Innovation and Investment: Building Tomorrow's Economy in the Bay Area

Bay Area Economic Profile
March 2012
Eighth in a Series

BAY AREA COUNCIL ECONOMIC INSTITUTE
Connecting business, labor, government and education

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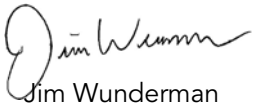
Introduction

This report, the eighth in a series of biennial Bay Area Economic Profile reports produced by the Bay Area Council Economic Institute in partnership with McKinsey & Company, examines the evolution of the Bay Area's economy in the wake of the Great Recession that severely impacted the region from 2008 to 2010 and continues to be felt by many of our citizens and businesses. As previous profile reports have done, it benchmarks the Bay Area's economic performance against other knowledge-based economies in the United States and around the world, to assess the region's national and global competitiveness. It also analyzes the economic and policy challenges that continue to confront the region and that must be addressed if the Bay Area wishes to maintain its current position of economic leadership.

This year's Bay Area Economic Profile report finds, as it has so often in the past, that the region has experienced a substantial economic recovery and remarkable economic growth based on its ability to innovate across a range of leading sectors. This strength in innovation continues to position it favorably as both a partner and a competitor with leading economic regions throughout the world. At the same time, this success is being experienced unevenly, with high unemployment and challenged housing markets in many communities. This report also identifies significant long-term risks to the region's still-privileged position, through the continued erosion of key assets, including infrastructure and education. To address these challenges in a time of political division and constrained resources in Washington and Sacramento, we believe it essential that the Bay Area apply the same innovation it has shown in the private sector to the difficult policy issues it now confronts. By taking greater responsibility for creatively managing its own affairs and resources, the Bay Area has an opportunity to consolidate and build on its recent gains, to the benefit of both its residents and the state.

Laura Tyson
Chair
Bay Area Council Economic Institute

Sean Randolph
President & CEO
Bay Area Council Economic Institute



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Acknowledgements

This Economic Profile report was prepared on a pro bono basis by McKinsey & Company in cooperation with the Bay Area Council Economic Institute. It is the product of extensive analysis by the McKinsey team, management by the Institute, and input from regional leaders.

Contributors from McKinsey & Company included Lenny Mendonca, Director in McKinsey's San Francisco office and Chairman Emeritus of the McKinsey Global Institute; Kausik Rajgopal, Principal and San Francisco Office Manager; Martha Laboissiere, Associate Principal who oversaw the project; and Alex Maasry, who led the project team of JinA Bae, Diego Flores, and Marcela Merino.

Sean Randolph, President & CEO of the Bay Area Council Economic Institute, managed the project. Jon Haveman, the Economic Institute's Chief Economist, and Patrick Kallerman, its Research Associate, contributed to the research.

Valuable advice and insight were also provided by Bay Area Council policy staff, by Economic Institute Board Member Steve Levy (Center for the Continuing Study of the California Economy), and by members of the Economic Institute's Research Council: Olaf Groth (Emergent Frontiers), Stephen Goodman (Madrone Advisory), Cynthia Kroll (UC Berkeley), James Manyika (McKinsey & Company), Doug Henton (Collaborative Economics), and John Zysman (UC Berkeley).

Contents

Executive Summary

In spite of persistent and underlying challenges that it has yet to address, the Bay Area economy continues to display a remarkable resilience and innovativeness. While parts of California and the country remain economically stagnant, the Bay Area has posted strong productivity gains in key knowledge sectors that have fueled economic growth, and a new technology wave is once again proving that the Bay Area has maintained its distinctiveness as an innovation hub. However, regulatory complexity and budget shortfalls at all levels of government are straining education, infrastructure, and the business environment. While these structural problems have been discussed in past Economic Profile reports, their persistent and worsening nature raises the issue of how long the region's economic leadership can be sustained. While near-term economic success is reassuring, it should not be taken for granted that it will continue in the absence of greater attention to the region's structural challenges.

The Bay Area has maintained and increased its productivity edge over the past few years by further specializing in key knowledge sectors. Information technology and high-end manufacturing have grown more quickly and productively than in the rest of the nation. The region's universities and research institutions remain among the nation's highest-ranked. Local venture capital deals continue to account for roughly one-sixth of the world's total, and 40% of the national total, while the rest of the United States is losing share to emerging markets such as China and India. This enables the Bay Area to host many key emerging industries such as cleantech and social media.

As a business center, the Bay Area continues to thrive. It is home to more of the fastest growing companies than anywhere else in the country and ranks in the top 10 regions globally as a host to global Fortune 500 companies. The composition of the Bay Area's top companies is diverse and balanced, spanning energy, networking, communications, consumer products, food, and financial services.

However, the success of the region is not evenly shared across its nine counties and workforce. Unemployment remains above the national average at over 9%, and total employment remains near its lowest point in fifteen years. Blue collar jobs, traditionally a ladder to the middle class, are a decreasing percentage of available positions. Those seeking better education must first go through a kindergarten through 12th grade (K–12) education system that has seen mild test score improvements but ranks in the bottom five of states nationally. Meanwhile, the state has cut nearly 40% of the University of California system's funding since 2002. The institutions that for years have provided the region with much of its human talent now must find new ways to

finance their operations. Additionally, due to visa issues, it remains unduly difficult for foreign talent to migrate to the Bay Area.

Funding challenges extend to physical capital. The vast majority of infrastructure spending is for operations and maintenance, leaving little money to upgrade or develop new bridges, highways, and mass transit systems.

California's business climate remains among the most challenging in the country. Although as an innovation hub the Bay Area remains competitive in generating new businesses, large businesses are continually frustrated with the regulatory and tax environment.

Failing to address our underlying challenges threatens to undermine the region's future prosperity. Although the "wheels have yet to fall off" and many of the issues remain the same, deep budget cuts and high unemployment are intensifying these problems.

With limited ability to drive change at the state and federal levels, the region needs to mobilize to face its challenges if it wants to continue to thrive and lead into the 21st century. This calls for effective coordination across the public and private sectors, streamlining regulations for businesses that operate in the region, and cohesive regional economic planning for jobs, infrastructure, and education. Better collaboration across the region's many city and county governments is particularly important to enable the region in successfully tackling its most pressing issues. This is particularly important in a period of intensifying budget pressure.

This report finds that the Bay Area has shown its resilience over the past few years, growing, innovating, and leading in sectors that are important not only for the region but for the country as a whole. However, many of the region's underlying challenges are deepening. With limited help from the state and national levels, the Bay Area must come together to develop its own economic plans and strategies if it wants to ensure its long-term success.

I.
A Resilient Economy: Sustaining the Bay Area's Innovation Edge

In the past several years, the Bay Area has reinforced its competitive advantage, driven by its status as a leading international business center, an unparalleled innovation hub, and home to world-class human talent. In spite of consistent fears over the past 20 years that the Bay Area will lose its edge, the region continues to reinvent itself and sustain its productivity, innovation, and business advantage.

Each part that contributes to the innovation hub—universities, research institutions, venture capital, innovative firms and human talent—remains intact and ahead of peer regions in the United States and abroad. The share of the population that is college-educated is higher in the Bay Area than in comparable metropolitan regions. It has the highest share of innovative companies compared to peer regions internationally. Venture capital funds have continued to invest in Bay Area startups at the same rate as they have historically in spite of increasing opportunities in high-growth regions in Asia and Latin America. Bay Area universities and research centers offer more highly-ranked departments than any other region.

The Bay Area's welcoming climate, diverse settings from Silicon Valley to Napa Valley wine country, and informed culture still make it a top destination. Tourism continues to grow, and the region has seen more than 1 million people immigrate over the past 2 decades.

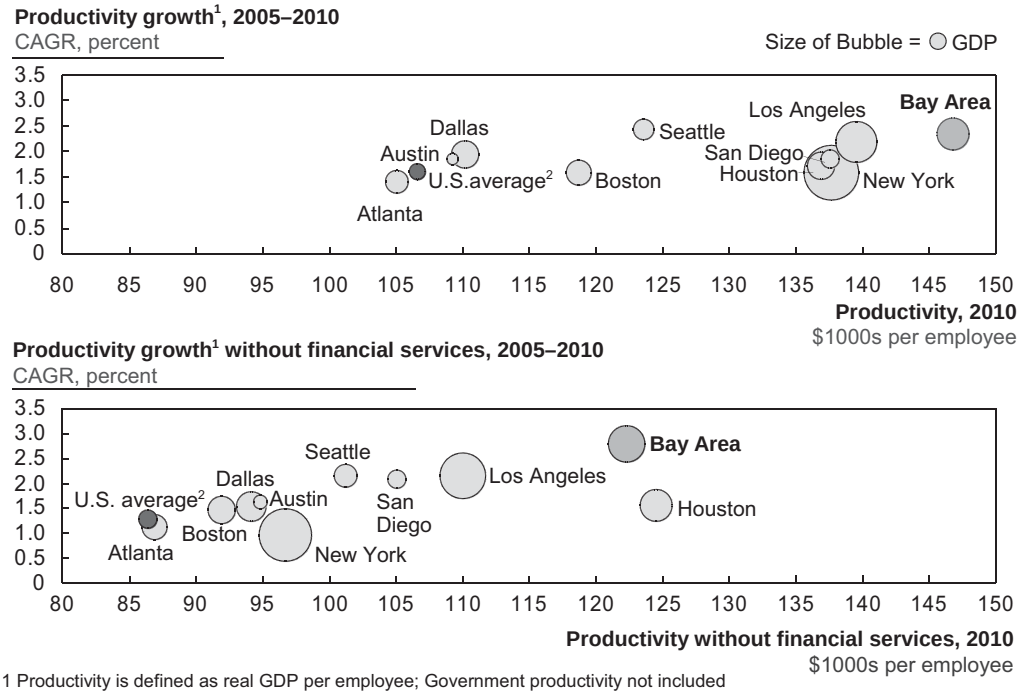
This report examines the Bay Area's competitive advantage in productivity, innovation, and human capital. It also identifies some of the structural challenges to this advantage which are not new in nature, but which have intensified and could significantly erode the Bay Area's innovation economic leadership should they be left on their current path.

A Highly Productive Economy

Predictions dating back many years that the Bay Area's productivity edge would disappear, overwhelmed by global competition in a technology sector with minimal barriers to entry, have not come to pass. In recent years, the Bay Area has not only retained its productivity advantage over peer cities in the United States, but has also exhibited higher productivity growth. Since 2005, productivity growth in the non-financial services segment of the Bay Area economy has averaged 2.8%, faster than any U.S. peer city (*Exhibit 1*).

Exhibit 1

The Bay Area has retained its productivity advantage compared to peers, even when removing the effect of financial services.

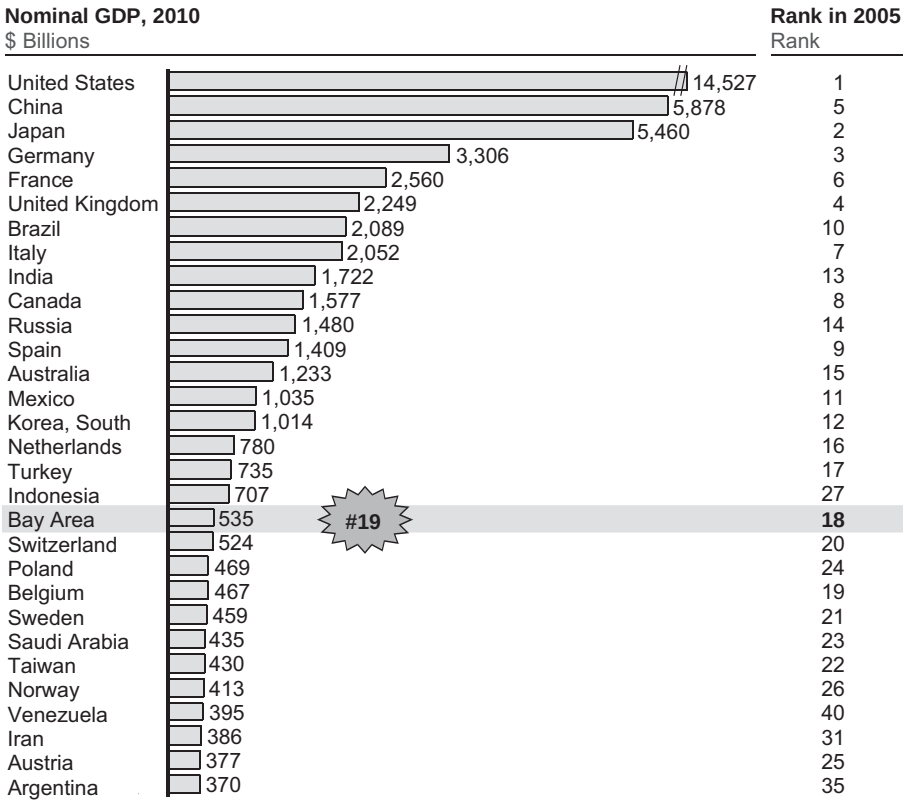


1 Productivity is defined as real GDP per employee; Government productivity not included
2 U.S. average not to scale
SOURCE: BEA, Moody's Economy.com, team analysis

This has enabled the Bay Area economy to grow to $535 billion, making it the 19th largest economy in the world when compared to national economies (*Exhibit 2*). The long-term trend shows that the Bay Area has fallen slightly from 18th largest five years ago, due primarily to growth in emerging markets. While the Bay Area has rebounded from the Great Recession more strongly than other regions, it's GDP growth over the past 5 years has averaged only 1.2% while emerging economies such as Turkey, Indonesia and Poland have grown at rates upwards of 5% in real terms.

Exhibit 2

The Bay Area is the 19th largest economy in the world with a GDP of $535 billion.



SOURCE: Global Insight, BEA team analysis

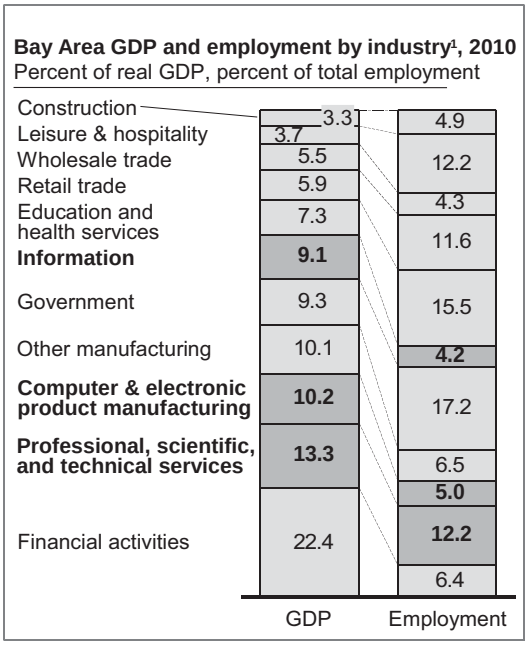
Nevertheless, from a *per capita* GDP perspective, the Bay Area remains remarkably strong, and emerging markets have a long way to go to close the gap. At $74,815, the Bay Area has the highest GDP per capita in the United States and ranks ahead of global peers such as London ($56,997) and Singapore ($43,867). Per capita GDP growth has averaged less than 1% per year, but this has been growth from a very high base.

Technology Driving Growth

The Bay Area's recovery has been led—once again—by technology. Three key sectors—information, computer and electronic product manufacturing, and professional and scientific services—have driven recent economic growth (*Exhibit 3*). While these sectors make up approximately 30% of the regional economy, they are responsible for 100% of its growth since 2005 (while other sectors have grown, net growth across all other sectors combined is ~0%). This is promising because these technology sectors—in which the Bay Area holds a productivity edge—are the ones that many national policymakers believe are critical to the ability of the nation as a whole to remain competitive.

Exhibit 3

The Bay Area's recent GDP growth has been led by computer manufacturing, information, and professional services.



	GDP growth, 2005–2010 CAGR, percent	Employment growth, 2005–2010 CAGR, percent
Construction	-6.5	-7.2
Leisure & hospitality	-1.2	0.7
Wholesale trade	2.8	-1.7
Retail trade	-1.5	-1.9
Education and health services	3.0	2.5
Information	**4.6**	**-0.3**
Government	-0.9	-0.7
Other manufacturing	1.5	-3.0
Computer & electronic product manufacturing	**11.5**	**-1.4**
Prof., scientific & technical services	**2.8**	**1.8**
Finance	-0.9	-3.9
Total	**1.2**	**- 0.9**

1 Only nonfarm industries included
SOURCE: BEA, BLS, Moody's Economy.com, team analysis

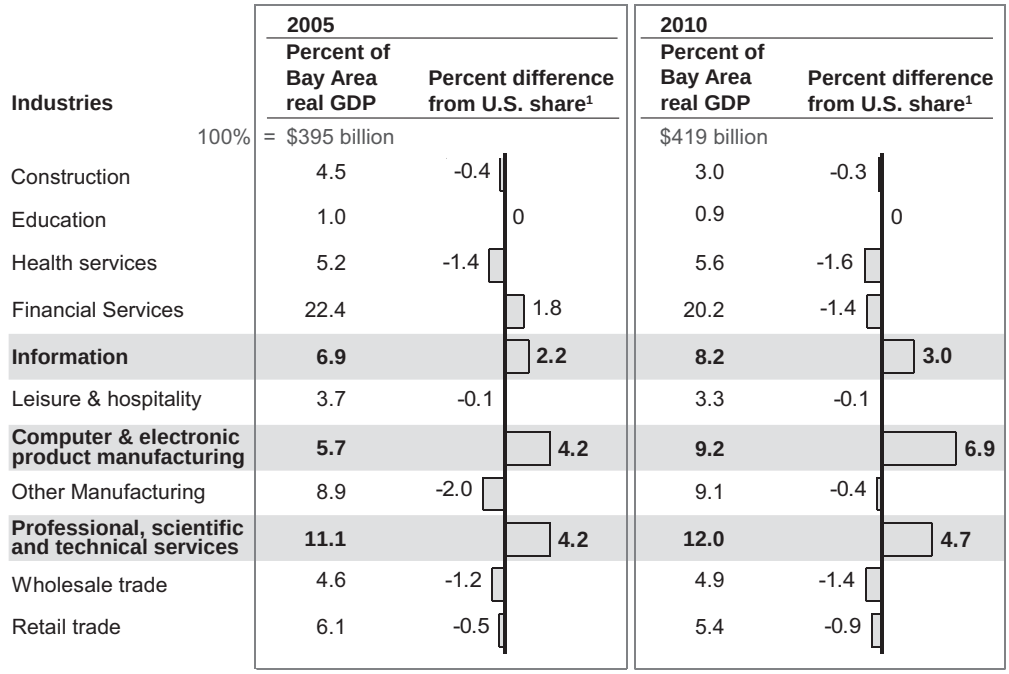
The 30% of Bay Area GDP that these sectors account for compares to only 15% for the U.S. economy as a whole (*Exhibit 4*). Furthermore, these sectors were only 24% of Bay Area GDP 5 years ago. The Bay Area is therefore becoming increasingly specialized in the sectors that should continue to provide growth and a competitive advantage. Most notably, computer and electronic product manufacturing—most of which is high-end—has increased

its share of GDP by more than 50%, growing from 5.7% of GDP in 2005 to 9.2% of GDP in 2010. This is a promising development for the region and its ability to defend and grow its manufacturing base.

Unfortunately, the employment story in these sectors does not parallel the positive story of strong productivity and GDP growth. Since 2005 there has been a net decline in employment in both information and computer and electronic manufacturing. Given the high capital intensity of these sectors, but their low propensity to generate employment, the Bay Area will need to look more broadly to find significant job growth.

Exhibit 4

The Bay Area is becoming increasingly specialized compared to the U.S. in computer manufacturing, information, and professional services.



1 A positive figure indicates that the Bay Area has a greater degree of its GDP concentrated in the industry than does the U.S. overall

SOURCE: Moody's Economy.com, team analysis

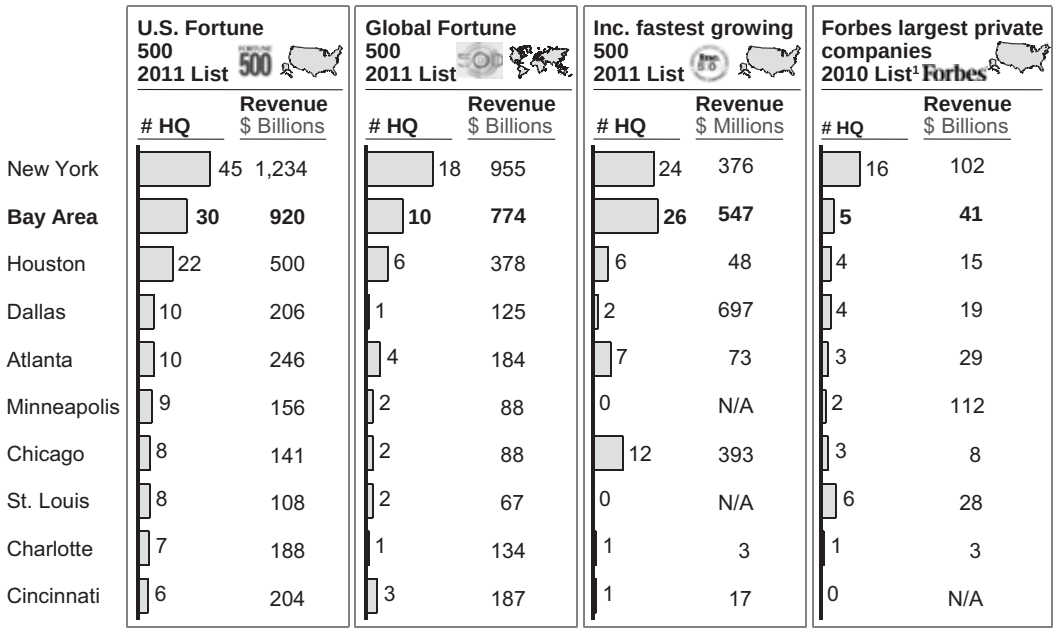
An International Business Center

The Bay Area is one of the most important and diverse business centers in the world. Many of the largest and fastest growing international firms are located here, and span a range of established and newer industries including energy, food, apparel, consumer goods, and technology. As part of the Pacific Rim, Bay Area companies enjoy strong connections with a region that hosts a growing share of the Global Fortune 500 and a disproportionate share of global GDP growth.

The Bay Area has 30 companies in the U.S. Fortune 500, second only to New York. It also has more companies (26) in the 2011 Inc. 500 fastest growing private companies list, more than any other region in the United States (*Exhibit 5*).

Exhibit 5

Many of the largest and fastest growing global companies are based in the Bay Area.



1 Forbes largest private companies list comprises of 223 companies; revenues for a number of Forbes largest private companies are calculated by using Forbes estimate or company provided estimate

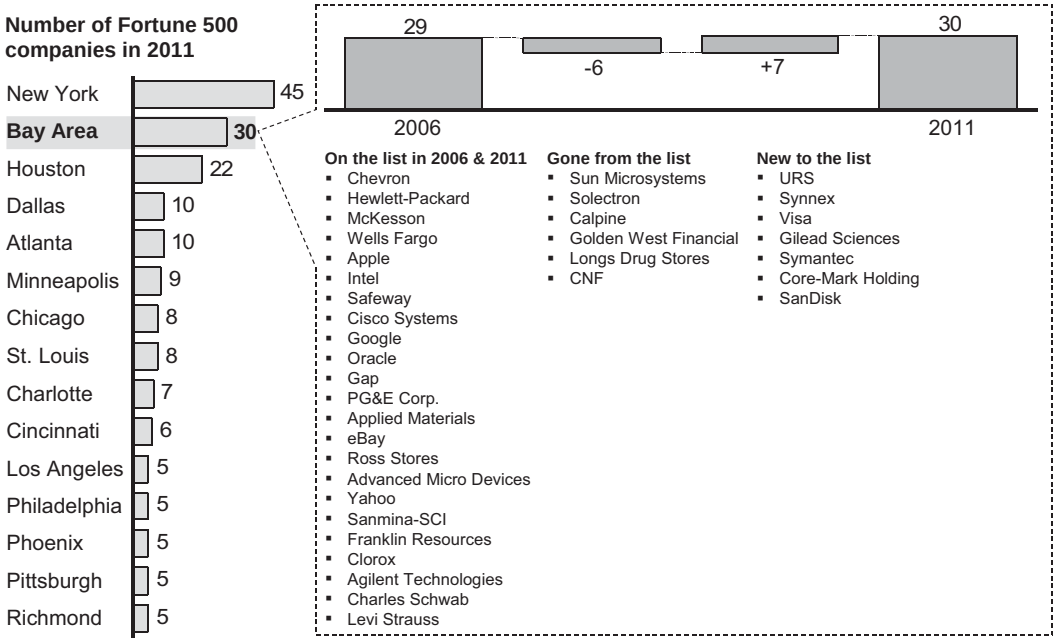
SOURCE: Fortune Magazine, Inc. 500, Forbes, team analysis

In the past 5 years, there has been significant turnover in the Bay Area's top companies, with six companies exiting the Fortune 500 and seven new ones added. Unlike other regions such as Houston (oil) or New York (finance/media) where the largest companies are heavily concentrated in one or two industries,

the Bay Area has real diversity in its top firms. For example, the five largest firms by market cap in the Bay Area come from five distinct industries: Chevron, Hewlett-Packard, McKesson, Wells Fargo, and Apple (*Exhibit 6*).

Exhibit 6

The Bay Area has the second largest number of Fortune 500 companies with few shifts over the past years.

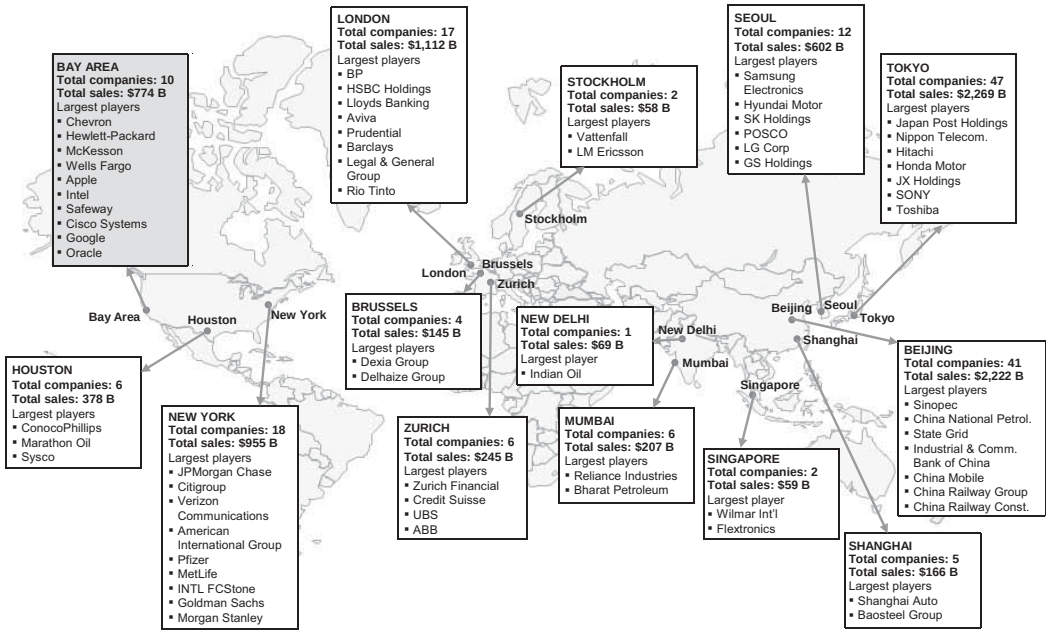


SOURCE: Fortune Magazine, team analysis

Globally, the Bay Area is home to 10 firms in the Fortune Global 500, which places it 6th in the world in this grouping (*Exhibit 7*). A growing number of the Global Fortune 500 companies are located in Asian cities such as Beijing (42), Tokyo (47), or Seoul (12). While many companies on the list from China are wholly or partially state-owned, this does not diminish the continued rise of the Pacific Rim as the most dynamic center of global economic activity. Many leading Asian firms, such as Samsung, have located their U.S. subsidiaries in the Bay Area. Given the Bay Area's role as the largest business center on the West Coast, the region is well-positioned to strengthen its status as a global commercial center.

Exhibit 7

The Bay Area is home to a high concentration of Fortune Global 500 companies.[1]



1 Data from July 2011
SOURCE: Fortune Magazine, team analysis

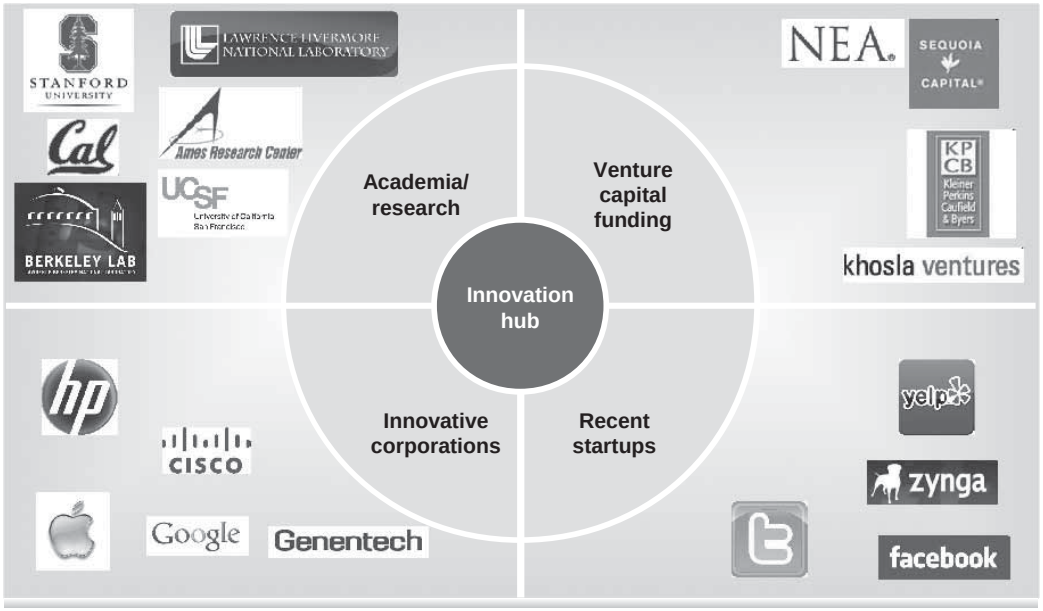
An Unparalleled Innovation Hub

Innovation continues to be at the core of the Bay Area economy, leading the region's recovery from the Great Recession and providing its competitive advantage. The region's assets include leading research institutions and universities, a disproportionate share of venture capital, a high concentration of innovative companies and jobs, and a new wave of dynamic startups (*Exhibit 8*).

Exhibit 8

There are many assets in the Bay Area to foster innovation.

NOT EXHAUSTIVE

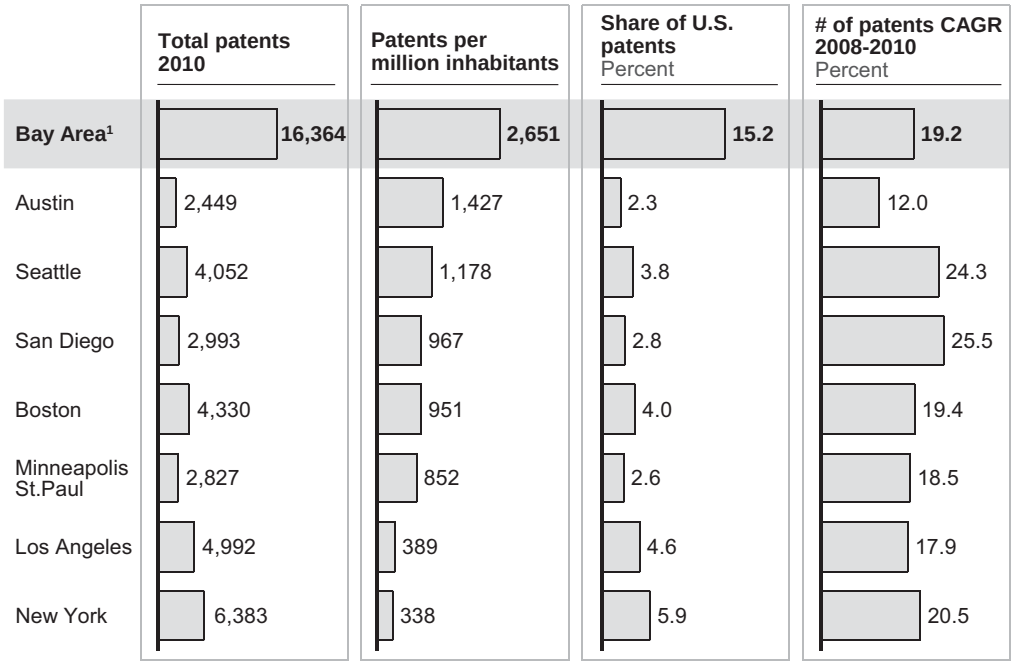


1 List of companies is not exhaustive
SOURCE: Hoovers, NCES, The Foundation Center, company websites, newspapers

Patents are perhaps the region's most striking innovation statistic. The Bay Area had over 2,600 patents per million inhabitants in 2010, far more than second-place Austin at approximately 1,400 (*Exhibit 9*). With only 2.3% of the nation's population, last year, the Bay Area generated 15.2% of all U.S. patents. The number of Bay Area patents has grown nearly 20% annually in the past few years.

Exhibit 9

The Bay Area remains at the head of its peer regions in terms of patents granted.



1 Data for San Francisco and San Jose MSAs
SOURCE: US Patent and Trademark Office, U.S. Census Bureau, team analysis

Universities and research institutions play a large role in driving the research behind patents and new innovations. Four of the Bay Area's schools—UCSF, Stanford, UC Davis and UC Berkeley—perennially rank nationally in the top 20 in R&D investment (*Exhibit 10*). Bay Area universities have a combined 60 departments in medicine, business, science and engineering ranked in the top 10 nationally, more than any other region (*Exhibit 11*). Leading research institutions include several national laboratories such as Lawrence Berkeley, Lawrence Livermore, Sandia-California and the NASA Ames Research Center.

Exhibit 10

Leading regional universities are responsible for a significant share of U.S. science and engineering R&D investment.

Total public and private science and engineering R&D investments at U.S. universities and colleges, 2009

Regional university	Rank in R&D investments 2002	Rank in R&D investments 2009	R&D investments 2009 $ millions	CAGR 2002-2009 Percent
UC San Francisco	6	4	948	6.8
Stanford University	8	14	704	3.9
UC Davis	14	15	682	5.9
UC Berkeley	13	17	652	4.6
UC Santa Cruz	128	113	144	10.6

- The Bay Area has four universities ranked in the top 20 institutions[1]
- These 5 schools invest just over $3 billion on Science and Engineering R&D, 5.7% of total national spending

1 U.S. institutions which invested at least $150K in R&D during FY2009

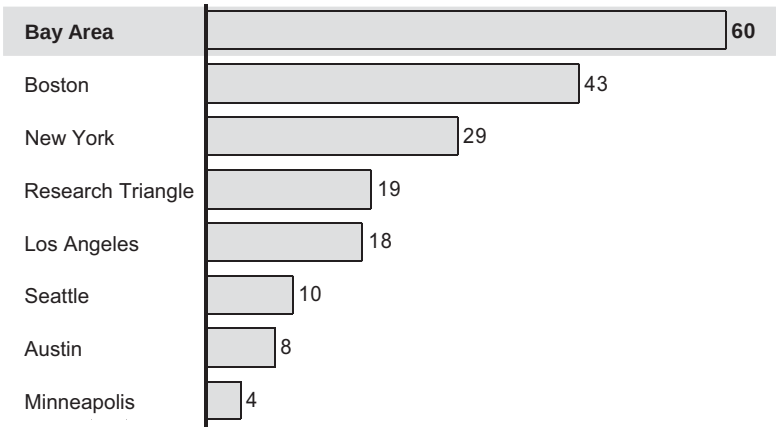
2 Investments include federal (DOD, DOE, HHS, NASA, NSF, USDA, other agencies), state and local government, industry, institution funds, and all other sources

SOURCE: National Science Foundation, Division of Science Resources Statistics, Survey of Research and Development Expenditures at Universities and Colleges: FY 2008

Exhibit 11

The Bay Area is home to more top 10 graduate programs than any of its peer regions.

Number of business, medical, science and engineering graduate programs ranked in the top 10 nationally[1]
Top graduate programs by region, 2011



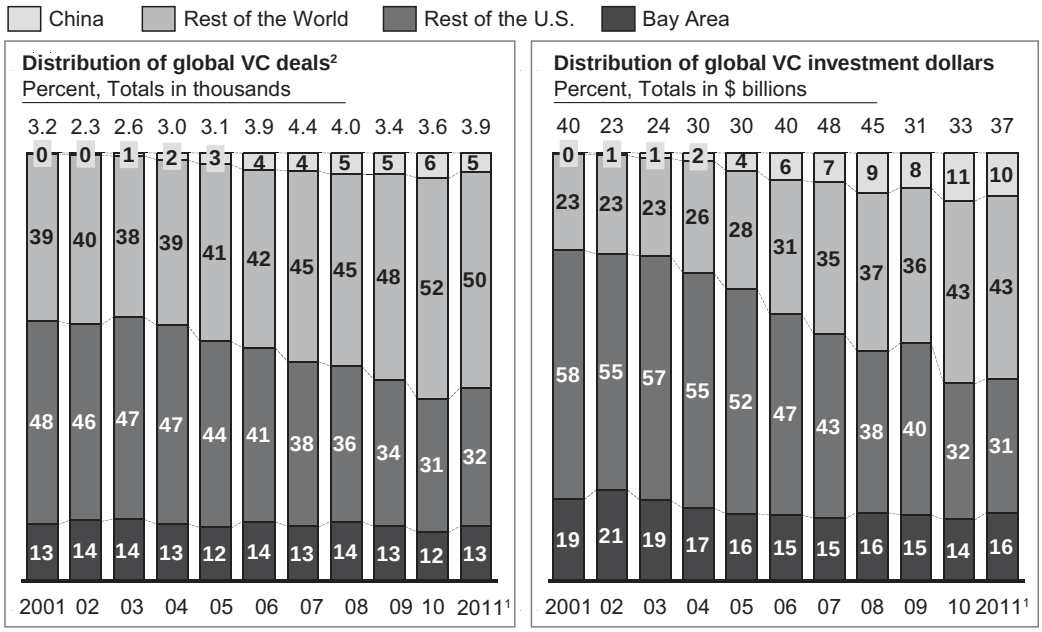
1 Includes ranking for specialty programs (10 in business, 7 in science, 12 in engineering, and 9 in medicine). Total = 38 x 10 = 380

SOURCE: U.S. News Best Grad Schools 2011, team analysis

The Bay Area also remains home to a large portion of the nation's venture capital. The region attracts 40% of all venture capital invested in the United States. Moreover, in spite of increasing growth opportunities in China and other emerging markets, the Bay Area has maintained its share of global venture capital deals and investment dollars. While the rest of the United States' share of venture investment dollars since 2005 has fallen from 52% of the global total to 31%, the Bay Area's 16% share has held constant (*Exhibit 12*). This is remarkable considering the seemingly common knowledge that major opportunities exist in the high-growth markets such as China, whose share of venture dollars has more than doubled from 4% to 10% since 2005.

Exhibit 12

Over the past decade, the Bay Area has maintained its share of the global venture capital (VC) market in spite of the rest of the U.S. losing significant share.

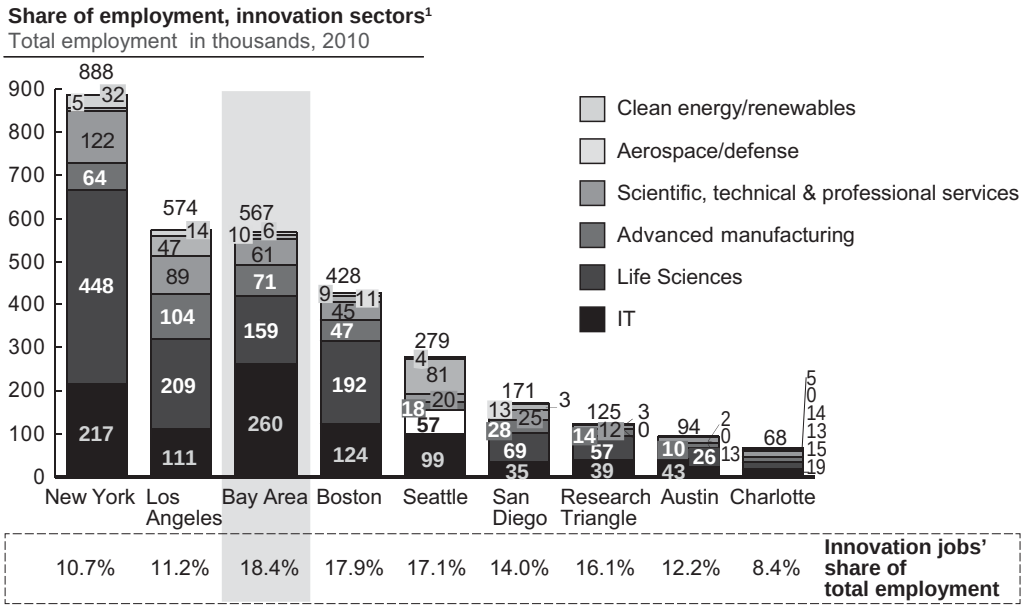


1 Data for 2011 is annualized from Q1 and Q2 2011
2 Deals included are "closed, private placement transactions" under US$ 100 million, in Capital IQ's Transaction Screening Repo
SOURCE: S&P Capital IQ, team analysis

As a result, the Bay Area has a higher portion of its jobs in innovation sectors—such as clean energy or life sciences—than any peer region in the United States (*Exhibit 13*). Furthermore, the Bay Area has 10 companies ranked in Thomson Reuters' "Top 100 Global Innovators"—more than any other region in the world except Tokyo.[1]

Exhibit 13

Innovation jobs represent a larger share of jobs in the Bay Area than anywhere else in the country.



1 Innovation sectors were defined as industry NAICS code with higher than average US productivity, preferably with high growth and capacity for intellectual or scientific progress

2 Bay Are includes five MSAs: San Jose, San Francisco, Napa, Santa Rosa and Vallejo; Research Triangle includes Durham and Raleigh MSAs

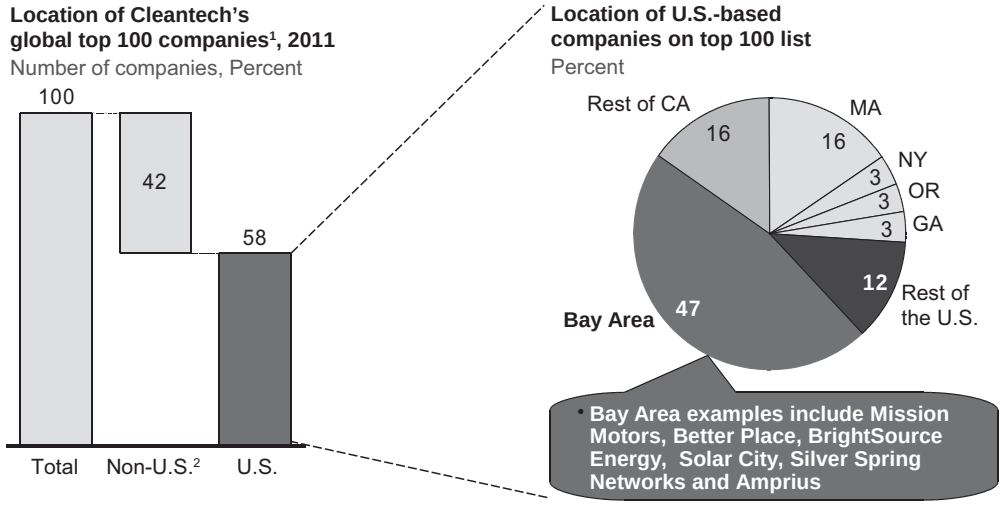
SOURCE: Moody's Analytics, BLS, team analysis

[1] The Bay Area's 10 companies are: AMD, Apple, Applied Materials, Chevron, Hewlett-Packard, Intel, LSI, SanDisk, Symantec, and Synopsis.

The Bay Area's innovation future appears promising. Regional companies are pioneering cleantech and social media—two sectors at the forefront of growth and innovation. Nearly 30% of the Cleantech Group's "Global Cleantech 100 companies" are based in the Bay Area (*Exhibit 14*), and seven of the ten largest social media companies by users are located in San Francisco or Silicon Valley (*Exhibit 15*). In addition to the direct benefits of hosting companies such as Facebook and Yelp, this generates employment and revenue benefits in adjacent industries such as application developers. For example, it is estimated that nationally there are 53,000 jobs in application companies for Facebook alone.[2] Following from this, since the majority of top application companies are also located in the Bay Area (six out of the top ten), one could estimate that Bay Area employment in this industry is around 20,000–30,000.[3] Thus, while other regions such as Boston and Austin seek to grow their innovation presence, it is hard to foresee them replicating the assets and the unique role that belong to the Bay Area.

Exhibit 14

Nearly half of the Cleantech Groups's 100 top private cleantech companies in the U.S.are located in the Bay Area.



1 These are the 100 cleantech companies that are the most likely to make the most significant market impact over the next 5-10 years. Companies must be independent, for-profit, and not be listed in any major stock exchange.

2 Non-US companies (and number of companies) include: UK (9), Germany (5), Israel (4), Netherlands (4), Canada (3), China (3), France (3), Australia (2), Denmark (2), Sweden (2), and one company each in Belgium, Finland, India, Norway, and New Zealand.

SOURCE: Cleantech Group's global top 100 cleantech companies, 2011, team analysis

[2] "Hann, Viswanathan, and Koh, "The Facebook App Economy", University of Maryland, September 19, 2011; appdata.com; crunchbase.com

[3] These 6 companies are Zynga, Electronic Arts, Woobox, RootMusic, Playdom, and Lolapps. Top application developers are measured by monthly active users.

Exhibit 15

Seven out of the top 10 social media companies are in the Bay Area.

Company	HQ	Market cap 2010 U.S. $ billion	Revenue FY 2011 U.S. $ million	Employees	Users Millions
facebook	Palo Alto	84.0	4,270	2000+	800
YouTube	San Bruno	N/A	1,600	N/A	500
twitter	San Francisco	4.0	140	600	200
zynga	San Francisco	9.0	1,000	1300	195
LinkedIn	Mountain View	8.0	140	1000	116
flickr	Sunnyvale	N/A	N/A	N/A	51
yelp	San Francisco	0.2	30**	750	50
GROUPON	Chicago	15.7	313	7000+	35
MySpace	Santa Monica	0.04*	109	200	30
foursquare	New York	0.6	N/A	75	10

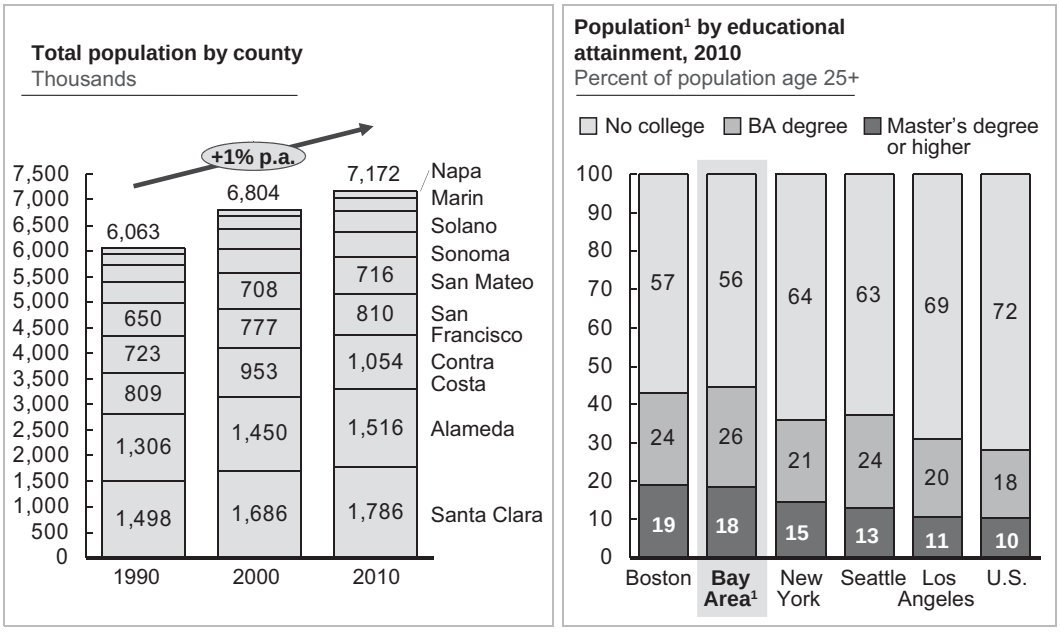
* 2011 Acquisition value
** 2009 data
SOURCE: Hoover's, eMarketer, Tech Crunch, Business Insider, press search

A Talented Workforce

A deep reservoir of human capital enables the Bay Area's innovation leadership: 44% of the adult population has a college degree or higher, more than any other U.S. metropolitan area, and well above the national average of 28% (*Exhibit 16*).

Exhibit 16

The Bay Area has a growing population that is highly educated relative to its peers.



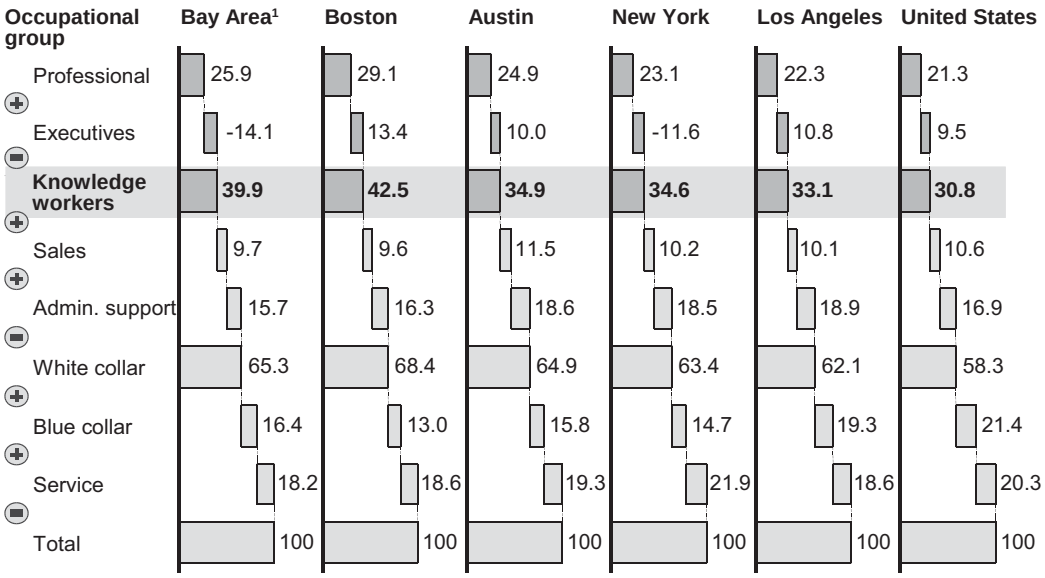
1 Data is at the MSA level, includes SF-Oakland-Fremont and San Jose-Sunnyvale-Santa Clara
SOURCE: BLS, Census Bureau, Moody's Analytics, American Community Survey 2010, team analysis

"Knowledge workers"—professionals and executives comprise 40% of the Bay Area's labor force (*Exhibit 17*). These knowledge workers are engineers, consultants, and researchers that drive new ideas and innovations in the region's laboratories, classrooms, and companies. The share of knowledge workers has increased from 35% to 40% over the past 10 years, indicating the region's continued shift to a knowledge-based economy. Conversely, blue collar jobs have decreased from 22% to 16%. Thus, the Bay Area's job market favors the highly educated while posing challenges for those with fewer skills. This highlights the need for access to quality high school, vocational, and higher education for all Bay Area residents in order to compete in the local job market.

Exhibit 17

Knowledge-based employment in the Bay Area surpasses that of most peer regions.

Breakdown of employment by occupational group, 2010
Percent of employment



1 Due to data constraints, in this case the Bay Area is defined as the combination of three MSAs: 1) Oakland-Fremont-Hayward; 2); San Francisco-San Mateo-Redwood City; 3) San Jose-Sunnyvale-Santa Clara
SOURCE: BLS, Occupational Employment Survey, team analysis

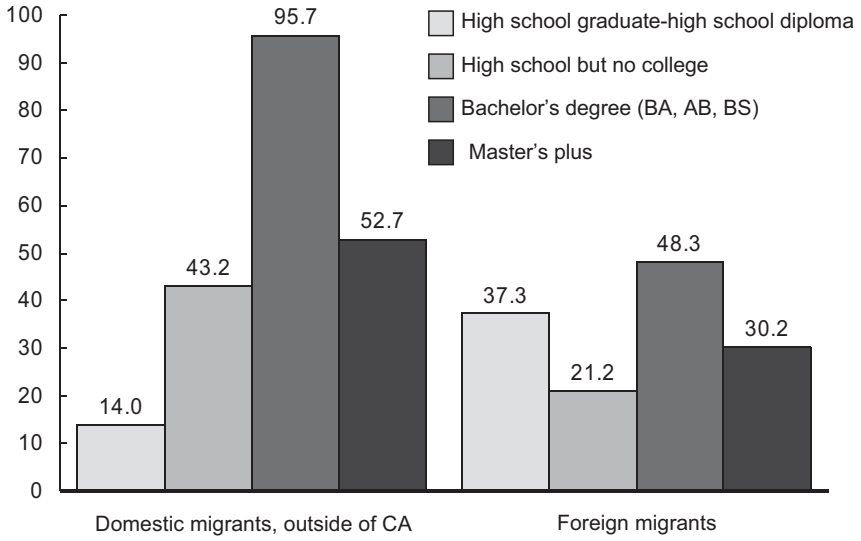
In-migration contributes substantially to the Bay Area's human capital advantage. Talented workers come from all corners of the world to participate in the region's innovation economy. Over the past 5 years, more than 225,000 immigrants with college degrees or higher have moved to the Bay Area—150,000 from other states and 75,000 from abroad (*Exhibit 18*). This diversity adds to the dynamism and competitive advantage of the Bay Area's economy.

However, migration has decreased in recent years; the Bay Area received 80,000 fewer migrants from 2005–10 than from 2000–05. Tougher immigration procedures and a scarcity of visas have limited the ability of many foreigners to come to the region to offer their talents.

Exhibit 18

Most migrants into the Bay Area have a bachelor's degree or higher.

Immigrants[1] into the Bay Area[2] by level of education, 2005-2010
Thousands of migrants



1 The base for this sample is population age 16+
2 Bay Area data is the sum of two MSAs: San Francisco - Oakland - Fremont and San Francisco - San Mateo - Redwood City.
SOURCE: Current Population Survey 2010, team analysis

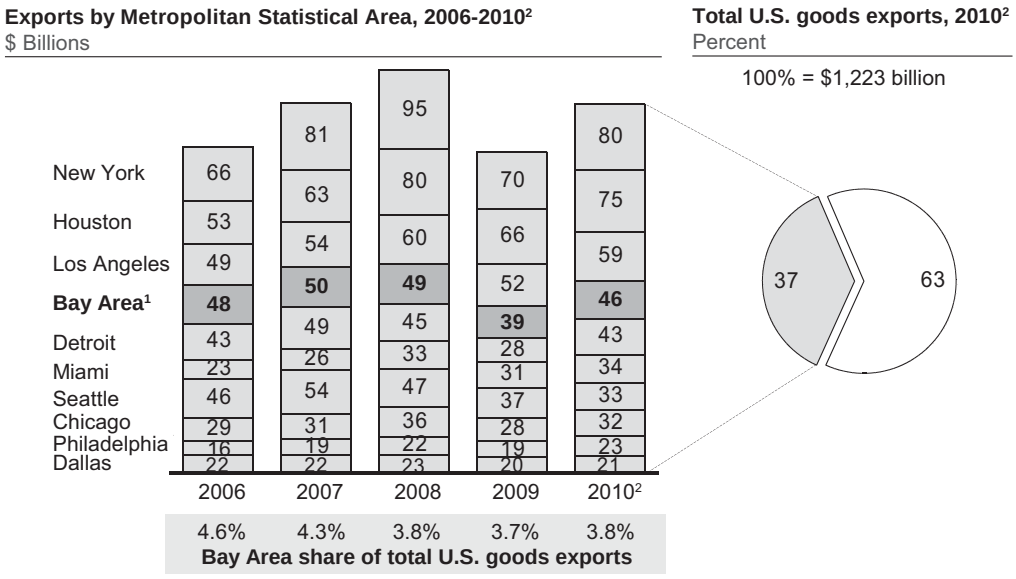
A Trade and Tourist Center

The Bay Area also benefits from strong flows of goods and people. Even as it becomes an increasingly knowledge-based economy, the region remains a significant trade and tourist hub. Facing the Pacific, the Bay Area particularly benefits from its proximity with fast-growing Asia.

Although exports have not quite returned to their pre-recession peak, the Bay Area is the 4th largest exporting region in the country (*Exhibit 19*). Its strong trading relationship with fast-growing Asian economies should enable long-term export growth (*Exhibit 20*). The recently-signed Korea-United States Free Trade Agreement offers a particularly good opportunity to increase exports to a major Asian trading partner. Following the recent Free Trade Agreement (FTA) that both countries ratified this autumn, the Bay Area will likely benefit disproportionately as 95% of trade tariffs between the two countries are eliminated over the next 5 years.

Exhibit 19

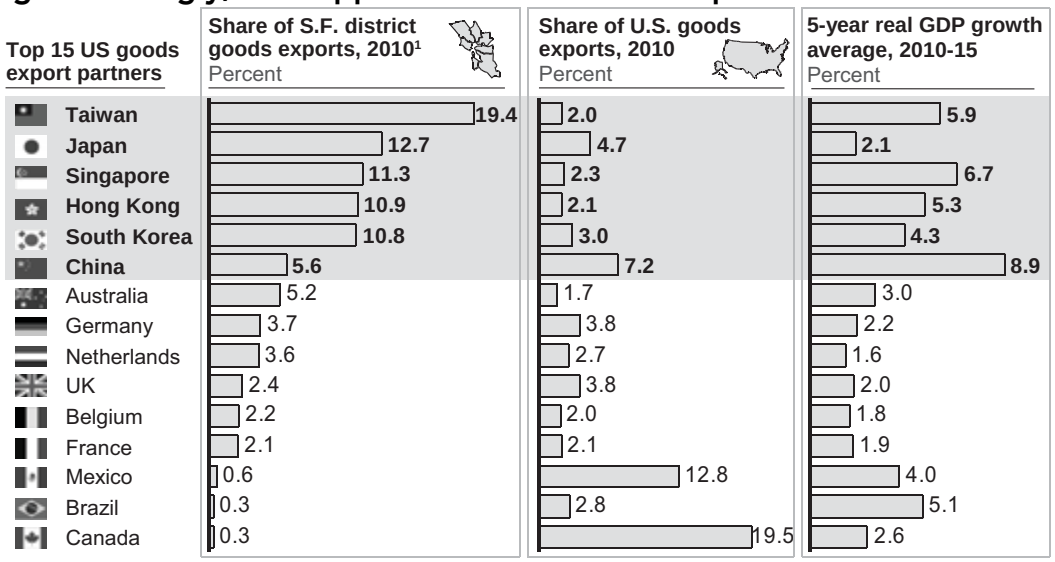
The Bay Area is the 4th largest exporting region in the nation.



1 Bay Area statistic includes San Francisco, San Jose, Santa Rosa, Fairfield, and Napa
2 2010 data is annualized from 2010 first half data
SOURCE: International Trade Administration (U.S. Department of Commerce), team analysis

Exhibit 20

The Bay Area's trade relationships in Asia, where GDP is projected to grow strongly, will support continued trade expansion.

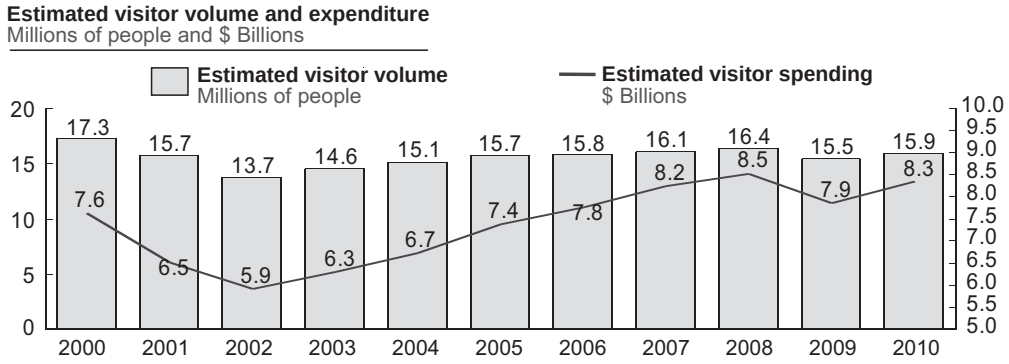


1 San Francisco customs district
SOURCE: Bureau of Economic Analysis, WiserTrade, Global Insight, team analysis

Tourism in the region is strong and growing, and has largely recovered from the recent recession. San Francisco is an international attraction as millions come to see the Golden Gate Bridge, Alcatraz, the city's steep hills, and the surrounding areas from Muir Woods to Napa, Sonoma and Silicon Valley. While total tourist volume in the Bay Area has increased slightly from 14 to 16 million in the past 8 years, total tourist spending has climbed from $5.9 billion to $8.3 billion, accounting for approximately 2% of Bay Area GDP (*Exhibit 21*).

Exhibit 21

As of 2010, tourist visits to San Francisco were stable, while tourist expenditure was growing.



SOURCE: San Francisco Convention and Visitor's Bureau, Federal Reserve Board, team analysis

II.
Perennial Problems:
Structural Issues Are Intensifying

While the resilience recently displayed by the Bay Area and its innovation economy is impressive, the benefits are not being evenly felt. Employment levels remain near their lowest point in fifteen years, and jobs are particularly scarce for blue collar workers, who account for only 16% of the current employment. Budget shortfalls are creating strains. Education, infrastructure, and the business environment pose serious challenges to the Bay Area's ability to maintain its competitive edge.

These are not new issues; indeed, prior Bay Area Economic Profile reports have highlighted them, urging a call to action before it becomes too late. Today, although the economy has largely persevered, the increased intensity of these underlying structural problems poses a challenge to the region's ability to sustain economic leadership in the longer term. Overall economic growth has been anemic when one takes a longer view, at only approximately 2% over the past 5 years. The region needs to look to itself to truly address these problems. While this report does not suggest that the Bay Area is on the verge of an economic crisis, it does recognize a pressing need to work through the region's many challenges.

The "Jobless Recovery"

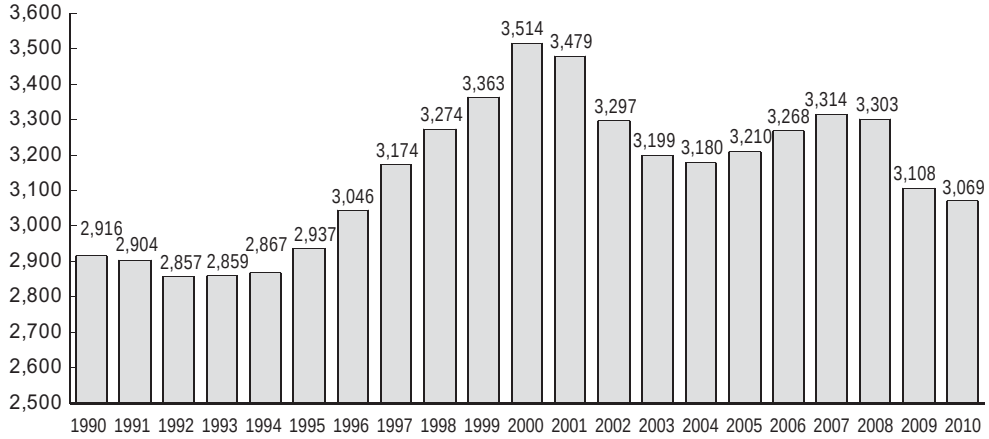
In many ways the Bay Area represents an amplified state of the U.S. economy. On one hand, the region has posted stronger productivity and GDP gains than the rest of the country. On the other hand, the number of jobs has declined in many sectors over the past decade. Total employment is still approximately 200,000 jobs lower than in 2007 and well below peak years in 2000–01 (*Exhibit 22*).

The historic trend of increasingly "jobless" recoveries is disturbing. Nationally, in the seven preceding recessions before 1990, employment levels typically returned to pre-recession peaks within 6 to 8 months after GDP returned to its pre-recession peak. However, starting with the 1990–91 recession, the number of months to employment recovery increased to 15 months; in 2001 it was 39 months; and current McKinsey Global Institute estimates show that it will take at least 68 months for the 2008–09 recession (*Exhibit 23*).

Exhibit 22

Bay Area employment still remains near its lowest point over the past decade.

Total employment in the Bay Area, 1990-2010
Employment in thousands

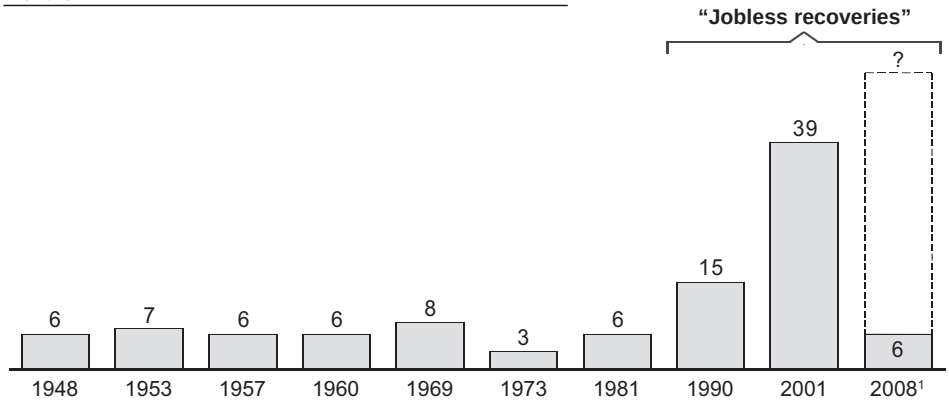


SOURCE: BLS, Moody's Economy.com, team analysis

Exhibit 23

Jobless recoveries in the U.S.: The time lag between GDP recovery and employment recovery has been increasing.

Lag from when U.S. real GDP recovers to when U.S. employment returns to pre-recession peak
Months



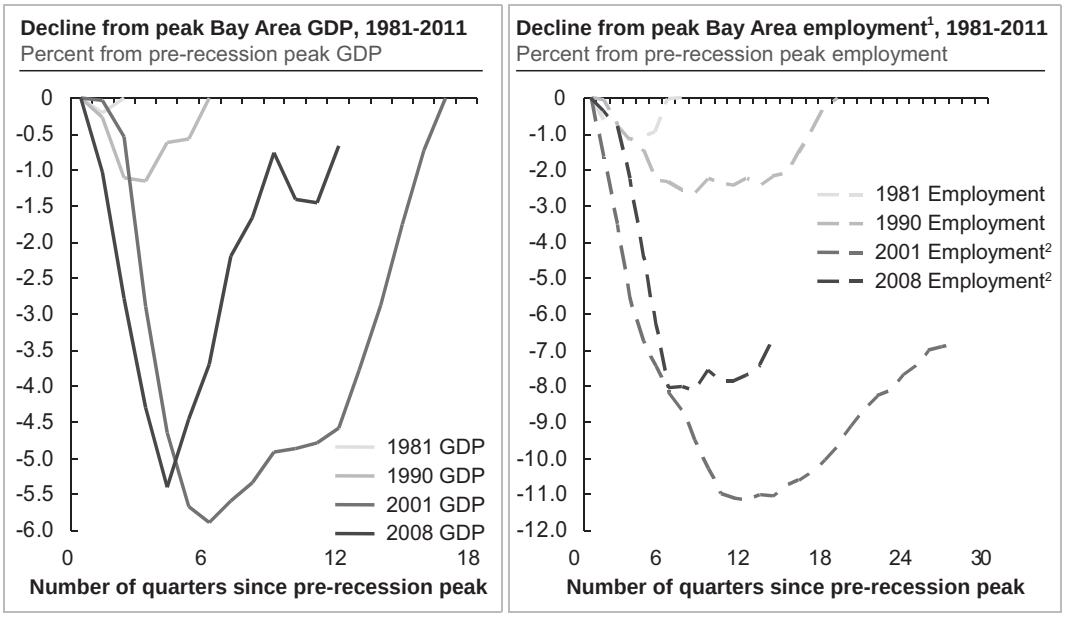
1 The National Bureau of Economic Research estimates that the recession began in December 2007. GDP returned to its pre-recession peak in December 2010

SOURCE: U.S. Bureau of Labor Statistics; U.S. Bureau of Economic Analysis; McKinsey Global Institute analysis

The picture for the Bay Area is even more severe. Employment has yet to recover from its pre-recession peak in 2001 and certainly has not recovered from its level prior to 2008 (*Exhibit 24*). Even if one removes the peak years of 2000–01 (which many argue were unsustainable in the dotcom bubble), employment had just recovered in 2007 before falling again. Thus the prospects of returning to "full employment" at a 5% unemployment rate are dim within the next five years.

Exhibit 24

In the Bay Area, employment is at its lowest level since the recession of 2001 and has yet to recover to its pre-recession peak.

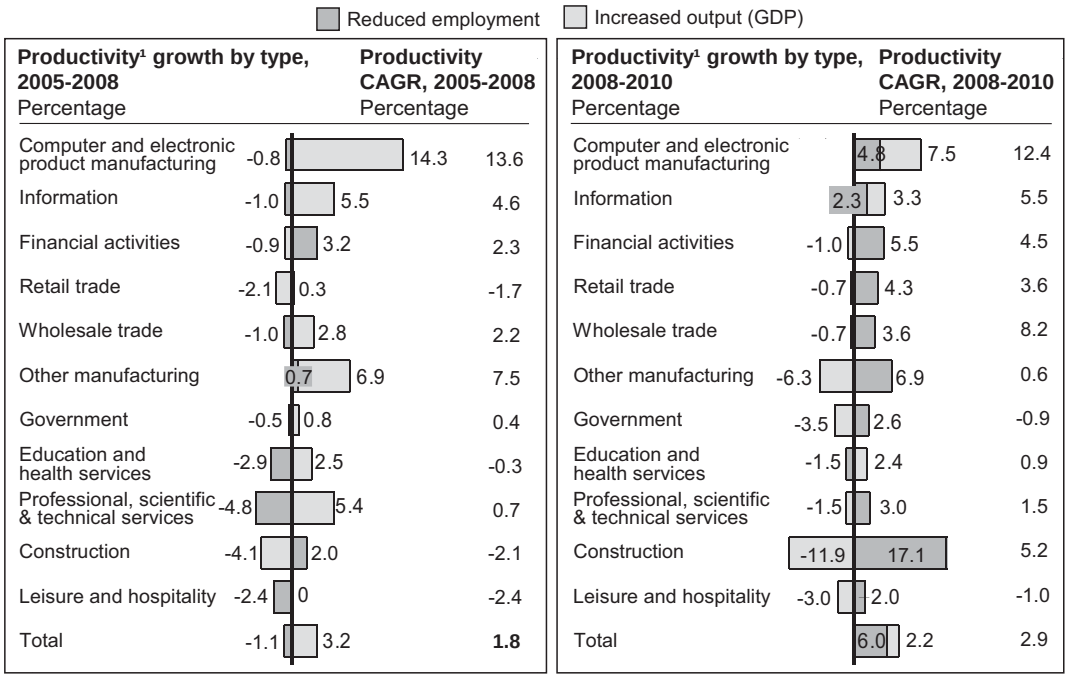


1 Total non-farm employment, seasonally adjusted
2 2001 Employment data starts from 2Q 2001 to 1Q 2008; 2008 Employment data is from 2Q 2008 t0 3Q 2011
SOURCE: Bureau of Economic Analysis Bureau of Labor Statistics, Moody's Analytics

These jobless recoveries imply that more and more employers are not re-hiring employees at previous levels as they grow out of recessions. Productivity gains are coming from reduced employment more than increased output using the same resources at hand. For the Bay Area, whereas increased output drove overall productivity gains from 2005–08, reduced employment has driven the majority of the region's strong productivity improvements from 2008–2010 (*Exhibit 25*). The information sectors driving the Bay Area's growth—computer and electronic product manufacturing, information and professional and scientific services—are not labor intensive and hence are not driving employment growth.

Exhibit 25

The Bay Area's productivity growth was mainly driven by increased output in 2005–2008 and by reduced employment in 2008–2010.



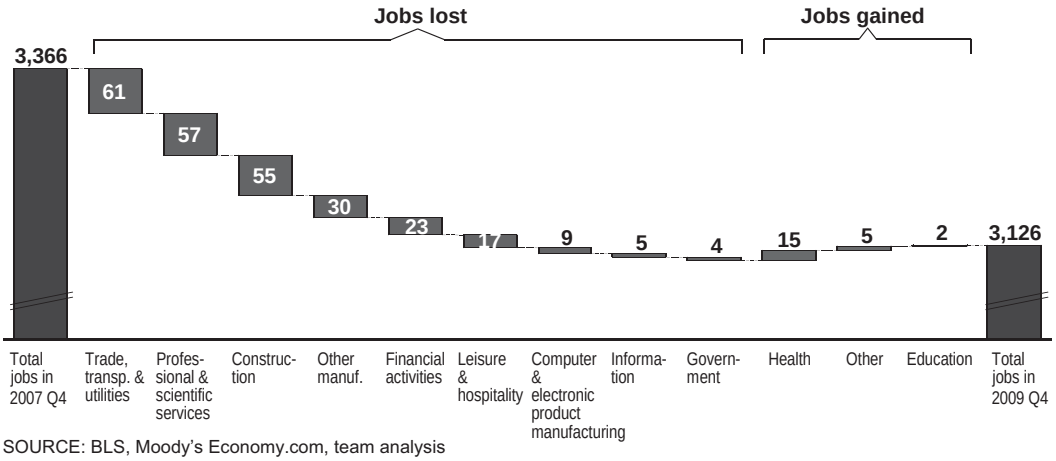
1 Productivity is defined as real GDP per employee
SOURCE: BEA, BLS, Moody's Economy.com, team analysis

During the recessionary period in 2008–2009, the Bay Area lost jobs across nearly all industries. In particular, job loss in the trade, professional services, and construction sectors totaled 173,000 (*Exhibit 26*). A few sectors—healthcare and education—actually added net jobs as demand for these services continued to rise.

Exhibit 26

The Bay Area lost jobs across nearly all industries from 2008–2009, especially in trade, professional services and construction.

Change in Bay Area employment by industry from 4Q 2007– 4Q 2009
Employment in thousands



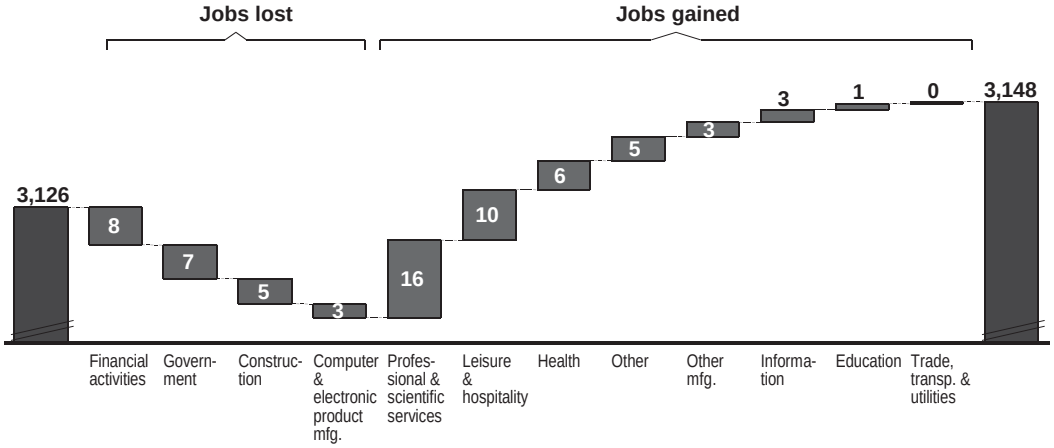
SOURCE: BLS, Moody's Economy.com, team analysis

The employment recovery in the Bay Area since 2009 has been led by professional and scientific services, leisure and hospitality, and health services (*Exhibit 27*). Several sectors—financial activities, government, construction, and computer and electronic product manufacturing—have continued to shed jobs. Significantly, computer and electronic product manufacturing has seen double-digit output growth over the past 5 years despite its declining employment. This sector perfectly exemplifies the simultaneous strength and challenges of the Bay Area economy: a high-tech, knowledge-based, strongly-growing sector that provides growth and income but with limited employment opportunities. As a result, in spite of its recent growth, the unemployment rate in the Bay Area remains stubbornly high and above that in most peer cities (*Exhibit 28*).

Exhibit 27

The employment recovery in the Bay Area has been led by professional services, leisure and hospitality, and health services.

Change in Bay Area employment by industry from 4Q 2009 – 4Q 2010
Employment in thousands

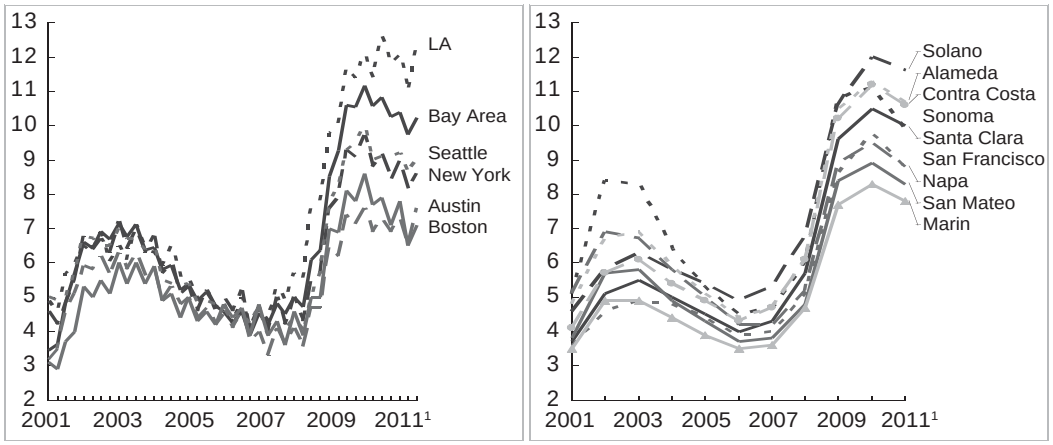


SOURCE: BLS, Moody's Economy.com, team analysis

Exhibit 28

Indeed, the employment rate in the Bay Area is far above that seen in most comparable peer regions.

Unemployment rate
Percent of workforce



1 Through August 2011
SOURCE: BEA, BLS, Moody's Economy.com, team analysis

In the Bay Area, the unemployment rate varies significantly by county, from a low of 7.8% in Marin County to a high of 11.6% in Solano County. Even as some counties struggle with unemployment, Santa Clara County—the home of Silicon Valley—posted the nation's highest job growth in 2011 at 3.2%.[4] Thus, while the tech industry is helping parts of the Bay Area economy, the East Bay and other areas that relied more heavily on blue collar jobs are not recovering as quickly.

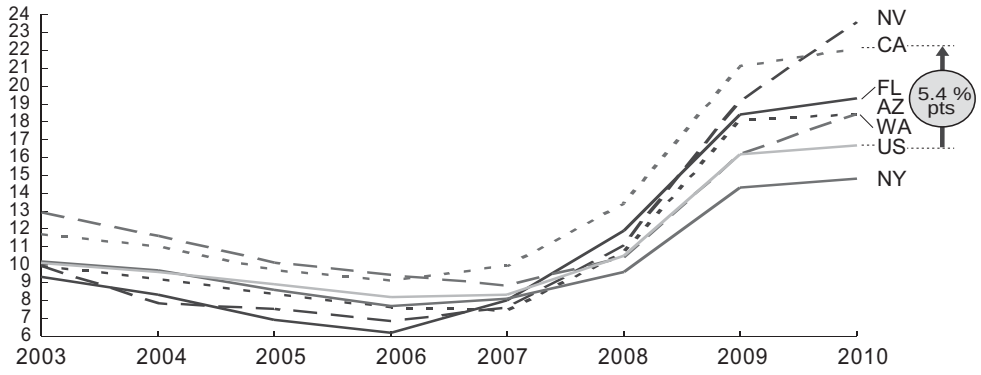
At the state level, the employment picture is even dimmer. The "U6" unemployment level in California stands at over 22%, more than five percentage points above the U.S. average (*Exhibit 29*). U6 is the broadest definition of unemployment that includes not only the unemployed, but also marginally attached workers, as well as part-time employed for economic reasons. It also accounts for "discouraged workers" who are no longer seeking a job. Hence, if one takes a broad definition of unemployment, more than one-in-five Californians is currently un- or under-employed.

Exhibit 29

U6 unemployment (which includes "discouraged workers") is over 22% in California—more than 5 percentage points above the national average.

U6[1] unemployment by state, 2006–2010

Percent of total labor force and marginally attached workers



1 U6: total unemployed, plus all marginally attached workers, plus total employed part time for economic reasons, as a percent of the civilian labor force plus all marginally attached workers

SOURCE: CPS March 2011 supplement, team analysis

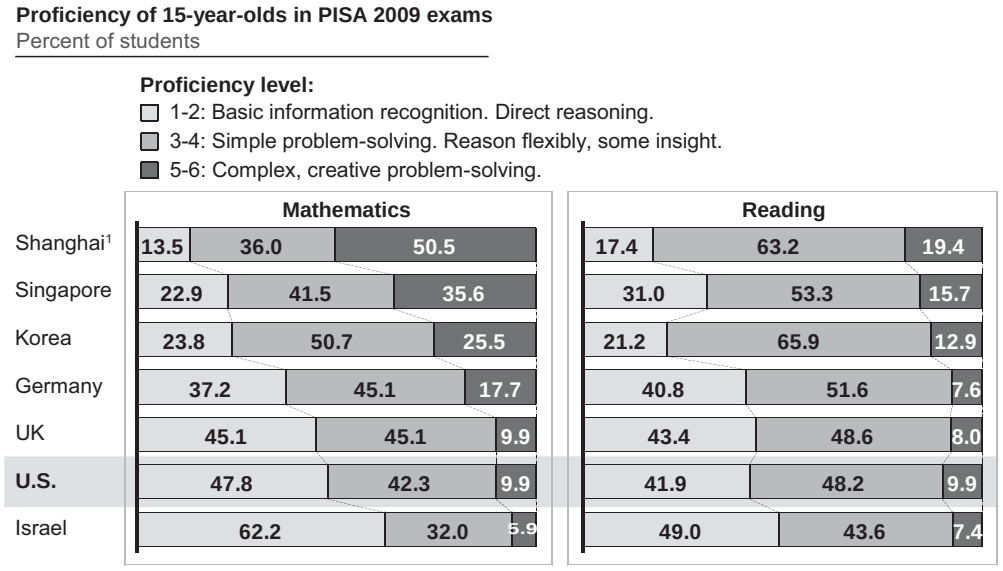
[4] San Jose Mercury News, "South Bay Leads Nation in Job Growth," 12/07/2011

Continued Challenges in Education

The need for education reform is among the most pressing and most discussed national issues; American teenagers continue to underperform relative to their international peers. A recent OECD analysis of the Programme for International Student Assessment (PISA) test shows that while only 10% of American 15-year-olds display complex, creative problem-solving skills, more than 25% of students in Korea, Singapore, and parts of China do so (*Exhibit 30*). These results are troubling because creative problem-solving skills will likely be essential for success in an increasingly competitive, knowledge-based global economy.

Exhibit 30

U.S. students are less proficient in mathematics and reading than international peers.

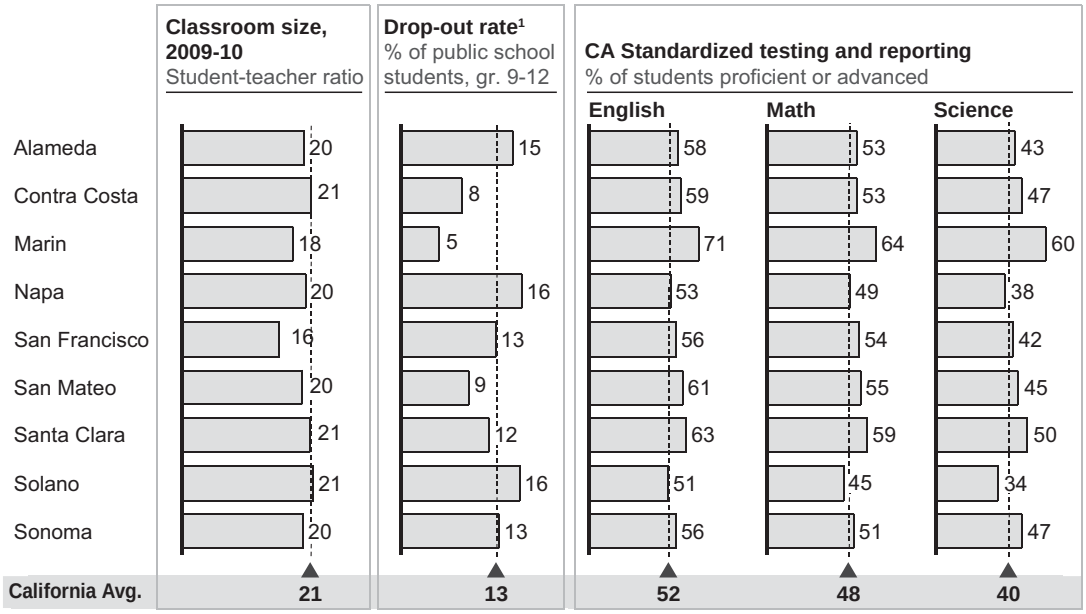


1 Results not available for all of China
SOURCE: OECD's PISA 2009, team analysis

The Bay Area is no exception to this pressing issue. Although there are varying results across the region's nine counties, on average they are in line with California overall. While Bay Area test scores in math, English, and science tend to be higher than state averages, dropout rates in a few counties are also a few percentage points higher (*Exhibit 31*).

Exhibit 31

Despite significant variation along a number of K–12 metrics, Bay Area counties on average are in line with California overall.



1 The 4-year derived dropout rate is an estimate of the percent of students who would drop out in a four year period based on data collected for a single year

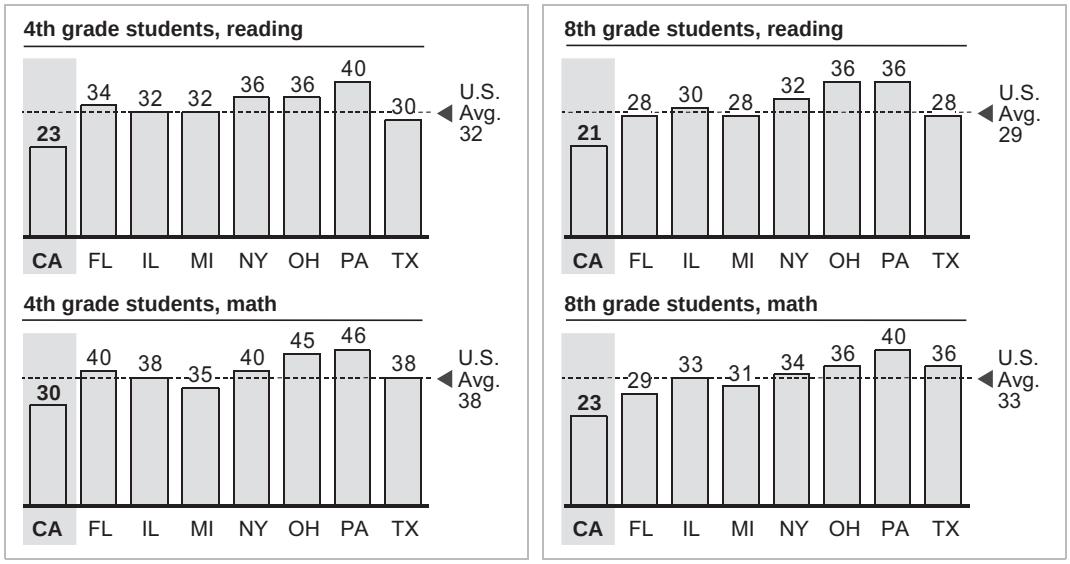
SOURCE: California Department of Education, team analysis

California scores well below the U.S. average in terms of 4th and 8th grade proficiency on standardized tests (*Exhibit 32*). The state frequently ranks in the bottom five in test scores. While test score results have improved slightly over the past few years, they have not closed the gap with the national average. Closing this gap is compounded by fiscal challenges. Funding levels for K–12 in California stood at $9,830 per student while the national average was $10,266 in 2010.[5] The threat of further teacher cuts and funding shortfalls in the education system is troubling.

Exhibit 32

California scores below the U.S. average in terms of 4th and 8th grade proficiency on standardized tests.

Students achieving scores at or above proficiency, NAEP 2009–2010
States with population > 10m
Percent



SOURCE: National Center for Education Statistics, NAEP, team analysis

[5] National Center for Education Statistics

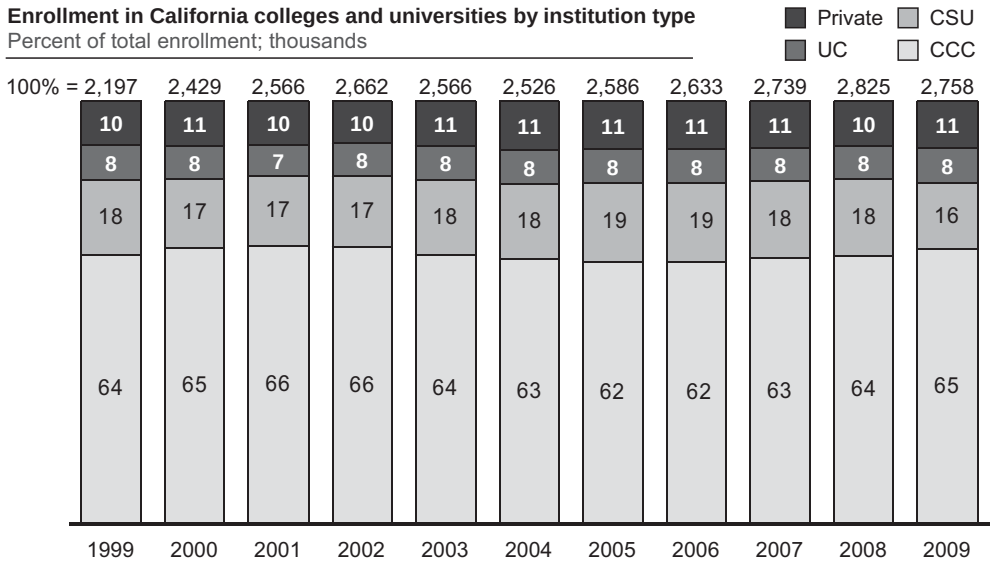
Funding Cuts in Higher Education

For decades, higher education has been one of the true strengths of California, and the Bay Area in particular. As identified in the first section of this report, Bay Area universities have more highly ranked graduate departments than any other region in the country, and four Bay Area universities rank in the top 20 nationally in R&D investment. This long history of excellence in higher education is one of the cornerstones of the region's innovation and productivity edge.

Much of California's success in higher education is associated with public institutions. In fact, public institutions provide roughly 90% of higher education in California (*Exhibit 33*). Enrollment in the three major systems—University of California (UC), California State University (CSU) and California Community College (CCC)—continues to rise, up from 2.2 million students ten years ago to 2.8 million students today.

Exhibit 33

Public institutions provide 90% of higher education in California.



1 2010 data is not yet fully available by institution type
SOURCE: California Postsecondary Education Commission

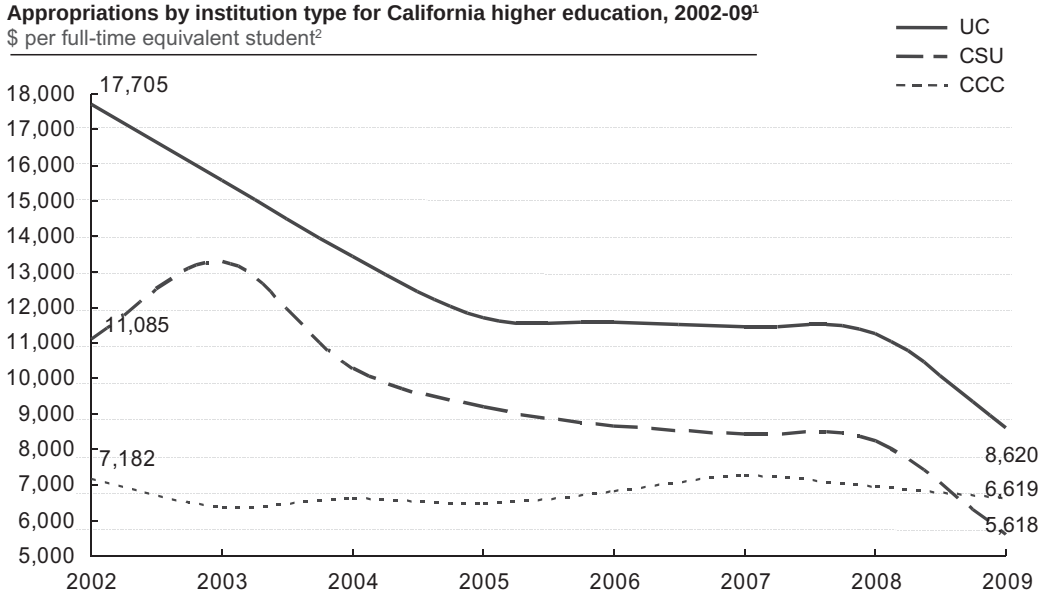
However, in spite of the nearly 30% rise in enrollment in the past decade, state funding for these schools has declined significantly. Sacramento has consistently dealt with budget shortfalls through cutting the amount it contributes to the state's higher education system. As a result, state support per full-time equivalent student has been cut by approximately 50% for both the UC and CSU systems since 2002 (*Exhibit 34*). Community colleges have also experienced funding cuts of 7.8%.

For better or worse, the burden now has shifted to students, with tuition today comprising 40% of total university costs in the UC and CSU systems, up from 25% in 2002.[6] While this percentage is still lower than the national average of 52%, the additional burden may make it difficult for many middle- to lower-income students to attend university.[7]

Exhibit 34

Public funding for UC schools has fallen 51% since 2002.

Appropriations by institution type for California higher education, 2002-09[1]
$ per full-time equivalent student[2]



1 Figures in 2002 dollars
2 FTEs: Full-time equivalent students. State funding is allocated on a full-time equivalent students basis
SOURCE: Shulock, N. et al, "Dollars and Sense",*Institute for Higher Education Leadership & Policy*. Sacramento, 2011. p. 14.

[6] Shulock, N. et al, "Dollars and Sense", *Institute for Higher Education Leadership & Policy*. Sacramento, 2011. p. 16-17

[7] ibid.

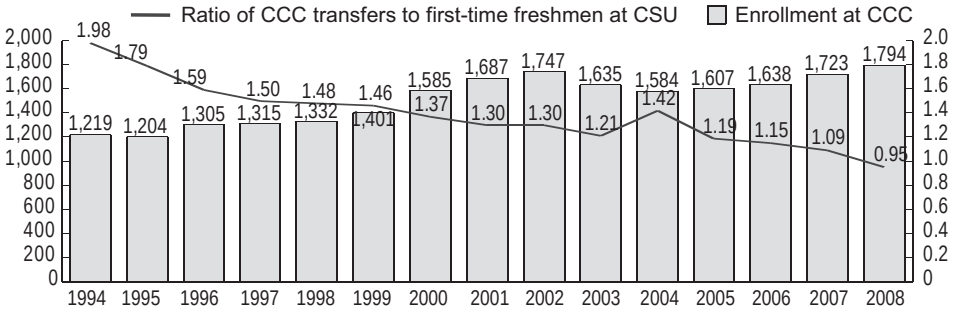
Conversely, in the California Community College system, the share of education and related spending that is covered by net tuition revenue has climbed from 7% to 12%, perhaps reflecting the view that community colleges represent a major vehicle for social mobility. Indeed, enrollment has increased in the CCC system by nearly 50% over the past 15 years, up from 1.2 million in 1995 to 1.8 million in 2010.

However, the transfer rate from community colleges to four-year schools has declined significantly. For example, the ratio of CCC transfers to first-time student status at CSU schools declined from 1.98 in 1994 to 0.95 in 2008 (*Exhibit 35*). Hence, although CCC enrollment has increased by 50%, the number of transfers from community colleges has stagnated at 50,000 per year.[8]

Exhibit 35

For community colleges, enrollment has increased nearly 50% over the past 20 years, but transfers to CSUs have dropped significantly.

California Community College enrollments and transfer rates to CSU schools[1]
Thousands; ratio of CCC transfers to first-time students in CSU schools



1 This is the ratio of transfer students to first-time freshmen at CSU. The falling ratio represents a falling transfer rate to CSUs

SOURCE: California Postsecondary Education Commission, PPIC "Higher Education in California", California Competes, team analysis

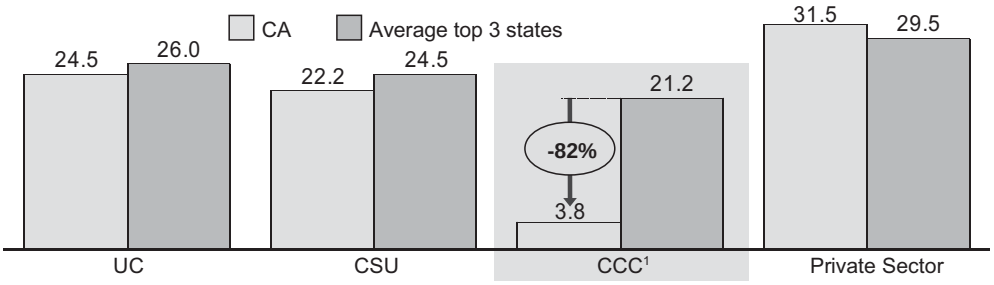
[8] California Postsecondary Education Commission, PPIC "Higher Education in California", California Competes, p. 11

Furthermore, while UC and CSU graduation rates are in line with those from other top performing states, the CCC system is currently only graduating 3.8 students per 100 full-time equivalent students with undergraduate credentials. While this may reflect varied reasons why students attend community college (including personal education and short-term retraining), it also suggests underperformance and inefficiency in the use of limited public education resources. (*Exhibit 36*).

Exhibit 36

While the UC or CSU graduation rates compare well against top states, the CCC graduation rate is extremely low.

Undergraduate credentials awarded per 100 full-time equivalent students
Percent of population



1 Includes only vocational/technical certificates and degrees
SOURCE: California Competes, PPIC, CPEC, team analysis

Challenges to Infrastructure

To maintain and improve its status as a major economic hub and support a 21st century economy, the Bay Area needs to upgrade its infrastructure. Bridges, tunnels, roads and mass transit systems are aging and in some cases inefficient. However, the Metropolitan Transportation Commission (MTC) projects that funding shortfalls across roads and mass transit systems will be close to $50 billion over the next 25 years (*Exhibit 37*). The MTC already spends 80% of its budget on basic operations and maintenance of existing infrastructure; that percentage is projected to increase over time.[9] Given the current statewide budget shortfalls and the difficulty in issuing new bonds to start new infrastructure projects, the Bay Area faces a real challenge over the coming decades in keeping its infrastructure up-to-date. Further adding to the challenges is the likelihood of a major earthquake that would cause both direct physical damage and flooding if levees fail.

Congestion remains a perennial problem. At 29 minutes per commuter, San Francisco is tied for third longest average commute time in the country behind Chicago (34 minutes) and New York (39 minutes) (*Exhibit 38*). Annual hours of traffic delay for San Francisco is 50 hours per peak traveler, a level comparable to other major cities but well above the national average of 34 hours; the cost of congestion per automobile commuter is $1,019 in San Francisco versus $713 nationwide.

Easy-to-access, high quality mass transit typically is the best way to deal with congestion. However, due to funding shortfalls, many of the Bay Area's transit systems such as BART (Bay Area Rapid Transit) and Caltrain have recently cut back service levels . For example, in each of the last two years, Caltrain has cut back the number of trains it operates by about 10%.[10] To keep itself operating, Caltrain has also been forced to use some funding dedicated to capital projects for maintenance and operations.

Part of the difficulty with Caltrain is that it lacks a strong cross-jurisdictional charter to fund its operations across the three counties in which its trains operate. Governed by the Peninsula Corridor Joint Powers Board (PCJPB), Caltrain serves San Francisco, San Mateo, and Santa Clara counties. Each year, Caltrain appears on the verge of shutting down as the three counties disagree over how much each needs to contribute to the system's operation. While Caltrain can raise prices on passengers, ticket fares tend to make up less than 50% of total operating costs. Alternate funding sources are required, but given the cross-jurisdictional nature of the system, it would be difficult to coordinate a ballot measure across all three counties. Additionally, state and federal funds have been on the decline. The need for regional coordination is acute but remains challenging to implement.

[9] Metropolitan Transportation Commission

[10] Caltrain website; www.caltrain.org

Exhibit 37

Maintaining the transportation system largely faces shortages in funding.

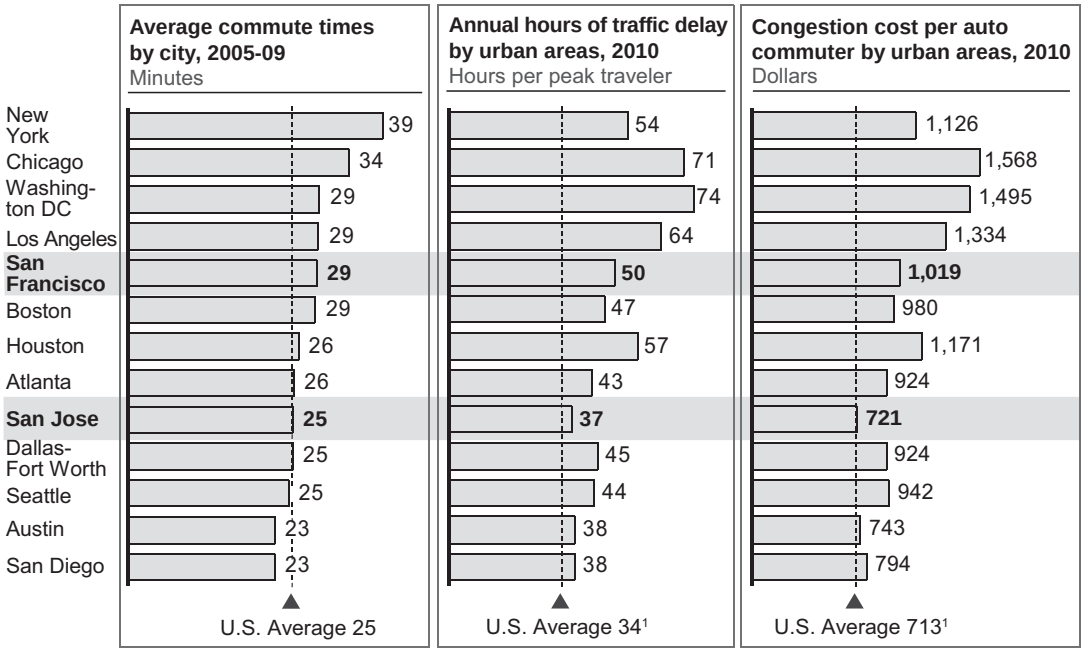
Transportation 2035 funding levels
$ billions of year-of-expenditure dollars

	Total need	Committed funds	Discretionary funds	Shortfall
Local streets and roads	34.5	16.3	7.0	11.2
Transit capital	40.3	16.7	6.4	17.2
Transit operations	98.0	90.0	-	8.0
State highways	17.0	4.0	-	13.0

SOURCE: California MTC

Exhibit 38

While long commutes and traffic delays in the Bay Area are still common, they are comparable to those in domestic peers.



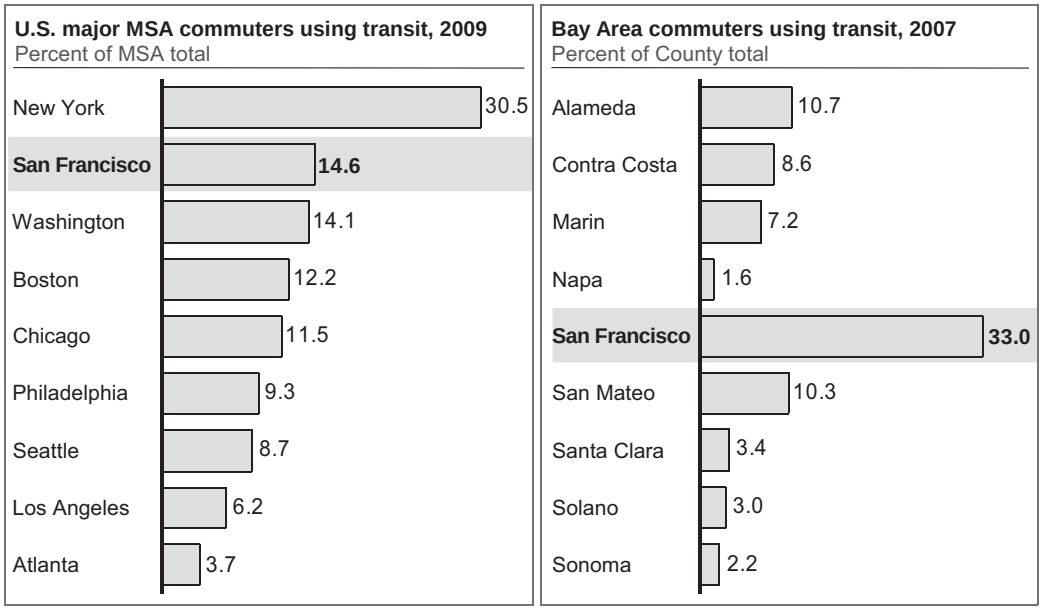
1 U.S. average is the average of traffic delay in 439 urban areas

SOURCE: US Census, Bureau of Transportation Statistics, Cities Ranked and Rated, Texas Transport Institute 2010 Annual Urban Mobility Report; Metropolitan Transportation Commission, team analysis

BART and the San Francisco Municipal Transportation Agency (Muni) are facing a combined $16.8 billion capital shortfall in the next 25 years.[11] San Francisco County is ahead of the rest of the Bay Area in public transit use, with 33% of commuters using BART or Muni; 14.6% of commuters use public transit in the broader San Francisco Metropolitan Statistical Area (MSA), second only to New York (30.5% of commuters) (*Exhibit 39*).

Exhibit 39

While the San Francisco MSA has the 2nd highest percentage of commuters using public transit, San Francisco is the only county in the Bay Area with a significant use of public transit.



SOURCE: U.S. Census, MTC

Nevertheless, the perception in San Francisco remains that public transit is not as convenient as in other large cities such as New York or Chicago. In fact, according to the 2007 U.S. census, since the 1960s the percentage of Bay Area commuters using public transit has decreased steadily.[12] This trend is precisely the opposite of what one would expect and hope for in an increasingly urban, developed region. While other competing global regions like Tokyo and Shanghai have highly efficient subways and high-speed rail systems, San Francisco and the Bay Area seem to be regressing. Plans for a high-speed rail system have been sidetracked due to budget concerns, and the expansion of light rail in San Francisco from the SOMA district to downtown is delayed due to a disagreement on where the final station will be located.

[11] See Appendix A., Exhibit 57.

[12] 2007 U.S. Census

Given the deficit of infrastructure investment in the region and the state, public-private partnerships (P3) could be used more extensively to develop key infrastructure, while saving public resources, improving service, and creating jobs in the hard-hit construction sector. The rebuilding of the Presidio Parkway (Doyle Drive) from the Golden Gate Bridge into San Francisco is a current example. Other possible applications include the Metropolitan Transportation Commission's proposed High-Occupancy Toll (HOT) lanes. Public-private partnerships aren't limited to transportation, however, and can also be used in projects such as schools, hospitals, university housing, and water treatment.

A Challenging Business Climate

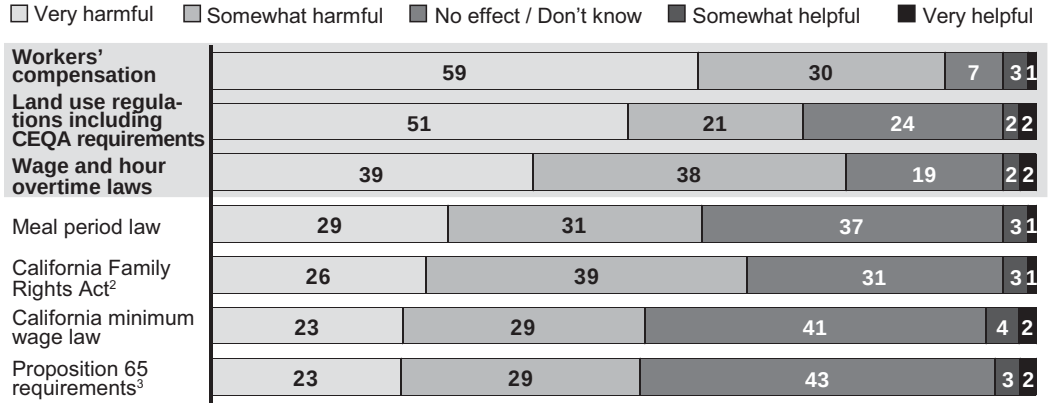
The Bay Area remains a great place to do business. Given its diversity of top firms, its highly-skilled labor force and its role as an innovation hub, the region both attracts and generates new and growing businesses. However, in terms of the cost of doing business and its regulatory environment, California—and hence the Bay Area—is consistently near the bottom of national rankings.

Employers are consistent in identifying the core issues that contribute to this challenging environment: workers' compensation laws, the California Environmental Quality Act (CEQA), and wage and overtime laws (*Exhibit 40*).

Exhibit 40

California employers find regulations including workers' compensation, CEQA, and wage and overtime laws the most challenging.

Survey results: How will these laws and regulations impact your future decisions to make investments or keep workers in California?[1]



1 345 respondents from various industries responded to the California regulatory and competitiveness survey
2 California Family Rights Act includes California medical leave law
3 Safe Drinking Water and Toxic Enforcement Act of 1986
SOURCE: California Manufacturers and Technology Association and National Federation of Independent Business 2011 Survey, California Office of Environmental Health Hazard Assessment

In recent years, California has reduced the costs to employers of insuring for workers' compensation. A recent study shows that while the cost of insuring for workers' compensation for employers in California was 236% of the national average in 2004, today it stands at around 131% of the average (*Exhibit* 41). However, at $2.68 per $100 of payroll, California remains the second highest state in workers' compensation costs (behind Illinois).

Exhibit 41

While workers' compensation premium rates in California are among the highest in the U.S., the rates have decreased significantly over the years.

Workers' compensation premium index rates

State	Index rate, 2010[1] $ per $100 payroll	Percent of study mean	Index rate, 2004 $ per $100 payroll	Percent of study mean	2004-10 CAGR Percent
Illinois	3.05	149	2.65	103	2.37
California	**2.68**	**131**	**6.08**	**236**	**-12.76**
Texas	2.38	117	3.08	119	-4.21
New York	2.34	115	2.97	115	-3.90
Georgia	2.08	102	2.14	83	-0.47
Washington	2.04	100	2.20	85	-1.25
Massachusetts	1.54	75	1.70	66	-1.63

1 Premium rate indices are calculated based on data from 51 jurisdictions, for rates in effect as of Jan. 1, 2010
SOURCE: Oregon Department of Consumer and Business Services

CEQA reform remains a central issue for the Bay Area and California. While its intent—protecting the natural environment—is important and enjoys broad support, some feel that CEQA has been responsible for pushing urban sprawl into the Central Valley instead of creating denser urban areas. Moreover, because CEQA allows anyone to sue against new construction projects, reports find that new construction in California can take more than 12 months longer than in other states. These lawsuits are often unrelated to the environmental merits of a project, and are used instead as blocking or delaying tactics. All this adds to project costs, and sometimes can kill projects outright. This poses a real challenge to businesses in California, since the time to build new facilities is much shorter in other states with similar environmental protection laws.

As for labor statutes, California has similar minimum wage laws and weekly overtime laws as other states; minimum wage is $8.00, tied for the eighth highest nationally. Weekly overtime rules require 1.5 times pay after 40 hours, in line with over 20 states. However, California is the only state that also has daily overtime laws, requiring overtime after 8 hours and double time pay after 12 hours (*Exhibit 42*). Some employers find this challenging in businesses where 3 or 4 days of work with longer shifts makes more sense than five 8-hour workdays.

Exhibit 42

California has less flexible overtime laws compared to other states.

Minimum wage and overtime laws by state

Rank	State	Minimum hourly wage ($)	# of hours per day for 1.5x minimum wage (Hours)	# of hours per day for 2x minimum wage (Hours)	# of hours per week for 1.5x minimum wage (Hours)
1	Washington	8.67	0	0	40.00
3	Illinois	8.25	0	0	40.00
8	**California[1]**	**8.00**	**8.00**	**12.00**	**40.00**
8	Massachusetts	8.00	0	0	40.00
20	New York	7.25	0	0	40.00
20	Texas	7.25	0	0	0
44	Georgia	5.15	0	0	0

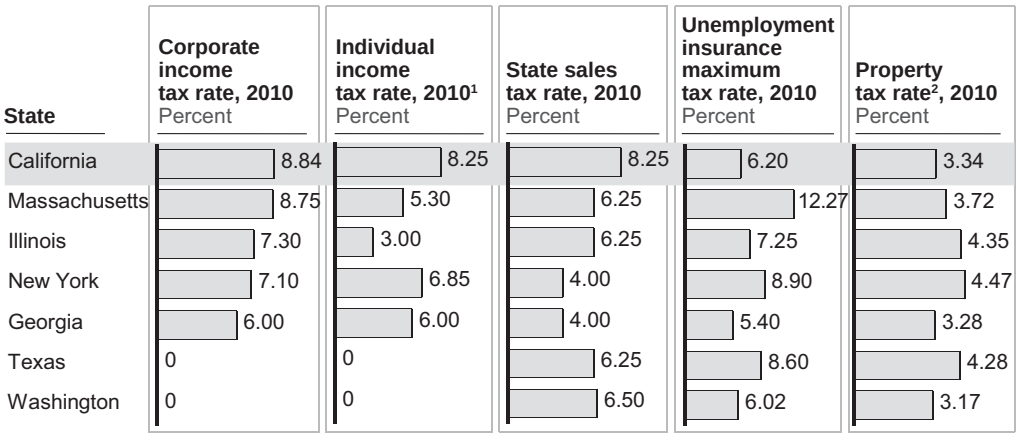
1 For California, the overtime laws also include: on the 7th day, first 8 hours 1.5x, over 8 hours 2x the minimum wage
SOURCE: United States Department of Labor

The corporate tax rate in California at 8.84% is the highest in the country (*Exhibit 43*). Similarly, the individual income tax rate (8.25% for a median income of $40,000) and the state sales tax rate (8.25%) are the highest in the country. This increases burdens on both businesses and employees who reside in California. In contrast, property taxes are on average 3.34%, much lower than in peer states such as Massachusetts (3.72%), Illinois (4.35%), and New York (4.47%).

Exhibit 43

High state taxes make the Bay Area less cost-competitive vis-à-vis comparable locations in other states.

Tax rates as of July 2010



1 Individual income tax rate consists of the tax rates on income of $40,000
2 Property tax collections as a percentage of income
SOURCE: Tax Foundation: 2011 State Business Tax Climate Index report

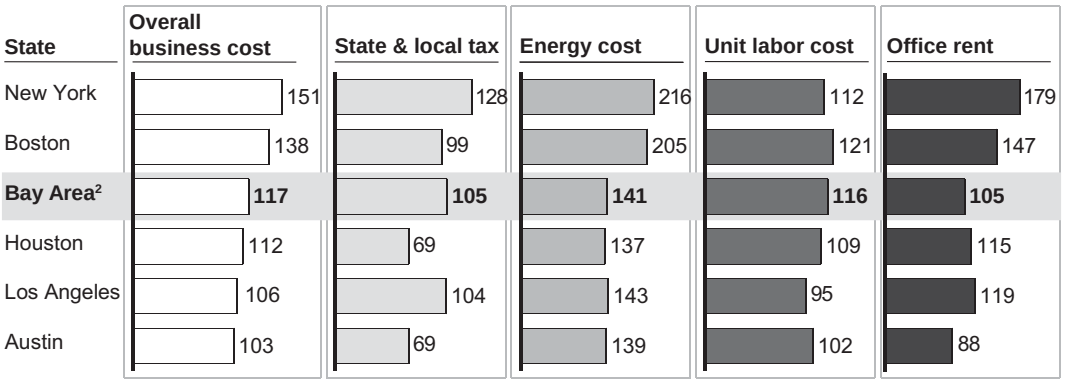
Given the state's fiscal situation, simply cutting taxes is probably not feasible. However, tax reforms that shift the tax burden in ways that reflect how many other states operate could potentially improve the business environment without undermining the state's revenue base.

These regulations and challenges are statewide issues that are not unique to the Bay Area, but are common to all of California. However, successful resolution of these issues can help improve the region's business environment. At the local level, streamlined permitting can reduce time and cost for the entrepreneurs and small businesses that are responsible for most new job creation. One positive development is that the cost of doing business has actually improved in the Bay Area over the past few years. Whereas the Bay Area was second in terms of cost of doing business 5 years ago, today it stands at 117% of the U.S. average, third behind Boston (138%) and New York (151%) (*Exhibit 44*). Commercial real estate rent in San Francisco at $37 per square foot is significantly cheaper than many of its global peers, including London, Shanghai, Singapore and New York (*Exhibit 45*).

Exhibit 44

The Bay Area's cost of doing business is comparable to its peer regions in the U.S., but higher than the national average.

Relative costs of doing business by MSAs, 2009
MSA index as compared to the U.S. average[1]

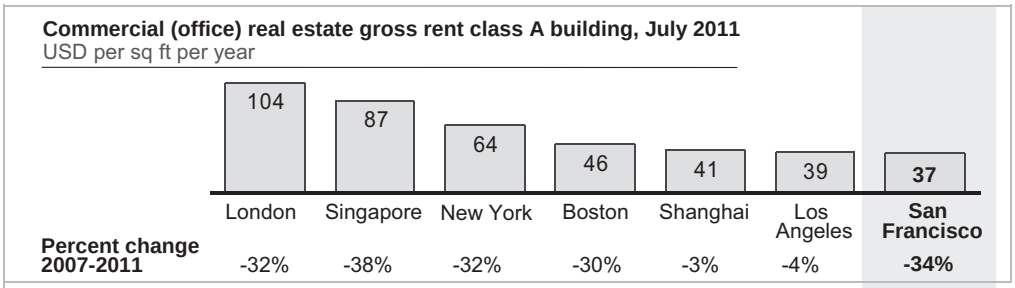


1 2009 MSA business costs indexed to 100 for US average
2 The Bay Area includes San Francisco, San Jose, and Oakland MSAs; Bay Area's overall business cost is the average of the costs in the three MSAs
SOURCE: U.S. Cost of doing business: Costs fall in 2009, Moody's Analytics

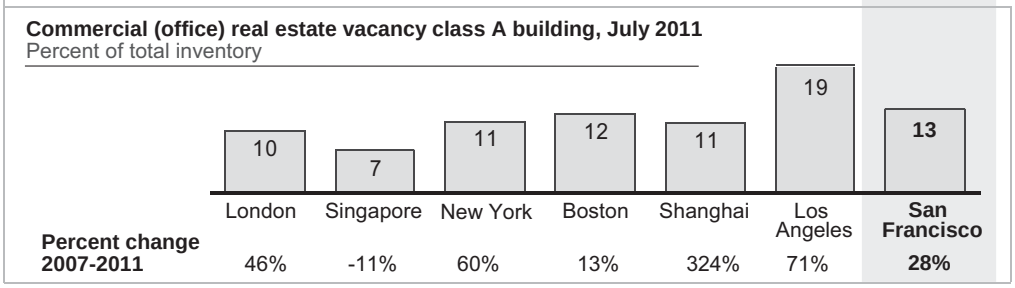
Exhibit 45

Low commercial rent and available real estate could help attract business to the Bay Area.

Commercial (office) real estate gross rent class A building, July 2011
USD per sq ft per year



Commercial (office) real estate vacancy class A building, July 2011
Percent of total inventory



SOURCE: Colliers, Team analysis

Cost of Living High but Improving

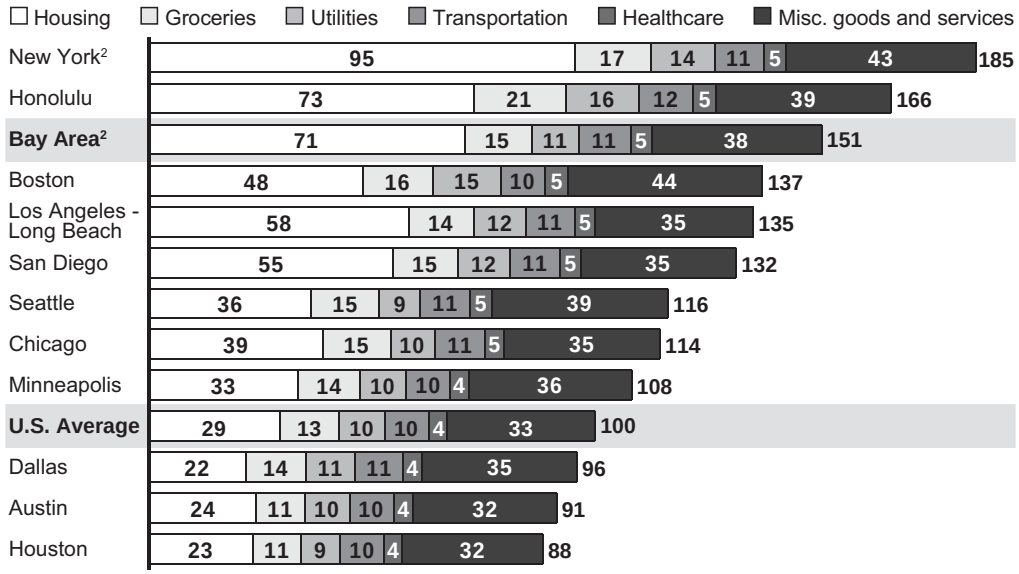
Cost of living in the Bay Area, driven mainly by housing, continues to be a challenge. The region is the 3rd most expensive place to live in the U.S., after New York and Honolulu (*Exhibit 46*). Its cost of living index is 151 benchmarked against the U.S. average at 100.

However, the Bay Area has a relatively low cost of living compared to global peer cities. According to Mercer's Worldwide Cost of Living 2011 survey, the Bay Area does not rank among the global top 50 for high cost of living. In contrast, many of the Bay Area's peers ranked among the top 50, including Tokyo (ranked #2), Zurich (#7), Singapore (#8), London (#18), Shanghai (#21), and New York (#32).

Exhibit 46

The Bay Area is the 3rd most expensive place to live in the U.S., after only New York and Honolulu.

Cost of living index by MSAs, 2Q 2011
MSA index as compared to the U.S. average[1]



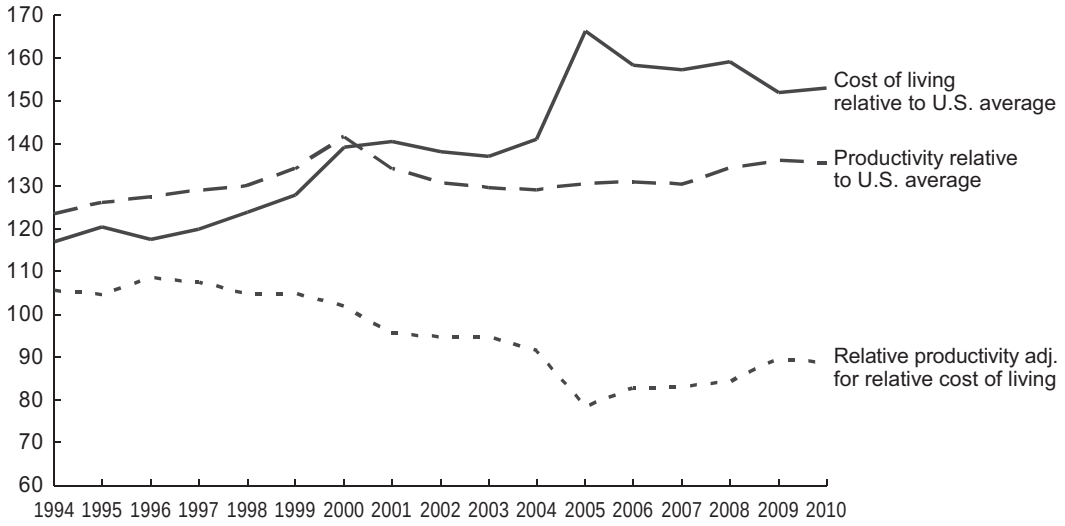
1 Indexed to 100 for U.S. average
2 New York includes Brooklyn, Manhattan, and Queens urban areas; the Bay Area includes Oakland, San Francisco, and San Jose urban areas
SOURCE: ACCRA cost of living index

In fact, in terms of affordability, the Bay Area has improved over the past few years. The region's cost of living index surpassed the region's productivity index in 2000; since 2005, however, the gap between cost of living and productivity has started to narrow, indicating improved affordability (*Exhibit 47*).

Exhibit 47

While the Bay Area's cost of living index has surpassed its productivity index, since 2005 the gap has started to narrow.

Cost of living index in the Bay Area[1], 1994-10
MSA index as compared to the US average[2]

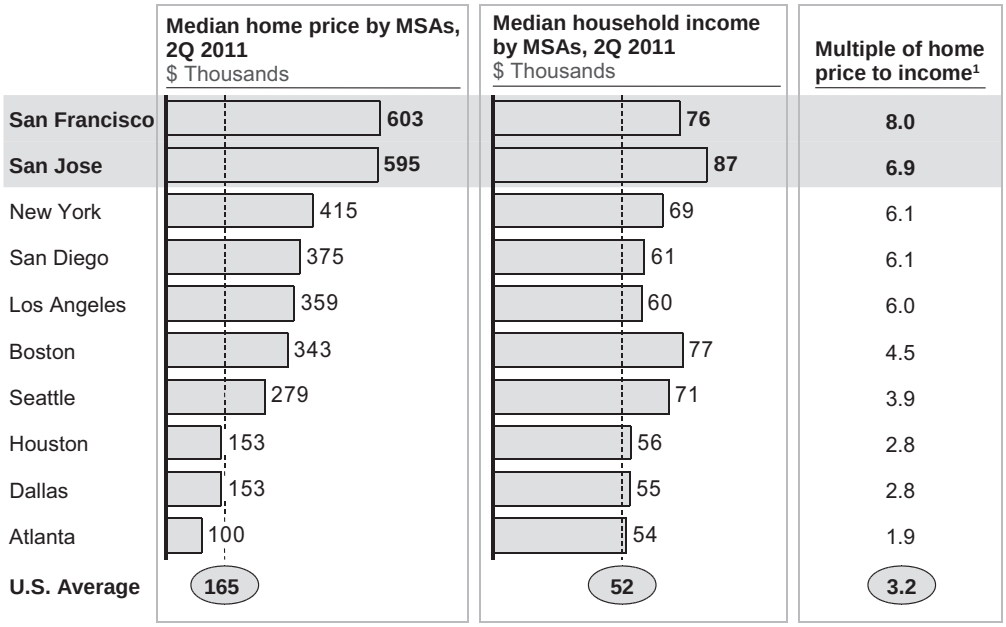


1 The Bay Area includes Oakland, San Francisco, and San Jose MSAs
2 Indexed to 100 for U.S. average
SOURCE: ACCRA cost of living index, Moody's Economy.com, team analysis

The largest driver of the Bay Area's cost of living is housing. Median home prices in San Francisco ($603,000) and San Jose ($595,000) are the highest in the country; the multiples of the average home price to average income in those two cities are also the highest in the country (*Exhibit 48*). In San Francisco, the average home is 8.0 times average income, whereas the average home across the United States is only 3.2 times average income.

Exhibit 48

Bay Area homes are still among the most expensive in the country.



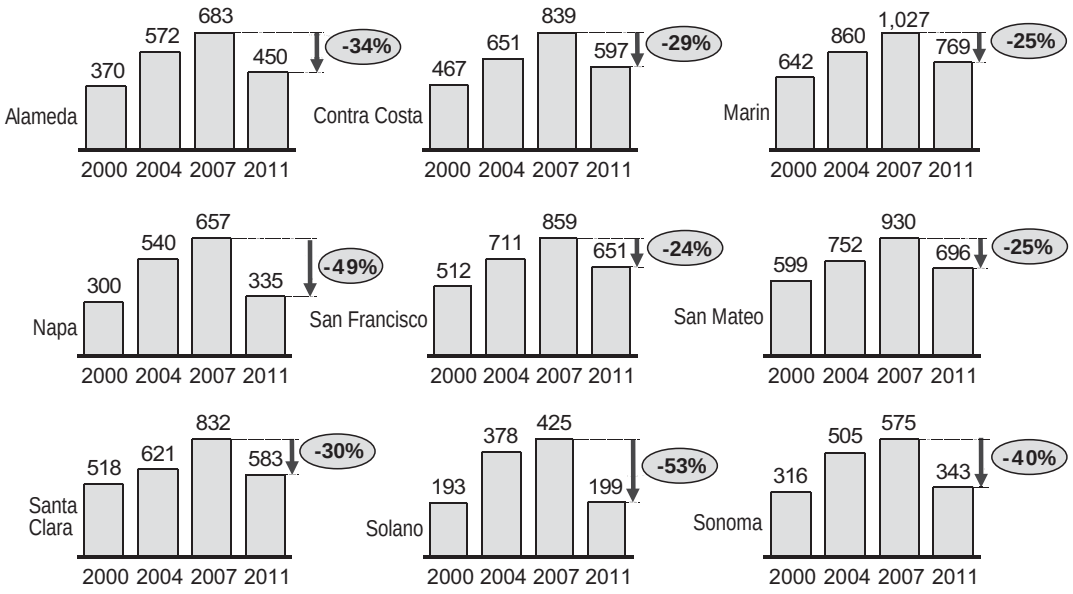
1 Defined as median cost of a house divided by the median income
SOURCE: National Association of Realtors, Moody's Analytics, team analysis

Recently, home prices have fallen across all nine Bay Area counties, although to varying degrees (*Exhibit 49*). While San Francisco has seen a 24% drop in real estate prices since the 2007 peak, the median home price has dropped by 49% in Napa County over the same period. Nevertheless, the drop across the board is welcome—even though San Francisco still has the highest ratio in the nation of median home price to income at 8.0, that ratio had stood at 13.5 in 2005.[13]

Exhibit 49

Housing prices have declined across all counties in the Bay Area.

Median home prices in Bay Area counties
$ Thousands[1]



1 For 2011, data represents Dec 2011 median home price estimate
SOURCE: National Association of Realtors, Moody's Analytics, team analysis

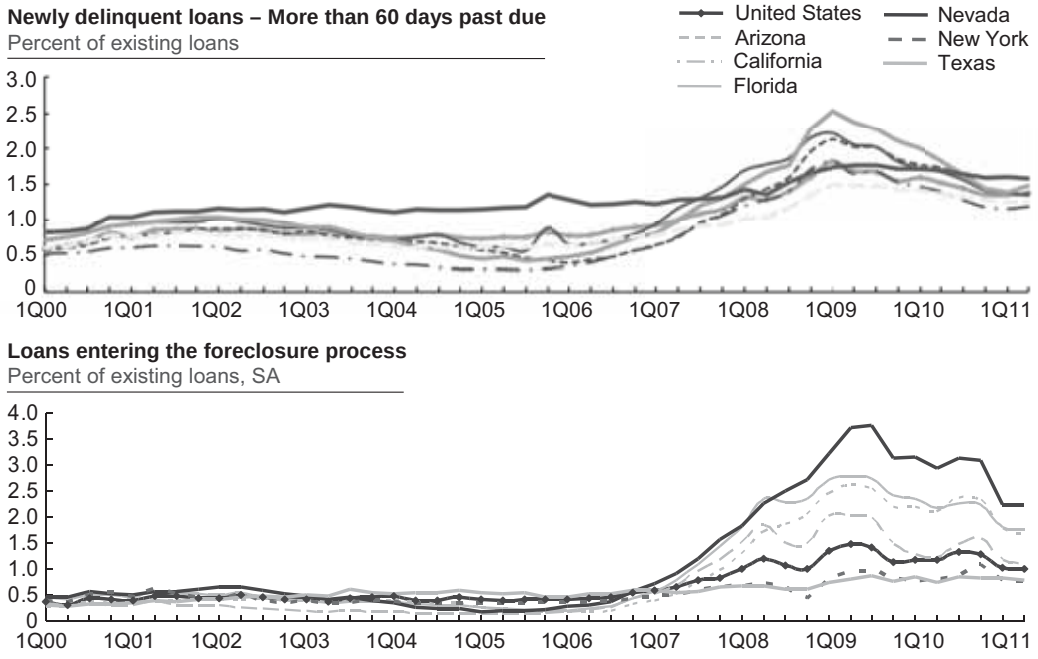
This will benefit those who are looking to buy or are moving to the region. Unfortunately, the lower home prices also reflect a drop in demand for housing. High unemployment and high levels of foreclosures have created an excess supply of housing in many counties; many people in the Bay Area can no longer afford the homes they were able to purchase only a few years ago.

[13] National Association of Realtors

Fortunately, the rate of foreclosure in the region—as in the rest of the country—has begun to slow.[14] During the depths of the Great Recession in the first half of 2009, the quarterly foreclosure rate in California peaked at just over 2%; it has since dropped closer to 1%, (*Exhibit 50*). And while California remains slightly above the national average, other states that were hard-hit by the recession, such as Nevada and Florida, have significantly higher foreclosure rates.

Exhibit 50

Foreclosure and delinquency rates, which rose sharply leading up to 2009, have slowed.



SOURCE: Mortgage Banker's Association: National Delinquency Survey, Moody's Analytics, team analysis

[14] Recent evidence, however, suggests that foreclosure rates may again be on the rise.

III.
Improving Regional Focus and Coordination

Parts of the Bay Area economy—especially innovation sectors—are once again thriving and leading the nation in growth and productivity. Still, the Bay Area economy certainly has a long way to go for a full recovery from the Great Recession, and has a number of perennial challenges that are intensifying. Problems persist in unemployment, the business environment, education, and infrastructure. The region must look more to its own leadership and resources to address these challenges. Further, given the continuing political and budgetary challenges in Sacramento and Washington, the region must find a way to take the initiative and act as a more focused, integrated unit.

This has historically been a challenge for the Bay Area. The region consists of nine counties and over one hundred distinct cities. The "local" nature of many of these communities has made regional planning and coordination difficult. While there are a number of regional agencies such as the Metropolitan Transportation Commission (MTC), the Association of Bay Area Governments (ABAG) and the San Francisco Bay Conservation and Development Commission (BCDC), because each has its unique function, regional land use and transportation coordination and economic planning remains challenging.

The concept of "regional governance" has long been a part of the Bay Area conversation. In the early 1990s, "Bay Vision 2020" had attempted to consolidate separate regional bodies into a single entity but ultimately the state legislature did not approve it. More recently, a Joint Policy Committee composed of representatives of the four regional agencies was created to improve coordination, but with very limited resources or authority. The FOCUS program of ABAG and MTC represents the region's best effort to date to bring more consistency to regional planning.

As part of the research for this report, the team interviewed about twenty local leaders on the topic of "regional governance" and looked at other regions around the country that had some form of regional governing entities.[15]

Interestingly, we found that regional coordination need not be another layer of government, but can vary in its form and purpose. Cross-jurisdictional collaboration can be as simple as shared services between two towns or as complex as full land use and economic development planning across an entire region. Governance structures thus vary in the number of parties involved and in the number of governing issues (e.g., safety, infrastructure) they cover, providing a matrix on how to think about different government

[15] The team looked at Portland, Denver, St. Paul-Minneapolis, Shanghai, and London.

bodies (*Exhibit 51*). Different types of government services tend naturally to fall into different quadrants of this matrix (*Exhibit 52*). For example, public safety such as police or fire departments falls naturally into shared services between 2 or 3 towns, while mass transit systems require collaboration and sharing of costs across the entire region.

Exhibit 51

Regional governance models vary by the number of governments involved and the number of governance issues they cover.

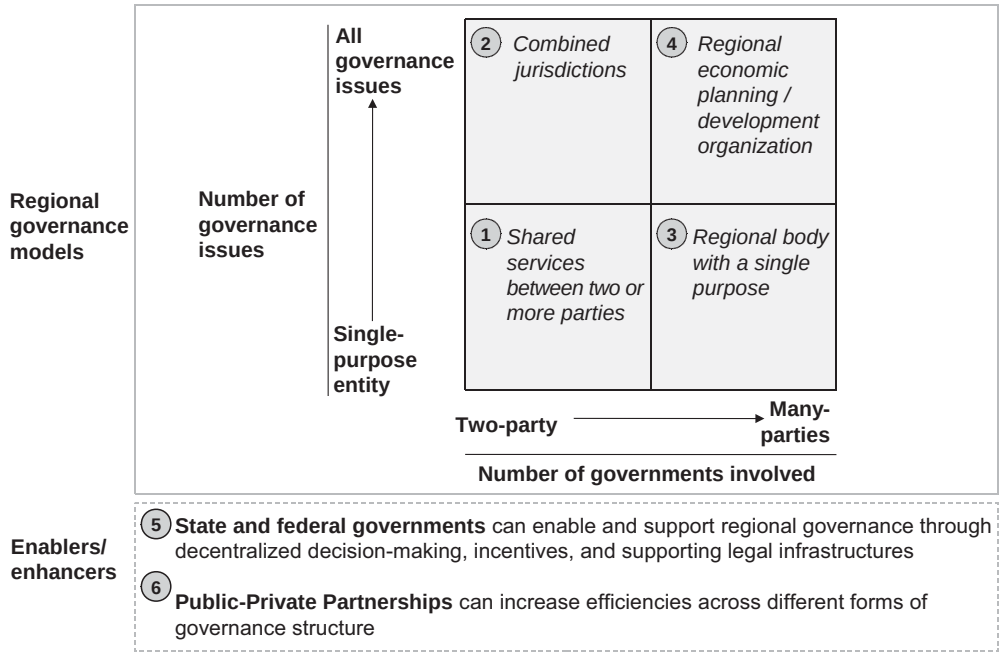
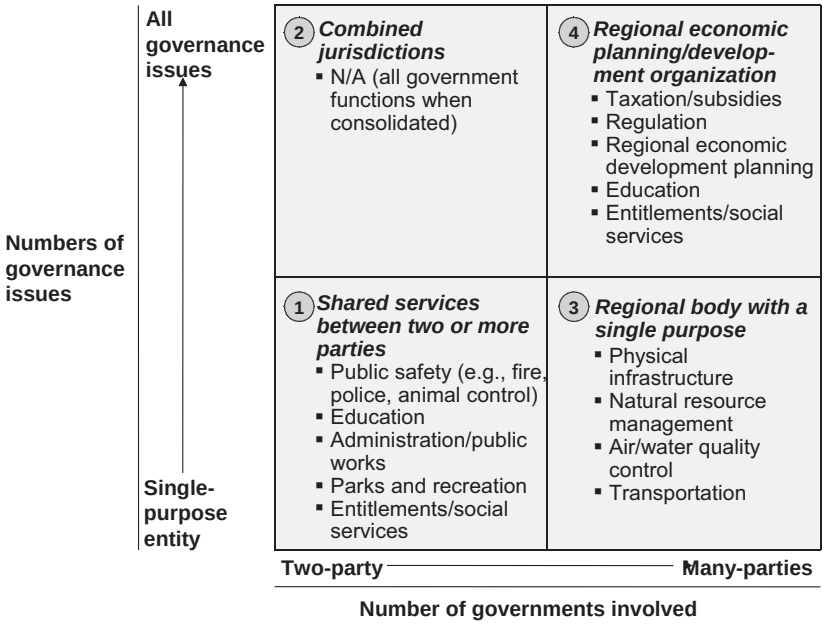


Exhibit 52

Different government services tend to fall naturally into one of the four quadrants.

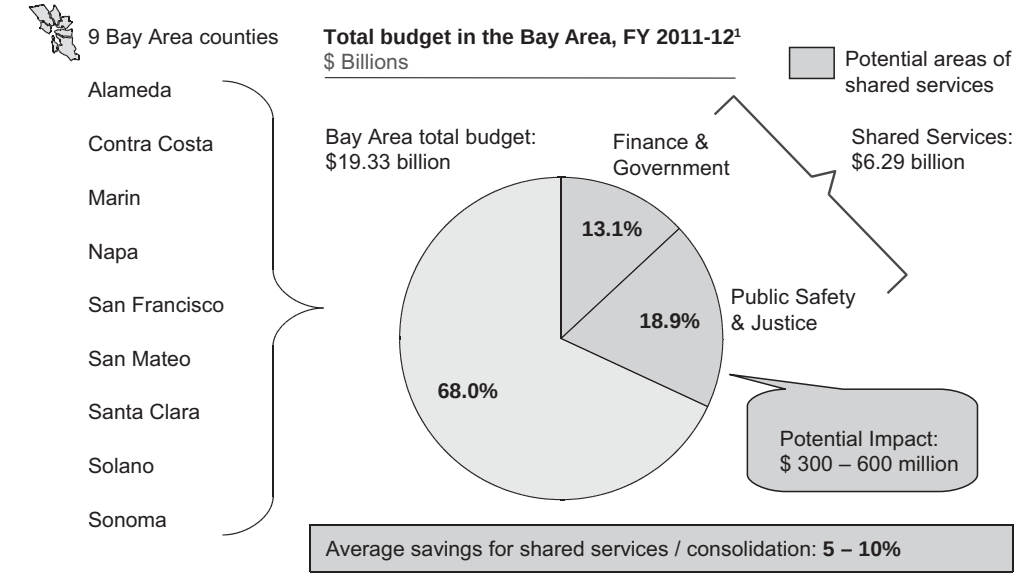


In the Bay Area, a different, integrated approach could be applied to tackle a range of challenges. In the business environment, companies operate better when there is consistent taxation and regulation across a region. A deeper conversation of government with the private sector around competitiveness and job creation could provide a new foundation for public-private action. A stronger public-private vision could help address issues surrounding regulatory coordination and the economic impacts of specific regulatory measures, and could also enable the region to work more effectively in driving necessary changes in Sacramento such as CEQA reform.

In funding for local governments, consolidating and sharing services among cities and between cities and counties could free up badly needed funds. Analysis by McKinsey & Company finds that most shared services result in about 5% to 10% savings on average. Given that roughly $6.3 billion is spent across the nine Bay Area counties in functions of government that are "shareable," the region could save $300–600 million per year if cities maximized the level of services they share (*Exhibit 53*).

Exhibit 53

Sharing services across the Bay Area counties can lead to $300–600 million in cost savings for government and public safety budgets.



1 The FY 2012 budget comprises of adopted and recommended budgets for the Bay Area counties

SOURCE: Individual county budget reports, team analysis

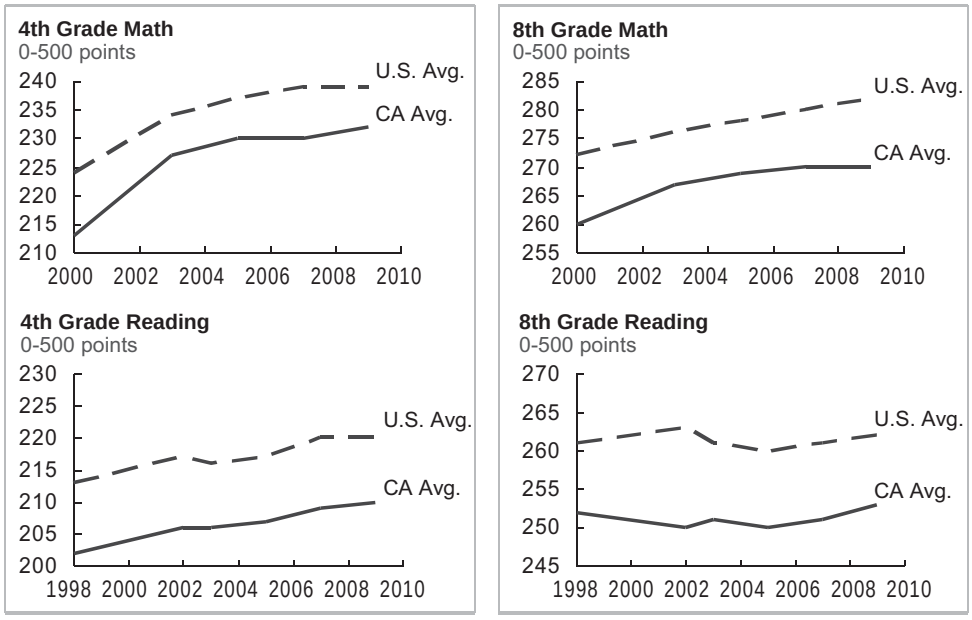
To address unemployment, the Bay Area would benefit from a cohesive economic development and jobs strategy. This should include issues in the business environment, but go further to include land use and infrastructure planning, a focus on sectors that are most likely to generate future growth, and education and workforce training to both support those sectors and engage communities that are at risk of being left behind. Again, this does not necessarily require a single regional governing body, but does call for better coordination among regional agencies, a much deeper dialogue with the private sector, and new mechanisms to bring added structure and focus to the regional conversation.

In summary, in the past few years, the Bay Area has had positive economic momentum and has consolidated its position of leadership as a knowledge and innovation economy. Parts of the region are flourishing, and the prospects for its near-term future are strong. At the same time, this growth is benefitting the region and its communities unevenly, and the Bay Area still faces lingering challenges that, left unresolved, may worsen over time. This can affect the region's longer-term competitiveness. It is incumbent on the region to act with greater focus, determination, and authority to address these challenges together, to assure that the Bay Area remains the world's premier innovation economy and a place of opportunity for all its residents.

Appendix A.

Exhibit 54

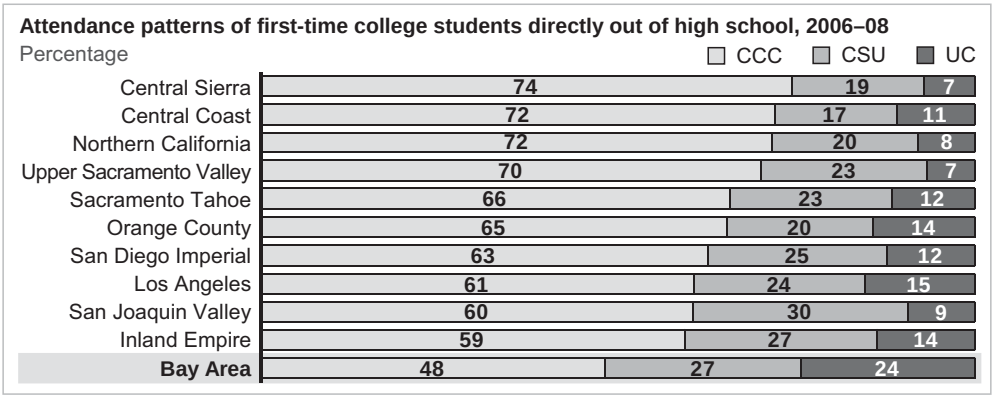
Although California standardized text scores for 4th and 8th grade math and reading proficiency have improved over time, they remain below the U.S. averages.



1 The Mathematics and Reading tests have not always been administered in the same year
SOURCE: National Center for Education Statistics, NAEP, team analysis

Exhibit 55

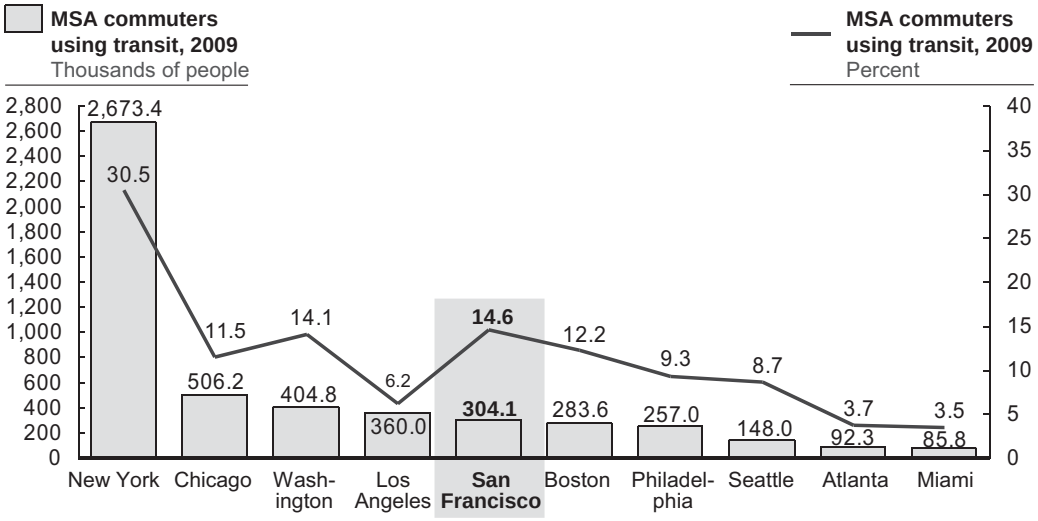
Within California, the Bay Area has the highest portion of students enrolling directly in UC and CSU schools.



SOURCE: California Competes, Regional Jobs & Education Data

Exhibit 56

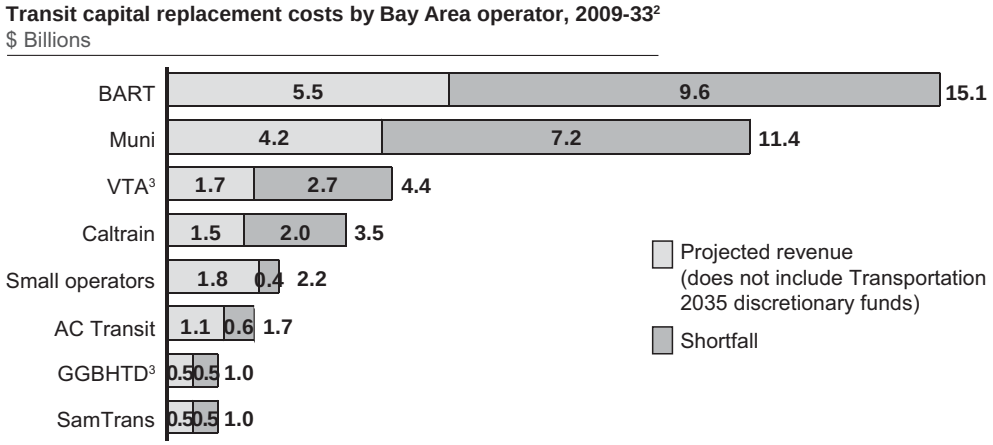
While San Francisco has a smaller number of commuters using transit in comparison to some peer MSAs, in relative terms, it has the 2nd highest percentage.



SOURCE: U.S. Census 2009

Exhibit 57

BART and Muni face a combined $16.8 billion in shortfalls toward anticipated capital replacement costs.[1]



1 BART's and Muni's combined $16.8 billion capital shortfall is calculated before taking into account Transportation 2035 discretionary funds. Including discretionary revenues committed in Transportation 2035 to the operators results in a $12 billion combined shortfall for BART ($6.8 billion) and Muni ($5.2 billion).

2 Total capital replacement needs are estimated based on data available from each operator at the time of the analysis. Commission policy that directs regional discretionary funding to cover the shortfall may take into account differences in 25-year projected shortfalls and needs identified in the near term.

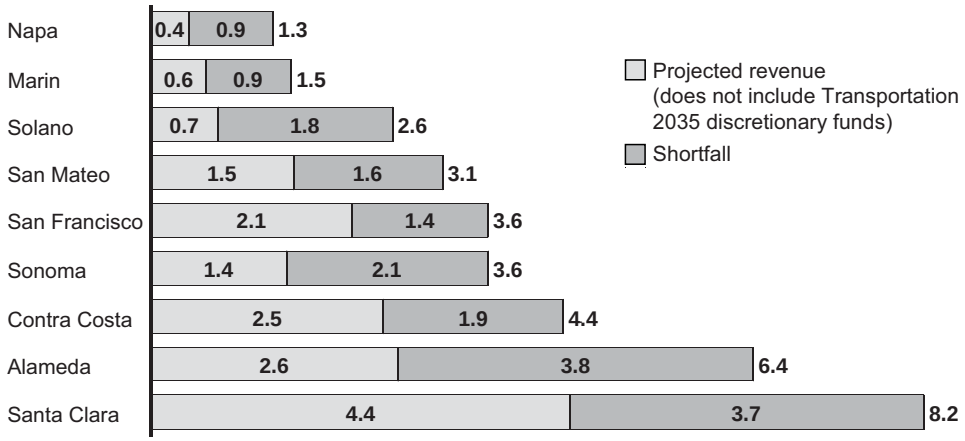
3 VTA = Santa Clara Valley Transportation Authority; GGBHTD = Golden Gate Bridge, Highway and Transportation District

SOURCE: Metropolitan Transportation Commission

Exhibit 58

Over half of the $34.5 billion needed to fund Bay Area road maintenance has yet to be committed.

Funding for anticipated road maintenance by Bay Area counties, 2009–2033
$ Billions



SOURCE: Metropolitan Transportation Comission

Exhibit 59

California ranks high in business climate indexes that measure the ease of business incubation and innovation.

State rankings across various business climate indexes

Highest rank among 3 states within an index

Index	California	Texas	New York
State New Economy Index (SNEI)	4	15	12
State Competitiveness Index (SCI)	20	25	35
State Business Tax Climate Index (SBTC)	45	7	49
Small Business Survival Index (SBSI)	46	7	45
Cost of Doing Business Index (CDBI)	47	26	49
Economic Freedom Index (EFI)	47	19	50
Economic Freedom Index North America (EFINA)	43	5	48
Fiscal Policy Report Card on the Nation's Governors (FPRCNG)	31	13	12

SOURCE: PPIC report on Business Climate Rankings and the California Economy 2011, team analysis

Appendix B.

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Rose Jacobs Gibson, Supervisor, District 4, County of San Mateo

Gilda Gonzales, CEO, The Unity Council (Spanish Speaking Unity Council)

Mark Green, Mayor, City of Union City, and Immediate Past President, ABAG

Scott Haggerty, Supervisor, District 1, County of Alameda

Michael E. Hardeman, Business Representative, Painters & Allied Trades District Countil 36

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Rachel Krevans, Managing Partner, Morrison & Foerster

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Edwin M. Lee, Mayor, City and County of San Francisco

William L. Lee, Director of International Economic & Tourism Development, San Francisco International Airport

Ted Lempert, President, Children Now

Steve Levy, Director & Senior Economist, Center for the Continuing Study of the California Economy

Mark Luce, Supervisor, District 2, County of Napa and President, Association of Bay Area Governments

Peter A. Luchetti, Partner, Table Rock Capital, LLC

Jeremy Madsen, Executive Director, Greenbelt Alliance

Cynthia L. Murray, President & CEO, North Bay Leadership Council

Nathan Nayman, Head of State and Local Relations, Visa, Inc.

Edward E. Penhoet, PhD, Director, Alta Partners

Julie Pierce, Councilmember, City of Clayton, and Vice President, ABAG

Mohammad H. Qayoumi, PhD, President, San Jose State University

Jean Quan, Mayor, City of Oakland

Ezra Rapport, Executive Director, Association of Bay Area Governments

Chuck Reed, Mayor, City of San Jose

Paul Saffo, Managing Director, Foresight, DISCERN

Sheryl Sandberg, COO, Facebook

George Scalise, President Emeritus, Semiconductor Industry Association

Robert Schroder, Mayor, City of Martinez

Kim Walesh, Director, City of San Jose, Office of Economic Development

Anne Wilson, CEO, United Way of the Bay Area

John Wilton, Vice Chancellor, Administration & Finance, UC Berkeley

Jim Wunderman, President & CEO, Bay Area Council

Bay Area Council Executive Committee

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Secretary: **Michael Covarrubias,** Chairman & CEO, TMG Partners
Treasurer: **Perry Pelos,** Head of Commercial Banking, Wells Fargo & Company
Laurence Baer, President, San Francisco Giants
Andrew Ball, President & CEO, Webcor Builders
Gregory Becker, President and CEO, SVB Financial Group
Teresa Briggs, Managing Partner, Deloitte
Steven Buster, President and CEO, Mechanics Bank
C. David Cush, President and CEO, Virgin America
Weili Dai, Co-Founder, Marvell Technology Group Ltd.
Lloyd Dean, President & CEO, Dignity Health
Christopher DiGiorgio, Northern California Managing Director, Accenture LLP
Paula Downey, President and CEO, Insurance Exchange, AAA Northern California Nevada & Utah
Robert Duffy, Partner, A T Kearney, Inc.
Andrew Giacomini, Managing Partner, Hanson Bridgett LLP
George Halvorson, Chairman & CEO, Kaiser Foundation Health Plan, Inc., and Hospitals
Mary Huss, Publisher, San Francisco Business Times
Robert James, Partner, Pillsbury Winthrop Shaw Pittman LLP
Donald Knauss, Chairman & CEO, The Clorox Company
Richard Kramlich, General Partner/Co-Founder, New Enterprise Associates
James Levine, Managing Partner, Montezuma Wetlands LLC
John Martin, Director, San Francisco International Airport
Duncan Matteson, Chairman, The Matteson Companies
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Alexander Mehran, President and CEO, Sunset Development Company
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Kausik Rajgopal, Principal, McKinsey & Company
Julie Sattler, Vice President, SSC Operations, Lockheed Martin Space Systems Company
Joseph Saunders, Chairman & CEO, Visa Inc.
J. Michael Shepherd, Chairman & CEO, Bank of the West
Jed York, President & CEO, San Francisco Forty Niners, Ltd.
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Association of Bay Area Governments Executive Board

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Vice President: **Councilmember Julie Pierce,** City of Clayton
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Secretary-Treasurer: **Ezra Rapport**
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County Representatives

Alameda: **Supervisor Nadia Lockyer**
Alameda:**Supervisor Scott Haggerty**
Contra Costa: **Supervisor Gayle B. Uilkema**
Contra Costa: **Supervisor John Gioia**
Marin: **Supervisor Susan L. Adams**
Napa: **Supervisor Mark Luce**
San Francisco: **Supervisor John Avalos**
San Francisco: **Supervisor Carmen Chu**
San Francisco: **Supervisor Malia Cohen**
San Mateo: **Supervisor Rose Jacobs Gibson**
San Mateo: **Supervisor Dave Pine**
Santa Clara: **Supervisor Mike Wasserman**
Santa Clara: **Supervisor David Cortese**
Solano: **Supervisor Barbara Kondylis**
Sonoma: **Supervisor David Rabbitt**

City Representatives (in order by county or major city)

Alameda: **Councilmember Beverly Johnson** (Alameda)
Alameda: **Mayor Mark Green** (Union City)
Contra Costa: **Councilmember Julie Pierce** (Clayton)
Contra Costa: **Councilmember Dave Hudson** (San Ramon)
Marin: **Mayor Pro Tem Pat Eklund** (Novato)
Napa: **Mayor Jack Gingles** (Calistoga)
City of San Francisco: **Mayor Edwin Lee**
City of San Francisco: **Jason Elliott,** Legislative Director
San Mateo: **Councilmember A. Sepi Richardson** (Brisbane)
San Mateo: **Vice Mayor Richard Garbarino** (S San Francisco)
Santa Clara: **Councilmember Ronit Bryant** (Mountain View)
Santa Clara: **Mayor Joe Pirzynski** (Los Gatos)
Solano: **Mayor Harry Price** (Fairfield)
Sonoma: **Councilmember Susan Gorin** (Santa Rosa)
City of Oakland: **Councilmember Rebecca Kaplan**
City Of Oakland: **Councilmember Jane Brunner**
City Of Oakland: **Councilmember Desley Brooks**
City Of San Jose: **Councilmember Sam Liccardo**
City Of San Jose: **Councilmember Kansen Chu**
City Of San Jose: **Councilmember Ash Kalra**

The Bay Area Council Economic Institute is a partnership of business with labor, government, higher education and philanthropy, that works to support the economic vitality and competitiveness of the Bay Area and California. The Association of Bay Area Governments is a founder and key institutional partner. The Economic Institute also supports and manages the Bay Area Science and Innovation Consortium (BASIC), a partnership of Northern California's leading scientific research universities and federal and private research laboratories. Through its economic and policy research and its many partnerships, the Economic Institute addresses key issues impacting the competitiveness, economic development and quality of life of the region and the state, including infrastructure, globalization, science and innovation, energy, and governance. A public-private Board of Trustees oversees the development of its products and initiatives.

The Bay Area Council is a business-sponsored, public-policy advocacy organization for the nine-county Bay Area. The Council proactively advocates for a strong economy, a vital business environment, and a better quality of life for everyone who lives here. Founded in 1945, the Bay Area Council is widely respected by elected officials, policy makers and other civic leaders as the voice of Bay Area business. Today, approximately 275 of the largest employers in the region support the Bay Area Council and offer their CEO or top executive as a member. Our members employ more than 4.43 million workers and have revenues of $1.94 trillion, worldwide.

Association of Bay Area Governments

ABAG is the Council of Governments and regional planning agency for the nine counties and 101 cities of the San Francisco Bay Area. ABAG's mission is to enhance the quality of life in the San Francisco Bay Area by leading the region in advocacy, collaboration, and excellence in planning, research, and member services. The agency's research focuses on existing conditions, forecasting changes to the population and economy, and assisting local governments to identify policies that address a changing environment. This research supports the collaborative local land use planning strategy employed by ABAG.

McKinsey&Company

McKinsey & Company is a management consulting firm that helps leading corporations and organizations make distinctive, lasting and substantial improvements in their performance. Over the past eight decades, the firm's primary objective has remained constant: to serve as an organization's most trusted external advisor on critical issues facing senior management. With consultants deployed from more than 90 offices in 50 countries, McKinsey advises companies on strategic, operational, organizational and technological issues. The firm has extensive experience in all major industry sectors and primary functional areas as well as in-depth expertise in high-priority areas for today's business leaders.

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