



Silicon Valley Competitiveness and Innovation Project - 2016 Update

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



svcip.com

About the SVCIP partners

For nearly 40 years the **Silicon Valley Leadership Group** has represented the public policy interests of companies in the region, and at present consists of nearly 400 member companies.

Silicon Valley Community Foundation advances innovative philanthropic solutions to challenging problems. As the largest community foundation in the world, 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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A Letter from the SVCIP Partners

February 2016

Dear Friends,

Silicon Valley is one of the world's most dynamic centers of innovation with talented people working to invent breakthrough products and services every day. And yet, maintaining and even increasing our prosperity requires diligence and a comprehensive strategy that supports the region's competitive advantages while also addressing its challenges.

Recognizing this responsibility, the Silicon Valley Leadership Group and Silicon Valley Community Foundation partnered together to establish the Silicon Valley Competitiveness and Innovation Project (SVCIP), a multi-year effort to develop a data-driven, overarching economic strategy and shared policy agenda to enhance and reinforce the region's competitive advantages in innovation. At the same time, we need to ensure that Silicon Valley residents have access to the job opportunities and prosperity linked to growth in key industries.

Now in its second year, the SVCIP updates key indicators from the 2015 inaugural report, makes comparisons to other innovation regions in the country—New York City, Boston, Southern California, Seattle and Austin—and for the first time, to other innovation regions in the world. It also includes progress on a long-term public policy agenda and specific policy actions considered critical to furthering Silicon Valley as a world leader promoting innovation and opportunity for all its businesses and residents.

The current installment of the SVCIP shows that while Silicon Valley continues to have a white hot economy and high job growth, there are several warning signs. Skyrocketing housing prices and increasing traffic congestion are eroding our quality of life and causing many residents to relocate to other parts of the country. Slow growth in STEM degrees conferred and widening disparities in educational outcomes point to serious leaks in our talent pipeline. And, steady decreases in university and federal R&D funding mean there is less capital to fund innovation.

Clearly, there is more work to be done and we must remain vigilant. But we are proud of a number of policy accomplishments made since this project's inception, including in early learning and STEM education, housing and transportation, and support for federal R&D funding. To receive the latest data and news about our progress in 2016, please visit our website at svcip.com.

We invite you to engage with us and other private, public and community leaders on the SVCIP to ensure our collective actions maintain Silicon Valley's competitive advantages, while making it one of the world's best places to work and live.

Sincerely,



Carl Guardino
President and CEO
Silicon Valley Leadership Group



Emmett D. Carson, Ph.D.
CEO and President
Silicon Valley Community Foundation

SVCIP Indicator Dashboard

2016 Update

			Strong and Gaining Ground	Needs attention, losing ground to other regions	Critical need for attention, trending down	Change from SVCIP 2015
INNOVATION PROCESSES	INNOVATION ASSETS	Talent	STEM Talent Pool	•		★
			Change in Educational Attainment	•		○
			STEM Degrees Conferred		•	×
			International Talent	•		○
			Talent Migration		•	×
	Risk Capital and R&D	Venture Capital	•			★
		Venture Capital Fundraising	•			★
		Universities' R&D Expenditures		•		×
	Idea Generation Commercialization Business Innovation	Patents	•			○
		Follow-On Investment by Stage	•			○
		Company Pre-Exit Valuations		•		○
		Initial Public Offerings		•		×
OUTCOMES & PROSPERITY	Business Competitiveness	Cost of Doing Business			•	○
		Labor Productivity	•			★
		Home and Rent Values			•	×
	Quality of Life	Traffic Congestion			•	×
		Preschool Enrollment		•		★
	Access to Opportunity	Mathematics Proficiency in 8th Grade			•	×
		Jobs in Innovation Industries	•			★
	Jobs	Output 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, 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 2016 Update includes a “check-up” of the Indicator Dashboard and progress on the public policy agenda. Data for each of the indicators is compared to key innovation regions in the U.S., including the New York City metro area, Boston, Southern California, Seattle and Austin, and also to global innovation regions in a few key areas. The Silicon Valley region is defined as Santa Clara, San Mateo and San Francisco counties.

Key findings:

Innovation industries' output increased by 10% between 2013 and 2014, and jobs increased by 7%

Silicon Valley’s Innovation Industry jobs and output continue to grow. Innovation Industries are comprised of companies that research, develop and/or scale new technologies, uses and processes, or support the development of startup companies. In 2014, the most recent available year, Innovation Industries comprised 25 percent of Silicon Valley’s total jobs, the highest of any of the innovation regions examined.

China's R&D investments increased 304% between 2004 and 2013 compared to 25% in the U.S.

Silicon Valley is the global innovation leader, though the U.S. is losing ground on research and development (R&D) and talent. Silicon Valley ranks first among global innovation regions for its ability to launch and support development of new businesses and technologies, followed by New York City, Los Angeles, Boston and London. However, the number of science and technology researchers in China and South Korea is growing more rapidly than the U.S., and China’s total investment in R&D quadrupled between 2004 and 2013, compared to 25 percent in the U.S.

58% of Silicon Valley’s high technology STEM workforce is foreign-born

Immigrants remain a critical part of the innovation economy in Silicon Valley. Fifty-eight percent of the region’s STEM workers are foreign-born, and more residents are entering the region from abroad than other parts of the U.S.

STEM degrees conferred in Silicon Valley increased by only 5% versus 11% in New York City and Seattle

Talent is one of Silicon Valley's most critical innovation assets, though some warning signs are emerging. While Silicon Valley's STEM talent is the most concentrated in the U.S., STEM degrees conferred from regional education institutions are growing more slowly than in other regions. In addition, for the first time since 2011, net domestic migration in Silicon Valley was negative, meaning that more Silicon Valley residents left the region for other parts of the U.S. than arrived from other parts of the U.S.

Q2 2015 was the strongest quarter for venture capital fundraising since 2007

Venture capital fundraising was strong in 2014 and 2015, though initial public offering (IPO) valuations fell below recent highs. As a precursor to investment, increased venture capital fundraising was a positive sign. IPO valuations in 2015 of Silicon Valley-based companies fell below 2014 and 2013 levels.

Silicon Valley home prices increased 13% between August 2014 and August 2015, and rents increased by 12%

Congestion and housing costs worsened. In 2014, the average Silicon Valley commuter lost 67 hours in traffic congestion, an increase of 13.6 percent from 2010. Silicon Valley's median home value was \$870,000 in 2015, and grew more rapidly from the prior year than all other innovation regions. In the city of San Francisco, average monthly rent for a two bedroom unit in 2015 was \$4,200, higher than any other major metropolitan area in the U.S.

51% of Silicon Valley's 8th graders were *not* proficient on the state math exam, with large disparities in proficiency by race and ethnicity

Education is a critical issue for the long term health of Silicon Valley. In 2015, only 49 percent of Silicon Valley's 8th Grade Students met or exceeded the new state standards for mathematics proficiency, and there was significant disparity in proficiency by race and ethnicity. Only 20 percent of Black or African American students and 21 percent of Hispanic or Latino students met or exceeded standards for Mathematics in 8th grade, compared to 79 percent of 8th grade Asian students, and 66 percent of White students.

These indicators show that while Silicon Valley continues to create jobs, the foundations of prosperity are under strain. Robust venture capital fundraising, patent filings and early stage investments suggest that the region's innovation ecosystem is still strong. However, there are also a number of warning signs. The slowdown in IPOs and the outflow of home-grown talent to other parts of the U.S. are symptoms of underlying issues for the region. Other factors are placing additional pressure on the region's long term innovation assets including high pre-exit startup company valuations, increased cost of living, slower growth in universities' and national R&D expenditures, slow growth in STEM degrees conferred and wide disparity in student education outcomes.

To address these issues, SVCIP identified a number of public policy areas critical to the region's future success, including STEM education and high quality Pre-K education, R&D, high-skill immigration, housing and transportation, and business regulation. In 2015, there were several state and local legislative successes to support education, housing and transportation. Achievements included state-wide legislation to improve STEM pipeline among young students. This update also identifies further opportunities.

In 2016 many of the project indicators will be updated quarterly with new data. To receive notice when quarterly data updates occur, please register at svcip.com.

International Comparisons At A Glance

Silicon Valley continues to be the world's leading innovation economy based on venture capital investments, startup company exit valuations, its talent pool and entrepreneurial supports and networks, according to Compass' Global Startup Ecosystem Ranking of 2015.

Among the top global innovation economies, Berlin is expanding fastest, based on growing exit valuations and venture capital investments.

The Global Startup Ecosystem Ranking 2015

Global Innovation Region*	Ranking	Growth Index
Silicon Valley	1	2.1
New York City	2	1.8
Los Angeles	3	1.8
Boston	4	2.7
Tel Aviv	5	2.9
London	6	3.3
Chicago	7	2.8
Seattle	8	2.1
Berlin	9	10
Singapore	10	1.9

*China, Taiwan, Japan, and South Korea are not included in this ranking, based on data availability. Compass estimates that Beijing ranks in the top 5 innovation regions, and Shanghai ranks in the top 15.

Data Source: Compass. The Global Startup Ecosystem Ranking 2015.

Analysis: Collaborative Economics

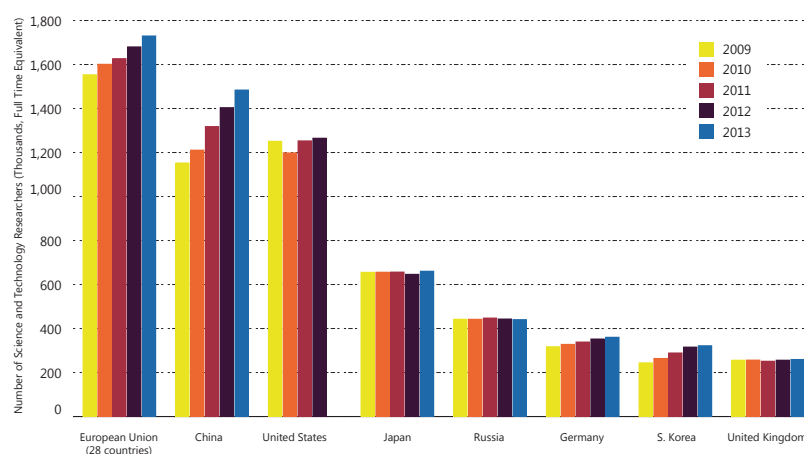
Based on data availability, international comparisons of the STEM talent pool and R&D are compared at the national level.

The European Union (EU-28) and China had the most science and technology (S&T) researchers in 2013 (1.52 and 1.48 million, respectively). While data for the U.S. was not available for 2013 at the time of publication, there were 1.27 million S&T researchers in the U.S. in 2012, the most recent year for which data is available.

Among global innovation leaders, South Korea had the largest share of S&T researchers compared to its population in 2013 (0.66 percent), and China the smallest (0.11 percent). South Korea and China's pool of S&T researchers also grew most rapidly over the past five years (+32 percent and +29 percent, respectively).

Science and Technology Researchers

United States and Select Countries, 2009-2013



Note: Data for the U.S. in 2013 is not available

Data Source: OECD Main Science and Technology Indicators

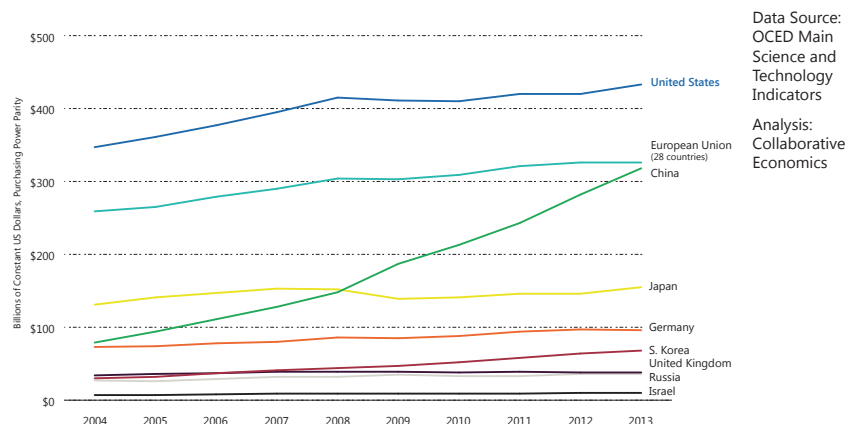
Analysis: Collaborative Economics

The U.S. and EU-28 had the highest gross R&D spending globally in 2013, US\$433 billion and US\$326 billion respectively.

China's R&D spending grew most rapidly, and more than quadrupled between 2004 and 2013 to US\$318 billion.

Gross R&D Spending

Billions of Constant U.S. Dollars, at Purchasing Power Parity
United States and Select Countries, 2004-2013



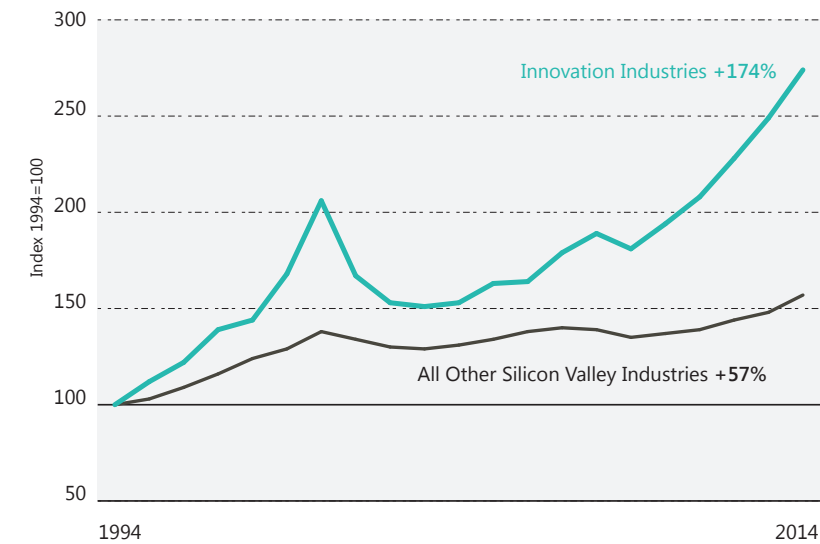
Data Source: OECD Main Science and Technology Indicators

Analysis: Collaborative Economics

Innovation Industries Overview

Silicon Valley Growth in Output

Innovation Industries and All Other Industries Silicon Valley, 1994=100



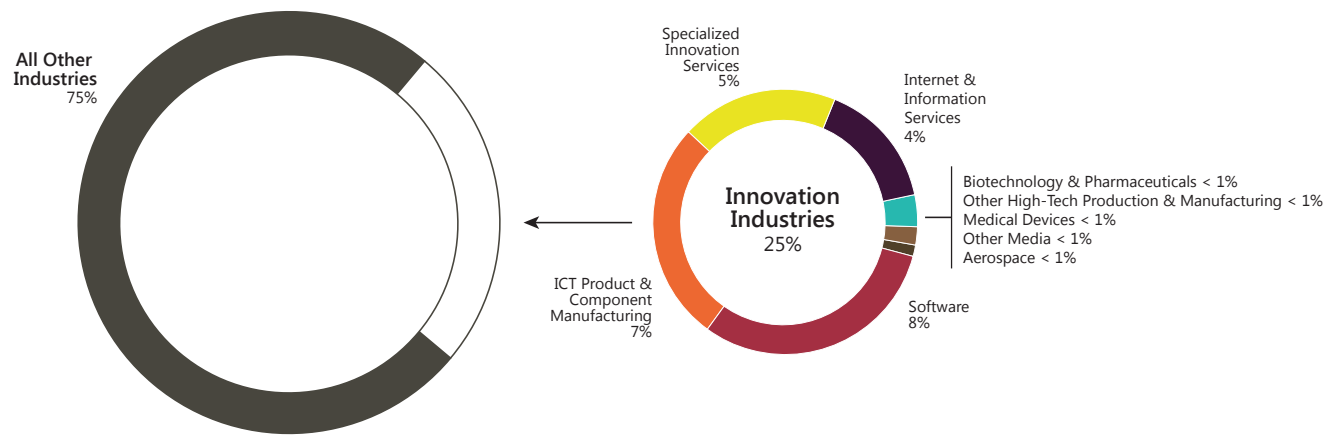
Innovation Industries continue to drive growth in Silicon Valley. Between 1994 and 2014, output in Silicon Valley's Innovation Industries more than doubled, while the rest of the economy expanded by 57 percent. Growth in Innovation Industries accelerated between 2010 and 2014, expanding 10 percent between 2013 and 2014.

Twenty-five percent of Silicon Valley's jobs were in Innovation Industries in 2014, led by Software and Information Communication Technology (ICT) Product and Component Manufacturing.¹

Data Source: Moody's Analytics, Bureau of Labor Statistics
Analysis: Collaborative Economics

Silicon Valley Employment

Detailed Innovation Industries and All Other Industries, 2014

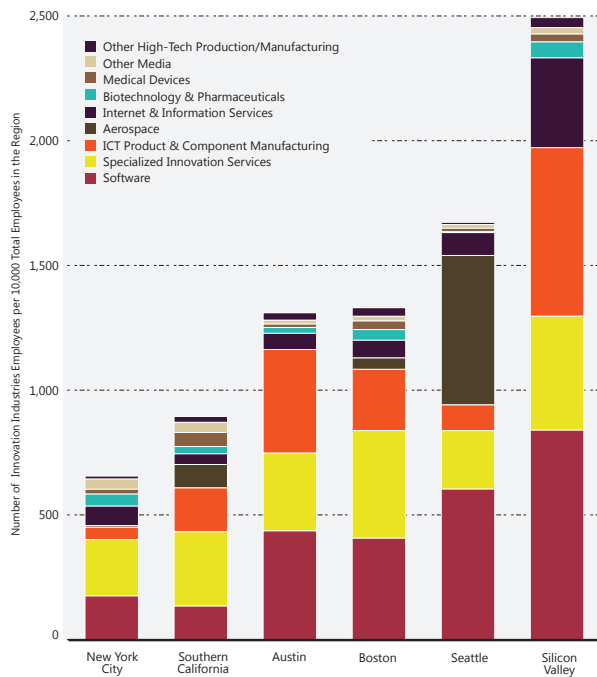


Data Source: Bureau of Labor Statistics, Quarterly Census of Employment and Wages
Analysis: Collaborative Economics

¹ Note that Specialized Innovation Services in this indicator are comprised of management, scientific and technical consulting and development services.

Employment in Innovation Industries by Region

Per 10,000 Workers in Overall Economy
Innovation Regions, 2014



There were 443,000 jobs in Innovation Industries in Silicon Valley in 2014, the highest proportion of the total regional workforce of all the innovation regions. Employment in Innovation Industries grew 7 percent between 2013 and 2014, although employment during the same period grew fastest in Austin (+11 percent), suggesting it may be gaining on Silicon Valley.

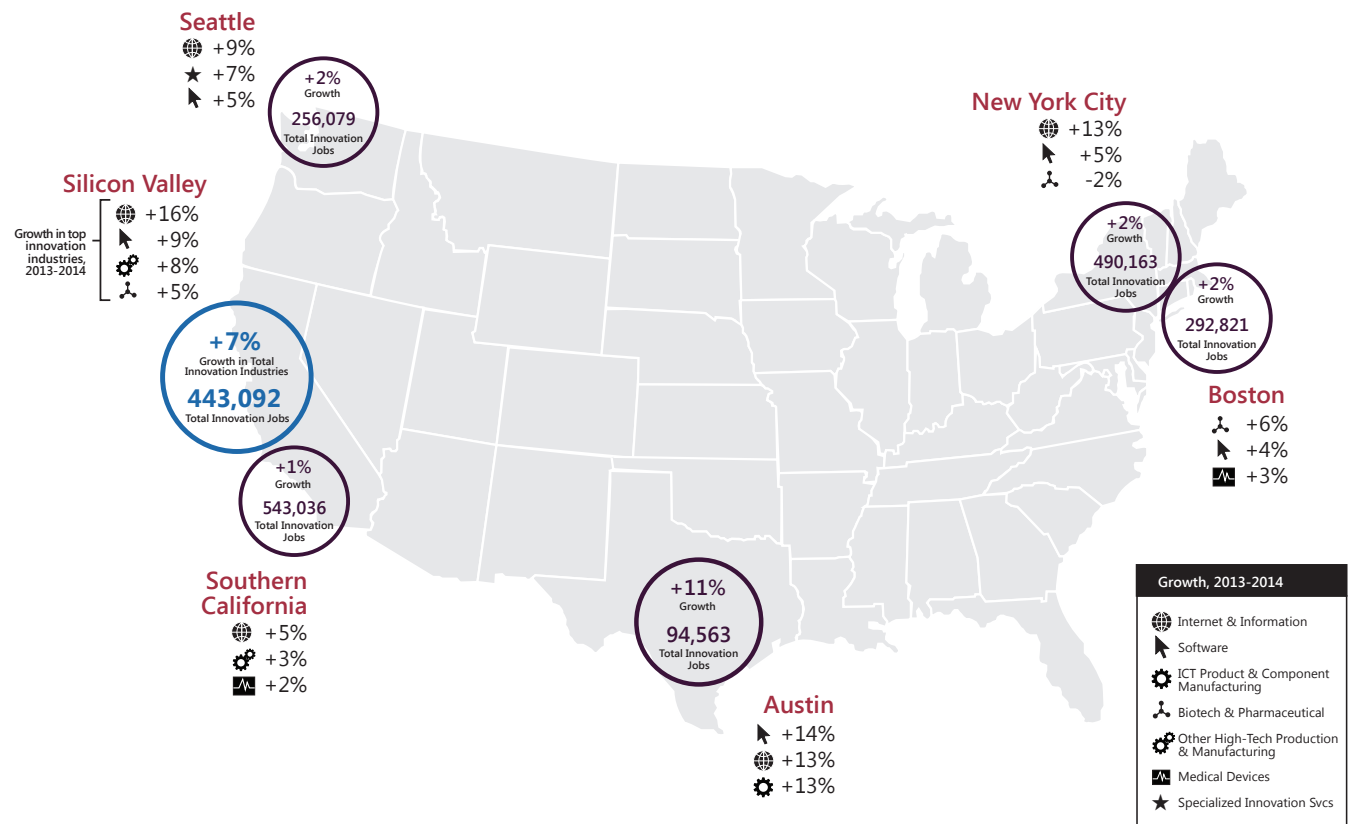
Seattle had the second highest share of jobs in Innovation Industries of the innovation regions, led in part by high concentration of employment in Aerospace.

Regions vary in their composition of innovation industries. The chart below highlights trends in each region's largest or fastest growing innovation industries.

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

Employment Growth in Top Innovation Industries

2013-2014

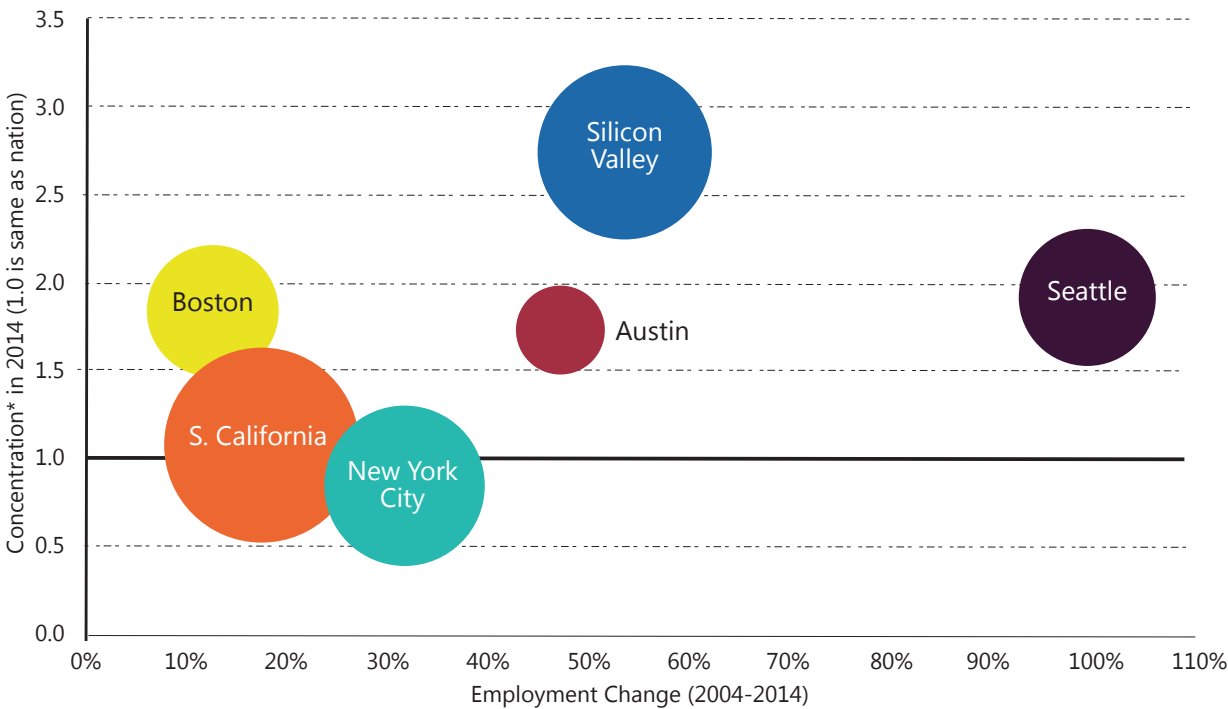


Data Source: Bureau of Labor Statistics, Quarterly Census of Employment and Wages
Analysis: Collaborative Economics

Science, Technology, Engineering and Math (STEM) talent is a key competitive asset in innovation regions because this workforce helps companies research, develop, improve and scale innovative technologies, businesses and processes.

Talent Pool for Innovation Industries

Concentration*, Jobs** and Growth in High-Tech STEM Occupations, 2004-2014



*Concentration is calculated as Regional High-Tech Emp/Regional Total Emp)/(National High-Tech Emp/National Total Emp)
**Size of bubble reflects number of High-Tech STEM jobs
Data Source: Bureau of Labor Statistics, Occupational Employment Statistics
Analysis: Collaborative Economics

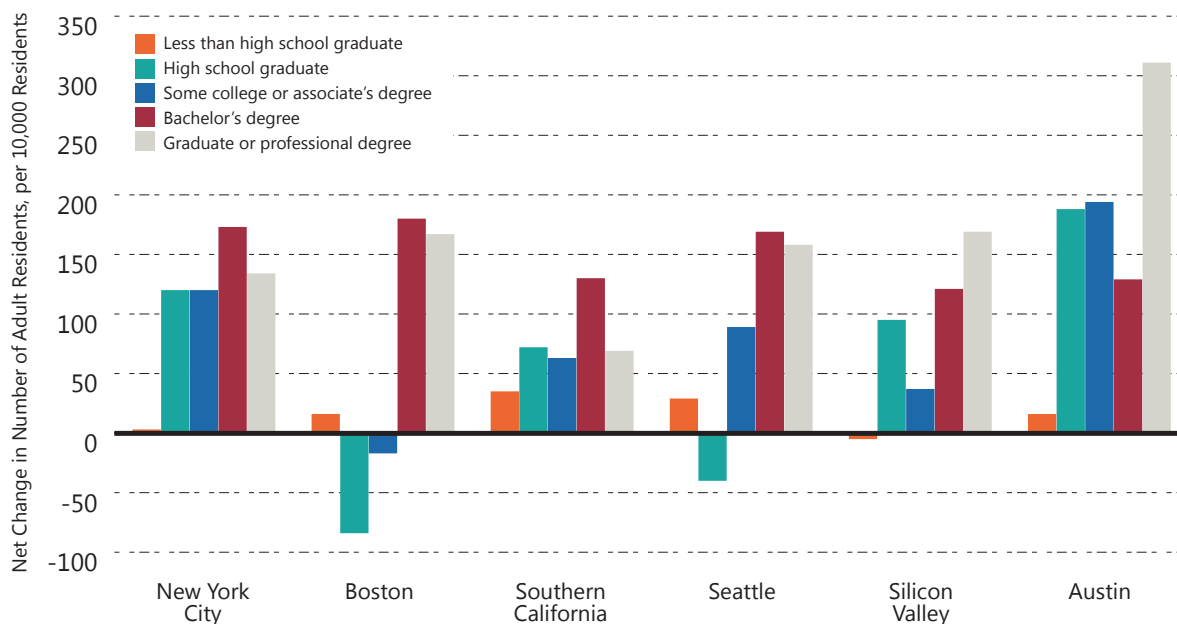
In 2014, Silicon Valley had 2.7 times as many high technology STEM jobs as the U.S., compared to the size of the total economy, an increase from 2013.

Seattle's high technology STEM workforce grew fastest, doubling between 2004 and 2014.

While Austin's growth in high technology STEM jobs was strong (+47 percent between 2004 and 2014), the pace of growth slowed as Austin's base of jobs expanded.

Population Change by Educational Attainment Per 10,000 Residents

Innovation Regions, 2012-2014



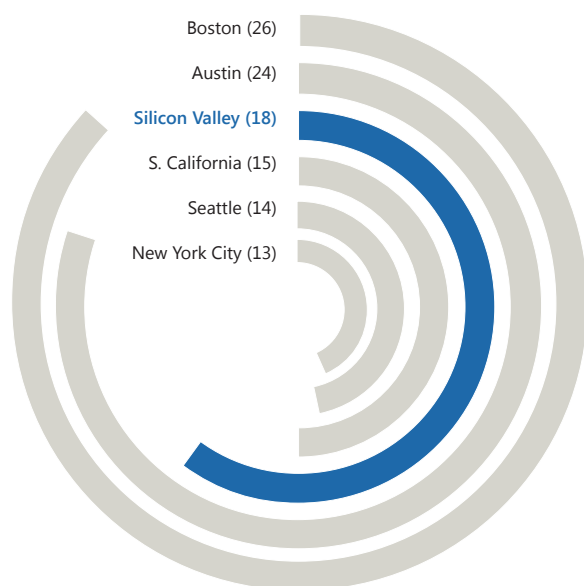
Note: Based on data constraints, regional definitions reflect a metropolitan statistical area rather than counties. Please see Appendix for details.
 Data Source: U.S. Census Bureau, American Community Survey, reflects adult population 25 and over
 Analysis: Collaborative Economics

Between 2012 and 2014, Austin experienced a faster increase in residents with a Master's degree or higher than Silicon Valley (+23.4 percent and +9.1 percent, respectively), meaning it is attracting more workers with advanced skills.

Meanwhile, growth in the number of San Diego residents (a sub-region of Southern California) with Bachelor's degrees was highest of the innovation regions (+13.4 percent), while Silicon Valley ranked fourth in its pace of change.

STEM Degrees Conferred Per 10,000 Residents

Innovation Regions, 2014

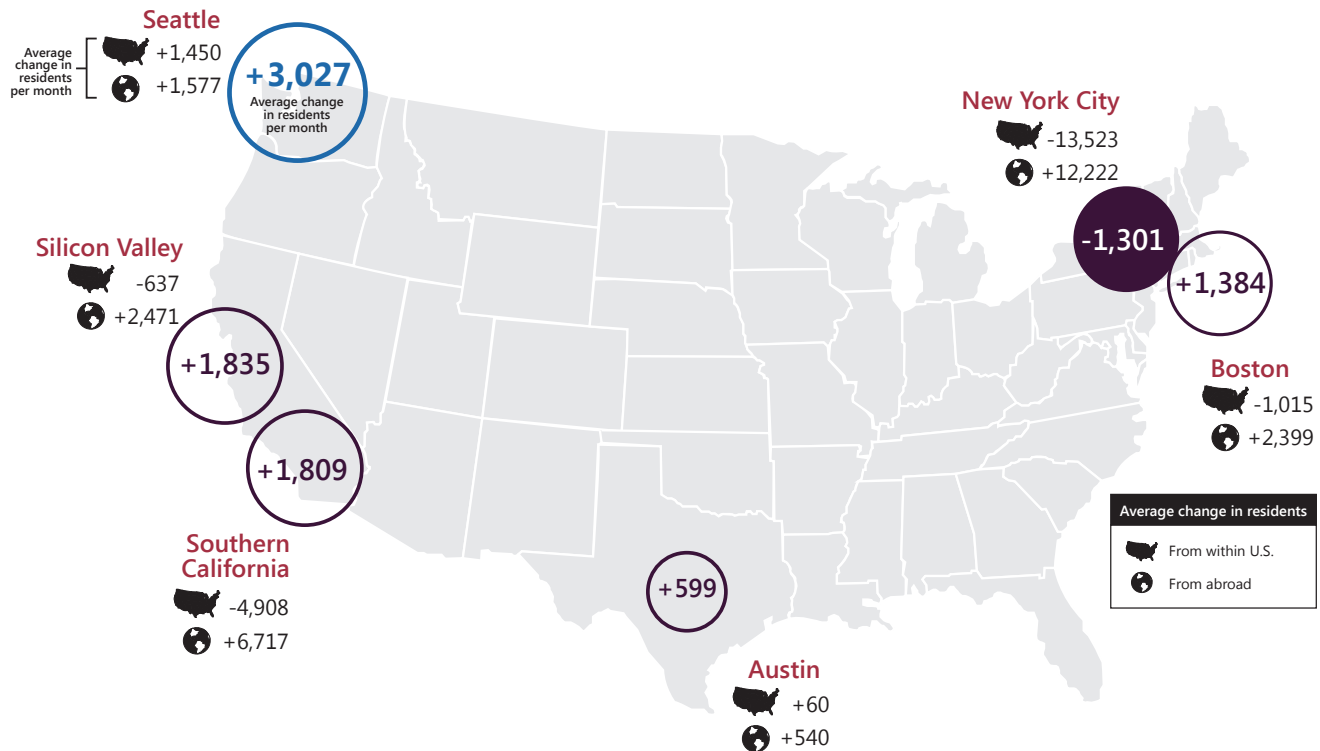
**Growth in STEM Degrees Conferred 2013-2014**

Seattle	11.4%
New York City	11.2%
Boston	9.6%
Austin	6.4%
Southern California	6.2%
Silicon Valley	4.8%

Boston's education institutions led the innovation regions in STEM degrees conferred in 2014 (adjusted for the region's population), with strong performance in both bachelor's and graduate degrees. Silicon Valley again ranked third among the innovation regions.

During the same period, the number of STEM degrees conferred in Silicon Valley grew 4.8%, the slowest pace of the innovation regions.

Note: Data are based on first major and include bachelors, masters and doctorate degrees. Data Source: National Center for Educational Statistics, IPEDS
 Analysis: Collaborative Economics

Migration FlowsAverage Net New Residents Per Month
Innovation Regions, 2014Data Source: U.S. Census Bureau Population Estimates
Analysis: Collaborative Economics

In 2014, Seattle had the highest average net new residents followed by Silicon Valley, Southern California, and Boston.

For the first time since 2011, net domestic migration in Silicon Valley was negative, meaning that more Silicon Valley residents left the region for other parts of the U.S. than arrived from other parts of the U.S. A large number of new residents from abroad drove the total increase in migration.

Net foreign migration exceeded net domestic migration in all innovation regions.

International Talent

Foreign Born and In-State Born Share of Population in STEM Professions, with a Bachelor's Degree or Higher, 2014

	Foreign Born Share	In-State Born Share
Silicon Valley	58%	20%
New York City	43%	27%
Southern California	39%	34%
Seattle	34%	21%
Boston	32%	31%
Austin	25%	36%

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

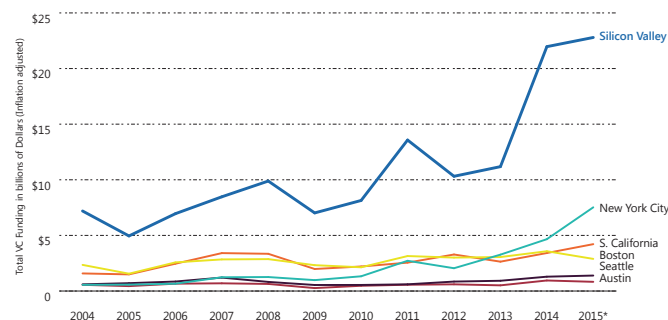
Silicon Valley's share of foreign-born STEM workers – 58 percent – was highest of the innovation regions in 2014. Only one in five STEM workers in Silicon Valley was born in California. This data suggests that there is not enough state talent with the requisite skills to fill STEM jobs.

Innovation Assets: Risk Capital and R&D Funding

Venture capital is important for the growth of startup companies, as venture investors tolerate more risk than conventional investors and lending institutions. R&D funding helps to build a pipeline of research for future innovations.

Total Venture Capital Investment - Annual

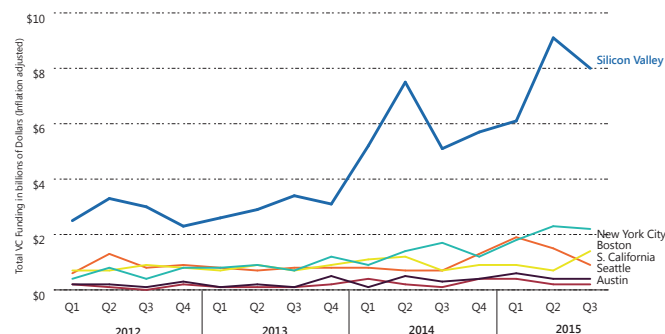
Innovation Regions, 2004-2015*



*Data through November 10, 2015
Data Source: CB Insights
Analysis: Collaborative Economics

Total Venture Capital Investment - Quarterly

Silicon Valley and Innovation Regions, Q1 2012 - Q3 2015

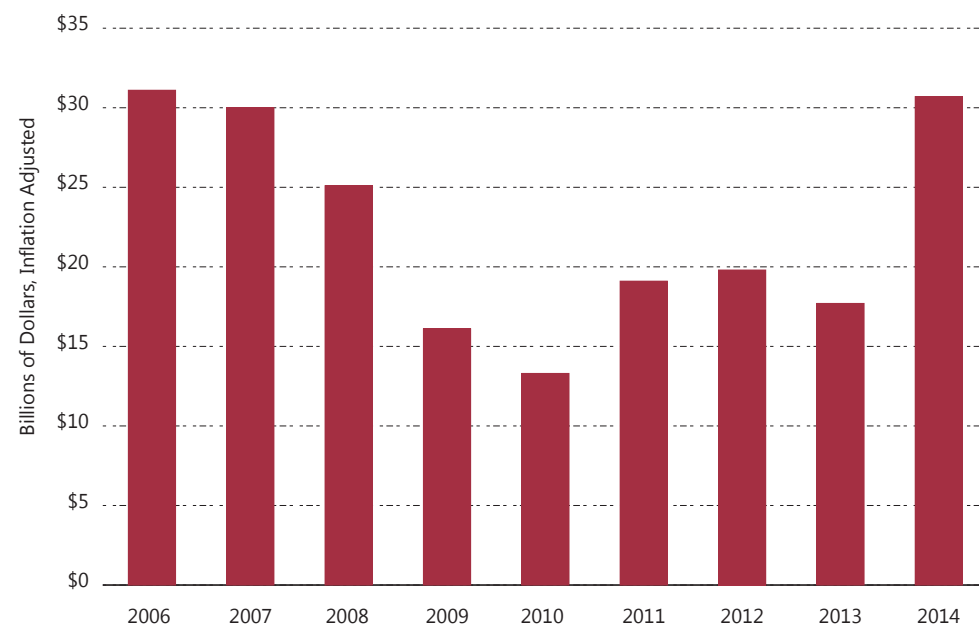


Silicon Valley continued to lead in venture capital investment in 2015, though the pace of growth slowed between 2014 and 2015. New York City's venture capital investments rose 61 percent over the same period.

While remaining above a five-year average, Q3 2015 investment in both Silicon Valley and New York City dipped after a very strong Q2 2015.

Venture Capital Fundraising

United States, 2006-2014

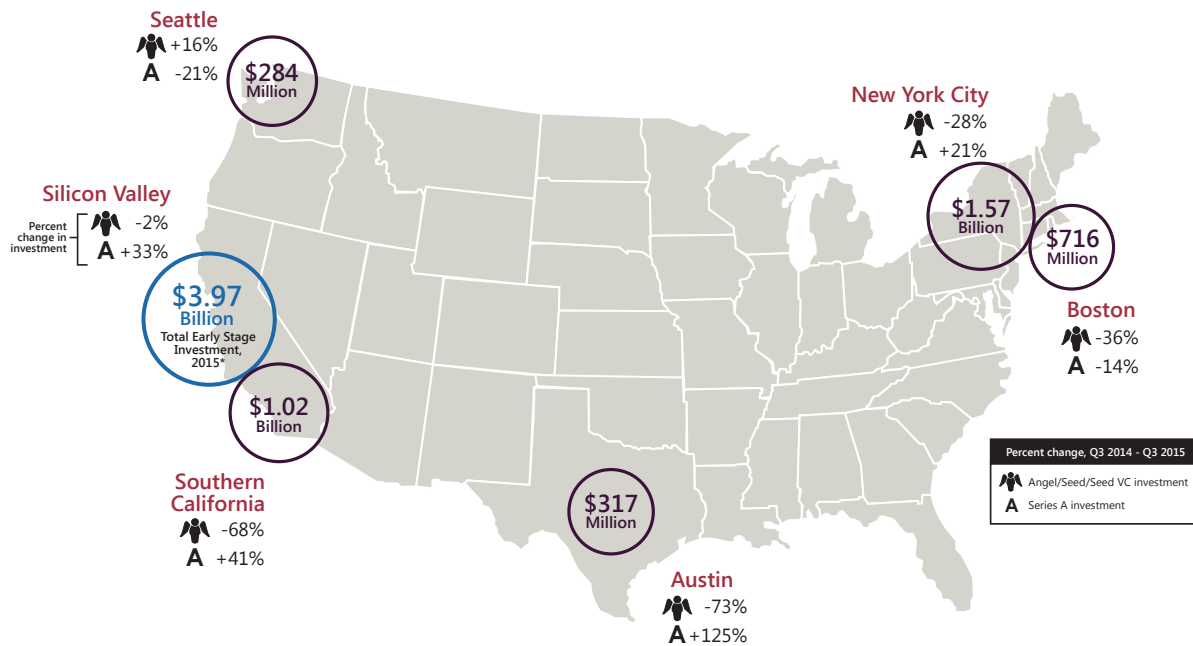


A key forward-looking indicator of the health of venture capital investment is venture capital fundraising, and U.S. total fundraising has been on the rise. Venture capital funds raised \$30.7 billion in 2014. In the first half of 2015, fundraising trends were promising, with Q2 2015 the strongest fundraising quarter since Q4 2007.

Data Source: National Venture Capital Association (NVCA) and Thomson Reuters Fundraising Report
Analysis: Collaborative Economics

Very Early Stage Funding

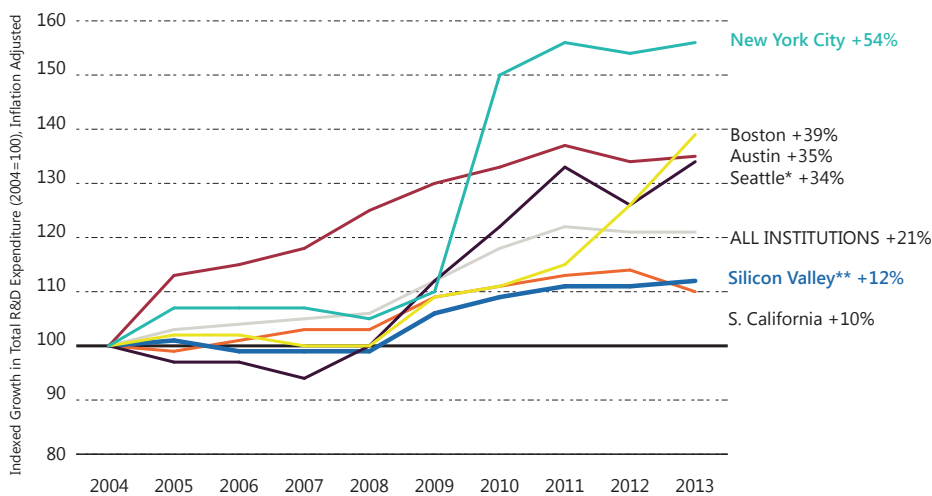
Angel/Seed and Series A Investments, 2015*
Innovation Regions



Data Source: CB Insights
Analysis: Collaborative Economics

Growth in R&D Expenditures

Innovation Regions, 2004-2013 (Index 2004=100)

**Total R&D Expenditures 2013**

All Institutions	\$68.1B
S. California	\$4.18B
New York City	\$3.62B
Boston	\$3.02B
Silicon Valley**	\$2.84B
Seattle*	\$1.22B
Austin	\$773M

*Growth path proxied by Federal Expenditure to University of Washington, the principal driver of R&D funding in Seattle

** Silicon Valley includes East Bay universities

Data Source: National Science Foundation
Analysis: Collaborative Economics

Nationally, R&D expenditures at universities rose 21 percent between 2004 and 2013, to \$68.1 billion. Spending on R&D at universities is an important input to the innovation pipeline.

R&D expenditures in Silicon Valley universities (including U.C. Berkeley) grew 12 percent over the same period, lagging most of the innovation regions. While New York City's universities expanded most over the decade, R&D expenditures at Boston's universities expanded most rapidly between 2011 and 2013 (+28 percent).

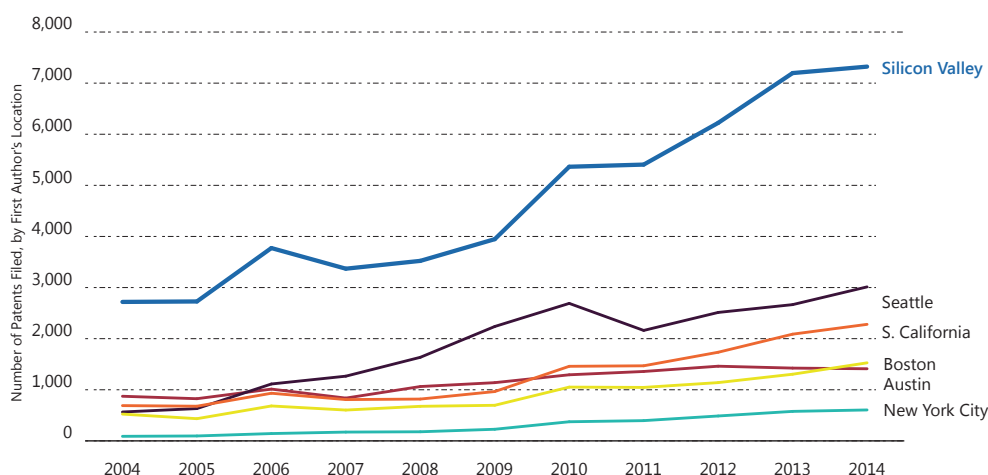
While Southern California's universities accounted for the most R&D expenditures in 2013, they grew at the slowest rate over the decade.

Innovation Processes: Idea Generation and Commercialization

Innovation processes leverage the economy's assets in talent, capital and R&D to translate ideas into commercial products and services. Idea generation is an early step in that process. Patent filings and commercialization - the development and scaling of technology or services - are other critical elements of the innovation process. The progression of follow on investments into venture-backed startup companies illustrates the ability for early stage companies to grow and scale.

Patent Filings

Computers, Data Processing and Information Storage
Innovation Regions, 2004-2014

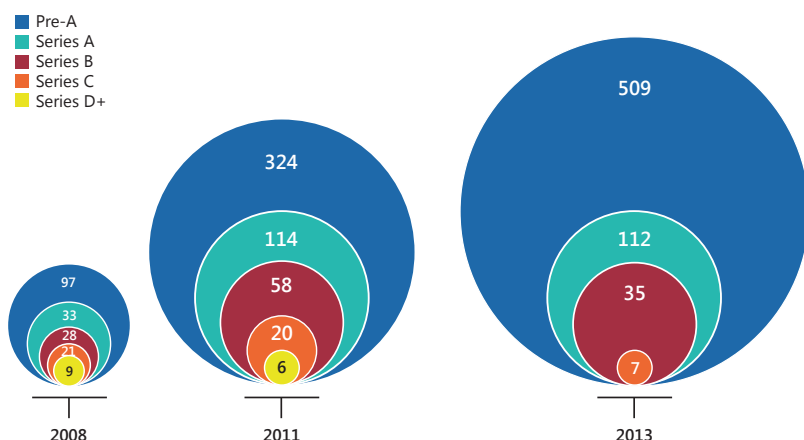


Silicon Valley continued to lead the innovation regions in patent registrations in 2014, particularly in Computers, Data Processing and Information Storage technologies (7,300 patents in 2014).

Note: New York City defined as Bronx, Kings, Queens, New York and Richmond Counties
Data Source: USPTO Custom Data Extracts
Analysis: Collaborative Economics

Progression of Early Stage Investment*

Silicon Valley Based Startups - For Companies that Launched in 2008, 2011 and 2013



*Reflects follow-on venture capital investments into start up companies, which secured their first Seed, Angel or Seed VC investment in 2008, 2011 or 2013

Incorporates investment data through November 10, 2015

Data Source: CB Insights

Analysis: Collaborative Economics

In 2013, 509 new startup companies in Silicon Valley received at least one round of Angel, Seed or Seed VC investment, an increase from prior years. An increase from prior years, more early-stage companies are growing and scaling than previously.

Among companies that launched in 2013, only 22 percent secured a Series A investment following very early stage investments. With Series A investment, a firm's likelihood for Series B was higher: 31 percent of firms that launched in 2013 with Series A funding secured Series B.

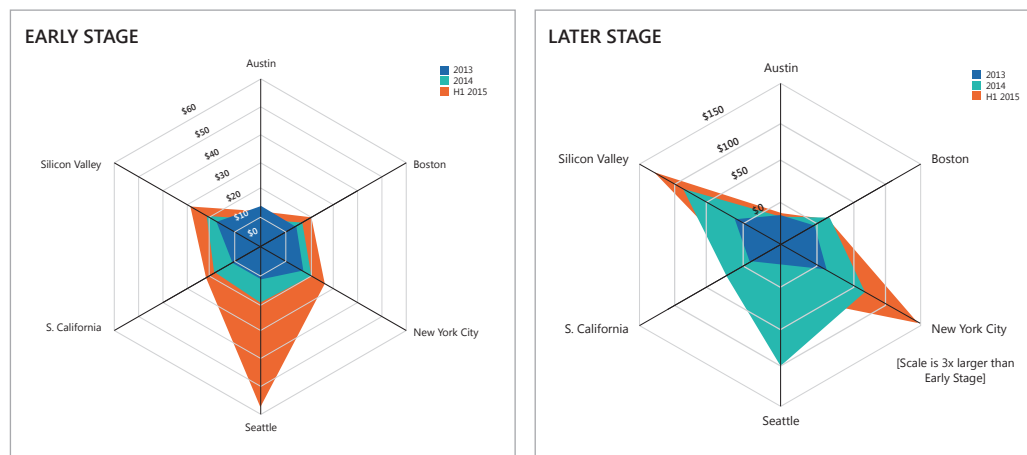
Innovation Processes: Business Innovation

Business innovation is an aspect of Innovation Processes and reflects new business models, technologies and services creating value in regions. Startup company valuations and initial public offerings (IPOs) compare the economic value (or potential for value) of business innovation across regions.

Median Valuation of Early and Late Stage Start-Up Companies

In Millions of Dollars, Inflation Adjusted

Innovation Regions - 2013, 2014 and First Half (H1) of 2015



Note: Adjusted amounts from Bureau of Labor Statistics CPI Inflation Calculator into 2015 dollars (www.bls.gov/data/inflation_calculator.htm)

Data and Analysis: Pitchbook Data, Inc. July 2015

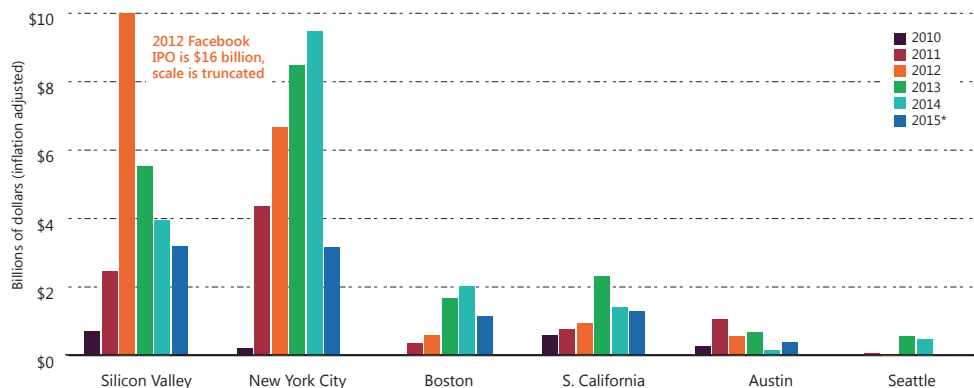
Valuations are estimates of startup companies' worth, and a higher median regional valuation suggests companies are larger, worth more and have been better able to secure past investment. However, very high median company valuations raise concerns about over-valuation/ overheating in the market. In 2015, a number of private company valuations have been reduced as they move into public markets.

Median later stage valuations rose in the first half of 2015 in New York City, to \$149 million, surpassing Silicon Valley median valuations.

All of the innovation regions exhibited gains in median valuations for early stage companies in the first half of 2015 from 2014. Seattle had the largest median pre-money valuations for early stage companies in the first half of 2015.

Value of IPOs

Innovation Regions, 2010-2015*



*Data through November 10, 2015
Data Source: CB Insights
Analysis: Collaborative Economics

Pre-exit valuations rose in 2015. However, as of November 2015, most regions' IPO valuations were below prior years' performance.

In 2015 through November 10, IPOs of Silicon Valley-based companies generated \$3.2 billion for investors, lower than the previous two years.

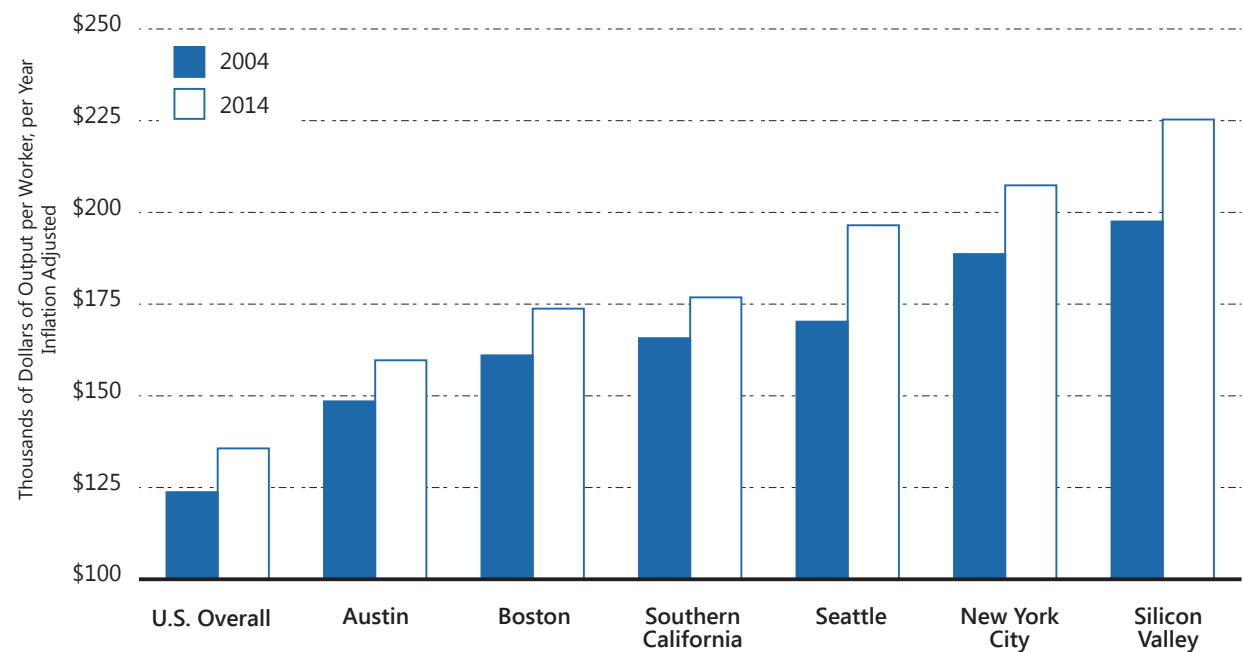
Signaling a potential slowdown of value flowing in to the entire country, Renaissance Capital reported a marked decline in IPOs across the U.S. in Q3 2015 in response to negative global market conditions.

Outcomes and Prosperity: Business Competitiveness

Labor productivity and business operations costs are critical considerations for companies as they determine where to conduct business, though strong labor productivity and other regional assets (such as access to suppliers and end markets) may outweigh cost trade-offs.

Worker Productivity

Annual Value Added per Employee
Innovation Regions and U.S. Overall, 2004 and 2014



Data Source: BEA, BLS
Analysis: Collaborative Economics

Silicon Valley's worker productivity (measured as annual output per worker) was the highest of the innovation regions in 2014, \$225,000 annually per worker. Furthermore, Silicon Valley's productivity also increased rapidly (+14 percent) between 2004 and 2014, second only to Seattle (+15 percent).

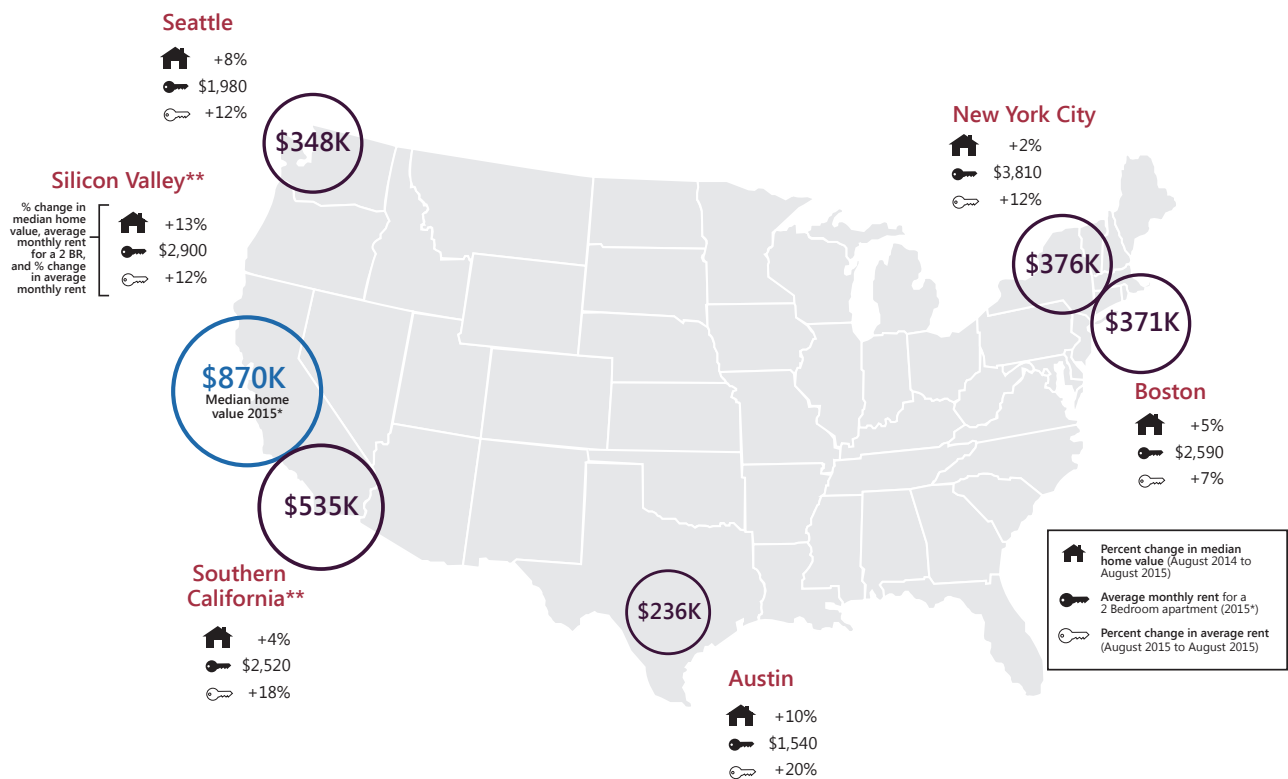
Note: The cost of doing business compared to U.S. baseline innovation regions will be updated later this year. See the 2015 report for the most recent comparison of output and cost.

Outcomes and Prosperity: Quality of Life

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

Housing Costs in Innovation Regions

Median Home Values and Average Monthly Rent, 2015*



*2015 data span January through August 2015
**Due to data constraints, the Silicon Valley indicator uses data from the San Jose Metro Area. The Southern California category uses Los Angeles data
Data Source: Zillow, Rent Jungle, Bureau of Labor Statistics
Analysis: Collaborative Economics

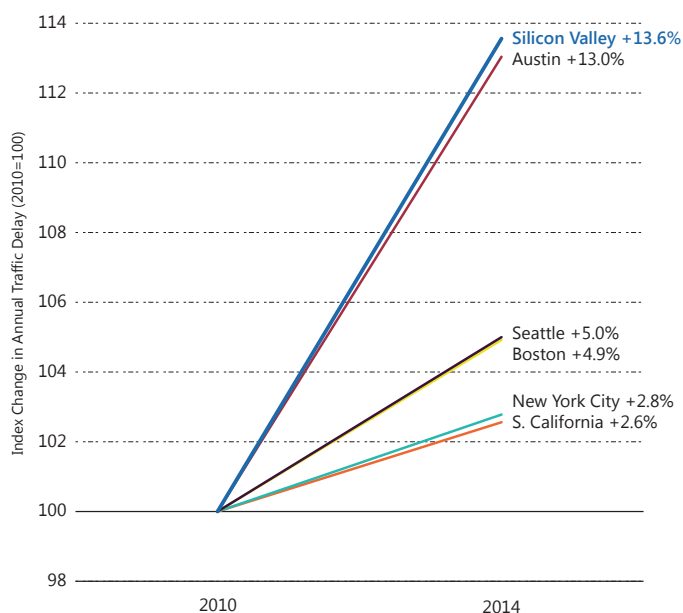
Silicon Valley's median home value was \$870,000 in 2015 through August, higher than all other innovation regions. High housing costs reduce the affordability of the region, reducing the ability of companies to recruit and retain top talent, and straining middle and low income families in the region.

Silicon Valley ranked second in monthly housing rental costs, behind New York City (\$2,900 and \$3,800 per month for a two bedroom unit, respectively). In the city of San Francisco, average monthly rent for a two bedroom unit in 2015 through August was \$4,200.

While home values rose fastest in Silicon Valley between August 2014 and August 2015, rents increased most rapidly elsewhere.

Economic Costs of Traffic Congestion

Change in Annual Hours of Traffic Delay Per Auto Commuter
Innovation Regions, 2010 and 2014 (Index 2010=100)



Economic Costs of Traffic Congestion

	Aggregate Regional Cost of Congestion in 2014 (in Billions)	Average Annual Traffic Delay Per Auto Commuter from Congestion (in Hours)**
Southern California*	\$15.0	80
New York City	\$14.7	74
Silicon Valley*	\$5.4	67
Boston	\$3.4	64
Seattle	\$3.3	63
Austin	\$1.1	52

*For aggregate regional cost of congestion, Silicon Valley includes the San Jose and San Francisco-Oakland urban areas, Southern California includes Los Angeles and San Diego urban areas

**Average annual traffic delay reflect San Jose Metro area and Los Angeles urban areas, respectively

Data Source: Texas A&M Transportation Institute; 2015 Urban Mobility Scorecard
Analysis: Collaborative Economics

The average Silicon Valley commuter lost 67 hours per year, roughly an hour and 15 minutes per week, due to traffic congestion in 2014, in addition to time spent commuting. This is an increase of 13.6 percent from 2010. Commuters in Southern California and New York City spent even more time in congestion on average each year (80 hours and 74 hours, respectively), though the time lost to traffic has not increased as rapidly in these regions as Silicon Valley.

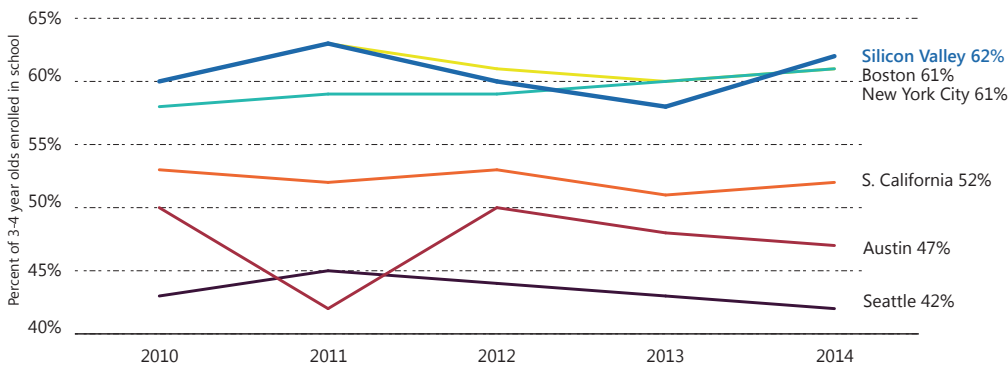
Cumulatively, the Greater Silicon Valley region (encompassing the full Bay Area) lost \$5.4 billion in 2014 due to congestion (measured by lost economic productivity, wear and tear on vehicles and other factors). These challenges can diminish this region's quality of life, prompting business and talented employees to go elsewhere.

Outcomes and Prosperity: Access to Opportunity

Education enables access to well-paying jobs and facilitates income mobility. In innovation regions, where jobs in Innovation Industries have strong earning potential, high quality education is particularly important to promote access to opportunity across the full population.

Preschool Enrollment

Share of 3-4 Year Olds Enrolled in School
Innovation Regions, 2010-2014

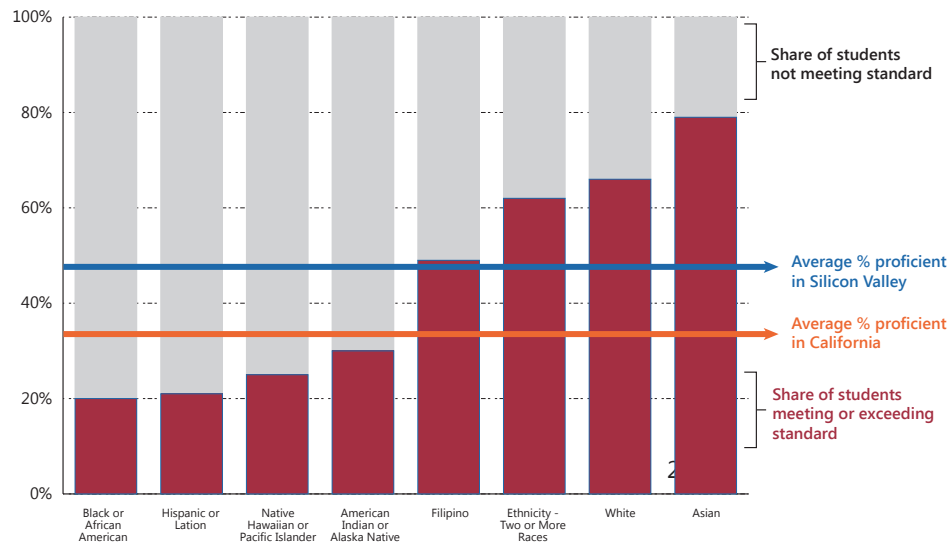


Data Source: American Community Survey
Analysis: Collaborative Economics

Attending high quality Pre-K provides youth with critical foundational skills. In 2014, 62 percent of Silicon Valley's 3-4 year olds were enrolled in a preschool program, slightly above enrollment rates in New York City and Boston.

Mathematics Proficiency among 8th Grade Students

Share of Students Meeting or Exceeding Standards, by Race and Ethnicity
Silicon Valley, 2015




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




Eight grade math proficiency is an important predictor for college preparedness and professional opportunities. In 2015, 49 percent of Silicon Valley's 8th grade students met or exceeded the new state standard for mathematics, based on the Common Core.

These test scores also indicate a significant achievement gap in Silicon Valley. Twenty percent of Black or African American students and 21 percent of Hispanic or Latino students met or exceeded standards for Mathematics in 8th grade. In comparison, 79 percent of 8th grade Asian students and 66 percent of White students were proficient.

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 3rd grade reading and 8th 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 policy priorities helped the Silicon Valley Leadership Group, Silicon Valley Community Foundation and partner organizations initiate and support focused public policy actions. While progress on high-skill immigration and regulation policies were limited in 2015 given state and federal contexts, there were key successes in education and transportation and housing, and some movement on R&D.

STEM Education and High Quality Pre-K Enhancements



In October 2015, California Senate Bill 359, the “California Mathematics Placement Act”, was signed into law. Sponsored by SVCF, this law requires school districts to develop and adopt math placement policies that are fair, transparent and based on objective measures of student performance thereby eliminating key leaks in the STEM talent pipeline in California, especially for students of color. Other SVCIP partners played a significant advocacy role in this legislation.



The Governor's budget expanded the state preschool program by 2,500 part-time slots.



San Mateo County committed \$15M in Measure A funding to the Big Lift a bold social venture that is co-led by SVCF and aims to dramatically improve third-grade reading proficiency.



Senate Bill 172 passed, correcting a legal inconsistency related to high school exit exams, which sunset after 2015. The law also allows qualifying students to still obtain their high school diploma retroactively.

Transportation and Housing Achievements



In June 2015, the State Supreme Court upheld San Jose’s Inclusionary Housing Ordinance, ensuring a requirement for the inclusion of affordable housing in Silicon Valley.



SVCIP partners built support for a potential 2016 ballot measure to promote a systems-based approach for local transportation funding, spanning several Silicon Valley counties, including Santa Clara County (lead role), Santa Cruz County (advisory role) and San Francisco County (supportive role).



SVCF, along with ten cities and two counties in Silicon Valley, launched the Grand Nexus Study for Affordable Housing Impact Fees. The project explores policy solutions for funding affordable housing in the future.

Research and Development



SVCIP partners advocated for H.R. 880, the “American Research and Competitiveness Act of 2015,” which would make the federal R&D tax credit permanent.



In late 2015, Congress passed an omnibus appropriations and tax extender legislation, making the Research and Development (R&D) credit permanent.

Appendix

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.

Regional Output in Innovation Industries - Regional Output in Innovation Industries is estimated using Moody's Analytics nominal GDP levels for Santa Clara, San Mateo and San Francisco counties, adjusted for inflation using the Bureau of Economic Analysis personal consumption expenditures (PCE) price index. Due to data constraints, Innovation Industries include the following sectors: computer and electronic product manufacturing, electrical equipment, appliance and component manufacturing, and information. A share of professional, scientific, and technical services GDP was added as well, in the same proportion as the computer system design services and custom computer programming services employment share of professional, scientific, and technical services employment from BLS-QCEW.

Talent Pool in Innovation Industries: High technology STEM Occupations - High technology STEM Occupation data is from Bureau of Labor Statistics, Occupational Employment Statistics, from May 2003 and May 2013. Due to data constraints, regions are defined by MSAs, rather than county. High technology STEM Occupations are scientific, engineering, and technician occupations, defined by the Bureau of Labor Statistics (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 sciences managers. Science and engineering industries are based on U.S. Census Bureau Standard Occupational Classification system, and included comparable codes in the 2002 and 2010 classifications.

International Talent - Data for international talent is provided by the United States Census Bureau, 2013 American Community Survey Public Use Microdata Samples (PUMS). Regions are defined on a county basis. The Science & Engineering (S&E) category is comprised of workers in the following occupations: Computer, Physical Engineers, Design, Biological, Mathematics and Aerospace Engineers & Scientists. "Design" includes Designers and Artists & Related Workers. Both were added to the S&E occupations to try to capture the employment of Graphic Designers and Multi-Media Artists & Animators. Data includes all employed, at work individuals with a Bachelor's degree or higher. Foreign-born does not include individuals from U.S. territories. In-state-born share of workers for New York City only incorporates NY state, for Boston, both MA and NH. Science and engineering industries are based on U.S. Census Bureau Standard Occupational Classification system. This classification system was updated in 2010.

Population Change by Educational Attainment - Population Change by Educational Attainment uses data from the United States Census Bureau, American Community Survey (ACS), 1-year estimates, for 2011 and 2013. Due to data constraints, regions are defined by MSAs, rather than county. Indicator illustrates change in number of residents by education level among adults 25 years and above, divided by total residents 25 years and above (from the same dataset) per 10,000.

STEM Degrees Conferred - STEM Degrees Conferred refers to data from the National Center for Educational Statistics, Integrated Post-secondary Education Data System (IPEDS). Data are based on first major and include Bachelor's, Master's and Doctorate degrees in Biological & Biomedical Sciences, Physical Sciences, Engineering, Computer & Information Sciences, Mathematics & Statistics, Engineering Technologies and Related, Science Technologies/Technicians. To obtain degrees conferred, balanced by population, total degrees conferred is divided by population (U.S. Census) per 10,000.

Migration - 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 the case of Southern California and New York, 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.

Venture Capital & Early Stage Funding - Investment data are provided by CB InsightsTM (www.cbinsights.com) and include disclosed investment deals in private companies. Data are through November 10, 2014, unless explicitly noted to be through Q3 2014. All figures were adjusted for inflation, as described above. VC data includes Angel, Seed, Series A-E+, Growth Equity, Bridge, and Incubator series types.

R&D Expenditures at Universities - Research & Development Expenditures at Universities are from the National Science Foundation/National Center for Science and Engineering Statistics, Higher Education Research and Development Survey. From FY 2004 through FY 2009, some institution totals for all R&D expenditures may be lower-bound estimates because National Science Foundation did not attempt to estimate for non-response on non-science and engineering R&D expenditures item. Universities were classified into their respective regions by county. Total R&D Expenditure estimates were not available for Seattle from 2004 to 2009; to construct the indexed time series, growth rates for Federal R&D Expenditures for the University of Washington, Seattle were substituted (sourced from NSF, Statistical Abstract of the United States, 2007 and U.S. Census Federal R&D Obligations in 2008). In 2012, University of Washington accounted for 99% of Seattle's total reported research funding and federal funding was 86% of University of Washington's total R&D expenditure.

Patents - Patent data are provided by the U.S. Patent Trademark Office, Custom Data Extracts, and reflect utility patents granted by location of the first inventor on the patent application. Regions are defined by county, based on first inventors' city. Patent Registrations in Computers, Data Processing & Information Storage reflect USPC Classes 116, 235, 346-7, 360, 365, 369, 377, 700-20, 726, and 902.

Progression of Early-Stage Investment - Progression of Early-Stage Investment by Series data are from CB InsightsTM (www.cbinsights.com) and include disclosed investment deals in private companies through November 10, 2014. This indicator tracks venture-backed startup companies that launched in the selected year through subsequent rounds of funding. While companies may have received multiple rounds of funding within the series (e.g., several rounds of Series A funding), this indicator counts the first investment in the series only, and then that company's subsequent, higher-level series. Pre-A investments include angel, seed and seed VC investments. This indicator reflects 2012 as the most recent cohort because companies that launched in 2013 and 2014 have had less time to secure subsequent funding rounds, and historical comparisons would be inappropriate. Regions are defined by county, based on startups' HQ city.

Median Valuations of Startup Companies - Median Valuation of Startup Companies data and analysis are from Pitchbook Data, Inc. (pitchbook.com) as of July 2014. Valuations are evaluated before a subsequent round of investment ("pre-money"). Included are venture-backed companies that have not exited (e.g., through an initial public offering, merger/acquisition, etc). Figures are inflation adjusted using BLS CPI-U data. "Early Stage" startups are companies that have secured seed/seed VC or series A investments, while "Later Stage" startups refer to companies that received Series B investment or later. Regions are defined by county, based on startups' HQ city.

IPO Valuations - IPO Valuation data are from CB InsightsTM (www.cbinsights.com) and include initial public offering exits among private companies through November 10, 2014, adjusted for inflation. Where IPO valuation data were unavailable from CB Insights, valuations from CrunchBase (<http://www.crunchbase.com/>) were used. Regions are defined by county, based on startups' HQ city.

Productivity - Annual Output per Worker - Worker productivity is roughly proxied by annual regional output (GDP) in the private sector per private sector worker, in 2013. Regional GDP data are from Bureau of Economic Analysis, and employment data are from BLS-QCEW. Due to data constraints, regions are organized by principal metropolitan area. Silicon Valley is proxied by San Jose, New York City by New York metro, Southern California by Los Angeles. BLS-QCEW county-level data were matched to the MSA county definitions.

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 Jose, New York City by New York metro and Southern California by Los Angeles. Monthly data are averaged to estimate annuals.

Congestion - Annual time wasted in congestion per commuter and total cost of congestion are sourced directly from the Texas A&M Transportation Institute Urban Mobility 2015 study. In the annual time wasted in congestion per commuter data, Silicon Valley reflects the San Jose urban area. In total costs of congestion, Silicon Valley also includes the San Francisco-Oakland urban area.

Pre-School Participation - Pre-school participation data are from the U.S. Census Bureau, American Community Survey 1-year estimates from 2008 through 2013, and reflect percent share of total three and four year-olds in school. Regions are defined by county.

Mathematics Proficiency - Exam performance data are from the California Department of Education, CAASPP Results in 2015, and "proficiency" reflect students meeting or exceeding state standards on the 8th grade mathematics exam. Regions are defined by county.



The Silicon Valley Leadership Group, founded in 1978 by David Packard of Hewlett-Packard, represents nearly 400 of Silicon Valley's most respected employers on issues, programs and campaigns that affect the economic health and quality of life in Silicon Valley. For more information, visit svlg.org.



Silicon Valley Community Foundation advances innovative philanthropic solutions to challenging problems. As the largest community foundation in the world, 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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