-2017 (Index 2010=100)



Reflects commute times for workers employed in the innovation regions  
 Source: US Census, American Community Survey  
 Analysis: Collaborative Economics

Commute time can be an important factor in worker productivity and quality of life. Commute times continued to increase in 2017 in all the innovation regions except for Seattle. Austin's commute time rose the most of all the innovation regions (3%), while Silicon Valley's total grew 2% and the other innovation regions experienced 1% increases.

Silicon Valley has experienced the largest increase in commute time since 2010 among innovation regions (+21%). However, the region's rate of increase in commute time dropped between 2015 and 2017. Commute time rose 5% in 2015, but 3% in 2016 and 2% in 2017.

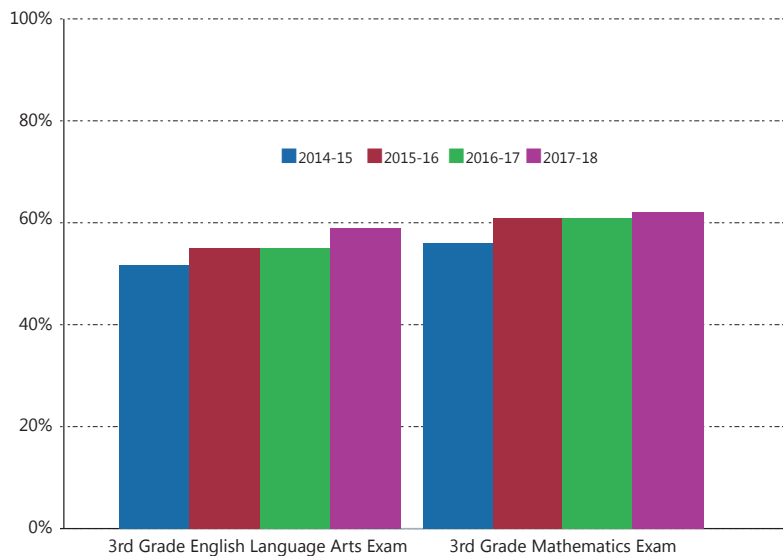
An average Silicon Valley commuter now spends about 73 minutes commuting per day (round trip). This figure remains second only to the commute time of New York City workers, who spend about 75 minutes commuting daily. Other innovation regions have shorter average round-trip commute times: Boston (66 minutes), Seattle (63 minutes), Southern California (62 minutes), and Austin (55 minutes). The difference in the longest and shortest commute times among innovation regions is 20 minutes.

# Outcomes and Prosperity: Access to Opportunity

Education enables access to well-paying jobs and facilitates income mobility. Jobs in innovation industries have strong earning potential; high quality education is therefore particularly important to promote access to opportunity across the full population.

## Share of Students Meeting or Exceeding State Learning Standards in Third Grade Language Arts and Mathematics

Silicon Valley, 2014-2015 to 2017-2018 Academic Years

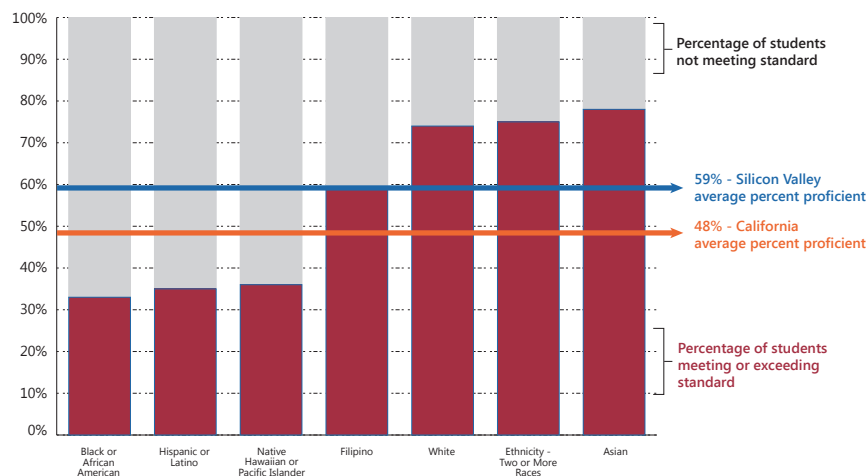


Data Source: California Department of Education, CAASPP 2018, 2017, 2016, 2015  
Analysis: Collaborative Economics

In the past four years, there have been measurable improvements in the performance of Silicon Valley third grade students in both English Language Arts and Mathematics. The proportion of third grade students who achieved proficiency in English Language Arts rose from 52% to 59%, and in Mathematics from 56% to 62% between the 2014-15 and 2017-18 academic years.

## English Language Arts Proficiency Levels Among Third Grade Students by Race/Ethnicity

Silicon Valley, 2018



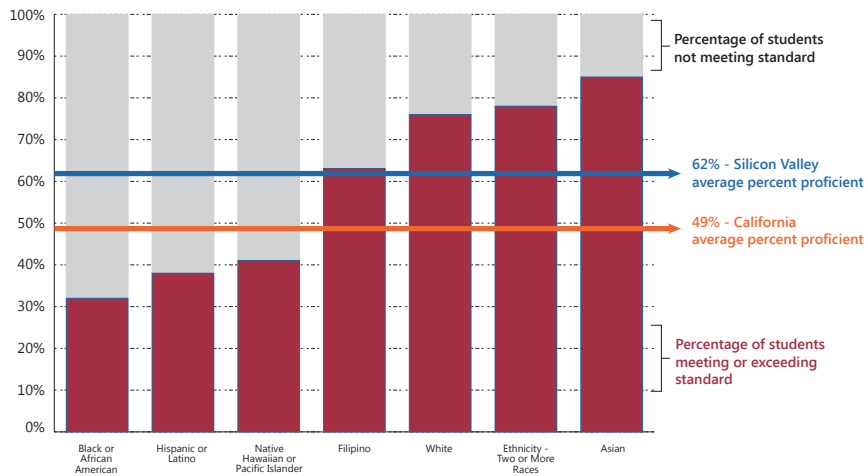
Despite recent gains, about four in ten Silicon Valley third grade students are still not proficient in English Language Arts and Mathematics. There is a substantial proficiency gap across ethnicities: for example, about six out of ten Silicon Valley Hispanic, Latino, and African American third grade students are not proficient in English Language Arts and Mathematics, while only two in ten Asian and White third grade students fail to meet state standards in these areas. These are troubling gaps, as third grade proficiency in English Language Arts and Mathematics is an important indicator of future academic success and STEM workforce readiness.

Note: Data for American Indian or Alaska Native students not available, due to small number of test takers  
Source: California Department of Education, CAASPP 2018  
Analysis: Collaborative Economics



### Mathematics Proficiency Levels Among Third Grade Students by Race/Ethnicity

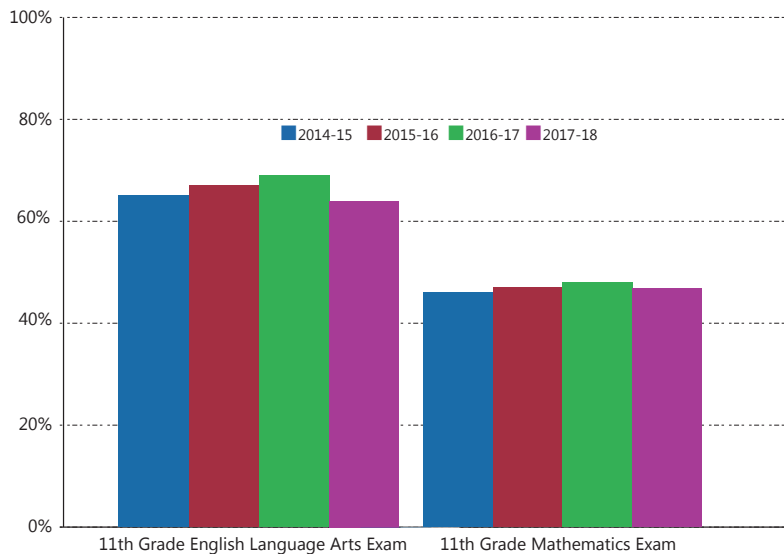
Silicon Valley, 2018



Note: Data for American Indian or Alaska Native students not available, due to small number of test takers  
Source: California Department of Education, CAASPP 2018  
Analysis: Collaborative Economics

### Share of Students Meeting or Exceeding State Learning Standards in Eleventh Grade English Language Arts and Mathematics

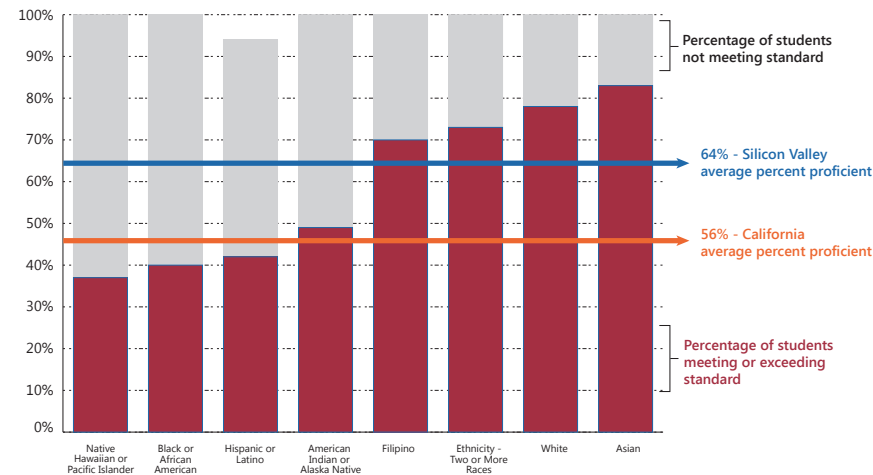
Silicon Valley, 2014-2015 to 2017-2018 Academic Years



Data Source: California Department of Education, CAASPP 2018, 2017, 2016, 2015  
Analysis: Collaborative Economics

Since eleventh grade students are close to entering college or the workforce, test results are an important indicator of how well we are preparing our young people for success. After three consecutive years of improvement on California's Smarter Balanced exams, the share of eleventh grade students that met or exceeded state standards in English Language Arts and Mathematics declined in Silicon Valley in 2018. This pattern mirrored the trend in California more broadly among eleventh grade test takers – a decline after years of improvement.

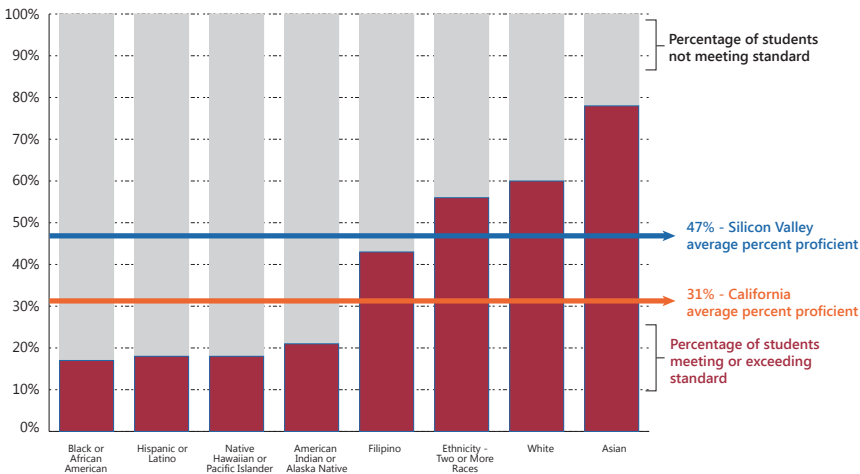
English Language Arts Proficiency Levels Among Eleventh Grade Students by Race/Ethnicity  
Silicon Valley, 2018



Source: California Department of Education, CAASPP 2018  
Analysis: Collaborative Economics

Only 64% of Silicon Valley eleventh grade students met or exceeded standards in English Language Arts in 2018, down from 69% in 2017, and even lower than in 2015. In addition, only 47% of eleventh grade students were proficient in Mathematics in 2018, down from 48% in 2017. Put another way, fully 36% of Silicon Valley eleventh grade students do not meet state standards in English Language Arts, and 53% fall short in Mathematics.

Mathematics Proficiency Levels Among Eleventh Grade Students by Race/Ethnicity  
Silicon Valley, 2018










Source: California Department of Education, CAASPP 2018  
Analysis: Collaborative Economics

Moreover, the gap in eleventh grade student test scores by ethnicity in Silicon Valley remains stark, and more substantial than the rest of California. For example, there was a 60% gap between the share of Asian eleventh grade students (78%) and the share of Hispanic and Latino eleventh grade students (18%) that met or exceeded state standards in Mathematics. At the state level, this gap was 55%. In Silicon Valley, the share of eleventh grade Hispanic and Latino students meeting or exceeding state standards in Mathematics has continued to decline the past three years from 20% to 19% to 18%. As a result, today fully 56% of all Silicon Valley eleventh grade students that are not meeting Mathematics standards are Hispanic or Latino, a total of more than 8,400 students.

## Policy Scorecard

In 2015, the Silicon Valley Leadership Group and Silicon Valley Community Foundation hosted a series of public policy strategy sessions with federal, state and local officials, CEOs, education administrators, and community leaders. The following public policy recommendations emerged as priorities to enhance the health of Silicon Valley's economy.

High-Skill Immigration	
Streamline the visa process for permanent residents and non-immigration visas.	
Broaden eligibility criteria for EB-5, to better reflect start-up company growth.	
Maximize O-1 visas, especially for high-talent entrepreneurs.	
Education: STEM Education and High-Quality Pre-K	
Increase funding for public preschool education programs, particularly targeting at-risk populations	 
Increase student opportunities to engage with STEM in pre-K and K-12	 
Accept more STEM courses as A-G requirements (e.g., engineering, science courses) for UC/CSU admission	
Increase student proficiency in third grade reading and eighth grade Algebra	 
Transportation and Housing	
Increase funding for BART and Caltrain, leveraging New Starts, Cap & Trade funds, local ballot initiatives and infrastructure financing districts	  
Develop a permanent funding source for affordable housing	 
Engage corporate leaders to encourage connectivity to transit	
Research and Development	
Develop R&D funding matching program for areas such as biotechnology, clean energy and DARPA	 
Implement permanent R&D (and R&D equipment) tax credits	 
Emphasize return on investment in funding formula, tax credits	 
Cost of Doing Business and Regulation	
Modernize CEQA	
Augment tax credits, incentives to encourage business expansion locally	 
Automate local permitting system	

Key	
Federal Action	
State Action	
Local Action	

## Policy Scorecard Progress

The Silicon Valley Leadership Group and Silicon Valley Community Foundation have tracked progress related to the indicators in this report since 2015. In 2018, there was important movement—for good and for ill—on a number of fronts, including the following:

### Immigration

**More Restrictive Immigration Rules:** The federal government proposed or enacted various measures in 2018 to tighten immigration rules affecting technology workers:

- Proposed eliminating the International Entrepreneur Rule, which granted international entrepreneurs temporary visas if they provide evidence of venture funding and jobs to be created.
- Proposed eliminating the work authorization for H-4 spouses of H-1B recipients.
- Cancelled premium, or accelerated, review of H-1B visas.
- Subjected Chinese visa applicants to heightened scrutiny and shorter visa stays, in response to suspected IP theft by Chinese nationals.
- Proposed revision of the definition of "specialty occupation" under the H-1B program to increase its focus on obtaining the best and brightest foreign workers.
- Proposed revision of the definition of "employment" and "employer & employee relationship" to better protect US workers and wages.
- Announced plans to propose additional requirements to ensure employers pay appropriate wages to H-1B visa holders.

### Transportation Policy

**BART:** The BART extension to Silicon Valley hit several key milestones. In April 2018, the California State Transportation Agency announced \$730 million in funding from Senate Bill 1, the state transportation infrastructure package signed into law by Governor Brown in 2017 after a bruising fight in the California Legislature. In May 2018, the Federal Transit Administration issued a Record of Decision for the project – a critical step in securing the \$1.5 billion in federal funds needed for the project to extend BART to downtown San José.

**Regional Measure 3:** The Leadership Group joined SPUR and the Bay Area Council to lead passage of Regional Measure 3 in June 2018, which will raise approximately \$4.5 billion over 30 years for regional transportation improvements – including funding to refurbish Diridon Station in preparation for BART's arrival, and to purchase new BART cars.

**San Mateo County Measure W:** The Silicon Valley Community Foundation (SVCF) supported the November election measure which modernizes transit and eases traffic by enacting a 0.5% sales tax for 30 years.

**Beating Back Threats to Transportation Funding:** The Leadership Group and SVCF joined a coalition of labor, business and transportation leaders to defeat Proposition 6 on the November 2018 ballot, which would have rolled back a critical 2017 state transportation package that provided \$5 billion annually for 10 years to maintain our state's aging transportation infrastructure.

### Education

**Computer Science Education:** The State Board of Education (SBE) adopted standards for K-12 computer science education in September 2018. Though they are not mandatory, they are expected to increase California K-12 student access to computer science classes.

## Housing

**2018 Statewide Affordable Housing Bond:** The Silicon Valley Leadership Group and three partner organizations across California led the successful statewide campaign to pass Proposition 1 on the November 2018 ballot, which will provide \$4 billion for affordable housing financing and home loans for veterans. Championed in the State Senate by Housing & Transportation Committee Chair Jim Beall, the bond proceeds, leveraged substantially by federal, state, and local housing funds, will produce an estimated 50,000 new affordable homes across California. SVCF also supported this measure as one of its highest 2018 policy priorities.

**Transit-oriented development near BART stations:** Governor Brown signed Assembly Bill 2923 (Chiu, Grayson), which requires the BART Board to adopt transit-oriented development (TOD) zoning standards for BART-owned land. It would also require cities to adopt these TOD standards, which include minimum heights and eased parking requirements depending on the type of community where the BART station is located.

**Proposition 2 – 2018 No Place Like Home Statewide Ballot Measure:** In addition to passing Proposition 1 in November 2018, the Leadership Group and its campaign partners led the effort to pass Proposition 2, which will provide funding for homes for Californians experiencing homelessness and mental illness. In addition to Proposition 1, SVCF also supported this measure as a 2018 policy priority.

**RHNA Reform:** Governor Brown signed several important reforms to the process by which regional housing production goals are developed across the State (the Regional Housing Needs Allocation, or RHNA). Senate Bill 828 (Wiener), co-sponsored by SVCF and the Leadership Group, strengthens the state's role in accurately assessing each region's housing needs. AB 1771 (Bloom) requires that localities are then allocated production targets that are data-driven and more equitable across income levels.

## Cost of Doing Business & Regulation

**Opportunity Funds:** In 2018, Governor Brown identified several areas in the greater Silicon Valley as eligible for new tax relief through a new investment vehicle called Opportunity Funds. Parts of Redwood City, East Palo Alto, San Jose and Fremont will benefit from these Funds, which were created through the 2017 federal Tax Cuts and Jobs Act to help direct investment to low-income communities, known as Qualified Opportunity Zones. The incentives for investment include deferral of capital gain, possible reduction in the amount of gain, and possible exclusion of gain on appreciation of the investment in a Qualified Opportunity Fund.



## Appendix

**Executive Survey** - Results are drawn from a Silicon Valley Leadership Group survey of 105 of its senior business executive members representing many of Silicon Valley's major employers in December 2018.

**Employment in Innovation Industries** - BLS-QCEW employment data are county-level survey-based employment estimates, available to the 4-Digit NAICS level. In this report, BLS-QCEW employment levels are annual averages. As a consistent methodology over time, this source is the basis for industry growth estimates.

Geographies for "Regions on the Rise" are defined using the Bureau of Labor Statistics' Metropolitan Statistical Area definitions for 2017. Due to availability of data/data suppression in the QCEW dataset (accessed 12.11.2018), 2016 data points were used for biotechnology employment in Johnson County, NC and Internet and Information Services in Wake County, NC in the 2017 figures.

**Talent Pool for Innovation Industries: Employment 2017, Change in Employment 2012-2017, and Employment Concentration 2017** - Data on high-technology STEM occupational employment is from the Bureau of Labor Statistics Occupational Employment Statistics for May of 2012 and 2017. Regional data is available by Metropolitan Statistical Area (MSA) rather than county. High-technology STEM occupations are scientific, engineering, and technical occupations defined by the BLS (Hecker, 2005), including computer and mathematical scientists, engineers, drafters, engineering and mapping technicians, life scientists, physical scientists, life and physical science technicians, computer and information systems managers, engineering managers, and natural science managers. Science and engineering industries are classified using the 2010 Standard Occupational Classification (SOC) System from the U.S. Census Bureau.

**STEM Degrees Conferred** - Data on the number of STEM Degrees conferred comes from the National Center for Education Statistics' Integrated Postsecondary Education Data System (IPEDS). Data are based on first major and include bachelor's, master's, and doctoral degrees in Biological & Biomedical Sciences, Physical Sciences, Engineering, Computer & Information Sciences, Mathematics & Statistics, Engineering Technologies and Related, Science Technologies/Technicians. To obtain STEM degrees conferred per 10,000 residents, Collaborative Economics divides the number of STEM degrees in each region by the region's population.

**Migration/Geographic Mobility** - Migration estimates reflect net change in number of migrants, based on origin, from U.S. Census Bureau Population Estimates. To obtain monthly averages, yearly migration numbers are divided by 12 months. In Silicon Valley, Boston, Southern California and New York City, the net change in domestic migrants was negative, meaning that more people left those regions than arrived from the rest of the U.S., hence all positive change in population was from abroad. Geographic mobility by age data is drawn from the US Census' American Community Survey (ACS) (Table B07001) and reflects 1-Year estimates by place of residence.

**International Talent** - Data for international talent is provided by the United States Census Bureau's 2017 American Community Survey (ACS) Public Use Microdata Sample (PUMS). Science and Engineering (S&E) occupations include science and engineering managers, computer scientists, programmers, developers and analysts; and Engineering; Mathematics; and Science occupations. Data includes all currently employed individuals with a Bachelor's degree or higher. Foreign-born does not include individuals from U.S. territories. Regions are defined by county. In-state-born share of workers for New York City incorporates New York state and New Jersey workers, and for Boston, Massachusetts and New Hampshire. Science and engineering occupational definitions are based on the U.S. Census Bureau's Standard Occupational Classification system, updated in 2010.

**Median Home Value and Average Rents** -Median Home Value data are from Zillow (www.zillow.com), and are inflation adjusted. Rents are sourced from Rent Jungle. Due to data constraints, regions are organized by principal city. Silicon Valley is proxied by San José, New York City by New York City metro and Southern California by Los Angeles. Monthly data are averaged to estimate annuals.

**Average Commute Times** - Change in average commute time for workers in innovation regions is sourced through the U.S. Census, American Community Survey. For the Austin region, Caldwell and Bastrop Counties in Texas are excluded in this analysis due to data suppression.

**English and Mathematics Proficiency** - Exam performance data are from the California Department of Education, CAASPP Results in 2017, and "proficiency" reflect students meeting or exceeding state standards in third grade English Arts, eighth grade Mathematics, and eleventh grade English Arts and Mathematics. Regions are defined by county.



The **Silicon Valley Leadership Group**, founded in 1978 by David Packard of Hewlett-Packard, represents more than 300 of Silicon Valley's most respected employers on issues, programs and campaigns that affect the economic health and quality of life in Silicon Valley. The Leadership Group strives to advance proactive solutions in the areas of energy, transportation, education, housing, health care, taxation, economic vitality and the environment. Leadership Group members collectively provide nearly one of every three private sector jobs in Silicon Valley and have more than \$3 trillion in annual revenue.

For more information, visit [svlg.org](http://svlg.org).



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