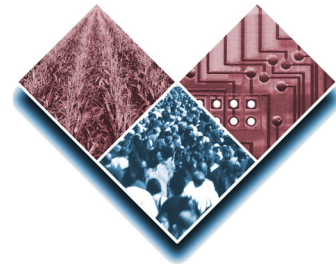


The Entrepreneurial Sacramento Valley

Regional Economic Development Impacts and Implications

October 2004



NEW VALLEY
CONNEXIONS

PREPARED BY
COLLABORATIVE ECONOMICS FOR
NEW VALLEY CONNEXIONS
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The Great Valley Center is a non-profit, non-partisan organization that supports individuals and activities that improve the social, economic, and environmental well-being of California's Great Central Valley.

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PREFACE

This report is the product of the Sacramento Valley Entrepreneurship Project, an initiative directed by the Great Valley Center and funded by The James Irvine Foundation. The Project report was completed by Collaborative Economics, with guidance from a group of project advisors from economic development and entrepreneurial support organizations in the region.

This report builds on the findings of *The Economic Future of the Sacramento Valley* (2001), which provided the region with an assessment of its economic base, identified areas of economic opportunity, and suggested strategies for realizing those opportunities. It called on the region to improve regional prosperity by deepening the distinctiveness, increasing the quality, and broadening the diversity of the regional economy.

The report also described several entrepreneurial firms that exemplified the kind of distinctiveness, quality, and diversity emerging in the Sacramento Valley. The role of these kinds of firms and the talent that drives them are especially important, providing much of entrepreneurial energy that creates prosperity and plants the seeds of the region's future economy. For these reasons, a better understanding and stronger focus on these firms and the environment in which they operate is critical. This provided the impetus for the Sacramento Valley Entrepreneurship Project.

To enable the region to better understand and focus on multiplying the successes of these kinds of firms, and to build on the original report, the Project:

- Developed the most comprehensive documentation of the region's base of entrepreneurial firms and talent ever completed
- Interviewed entrepreneurs in the region, assessed national research and experience regarding entrepreneurship, and collected data on the region's "habitat" or environment for entrepreneurship
- Worked with local public and private leaders and organizations to explore how best to promote entrepreneurship in the region



The Project sought to establish a set of quantitative measures and baseline numbers so local and regional leaders could track changes in their base of entrepreneurial firms and talent over time. Many data sources were used in the development of this report. The most comprehensive data on firms was derived from the National Establishment Time Series (NETS) database, which is itself based on information collected by Dun and Bradstreet. The counties included in the analysis are: Butte, Colusa, El Dorado, Glenn, Placer, Sacramento, Shasta, Sutter, Tehama, Yolo, and Yuba.

This report is divided into five chapters. The first chapter focuses on the essential role of entrepreneurship in regional economic development, based on a scan of national research and practice. The second chapter describes the current entrepreneurial “pool” in the Sacramento Valley—the thousands of people and firms engaged in entrepreneurship. The third chapter examines indications of future potential for entrepreneurship in the region. The fourth chapter describes the “habitat” or the environment that supports entrepreneurship, based on national research and experience, and the views of entrepreneurs and entrepreneurial support organizations in the region. The final chapter recommends a set of priorities for promoting entrepreneurship in the Sacramento Valley.

EXECUTIVE SUMMARY

It is clear from research and experience that entrepreneurship plays a critical role in regional economic development. The constant creation of new firms is essential to economic prosperity. In fact, entrepreneurship may be the single biggest driver of economic growth, job creation, and industrial and technological innovation in most regions.

How is entrepreneurship defined in this report?

- Entrepreneurs can be self-employed, operate in a partnership, or establish a corporation, often with others. According to the National Dialogue on Entrepreneurship, many definitions of entrepreneurs exist, but the one that seems to best fit the research and experience is: *an individual engaged in the process of starting and growing one's own business or idea.* Accordingly, success in entrepreneurship depends not only on knowledge, but putting that knowledge into action.
- In addition, there are some individuals that want to go beyond the basics: they choose to take the personal and business risks necessary to grow their business at a rapid rate in terms of revenues, employees, or both. Research suggests this subset of high-growth firms is responsible for much of the creation of new products and industries that can transform regional economies.

Why is entrepreneurship important in the Sacramento Valley?

- About one in five workers is self-employed, a rate higher than the national average
- Self-employment is growing faster than wage and salary employment
- There is a substantial and constant churning of firms—almost entirely from firm openings and closures, and very little from relocations or expansions of firms headquartered outside the region
- The region's churn from openings and closings exceeds that of Silicon Valley. On average, about 20% of the firms in the Sacramento Valley are created or closed annually, compared to about 13% in Silicon Valley
- The continuing creation of new firms is critical to regional economic development, with about half of the region's firms created between 1997 and 2002
- New firms are responsible for the vast majority of new jobs in the Sacramento Valley economy

- The quality of jobs created by new firms is comparable to those created by existing firms and firms expanding into the region, as measured by revenue per employee.
- Entrepreneurship has helped the regional economy diversify over time

What is the future potential for entrepreneurship in the Sacramento Valley?

- Population growth, mostly through in-migration, has expanded the talent pool and could continue to fuel entrepreneurship in the Sacramento Valley
- Increases in educational attainment and household income could portend growing entrepreneurship in the future, as higher education and income have been shown to correlate positively with greater entrepreneurship nationally
- The region has grown its entrepreneurial diversity over time, with the top-performing industry sectors—that is, those creating the most new firms—constantly changing. This means that the region has a track record of being able to keep generating new “winners” over time.
- The region is successfully participating in venture capital and other, nationally competitive funding

What kind of environment or “habitat” do entrepreneurs need to be successful?

- *Assets*—the education, research, and financial institutions, the physical infrastructure, including broadband internet capabilities, as well as specialized business services and support, necessary for success
- *Connections*—the networks that connect entrepreneurs with assets, such as industry associations, angel capital networks, specialized programs to link university assets and entrepreneurs (e.g., UC-Connect)
- *Culture*—the intangibles of attitude and mindset that determines how accepting and conversant a region is towards innovation and entrepreneurship
- *Quality of life*—the environment and amenities that attract and retain talented entrepreneurs and how a region deals with major issues such as transportation bottlenecks, crime, or poor schools
- *It is how these ingredients are combined, through regional leadership that makes the difference.* Without the proper “recipe,” regions that have strong assets, connections, culture, and quality of life can still under-perform in terms of entrepreneurship and innovation.

- *From all indications, the major ingredients of the region’s entrepreneurial habitat seem to have gotten stronger, rather than weaker, in recent years. But, the real question is: will the regional habitat be able to continue to encourage greater entrepreneurship and economic prosperity in the future?* Interviews with entrepreneurs and leaders of entrepreneurial support organizations lead to these conclusions:
 - ❑ Although entrepreneurship is growing, the Sacramento Valley is not yet recognized as an entrepreneurial place nor is entrepreneurship a top regional priority.
 - ❑ Although the entrepreneurial habitat is improving, especially the pipeline for high-value enterprises, it is still in its early stages of development.
- The future of entrepreneurship in the Sacramento Valley will largely depend on how well the region addresses these challenges.

What can be done to promote an entrepreneurial Sacramento Valley?

- As one venture capitalist interviewed for this report stated: “it may just be that the region’s time has come. It may be at an inflection point.”
- Is the region poised to move to a new level of innovation, entrepreneurship, and economic prosperity? To do so, we believe the region must make the following shifts:

MAKING THE LEAP: THE ENTREPRENEURIAL SACRAMENTO VALLEY

| FROM | TO |
|---|--|
| Individual entrepreneur success stories | Identity as an Entrepreneurial Valley |
| Top contributor to economic development | Top priority in economic development |
| Producing innovations with commercial potential | Rapidly converting innovations into companies |
| Patchwork of entrepreneurship programs | System of entrepreneurial support |
| Local leaders helping local entrepreneurs | Regional stewards of innovation and entrepreneurship |

- ❑ *From individual entrepreneur success stories to an identity as an Entrepreneurial Valley*—To begin this shift, a first step could be to organize an Entrepreneurial Sacramento Valley campaign, a regional initiative to raise the visibility of the findings of this report and other information on entrepreneurship in the region.
- ❑ *From top contributor to economic development to top priority in economic development*—To begin this shift, a first step could be for local jurisdictions and organizations to conduct an entrepreneurial performance review of their policies,

programs, and funding. Is entrepreneurship being given the priority justified by its impact on economic development? If not, why not? With these findings, local jurisdictions can identify and implement specific changes to policies, programs, and funding.

- ❑ *From generating innovations with commercial potential to rapidly converting innovations into companies*—To begin this shift, a first step could be for colleges and universities in the region to set new or higher goals for promoting entrepreneurship in the Sacramento Valley. For UC-Davis, in particular, the challenge is to go beyond what is working well for the institution in the short-run and focus on what will produce larger economic benefits for both the university and the region over the long-term.
- ❑ *From a patchwork of entrepreneurship programs to a regional system of entrepreneurial support*—To begin this shift, a first step could be to document the full range of existing entrepreneurial support efforts in the region, identifying them with input from the entrepreneurial community. With the “system map” identified, targeted investments from public, private, and community sectors could fill gaps, increase capacities, and improve connectivity within the system. In particular, it would be essential to develop a communications and referral network that can provide a single starting place for entrepreneurs in search of assistance.
- ❑ *From local leaders helping local entrepreneurs to regional stewards of innovation and entrepreneurship.* All the shifts described above will be difficult, if not impossible, to achieve without a core of leaders who can work together across jurisdictions to make them happen. To begin this shift, a first step would be to put out a call to stewardship. Those who answer the call—from public, private, and community sectors—could design and launch the changes described above and become “Ambassadors of Sacramento Valley Entrepreneurship,” taking the message across and beyond the region. And, they should keep the region accountable for progress, publishing specific measures focusing on the entrepreneurial people, firms, and habitat of the region-periodic updates on the State of the Entrepreneurial Sacramento Valley.

Like entrepreneurship, in the end, stewardship is about people stepping up, articulating a vision, taking a risk, and persisting through inevitable setbacks. The future of entrepreneurship in the Sacramento Valley will depend not only on the region’s entrepreneurs, but also the region’s stewards of innovation and entrepreneurship.

I. THE ROLE OF ENTREPRENEURSHIP IN REGIONAL ECONOMIC DEVELOPMENT

Entrepreneurship Drives Regional Economic Development

It is clear from research and experience that entrepreneurship plays a critical role in regional economic development. The constant creation of new firms is essential to economic prosperity. In fact, entrepreneurship may be the single biggest driver of economic growth, job creation, and industrial and technological innovation in most regions. For example:

- The most comprehensive, ongoing assessment of entrepreneurship is the Global Entrepreneurship Monitor (GEM), a multi-year comparison of entrepreneurial activity across countries. GEM has found repeatedly that new business creation is highly associated with economic growth worldwide.
- A comprehensive study of entrepreneurial dynamics sponsored by the Kauffman Foundation called *The Entrepreneur Next Door* (2002) points out that new firms are the dominant source of net job growth in the U.S. economy, while there is net job loss among older firms, whether large or small.
- Based on a review of research in the field, the National Commission on Entrepreneurship (now the National Dialogue on Entrepreneurship) estimated that entrepreneurs account for at least 2/3 of all technological innovation, and that 1/3 to 2/3 of the difference in national growth rates is due to high growth companies.
- The Commission has also documented the entrepreneurial origins of the Fortune 200, and found the formation of new industries and the development of most new technologies were highly dependent on the creation of new firms. Further, they point out in 1960, it took 20 years to replace 35% of the Fortune 500; by 1999, it only took 4 years.

Entrepreneurship is essential to cope with and capitalize on a new global economic environment. In this competitive environment, regional economic success depends on the ability of people and firms to be fast, global, knowledge-based, networked, and technology intensive.

- *Fast.* Time is money and market in today's global economic environment. Companies compete to develop and produce innovative products and services faster than their competition.
- *Global.* Markets are global and so is firm competition. Today's companies operate and sell globally, and compete for market share with firms from all corners of the world.

- *Knowledge-based.* Innovating on the basis of the knowledge and know-how of employees is essential to the success of today's companies.
- *Networked.* Companies now specialize in what they do best and develop relationships with partners, suppliers, and subcontractors to do the rest. They tap into information and innovation networks to stay abreast of change.
- *Technology-intensive.* Companies create, adapt, and use technology—basic as well as sophisticated—to constantly improve products and processes.

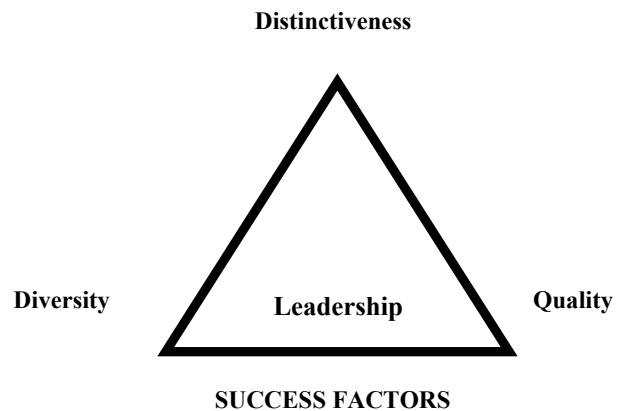
Today's global environment calls for the application of new ways of doing business to a wide range of products, services, and sectors. It impacts all regions, is a global phenomenon, and creates opportunities for all communities to participate. It is increasingly an economy driven less by large, full-service firms based primarily in large urban centers, and increasingly by growing networks of firms of many sizes that are located in a variety of communities—from large metropolitan areas to mid-size communities to small towns in more rural areas—creating distinctive specialties that make them competitive in global markets.

As pointed out in *The Future of the Sacramento Valley* (2001), to succeed in this environment, the region must pursue opportunities that broaden the economic diversity, deepen the distinctiveness, and increase the quality of its economy. By these terms, we mean:

- *Diversity*—the variety of different economic drivers in a region that can provide opportunities for prosperity and protect against over-dependence on any particular industry.
- *Distinctiveness*—the degree of specialization that distinguishes a region from others, and helps it define a unique role in the global economy.
- *Quality*—the value of economic activity in a region, often expressed through wage levels or revenue per employee that can provide a rising standard of living for people.

Individually, diversity, distinctiveness, and quality are necessary, but insufficient conditions for success. As many regions have found, a low-cost, low-value-added economy—even if broadly diversified—is a formula for decline. Similarly, a narrowly-based economy—even if it is of high quality—puts a region at risk if global forces overwhelm any individual specialization.

In short, the new economic environment rewards places that develop a diversified base of high-quality specializations. Entrepreneurship is a key driver—and sometimes the most important driver of this process. The goal is to build a set of economic specializations (firms, industries, and jobs) of rising quality (wages) that provides a firm foundation for prosperity. The key ingredient: leadership that can seize opportunities that best advance the diversity, distinctiveness, and quality of the region’s economy. These are the success factors in the new economic environment.



While the new economic environment rewards regions that pursue diversity, distinctiveness, and quality, there are many ways to achieve these outcomes. There are many pathways to prosperity. In the Sacramento Valley, communities can succeed based on their own assets and unique economic potential. No community needs to emulate some other place, instead of nurturing its own growing economic specializations and a uniquely attractive quality of life. Within the overall framework of diversity, distinctiveness, and quality, every place can define success on its own terms—and work to make it happen. Entrepreneurship is a key means by which regions succeed.

Entrepreneurship is Driven by Individuals and Firms

Understanding entrepreneurship requires understanding the contributions of individuals and firms. Entrepreneurs can be self-employed, operate in a partnership, or establish a corporation, often with others. According to the National Dialogue on Entrepreneurship, many definitions of entrepreneurs exist, but the one that seems to best fit the research and experience is: *an individual engaged in the process of starting and growing one’s own business or idea.* Accordingly, success in entrepreneurship depends not only on knowledge, but putting that knowledge into action. In addition, there are some individuals who want to go beyond the basics: they choose to take the personal and business risks necessary to grow their business at a rapid rate in terms of revenues, employees, or both. Research suggests this subset of high-growth firms is responsible for much of the creation of new products and industries that can transform regional economies.

The Kauffman Foundation has been a major sponsor of research into the nature of entrepreneurship. In 2002, the Foundation published a national, multi-year study (*The Entrepreneur Next Door: Characteristics of Individuals Starting Companies in America*), which was the first research effort to offer systematic and reliable data on the process of business formation. The study tracked a group of emerging entrepreneurs as they progressed through the entrepreneurial process, revealing that attempts at new business formation are more widespread than previously disclosed and involve all racial and ethnic groups.

Key conclusions from this national research, which surveyed more than 64,000 households nationwide, were:

- *Entrepreneurship is a widespread activity in the United States*—about 6 of every 100 U.S. adults 18 years and older (or more than 10 million Americans) are engaged in trying to start new firms. About one-half of all new ventures are started by individuals and about one-half by teams of people.
- While the rate of activity varies by group and geography, there is no one group not substantially engaged in entrepreneurship. Entrepreneurship substantially involves individuals of all ages, with the most active group being men ages 25-34. Men are about twice as likely to start a business as are women (i.e., 8.1 per 100 versus 4.5 per 100 adults). Blacks are 50% more likely to engage in start-up activities than whites. The prevalence of entrepreneurs is higher in urban areas—but it varies by group. For example, Hispanic entrepreneurial activity is highest in the least urban contexts.
- *Education and household income significantly predict entrepreneurship*. Those with higher incomes are more likely to be involved in starting a business. The relationship between education and entrepreneurship is particularly strong for black men (26% of those with graduate education experience have tried to start a business) and Hispanic men (20%), compared to white men (10%).

Moreover, the National Commission on Entrepreneurship's *High Growth Companies: Mapping America's Entrepreneurial Landscape* (2001) focused on the subset of high-growth entrepreneurial companies and found:

- Fewer than one in twenty U.S. businesses achieve high-growth rates
- High growth companies are found in all regions of the country
- Most fast-growing, entrepreneurial companies are not in “high tech” industries
- Each one of the 394 regions of the country contains some high-growth companies
- Most regions' high-growth companies are concentrated in certain specific industry sectors, although these sectors can vary widely by region

These major studies document the importance and diversity of entrepreneurship across the country. They demonstrate entrepreneurship is not just important for high-tech centers, but for every region of the country. They show entrepreneurship is not just about entrepreneurial individuals, but teams that form companies. They find entrepreneurship and high-growth companies are not limited to the same industries nationwide, but can flourish in sectors throughout the economy. They also document that not all small and new companies are the same—some are high-growth firms with a unique role to play in bringing new jobs and innovations to regional economies.

Entrepreneurship is Dependent on Regional Habitat

Entrepreneurship does not exist in a vacuum. It is a phenomenon that requires a supportive environment in which to flourish, which accounts for the differences in the level and success of entrepreneurship across regions. Many researchers and practitioners have defined elements of this supportive environment. For example, based on work done across the country in over 40 communities in the last two decades, Collaborative Economics has organized these ingredients into four broad categories, summarized in a report for the Heinz Endowments (*Innovative Regions: The Importance of Place and Networks*, 1999):

- *Assets*—the education, research, and financial institutions, the physical infrastructure, including broadband internet capabilities, as well as specialized business services and support, necessary for success
- *Connections*—the networks that connect entrepreneurs with assets, such as industry associations, angel capital networks, specialized programs to link university assets and entrepreneurs (e.g., UC-Connect)
- *Culture*—the intangibles of attitude and mindset that determines how accepting and conversant a region is towards innovation and entrepreneurship
- *Quality of life*—the environment and amenities that attract and retain talented entrepreneurs and how a region deals with major issues such as transportation bottlenecks, crime, or poor schools

It is important to note these are the ingredients. It is how these ingredients are combined, through regional leadership, which makes the difference. Without the proper “recipe,” regions with strong assets, connections, culture, and quality of life can still under-perform in terms of entrepreneurship and innovation.

In a similar vein, William Miller of Stanford University has edited a book called *The Silicon Valley Edge* (2000) based on his decades of experience as an educator, venture capitalist, international economic development advisor, corporate CEO, and board member with many companies in one of the world's most entrepreneurial regions. He has coined the term "habitat" to refer to the collection of ingredients upon which entrepreneurs and entrepreneurial firms depend:

Like a natural habitat for flora and fauna, the habitat of Silicon Valley is one in which all the resources high-tech entrepreneurial firms need to survive and thrive have grown organically over time. Silicon Valley's habitat includes people, firms, and institutions—their networks and modes of interaction. And, like a natural habitat, it is marked by complex, dynamic, interdependent relationships (p.3).

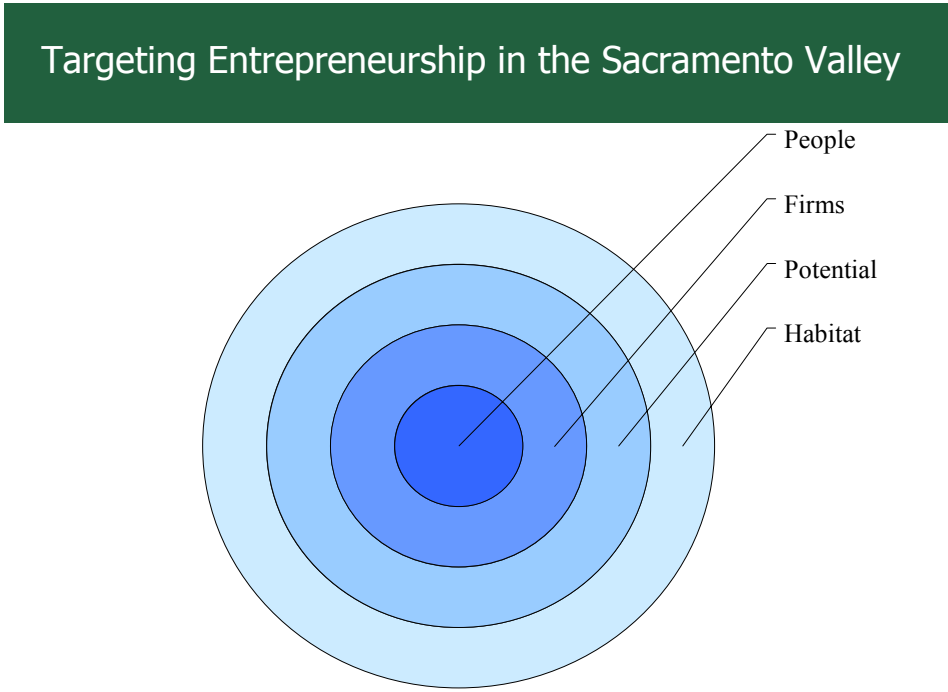
More specifically, he lists ten features crucial to the regional habitat for innovation and entrepreneurship (pp.6-13):

- *Favorable rules of the game*—The American system is more favorable to new business ventures than the systems of other countries.
- *Knowledge intensity*—Silicon Valley is a cauldron of ideas for new products, services, markets, and business models.
- *Open business environment*—Individuals and companies are open to win-win exchanges of knowledge and alliances.
- *Results-oriented meritocracy*—Large numbers of immigrant entrepreneurs have succeeded in the region, as have a diverse workforce based on ability and imagination.
- *A specialized business infrastructure*—There is a strong array of support services for new businesses, including venture capitalists and bankers, lawyers, headhunters, accountants, consultants, and others.
- *A high-quality and mobile workforce*—The Valley is a magnet for talent, including entrepreneurs, whose ranks are continuously replenished, bringing in new perspectives, stimulating innovations, and launching new firms.
- *Universities and research institutes that interact with industry*—Ideas and knowledge pass in two directions in a variety of ways.
- *Collaborations among business, government, and nonprofit organizations*—Working relationships among companies, governments, associations, and others provide the means to address key issues and community needs.
- *High quality of life*—The natural, cultural, historical, and intellectual qualities of the region have been major attractions for talent and companies.

Across these various definitions is one constant: entrepreneurs and entrepreneurial firms need support from their regions to succeed. While the specifics will vary by individual, firm, industry, and region, the general conclusion that regional habitat is critical to entrepreneurial success is widely accepted.

A Framework for Understanding and Promoting Entrepreneurship

Since it plays a critical role in regional economic development, it is essential entrepreneurship be understood and promoted in the Sacramento Valley. In developing a guiding framework (see figure below), this Project began with the essential ingredients: entrepreneurial people and the firms at the core. They are the main drivers of an entrepreneurial region. Beyond the people and firms currently involved in entrepreneurial activities, the Project identified indications of potential for future entrepreneurship in the region—such as population growth, patterns of entrepreneurial diversity, and pools of potential entrepreneurial talent. All these components—Entrepreneurial People, Firms, and Potential—exist in a Regional Habitat. The following chapters focus on entrepreneurial people and firms, potential, and habitat, with a concluding chapter on actions to promote an entrepreneurial Sacramento Valley.



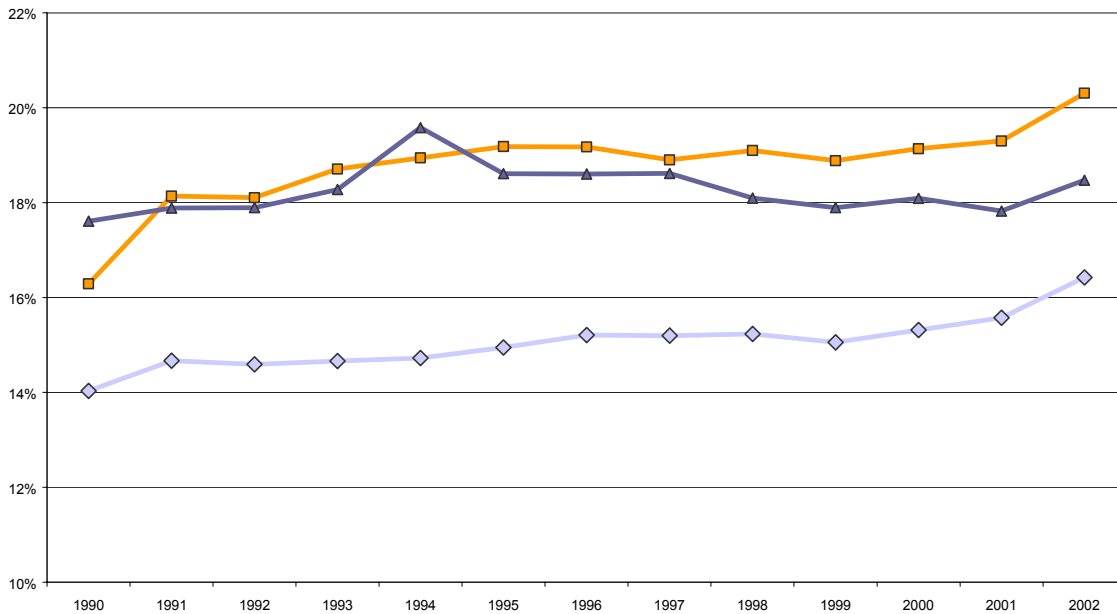
II. THE POOL OF ENTREPRENEURIAL PEOPLE AND FIRMS IN THE SACRAMENTO VALLEY

The Sacramento Valley is already an entrepreneurial region. It has a large and growing pool of entrepreneurial people and firms. By the numbers, the region is more entrepreneurial than the nation as a whole. Its economy “churns” more than a well-known entrepreneurial region like Silicon Valley—churn in the sense of firms starting up, going out of business, growing, declining, and moving in and out. Its entrepreneurial people and firms are indispensable to regional economic development: new firms accounted for the vast majority of new jobs since 1989. Further, the quality of jobs created by new firms, as measured by revenue per employee, is comparable to those of existing firms and the relocations/expansions of firms headquartered outside the region. Entrepreneurship has also helped the region diversify its economy since 1989.

About one in five workers is self-employed, a rate higher than the national average.

Approximately 18% of the non-farm, working population of the Sacramento Valley is self-employed—meaning they are engaged in some kind of entrepreneurial activity to support themselves (Figure II-1). In fact, the proportion of self-employed Sacramento Valley working adults is higher than that nationally, though lower than in California.

FIGURE II-1: PROPORTION OF WORKING POPULATION THAT IS SELF-EMPLOYED IN THE SACRAMENTO VALLEY (EXCLUDING FARMS)



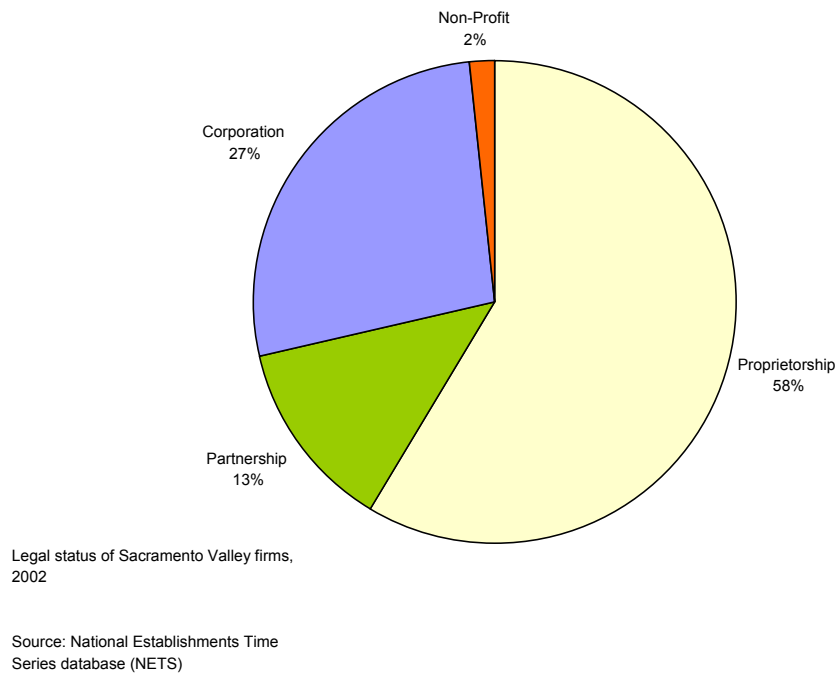
Non-Farm proprietorships as a share of total full and part time employment, US, California and the Greater Sacramento Valley Region, 1990 - 2002

■ California
▲ Sacramento Valley
◆ US

Source: US Bureau of Economic Analysis

Many entrepreneurs own and operate an individual proprietorship, while some are part of the ownership and operation of a partnership or corporation. As Figure II-2 shows, almost six in ten enterprises in the region (58%) are proprietorships, with the remainder being commercial corporations (27%), partnerships (13%), or non-profit corporations (2%).

FIGURE II-2: CLASSIFICATION OF FIRMS IN THE SACRAMENTO VALLEY

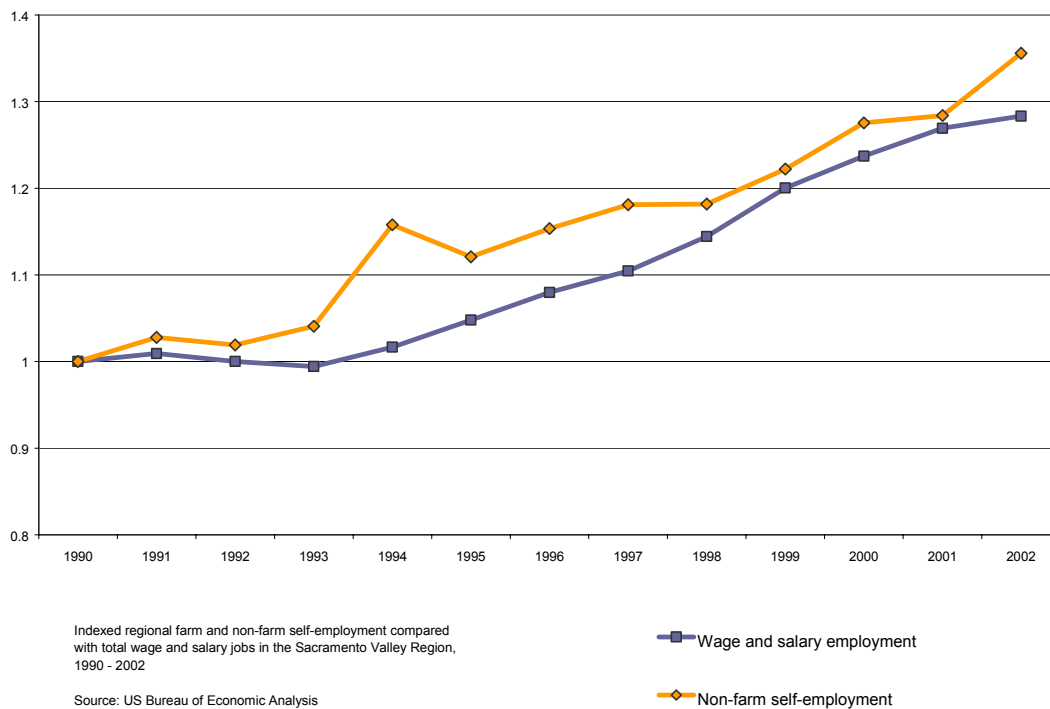


These figures from the U.S. Bureau of Economic Analysis represent the most commonly used measure of basic entrepreneurial activity. Of course, some of these proprietorships, partnerships, and corporations are growing; some are stable, and some declining. Some individuals are succeeding as entrepreneurs, while others are struggling. Nonetheless, the fact that about one in five workers in the Sacramento Valley is trying to be entrepreneur is important. Specifically, it means approximately 18% of the region’s current labor force of 1.13 million—or just over 200,000 Sacramento Valley residents are engaged in entrepreneurial activity today.

Self-employment is growing faster than wage and salary employment.

While one in five workers is an entrepreneur already, the growth of non-farm self-employment is outpacing wage and salary employment in the Sacramento Valley (Figure II-3). Not only is entrepreneurship as measured by self-employment an important component of overall employment, it is becoming even more important over time. This trend has been consistent since at least 1990, through two recessions, one recovery, and a boom period.

FIGURE II-3: GROWTH OF NON-FARM SELF-EMPLOYMENT AND WAGE AND SALARY EMPLOYMENT IN THE SACRAMENTO VALLEY

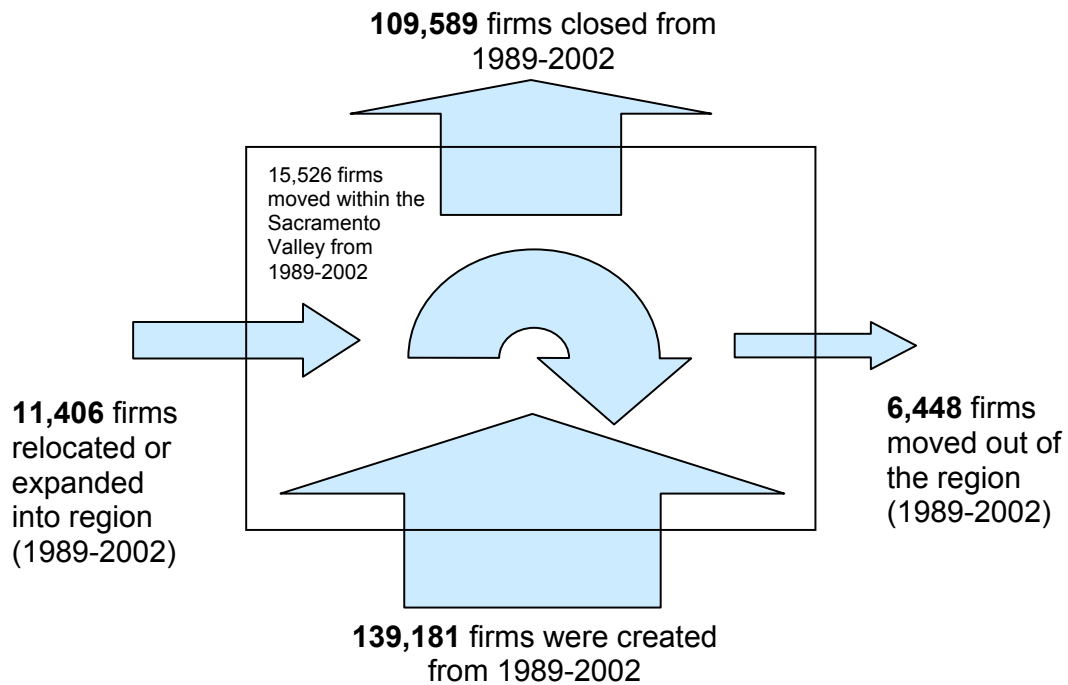


There is a substantial and constant churning of firms—almost entirely from firm openings and closures and very little from relocations—at a level exceeding Silicon Valley.

The Sacramento Valley has a dynamic economy, with substantial and constant changes in the number of firms in the region through births, deaths, and relocations. Firm births and deaths accounted for almost all (93%) of this churn between 1989 and 2002 (Figure II-4). Together, relocations of firm headquarters and expansions into the Sacramento Valley of firms headquartered outside the region contributed just 7% to the changing number of firms in the region during this period.

Between 1989 and 2002, births created 139,181 firms, while relocations and expansions of firms headquartered outside the Sacramento Valley added 11,406 firms. Of those 11,406 firms, 2,458 (22%) were relocations of firm headquarters, while 8,948 (78%) were expansions into the Sacramento Valley by firms headquartered outside the region. At the same time, deaths reduced the total number of firms in the region by 109,589, while relocations to other regions subtracted an additional 6,448 firms or so from the Sacramento Valley economy.

FIGURE II-4: FIRM CREATION AND CLOSURE RESPONSIBLE FOR MOST OF THE CHURN IN THE REGIONAL ECONOMY



Source: NETS Database

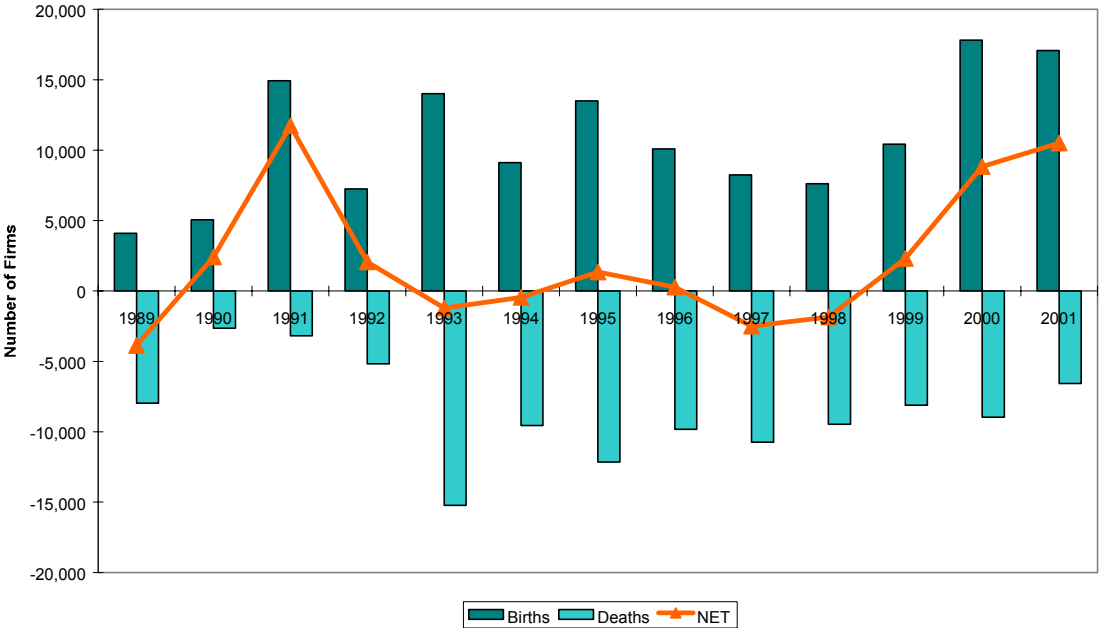
Note: This graphical representation of firm churn was first presented by Junfu Zhang in a study of entrepreneurship in the Silicon Valley region, High-Tech Start-Ups and Industry Dynamics in Silicon Valley, 2001.

Fortunately for the region, there has been a net gain of both firms and jobs as births have exceeded deaths during the 1989-2002 period. As Figure II-5 shows, fluctuations have occurred on an annual basis. In some years, for example, deaths exceeded births. However, the continuing creation of firms over a long period has enabled the regional economy to grow.

At the same time, as Figure II-6 shows, the net gain of firms relocating and expanding to the region is a fraction of the net gain from firm births in the region. Given these figures, it is reasonable to conclude that, without the sustained infusion of new firm births each year, the economy of the Sacramento Valley would have declined substantially during the 1990s.

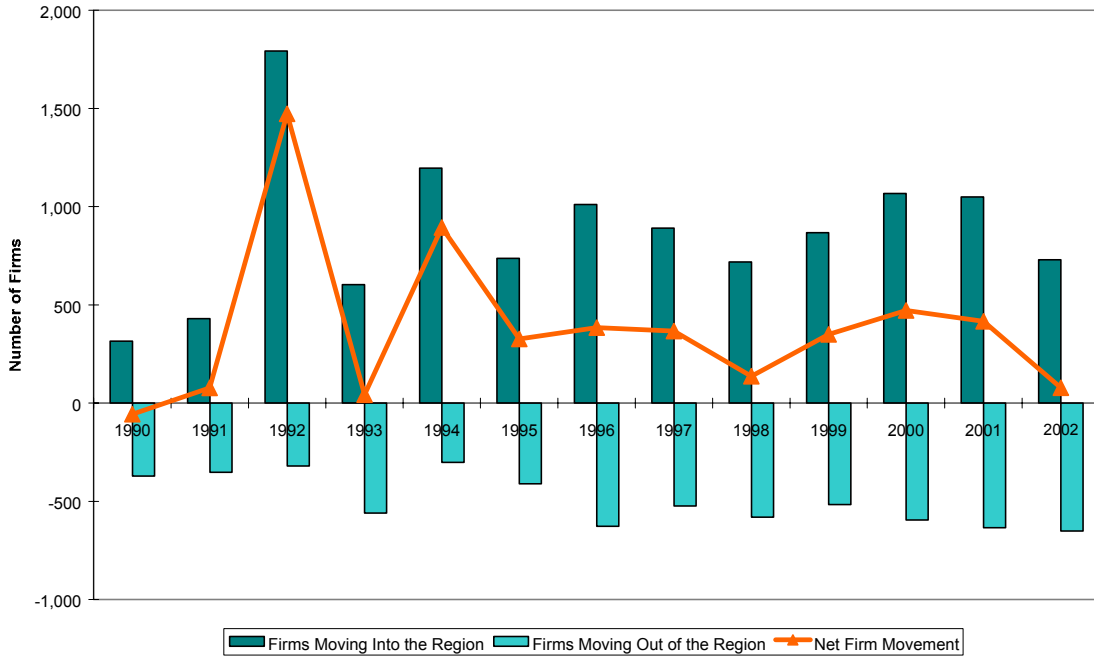
The Sacramento Valley also experiences more “churn” than Silicon Valley, a region traditionally cited as the prime example of entrepreneurial dynamism. On average, about 20% of the firms in the Sacramento Valley are created or closed annually, compared to at just over 13% in Silicon Valley. According to research by the Public Policy Institute of California, using the NETS database, about 13.3% of Silicon Valley companies are being created or closed annually. The comparable figure for the Sacramento Valley is 19.8%. Churn can be viewed in different ways: a high rate of churn means entrepreneurial dynamism but can also reflect an ability to create, but not grow firms.

FIGURE II-5: 20% OF COMPANIES ARE EITHER BORN OR DIE IN AN AVERAGE YEAR IN THE SACRAMENTO VALLEY



Source: NETS Database

FIGURE II-6: 1.4% OF FIRMS IN THE SACRAMENTO VALLEY MOVE INTO OR OUT OF THE REGION IN AN AVERAGE YEAR



Source: NETS Database

The continuing creation of new firms is critical to regional economic development, with about half the region’s firms created between 1997 and 2002.

Underscoring the importance of new and young firms to the region’s economy, only 31% of the firms in existence today were in existence in 1989 (Figure II-7). In other words, almost 70% of the regional economy “turned over” between 1989 and 2002. In fact, almost half of the regional economy turned over between 1997 and 2002.—i.e., 47% of total firms in the Sacramento Valley were created during that short time span. Further, in just two years (2001-2), 27% of total firms were created.

FIGURE II-7: ALMOST HALF OF ALL COMPANIES OPERATING IN THE VALLEY IN 2002 WERE CREATED WITHIN THE LAST FIVE YEARS

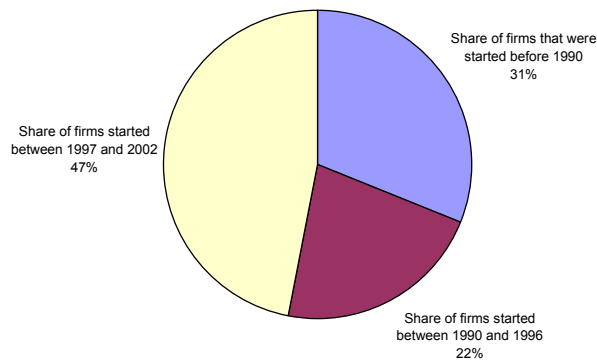
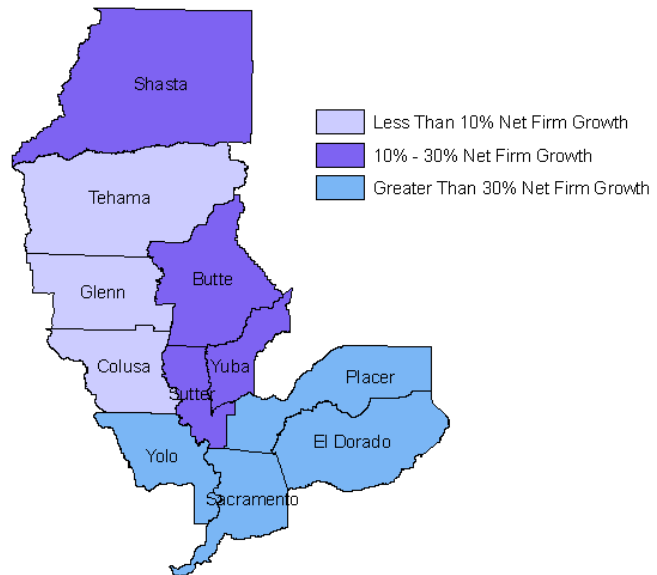


FIGURE II-8: MOST COUNTIES EXPERIENCED SUBSTANTIAL GROWTH IN NEW FIRMS BETWEEN 1990 AND 2002

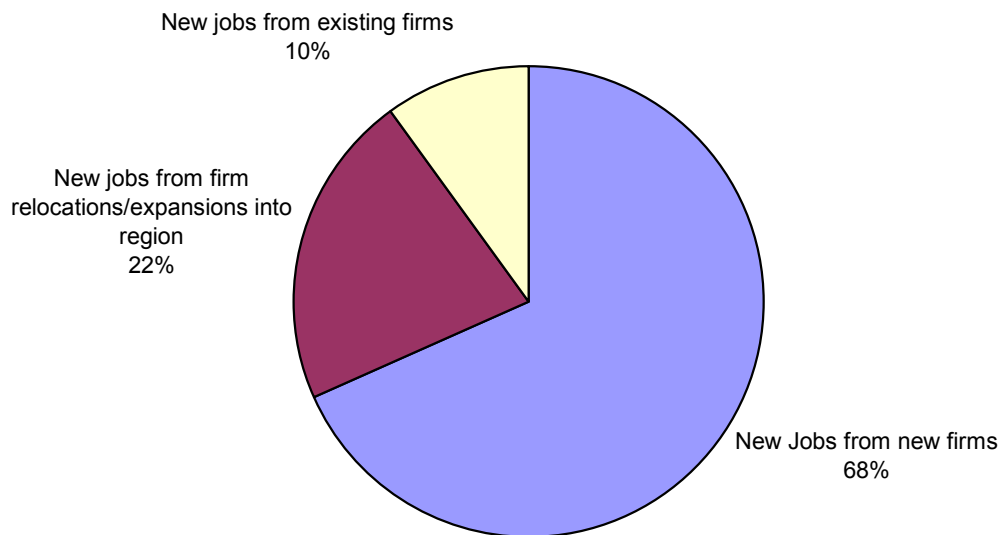
The continuing creation and survival of new firms was critical not only to regional economic development as a whole, but also to local economic development in most counties. As Figure II-8 shows, most counties experienced substantial growth in net new firms (i.e., firm births minus firm deaths) between 1990 and 2002. The net firm growth in Placer (53%), Sacramento (43%), El Dorado (37%), and Yolo (35%) Counties exceeded 30% during this period. Butte (28%), Sutter (25%), Shasta (24%) also experienced substantial net firm growth. Yuba County's net firm growth was 10%. Only Colusa (6%), Glenn (5%), and Tehama (1%) Counties experienced net firm growth of less than 10%. All counties experienced a net gain in new firms between 1990 and 2002.



New firms are responsible for the vast majority of new jobs in the Sacramento Valley economy.

New firms were responsible for more than two-thirds of new jobs added to the Sacramento Valley economy between 1989 and 2001. As Figure II-9 shows, 68% of the jobs created during this period is attributed to new firms, with an additional 10% accounted for by existing firms, and 22% generated by the job gains from firms with headquarters outside the Sacramento Valley—either through relocating its headquarters or another part of its business to the region, or through expansion (i.e., opening a new branch or other operation in the region). Specifically, between 1989 and 2001, new firms created 701,080 jobs, while existing firms created 103,206 jobs, and firms headquartered outside the region created 222,879 new jobs in the Sacramento Valley through either relocations or expansions as described above.

FIGURE II-9: DISTRIBUTION OF JOB CREATION WITH IN THE SACRAMENTO VALLEY, 1989-2001

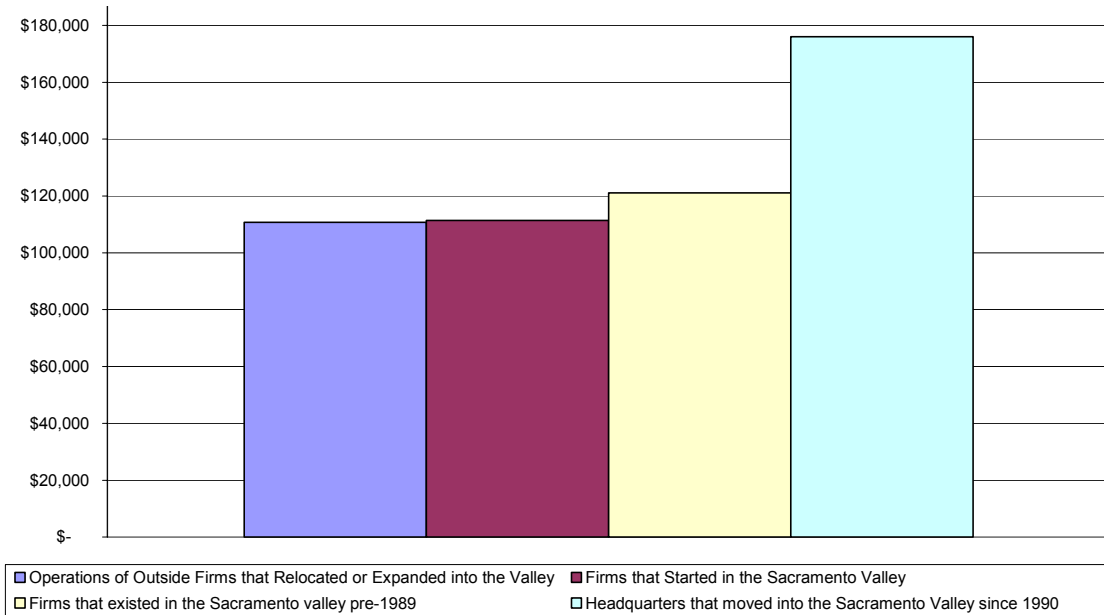


The quality of jobs created by new firms, as measured by revenue per employee, is comparable to those created by existing firms and firms expanding into the region.

What kinds of jobs have been added to the regional economy over this period? Although no comprehensive and available data exists about the occupational distribution and quality of jobs in individual firms, an aggregate measure can be used. Examining revenue per employee provides a reasonable proxy for job quality, the assumption being the higher the revenue per employee the higher wage structure for the business. Of course, on an individual firm basis, higher revenue per employee could reflect a few very highly compensated individuals, with the remainder being low-wage workers. It could also reflect a branch plant operation that generates high revenues per employee, but sends most of those revenues to a headquarters operation based outside the region. However, on an aggregate basis, looking at the pattern over thousands of firms, we believe these figures are meaningful.

As Figure II-10 shows, the average revenue per employee for new firms over the 1989-2002 period was comparable to those of existing firms and expansions of firms headquartered outside the region, and less than relocations of firm headquarters to the region. During this period, new firms had average revenue per employee of \$111,420, compared to \$121,078 for existing firms, and \$107,894 for the jobs created by outside firms expanding into the region. While relocations of headquarters had higher average revenue per employee of \$175,995 than all other firms, this group accounted for only about 1% of new firms during this period.

FIGURE II-10: COMPARISON OF REVENUE PER EMPLOYEE BY FIRM TYPE



Note: Revenue per employee is averaged over the period of 1990-2002, adjusted for inflation using 2003 as the base year.

Entrepreneurship has helped the regional economy diversify.

As established earlier in this chapter, entrepreneurship in the form of new firms has been major driver of quantitative gains in jobs, firms, and revenues in the Sacramento Valley economy. This contribution has been critical to regional economic development. However, new firms have also made measurable, qualitative contributions to the regional economy; namely, they have helped the region diversify its industry base.

As Figure II-11 shows, the number of and diversity of industry sectors accounting for the firms, employment, and revenues in the regional economy has grown. In 1990, the top 127 industry sectors (those with the most firms) together accounted for 50% of the region's total number of firms. By 2002, 50% of the region's total number of firms were spread over 162 industry sectors—an increase of almost 28%. Similarly, the number of sectors accounting for half of the employment also rose substantially from 125 to 154—an increase of more than 23%. The number of sectors accounting for 50% of revenues also grew about 9%, from 120 to 131. This diversification in the sources of firms, employment, and revenue was driven by the creation of new firms in a growing number of industry sectors.

**FIGURE II-11: DIVERSIFICATION OF ENTREPRENEURIAL GROWTH
 (# OF INDUSTRY SECTORS ACCOUNTING FOR 50% OF FIRMS,
 EMPLOYMENT AND REVENUES)**

| | Firms | Employment | Revenues |
|------------------|--------------|-------------------|-----------------|
| 1989 | 127 sectors | 125 sectors | 120 sectors |
| 2002 | 162 sectors | 154 sectors | 131 sectors |
| % Change 89-2002 | 27.6% | 23.2% | 9.2% |

Source: NETS database

The diversification of the regional economy during this period primarily took the form of new firms emerging in closely-related sectors, rather than the creation of whole new industries. New firms, employment, and revenues grew in additional sectors at the eight-digit level of the national Standard Industrial Classification (SIC) system. The eight-digit level is for a very specific kind of business (see Figure II-12 for regional examples), not a general category (e.g., manufacturing, services, agriculture) or even a more specific industry sector (e.g., semiconductors, computers, health services). Thus, through entrepreneurship, new dimensions were added to larger industry sectors, diversifying the way the region earns a living.

**FIGURE II-12: EXAMPLES OF FAST GROWING SECTORS IN THE
 SACRAMENTO VALLEY**

| SIC Description, 8-digit level | Firms in 1989 | Firms in 2002 | % Growth in Firms 89-02 |
|---|--------------------------|--------------------------|------------------------------------|
| Offices of health practitioners, nec* (e.g. Acupuncturists, Nutritionists, Physical Therapists, Psychologists) | 9 | 211 | 2244% |
| Computer graphics service | 14 | 289 | 1964% |
| Business services, nec* (e.g. Agents and Brokers for Authors, Bondspersons, Notaries Public) | 224 | 2697 | 1104% |
| Investors, nec* (e.g. Commodity Contract Trading Companies, Venture Capital Companies) | 44 | 513 | 1066% |
| General farms, primarily animals (i.e. Establishments deriving at least 50% of total sales from livestock and animal specialties, but less than 50% from any one type of product) | 37 | 246 | 565% |
| Mortgage bankers and loan correspondents | 59 | 391 | 563% |
| Custom computer programming services | 29 | 150 | 417% |
| Motion picture and video production | 28 | 137 | 389% |
| Computer related consulting services | 119 | 449 | 277% |
| Mortgage brokers arranging for loans, using money of others | 122 | 321 | 163% |

*nec: Not Elsewhere Classified

Source: NETS Database

The Online Appendix (www.greatvalley.org/nvc/entrepreneurship) lists for each county in the Sacramento Valley region the industry sectors (at the four-digit SIC level) that experienced the largest net gains in the number of new firms and the industry sectors that experienced the largest net losses in the number of firms during the 1989-2002 period. These lists provide a starting point for discussion and further exploration by local jurisdictions and organizations.

III. THE POTENTIAL FOR ENTREPRENEURSHIP IN THE SACRAMENTO VALLEY

What is the future potential for entrepreneurship in the Sacramento Valley? Predictions are always a difficult, if not impossible undertaking. There are typically too many variables, too much unpredictability to world events, industry restructuring, and technological innovation to make reliable guesses. While confidently picking future entrepreneurial “winners and losers” among industry sectors is neither possible nor productive, some observations can be made about the region’s potential for entrepreneurship based on past and continuing trends. While past performance is not a guarantee of the future, there do appear to be some major, long-term patterns that suggest a growing potential for entrepreneurship in the region:

- Population growth, mostly through in-migration, has expanded the talent pool and could continue to fuel entrepreneurship in the Sacramento Valley
- Increases in educational attainment and household income could portend growing entrepreneurship in the future
- The region has grown its entrepreneurial diversity over time, with top performers constantly changing
- The region is successfully participating in venture capital and other, nationally competitive funding

Whether or not the region capitalizes on this potential will depend on actions taken to strengthen the entrepreneurial habitat, as the Chapters IV and V suggest.

Population growth, mostly through in-migration, has expanded the talent pool and could continue to fuel entrepreneurship in the Sacramento Valley.

Population growth in recent years has created new business opportunities and markets and expanded the pool of actual and potential entrepreneurs. Thousands of new consumers and innovators have moved to the region. Some have helped existing firms innovate, while others have gone onto create a new company. The region’s population grew steadily through the 1990s, accelerating late in the decade and in the early 2000s. The region also increased its share of California’s population (Figure III-1).

The sources of population growth have shifted substantially in recent years. During most of the 1990s, the proportion of population growth due to net in-migration (i.e., in-migration minus out-migration) was comparable to that from natural population increase (i.e., births minus deaths). In some years, net in-migration was a much smaller contributor to population growth. However, beginning in 1999 and continuing through at least 2002, in-migration accounted for more than three-quarters (77%) of the total population growth of the Sacramento Valley (Figure III-2).

FIGURE III-1: SACRAMENTO VALLEY'S STEADY POPULATION GROWTH

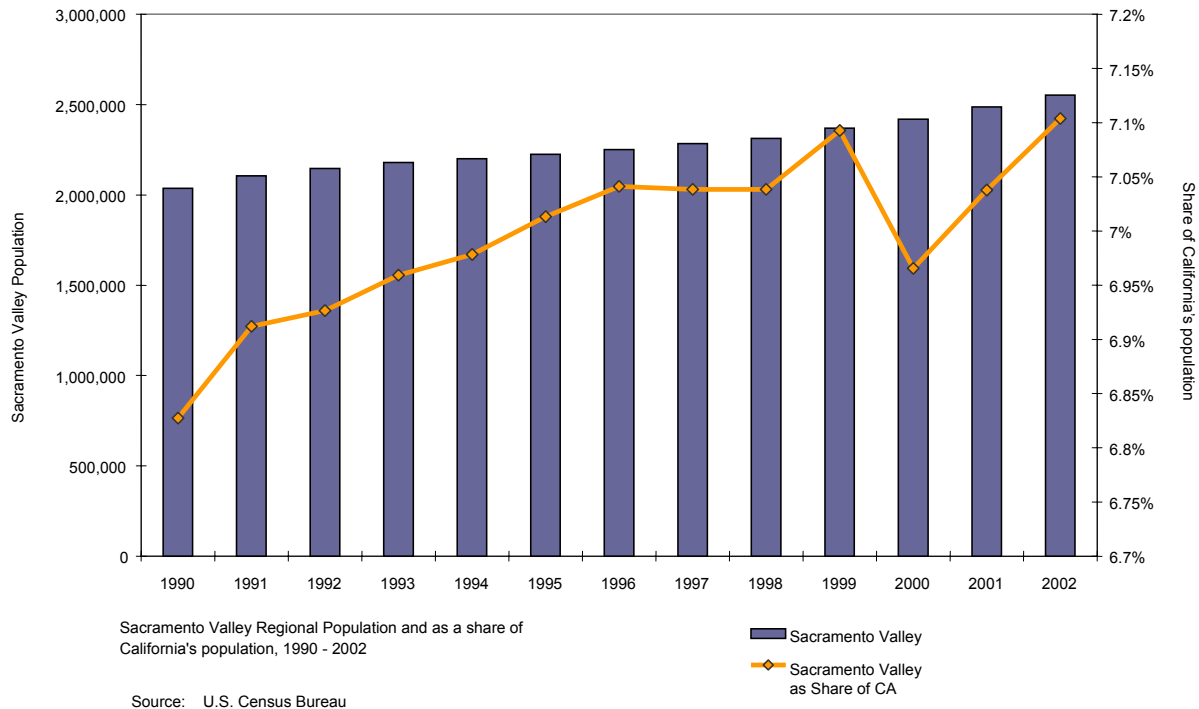
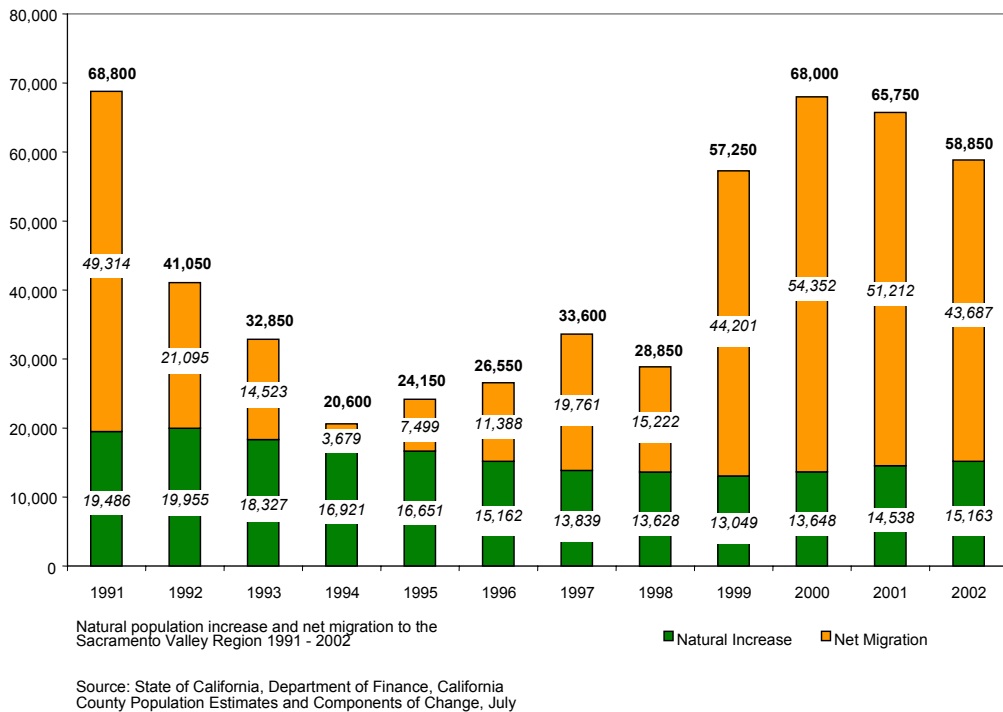
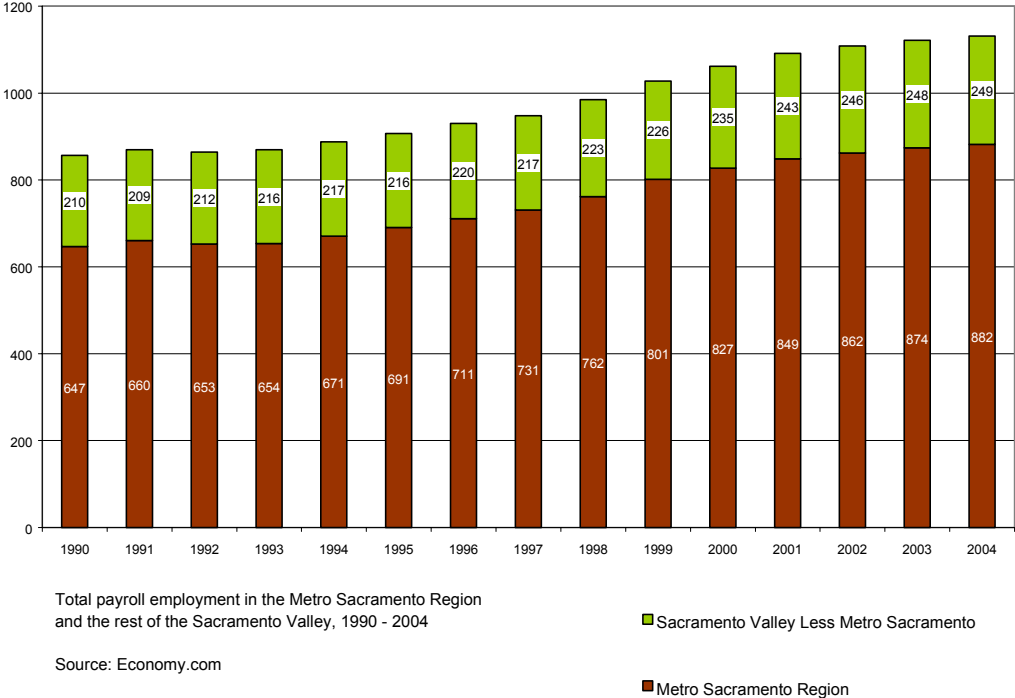


FIGURE III-2: MOST RECENT POPULATION GROWTH FROM IN-MIGRATION



With population growth and in-migration, the region’s overall talent pool has grown substantially in recent years—the pool from which potential entrepreneurs are to be found (Figure III-3). Between 1990 and 2004, total regional employment in the Sacramento Valley grew more than 30% from 857,000 to 1.13 million jobs. The Sacramento metropolitan area grew the fastest during this time, adding about 235,000 jobs while the rest of the region added 39,200. On average, employment in the Sacramento metropolitan area grew 2.2% annually while employment in the remainder of the region grew 1.2% each year during the past 14 years.

FIGURE III-3: GROWING TALENT POOL IN THE SACRAMENTO VALLEY

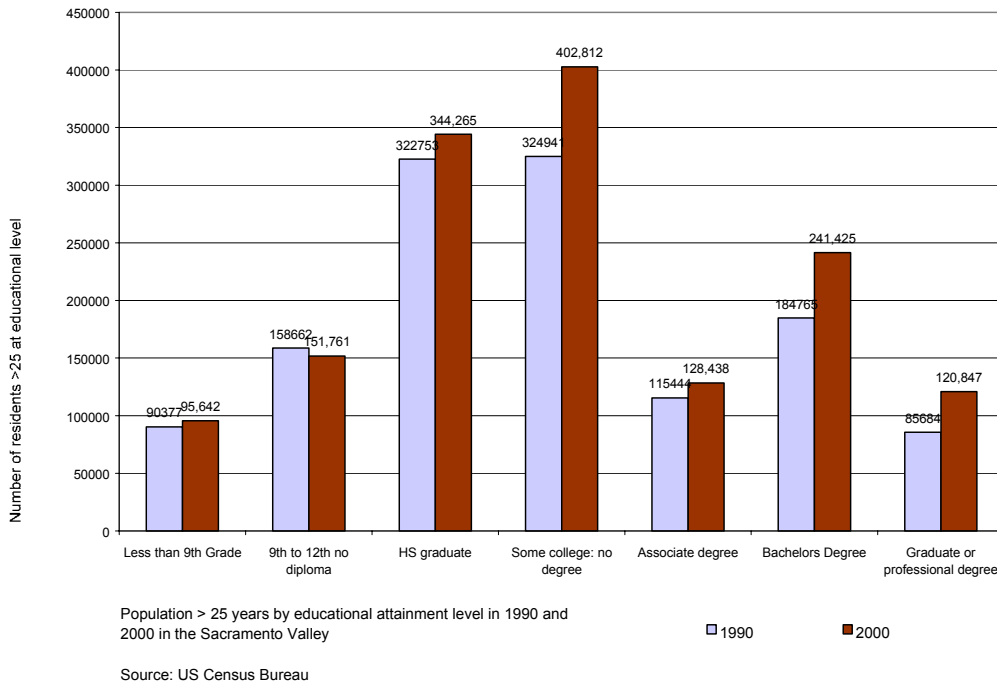


In addition, the region has large numbers of residents with specialized skills in technical and business areas that could be potential pools of entrepreneurs. Although entrepreneurs can and do come from virtually every occupational category, the region does have modest concentrations in a group of technical occupations that tend to drive innovation (e.g., computer software engineers and analysts, electrical engineers and technicians, medical scientists) and in professional and business services, which tend to be the source of managerial and other business talent important in starting and growing a firm. The region has just over 21,000 people working in professions focused on technological innovation, and about 55,000 working professional and business services. Both groups are slightly more concentrated in the Sacramento Valley than the national average (i.e., 1.03 and 1.06 times more concentrated, respectively).

Increases in educational attainment and household income could portend growing entrepreneurship in the future.

As noted earlier, national research suggests a strong predictive association between higher education and entrepreneurship, as well as higher household income and entrepreneurship. In both cases, the Sacramento Valley made major gains during the 1990s. In terms of educational attainment, the number of residents with college degrees (graduate, professional, bachelors, associate) grew from more than 385,000 to 490,000—an increase of about 27%. At the highest level, residents with graduate or professional degrees grew from almost 86,000 to more than 120,000—an increase of about 41% (Figure III-4).

FIGURE III-4: GROWING NUMBERS OF MORE HIGHLY EDUCATED RESIDENTS



The region not only increased the absolute number, but also the proportion of residents with college degrees. In 1990, 30% of the population had a graduate, professional, bachelors, or associate degree of some kind, with 25% having some college experience. By 2000, those with degrees accounted for 33% and those with college experience 27% of the population (Figure III-5).

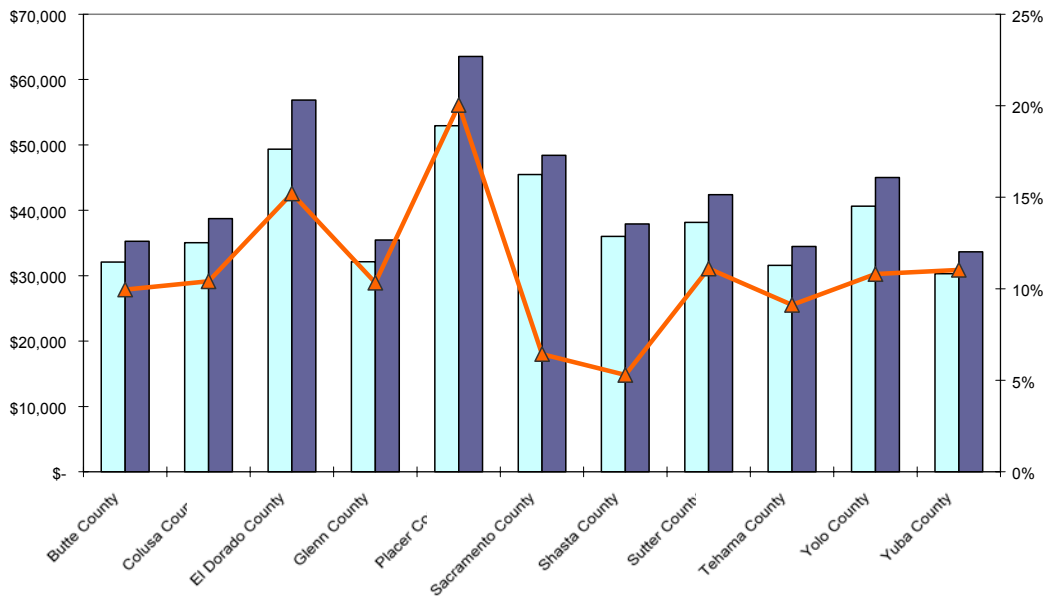
FIGURE III-5: GROWING PROPORTION OF POPULATION WITH COLLEGE DEGREES

| Education Level (% of Population) | 1990 | 2000 |
|--|-------------|-------------|
| Graduate, Professional, Bachelor and Associate Degrees | 30% | 33% |
| Some College Experience | 25% | 27% |
| High school diploma or less | 45% | 40% |

Source: U.S. Census Bureau

In terms of household income, the region has experienced both widespread gains and a large increase at the highest income levels. As Figure III-6 shows, inflation-adjusted median household income rose in every county in the region between 1990 and 2000—ranging from increases of about 5% to 20% depending on the county.

FIGURE III-6: RISING MEDIAN INCOMES ACROSS THE SACRAMENTO VALLEY



Change in Median Household Income by County, 1990 to 2000 (inflation adjusted)

Legend: 1990 (light blue bar), 2000 (dark blue bar), Change 90-00 (orange line with triangle)

Source: US Census Bureau

In addition, the proportion of the households at the highest income levels grew substantially during the 1990s (Figure III-7). Households annually making \$75,000 or more jumped from 9% to 24% of total households in a decade. Those households in the highest income group (i.e., making \$150,000 or more annually) rose from 1% to 4% of total households during this time. In other words, the actual number of households earning \$150,000 or more per year increased from about 9,500 to 36,000. An increase in high-income households means an increase in the potential regional investor pool for new, entrepreneurial firms.

FIGURE III-7: GROWING PROPORTION OF HOUSEHOLDS AT HIGHEST INCOME LEVELS

| Annual Income Level (% of households) | 1990 | 2000 |
|--|-------------|-------------|
| \$75,000 or more | 9% | 24% |
| \$40,000 - \$74,999 | 27% | 31% |
| Less than \$40,000 | 64% | 45% |

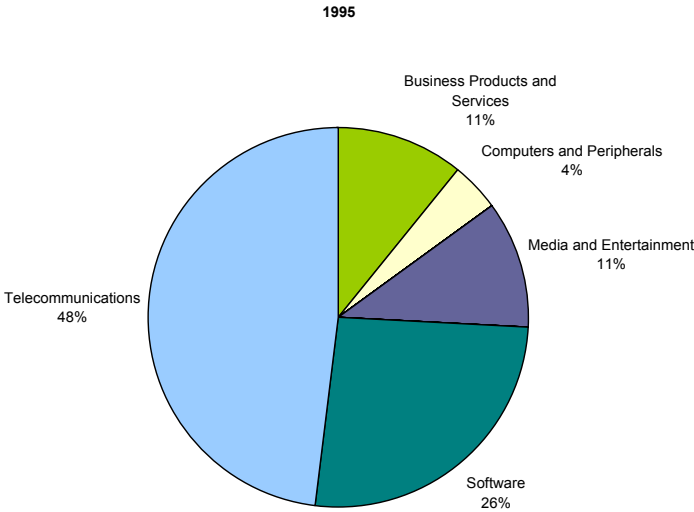
The region has strong entrepreneurial diversity, with top performers constantly changing.

The region’s most entrepreneurial sectors shift over time. A comparison of the top fifty industry sectors (those at the 8-digit SIC level with the most firms) in 1989 and 2002 found that one-third (34%) of the sectors had changed. By 2002, a substantial number of industry sectors added enough new firms to displace the top performers of 1989.

The most important finding from this pattern is that the region keeps producing new winners. Predicting exactly which sectors will be future winners may be impossible, but projecting that the region will continue to produce winners is more plausible.

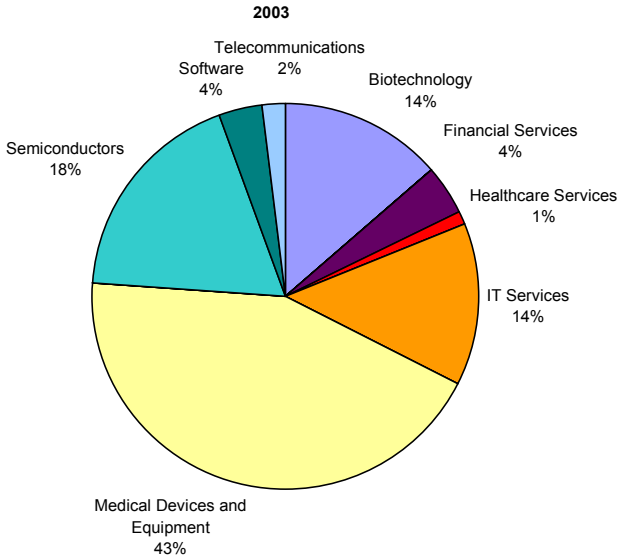
In fact, the data on venture capital support the notion that investors have shifted their focus to new areas in the Sacramento Valley—areas in which the seeds of future “winners” may have been planted. As Figure III-8 shows, in 1995 venture capitalists preferred telecommunications companies more than any other investment. About half (48%) of all regional venture capital dollars went to telecommunications companies. The second largest proportion of investment was directed to software companies (26%). By 2003, the pattern had shifted substantially. A total of 43% of all venture capital was invested in medical device and equipment firms, with an additional 16% to biotechnology and 1% to health services companies. In addition, 18% of all funding went to semiconductors, while another 14% went to information technology services.

FIGURE III-8: SHIFTING VENTURE CAPITAL INVESTMENTS IN THE SACRAMENTO VALLEY



Venture capital investments in Sacramento Valley companies by industry, 1995.

Source: PricewaterhouseCoopers, Thomson Venture Economics and the National Venture Capital Association: MoneyTree Survey



Venture capital investments in Sacramento Valley companies by industry, 2003.

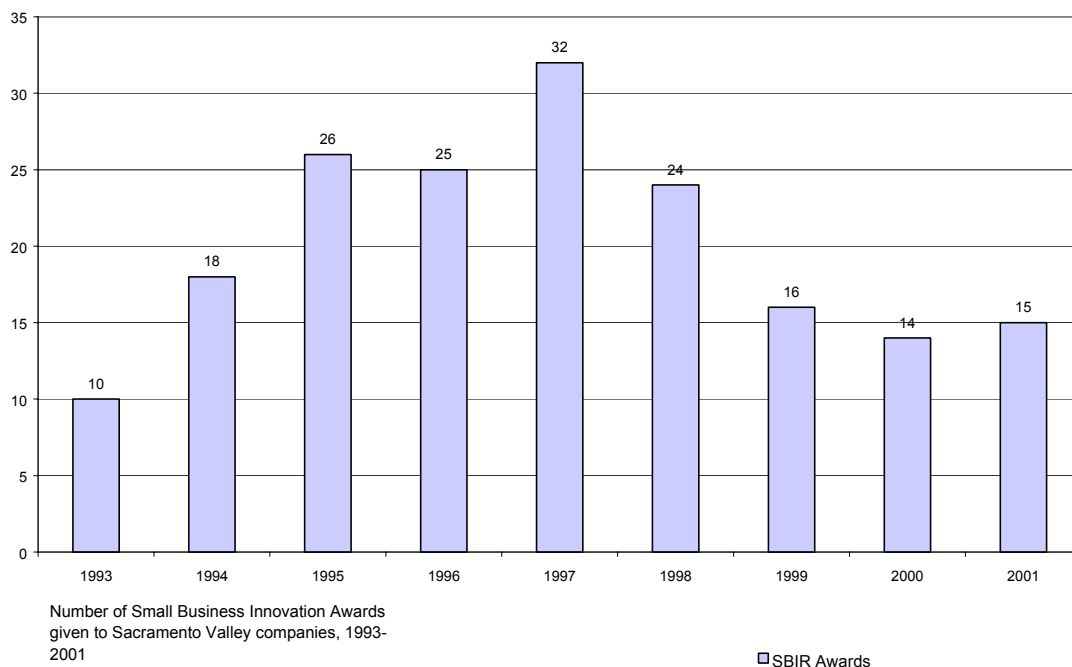
Source: PricewaterhouseCoopers, Thomson Venture Economics and the National Venture Capital Association: MoneyTree Survey

The region is successfully participating in venture capital and other, nationally competitive funding

Companies in the Sacramento Valley have been successful in securing venture capital and other, nationally-competitive funding-in particular, the federal Small Business Innovation Research (SBIR) program, which provide grants to entrepreneurs. The program is the world’s largest seed capital fund for development of new products and processes, and often provides the initial revenue stream for start-up companies. An SBIR award can signal to other investors that the company’s products and services merit further development capital.

- Venture capital investments increased from just over \$47 million to more than \$93 million between 1995 and 2003.
- The region has received SBIR awards, from a low of 10 in 1993 to a high of 32 in 1997. Although there has been fluctuation on an annual basis, the region has continued to receive at least 14 SBIR awards annually since 1993.

FIGURE III-9: SBIR AWARDS IN THE SACRAMENTO VALLEY



Source: RAND

IV. THE HABITAT FOR ENTREPRENEURSHIP IN THE SACRAMENTO VALLEY

As the previous chapters show, the Sacramento Valley has proven it already has a regional habitat that can support entrepreneurial growth. Its natural beauty and quality of life are attracting new residents in large numbers. Its economy is diversifying. The Valley is a mosaic of distinctive local economies, each with different strengths and opportunities, natural and community amenities, and pathways to future prosperity.

The real question is: will the regional habitat be able to continue to encourage greater entrepreneurship and economic prosperity in the future? Interviews with entrepreneurs and leaders of entrepreneurial support organizations lead to these conclusions:

- Although entrepreneurship is growing, the Sacramento Valley is not yet recognized as an entrepreneurial place nor is entrepreneurship a top regional priority
- Although the entrepreneurial habitat is improving, especially the pipeline for high-value enterprises, it is still in its early stages of development

The future of entrepreneurship in the Sacramento Valley will largely depend on how well the region addresses these challenges.

Although entrepreneurship is growing, the Sacramento Valley is not yet recognized as an entrepreneurial place nor is entrepreneurship a top regional priority

Although the amount of entrepreneurship is clearly growing, Sacramento Valley is not yet recognized as a particularly entrepreneurial place inside or outside the region. To most outside observers with only passing knowledge of the region, and many residents, the Valley is about agriculture and state government, and perhaps tourism. It is about individual farms, government employers, maybe a few large firms, and many small businesses serving residents and tourists. While all these components continue to be important contributors to the region's economy and identity, they are only part of the story. This report clearly shows that the Valley is a diversified, entrepreneurial region.

As noted in *The Economic Future of the Sacramento Valley*, the region made significant progress to broaden the diversity, deepen the distinctiveness, and grow the quality of its economy during the 1990s. Driving this change was a growing shift in mindset. Traditionally, the predominantly rural Sacramento Valley was a low-cost location, its economy largely dependent on abundant natural resources and government services, and its identity tied to its natural beauty and quality of life. Like many places, leadership in economic development was primarily externally-focused (e.g., industrial attraction) in an effort to create a more diversified, resilient economy.

In recent years, the shift to a new mindset has begun; one that is necessary to encourage entrepreneurship and capitalize on opportunities presented by a new economic environment:

- Today, while the Valley still provides a lower-cost business climate than many other locations, it also provides a prime location for certain higher-quality specializations.
- While the availability of natural resources remains critical to key sectors such as agriculture and wood products, the quality of human resources has become central to the future of the increasingly diversified economy of the Valley.
- While quality of life has been defined primarily as affordable living in a beautiful natural environment, today it also includes access to quality economic opportunities and community amenities.
- Leadership in economic development is now a combination of externally focused industry attraction and internally focused entrepreneurial development efforts, which have helped create a more diversified, but distinctive set of local economies.

FIGURE IV-1: THE PROCESS OF CHANGE IN THE SACRAMENTO VALLEY

| MINDSET | From | To |
|------------------------|---|--|
| Distinctiveness | Emphasis on role as low-cost location | High-quality specializations in lower-cost location |
| Diversity | Dependency on natural resources and government services | Diverse portfolio of industries based on natural resources and human resources |
| Quality | Quality natural environment | Quality of natural environment, economic choices, and lifestyles |
| Leadership | Externally-oriented to diversify narrow economic base | Both externally- and internally-oriented to diversify base of high-quality specializations |

While the transition to a new mindset is well underway, it is not yet pervasive or irreversible. Entrepreneurship is not yet a top regional priority, despite its strong role in regional economic development. Choices are being made every day about whether the Valley is marketed as a low-cost location or a high-quality destination, whether its specializations are nurtured or overlooked, whether entrepreneurship is actively promoted or taken for granted, and whether its communities can define their own economic destiny or let others determine their economic fate.

Although the entrepreneurial habitat is improving, especially the pipeline for high-value enterprises, it is still in its early stages of development.

As stated earlier in this report, there is no single, widely-accepted definition of entrepreneurial “habitat.” Nonetheless, certain major ingredients appear key, such as:

- *Assets*—the education, research, and financial institutions, the physical infrastructure, including broadband internet capabilities, as well as specialized business services and support, necessary for success
- *Connections*—the networks that connect entrepreneurs with assets, such as industry associations, angel capital networks, specialized programs to link university assets and entrepreneurs (e.g., UC-Connect)
- *Culture*—the intangibles of attitude and mindset that determine how accepting and conversant a region is towards innovation and entrepreneurship
- *Quality of life*—the environment and amenities that attract and retain talented entrepreneurs and how a region deals with major issues such as transportation bottlenecks, crime, or poor schools

Again, it is how these ingredients are combined, through regional leadership that makes the difference. Without the proper “recipe,” regions that have strong assets, connections, culture, and quality of life can still under-perform in terms of entrepreneurship and innovation.

From all indications, the major ingredients of the region’s entrepreneurial habitat seem to have gotten stronger, rather than weaker, in recent years.

- In terms of culture, there is greater recognition and appreciation for the role of entrepreneurship than in the past. Some interviewed for this report pointed to the increase in media attention to entrepreneurial success stories and emergence of new entrepreneurial support networks.
- In terms of quality of life, there is more variety of and higher-quality urban amenities to complement the existing natural, historic, and cultural assets of the region. Typical was the response of one of the entrepreneurs interviewed for this report, who cited “the quality, affordability, and pace of life, including family ties” that keeps her here.
- In terms of assets, there are more entrepreneurial support resources, from the growing reach of small business development centers to increasing venture capital investments to expanding access to financial, legal, and other business support expertise in the region. Institutions are more proactive; particularly colleges and universities that are providing entrepreneurial support and education, and helping commercialize new technologies. In addition, there are key employers, like Hewlett-Packard and Intel that act as a magnet for talent and a launching pad for entrepreneurs. And, the internet revolution

of the 1990s has helped make it easier to start some businesses from remote locations as well as connect to support resources and markets outside the region.

- In terms of connections, there are more entrepreneurial support networks, including the Golden State Capital Network, Sacramento Regional Technology Alliance (SARTA), Shasta Technology Association, and new efforts by local economic development organizations to include entrepreneurship in their portfolio.

In addition to these “inputs,” the cost environment, which is shaped by state and local public policy, is also important to entrepreneurship. Regulations, taxes, healthcare, workers compensation, land, housing, and other costs, in turn, can shape the decisions of entrepreneurs about whether or not to start, close, grow, shrink, or move a business.

While no one knows conclusively what impacts these factors have had on entrepreneurship in the Sacramento Valley since 1990, it is clear companies in certain lines of business and those more sensitive to costs are more affected than others. It is also clear companies adding more value per employee are better able to absorb higher costs. Overall, the underlying patterns show:

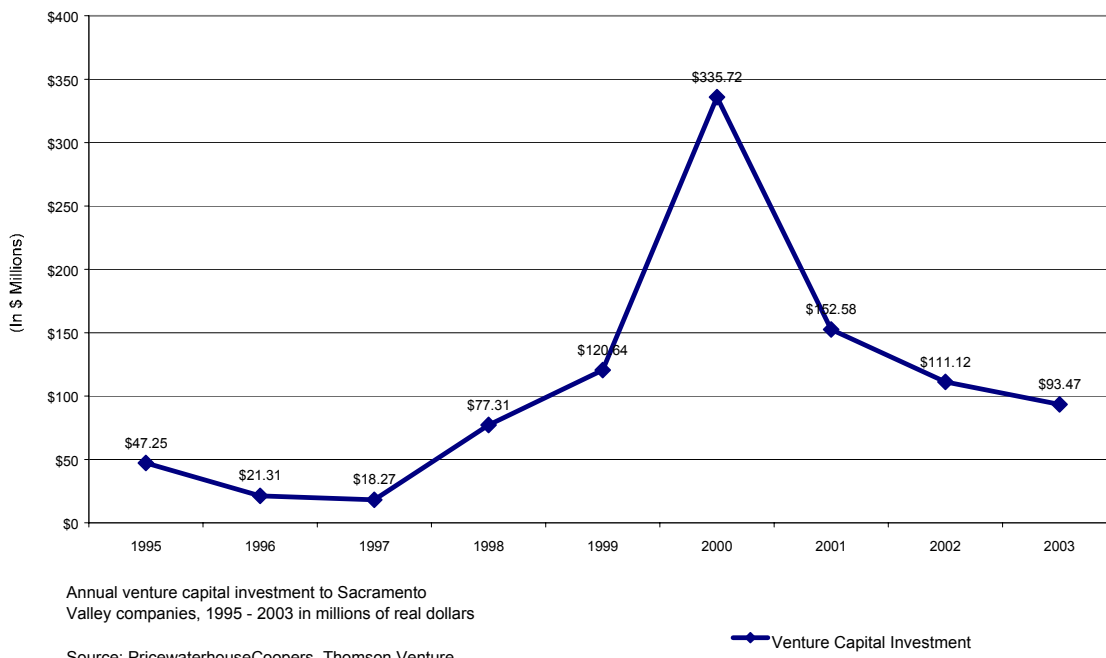
- Although almost 110,000 firms in the region closed their doors between 1989 and 2002, entrepreneurs kept starting businesses, adding more than 139,000 new firms. There was a net gain in new firms even during a period of rising costs.
- Although more than 666,000 jobs were lost to firm closures—many presumably due to cost factors—more than 700,000 jobs were created by new firms and more than 100,000 jobs were added from existing firms—in spite of cost factors.
- An average of about 500 firms moved out of the region annually during the 1989-2002 period, a relatively small number of companies presumably in search of a better business climate than the Sacramento Valley. And, every year since 1991 more firms have actually moved in (through either relocations or expansions) than moved out. In any case, the movement of firms in and out of the region accounted for a fraction (1.4%) of total firms on an annual basis.

Of course it is possible, with lower costs or more productive public investments, the rate of entrepreneurship could have been even higher, or the rate of job loss lower, over this period. Despite this potential lost “opportunity” for even more firms and jobs, the actual results during a time of rising business costs were still positive for the region.

Although there is not yet a reliable way to quantify the full range of entrepreneurial support available or to conclusively determine the impacts of the full range of business costs, a reasonable conclusion based on the views of regional experts and entrepreneurs is that the overall entrepreneurial habitat in the Sacramento Valley is improving. Further, in most areas where regional data are available, such as venture capital, research and development, patents, and licenses/options, the region has clearly made gains in recent years.

In terms of venture capital, investment in the region has nearly doubled over the last decade. Virtually all (99%) of the funding went to companies in the Sacramento metropolitan area. As Figure IV-2 shows, venture capital investments increased from just over \$47 million to more than \$93 million between 1995 and 2003, with a major spike in the 1999-2001 period of the “dotcom” boom. The pattern of venture capital investment follows national and Silicon Valley trends during this period: venture capital investment peaked in 2000 (with \$335 million invested in the Sacramento Valley), followed by a sharp decline in 2001 (down 55% in the Sacramento Valley). But, aside from the turbulence of that extraordinary period, the longer term trend in the Sacramento Valley is upward.

FIGURE IV-2: REGION’S VENTURE CAPITAL INVESTMENT HAS GROWN



Annual venture capital investment to Sacramento Valley companies, 1995 - 2003 in millions of real dollars

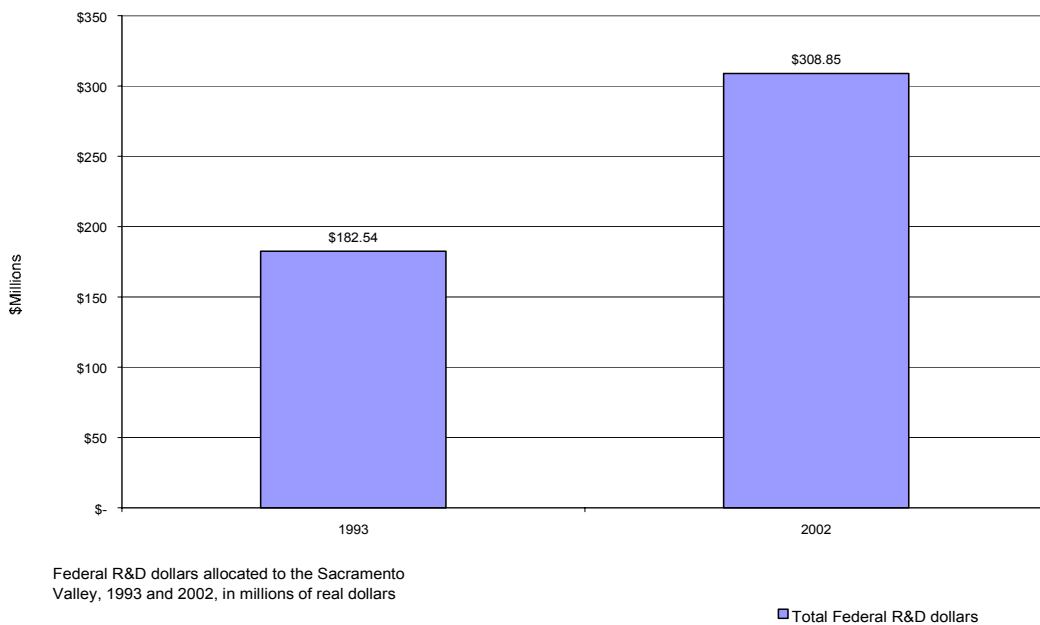
Source: PricewaterhouseCoopers, Thomson Venture Economics and the National Venture Capital Association; MoneyTree Survey

The Sacramento Valley has also strengthened both the investment in and output of research and development in recent years. The Sacramento Valley has become a more research and development intensive region in recent years. R&D funding is often seen as a measure of the potential “pipeline” for new ideas, innovations, and start-ups based on those ideas and innovations. In terms of public R&D funding, the region has experienced gains in the last decade:

- The amount of federal research and development dollars that went to the Sacramento Valley increased by nearly 70% from \$182 million dollars in 1993 to more than \$308 million in 2002 (figures adjusted for inflation).

- Though the majority of funding went to the Sacramento metropolitan area, other places in the region like Chico, Redding and Red Bluff also received federal R&D dollars.
- Chico-based companies together with researchers associated with California State University at Chico increased the number of funding recipients from 5 in 1993 to 17 in 2002, with the funding amount increasing from \$117,000 to \$1.7 million. Chico State is playing a more important role in attracting federal research dollars to the region.
- In 2002, funding recipients in Redding and Red Bluff secured \$350,000 and \$180,000 in federal research dollars

FIGURE IV-3: FEDERAL RESEARCH FUNDING GROWS SUBSTANTIALLY



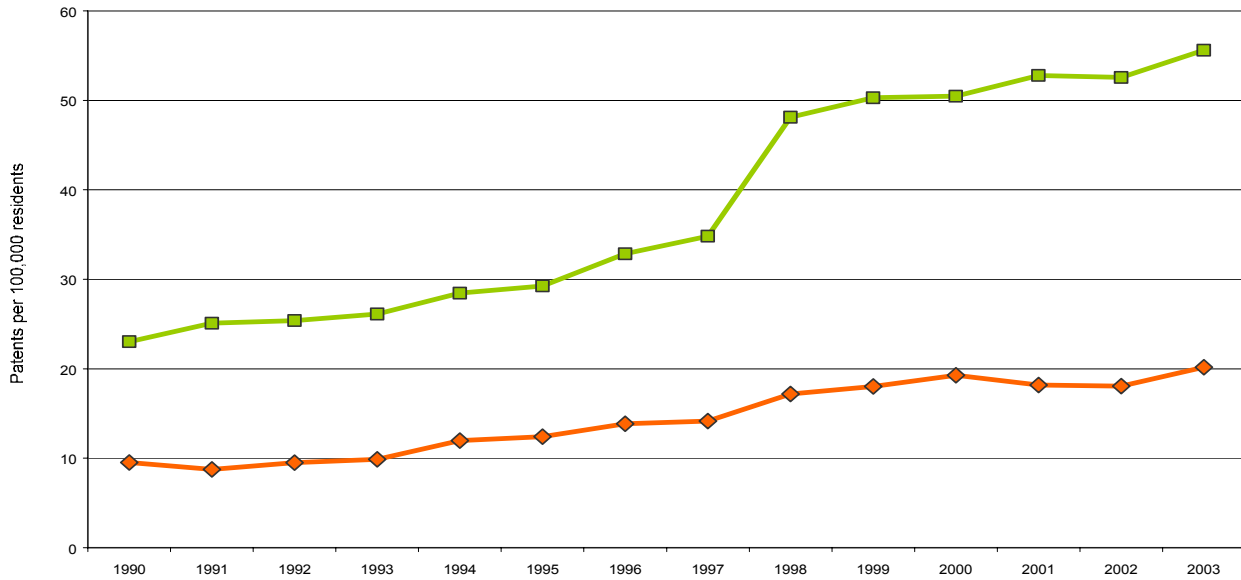
The region has also experienced greater output from R&D—as the rate of patents has more than doubled since 1990 (Figure IV-4). The number of utility patents awarded by the U.S. Patent and Trademark Office is an indicator of innovation. Patenting a new idea, process or technology is a first step towards commercialization.

- Sacramento Valley inventors patented 520 ideas in 2003, which was two and a half times the number of ideas patented in 1990, when regional inventors were awarded 194 patents.
- The University of California-Davis is a major catalyst for the filing of new patents. Between 1996 and 2003, the University filed 244 patents, increasing its share of UC system patents from 9% to 14%. The University has also experienced a recent surge in patent filings, beginning in 2001 (Figure IV-5).
- On a per capita basis, the number of patents in the Sacramento Valley more than doubled rising from 9.5 in 1990 to more than 20 per 100,000 residents in 2003.

At the same time, the Sacramento Valley has yet to match the patent production rate of California as a whole:

- The number of patents produced from the Sacramento Valley grew about 8% annually between 1990 and 2003, compared 8.5% annually for California patents.
- California inventors generated more than 55 patents per 100,000 residents in 2003 while the Sacramento Valley generated about 20 patents per 100,000 residents.

FIGURE IV-4: SACRAMENTO VALLEY PATENT OUTPUT INCREASING, THOUGH NOT AS FAST AS THAT OF CALIFORNIA



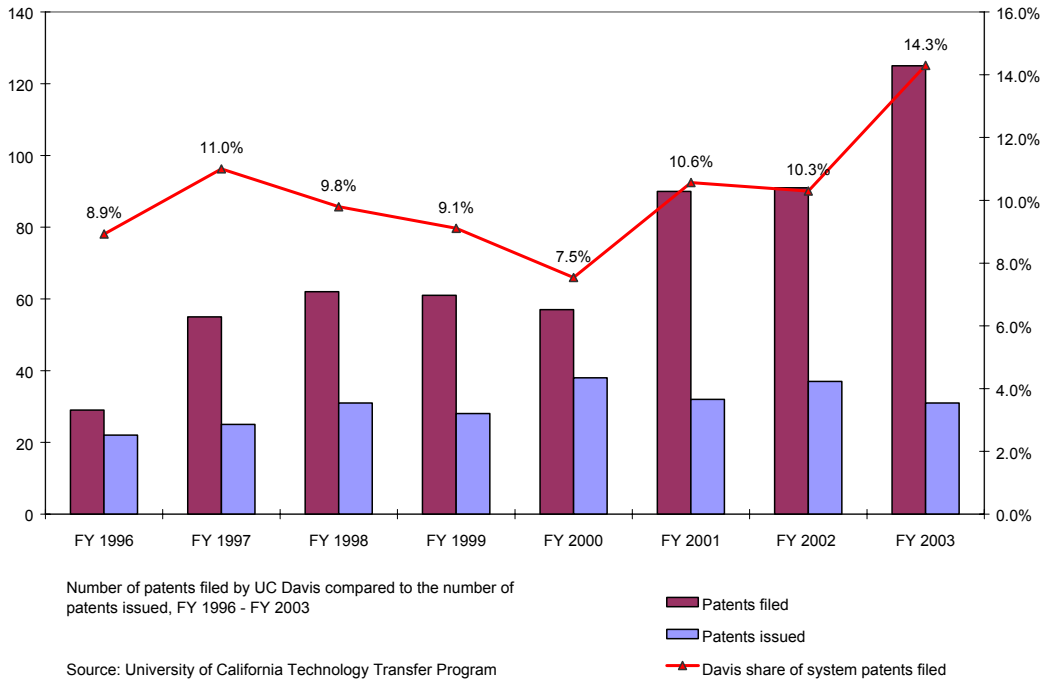
Number of utility patents awarded per 100,000 residents

—◆— Sacramento Valley Patents Per 100,000

Sources: US Patent and Trademark Office, CA Department of Finance, Demographic Research Unit

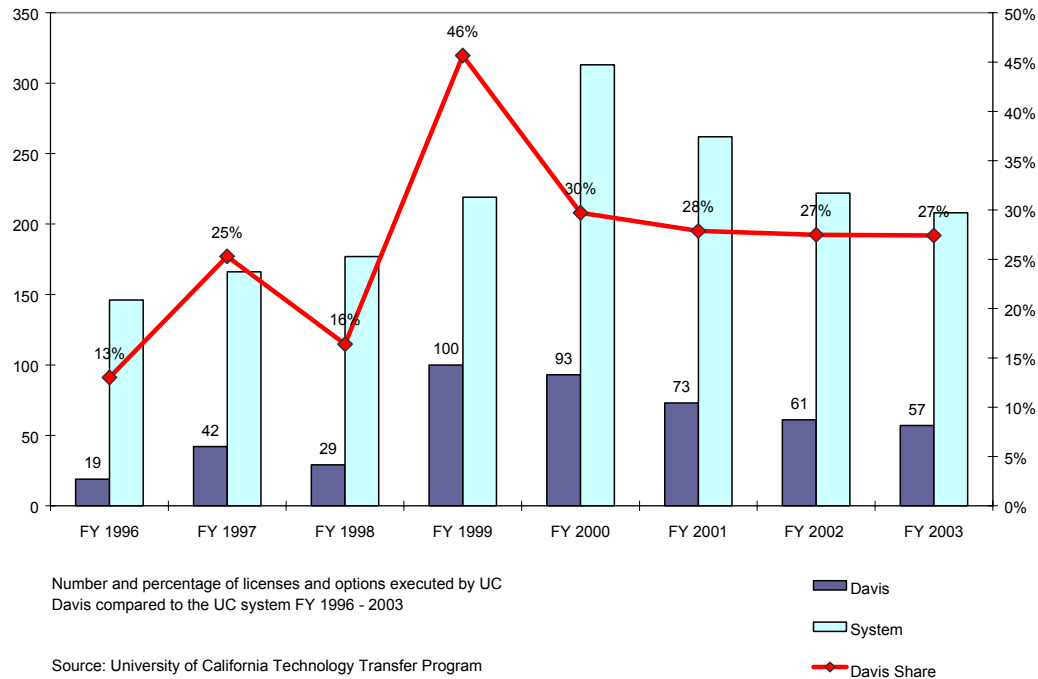
—■— CA Patents Per 100,000

FIGURE IV-5: UC-DAVIS PATENT PRODUCTION RISING



Even more important, the region is getting better at converting its research and development into economic benefits. The region’s ability to commercialize technology, as measured by licenses and options, is improving. Today, UC-Davis leads all other UC campuses in the development of business licenses and options, with about 27% of the total (Figure IV-6). Three quarters of these licenses and options are for plant-related technologies. Since the mid-1990s, the University has clearly increased its flow of licenses and options—despite yearly fluctuations and a recent decline since 2000, which is also being felt throughout the UC system.

FIGURE IV-6: UC-DAVIS LICENSES AND OPTIONS GROWING OVER THE LONG TERM



Even with these indications of progress, there is also widespread agreement the Sacramento Valley's entrepreneurial habitat is still in the early stages of development. Most entrepreneurial support networks have only existed a few years. Institutions have only become more proactive recently, and are still working on how to be most effective in supporting entrepreneurship and commercializing technologies. Interviews with entrepreneurs for this project surfaced several areas for future development:

- In life sciences, the greatest challenge is getting access to experienced people, people who can be executive officers or large-scale managers.
- There is a lack of higher-level people with knowledge of global markets. It is relatively easy to start a business and have slow, steady growth, but very hard to grow large and fast.
- There are real needs for skilled and educated people at all levels.
- We can communicate and run ads nationwide from Chico, but we still need access to sophisticated marketing expertise.

- While there are advantages to being in a smaller community—bankers know me personally—there are disadvantages in terms of lack of knowledge about different industries and markets.
- I talk to other people who are running their own companies, working on a peer-to-peer basis. I have been happy with some business support, but there are more people that I have not impressed me.
- There have been improvements, but there is still a dearth of reasonably priced investment capital in the region.
- If we could get financing, venture capitalists, and some other things located here and really funding local deals, then we could really tap the talent and ideas of this place.
- There are definitely more opportunities for talented entrepreneurs to pursue high-growth technology firms than in the past. As the infrastructure has increased, so too has the likelihood of success. For example, what used to be a 5% chance of getting capital is now maybe a 20% chance for the best ideas—though certainly not a guarantee.

The question is where to go from here. The Corporation for Enterprise Development, in collaboration with the W.K. Kellogg Foundation, has just published a national study called *Mapping Rural Entrepreneurship* (2003). The study included extensive research into the key components supporting the entrepreneurs across the country—i.e., the “habitat” required to promote entrepreneurship. In doing the research, the major challenge was:

There is a very wide array of programs and initiatives, ranging from old-established to exciting new experiments, but it impossible to gauge whether on the ground these come together in coherent, entrepreneurial systems of support or as disconnected, bureaucratic programs (p. 5).

This challenge of complexity and effectiveness confronts regions across the country, including the Sacramento Valley. Based on their extensive national study, they concluded that entrepreneurial development is best promoted by following four fundamental principles: community-driven, regionally-oriented, entrepreneur-focused, and continuously learning:

- *Community-driven*: Local communities need the tools and resources to identify and build upon their assets, to make choices that appropriately balance economic, social, and environmental imperatives, to learn from the experiences of others, and to be open to experimentation and innovation. It requires that all sectors of the community are invited and expected to contribute.

- *Regionally-oriented:* Only through regional cooperation across multiple jurisdictions and through regional institutions can there be sufficient scale, resources, and expertise to enable individual communities to play their full role. There are issues and concerns common to both urban and rural areas that can best be addressed through regional solutions: regions represent the economic engines and markets that rural enterprises have to serve.
- *Entrepreneur-focused:* Systems thinking is required to align the plethora of training, technical assistance, and financing programs to meet the variety of needs of entrepreneurs and their different levels of education, skills, and maturity.
- *Continuously learning:* Networks for peer support and learning are essential for entrepreneurs and practitioners, community leaders, and policymakers. Learning about entrepreneurship should be part of the school curriculum. The need for rigorous evaluation of the effectiveness of entrepreneurial strategies and returns on investment is pressing.

V. ACTIONS TO PROMOTE AN ENTREPRENEURIAL SACRAMENTO VALLEY

There are many ways the Sacramento Valley can promote more entrepreneurship. Clearly, the past decade or more has been a time of progress—many new firms, new jobs, and improvements in the assets, connections, culture, and quality of life “ingredients” essential for a strong entrepreneurial “habitat.” As one venture capitalist interviewed for this report stated: “It may just be that the region’s time has come. It may be at an inflection point.” Is the region poised to move to a new level of innovation, entrepreneurship, and economic prosperity? To do so, we believe the region must make the following shifts (Figure V-1):

| FROM | TO |
|---|--|
| Individual entrepreneur success stories | Identity as an Entrepreneurial Valley |
| Top contributor to economic development | Top priority in economic development |
| Producing innovations with commercial potential | Rapidly converting innovations into companies |
| Patchwork of entrepreneurship programs | System of entrepreneurial support |
| Local leaders helping local entrepreneurs | Regional stewards of innovation and entrepreneurship |

FIGURE V-1: THE ENTREPRENEURIAL SACRAMENTO VALLEY
From individual success stories to an identity as an entrepreneurial valley

Individual stories of entrepreneurial success are inspiring and instructive, but also paint an incomplete picture of entrepreneurship in the Sacramento Valley. Now, for the first time, the region has a comprehensive description of its underlying base of thousands of companies—and a convincing case for why the region is a strongly entrepreneurial place. It is clear from this assessment the region is not only a place of individual success stories, but a thoroughly “entrepreneurial valley.” Yet, most observers suggest the region’s identity is not that of a leading entrepreneurial hub. It is time to move beyond the stories and focus on the fundamental patterns of and potential for entrepreneurship in the Sacramento Valley.

Entrepreneurs, venture capitalists, and other interviewed for this report expressed a strong preference for promoting the region’s entrepreneurial diversity over a single industry or technology area. For example:

- By the very nature of innovation, new businesses can come from anywhere. Let’s not think in terms of specific industries.
- We don’t need an identity as a technology center, a “some-kind-of valley.” What we need is to be known for our diversity of opportunities, including our strength in life sciences, but also agricultural biotechnology, engineering, and other areas—even new kinds of energy like the Fuel Cell Partnership.

To begin this shift, a first step could be to organize an Entrepreneurial Sacramento Valley campaign, a regional initiative to raise the visibility of the findings of this report and other information on entrepreneurship in the region. Begin by holding a “Regional Dialogue on the Future of Entrepreneurship in the Sacramento Valley,” a series of briefing and discussion sessions with government, business, and community leaders on the role of entrepreneurship in economic development, the impacts of entrepreneurial firms on the Sacramento Valley, potential for entrepreneurship in the region, and the shifts required to unlock greater innovation, entrepreneurship, and economic prosperity in the future. A major regional dialogue on this topic would set the stage for the shifts described below.

From top contributor to economic development to top priority in economic development

It is difficult to find an elected official (or anyone else) who is not at least generally supportive of local small businesses. Sometimes that support translates into important policies and programs that have a positive impact on new and small firms, but too often, as one entrepreneur interviewed for this report put it, “we get little more than lip service.”

What is more common is that new and small firms can be easily overlooked as other issues take priority. Their individual impact on jobs and public revenues is small and dispersed. They typically do not generate the headlines garnered by successful corporate relocations. However, collectively, as this report shows, they create the vast majority of new jobs and increase the diversity and competitiveness of the economy. Yet, for the most part, entrepreneurship is not a top economic development priority of local jurisdictions—in terms of policy or funding. This reality is understandable given competing issues and priorities, but the strong case is made here for entrepreneurship to rise to the top.

To begin this shift, a first step could be for local jurisdictions and organizations to conduct an entrepreneurial performance review of their policies, programs, and funding. Is entrepreneurship being given the priority justified by its impact on economic development? If not, why not? Such a review should seek input from the entrepreneurial community about their needs for a supportive entrepreneurial “habitat.” With these findings, local jurisdictions can identify and implement specific changes to policies, programs, and funding.

From generating innovations with commercial potential to rapidly converting innovations into companies

Universities are one of the most important institutions that can make entrepreneurship a top economic development priority. In fact, the Corporation for Enterprise Development, in collaboration with the W.K. Kellogg Foundation, has just published a national study (*Mapping Rural Entrepreneurship*, 2003), finding that “anchor institutions”—universities, community colleges, community development financial institutions, and research and advocacy groups—play a vital role in articulating a vision, building partnerships, and attracting and mobilizing resources for entrepreneurship. Universities, in particular, can be important sources of innovation, which can lead to new companies—sometimes even breakthrough companies that go onto be major employers and global leaders in their industry.

Most institutions in the region already have some curriculum, programs, or centers dedicated to entrepreneurship or entrepreneurial assistance. For most institutions, the scope of innovation or potential company spin-offs may be limited now; but they could nonetheless set a goal to seed a growing number of new firms over time. The region’s major research university is UC-Davis, which has been responsible for most of the university-based patents, licenses, and options—tangible signs of potential and actual commercialization of innovations. Although other colleges and universities in the region are important wellsprings of talent—including entrepreneurs—it is UC-Davis that has most of the region’s research and development base, the foundation from which to generate innovations that could result in new high-growth companies.

To begin this shift, a first step could be for colleges and universities in the region to set new or higher goals for promoting entrepreneurship in the Sacramento Valley. While each institution’s goals need to be proportional to its capacities, the process of goal-setting could create greater understanding and visibility for existing efforts and emerging initiatives—and even greater institutional and regional financial commitment to their success. Institutions should be particularly creative in helping promote entrepreneurship. For example, alumni that have left the region, but are interested in returning could be the target for a recruitment campaign in collaboration with local economic development organizations—an effort to “welcome back” talented alumni, who could be actual or potential entrepreneurs.

The specific opportunity for UC-Davis is to commercialize more of its promising innovations faster, creating additional high-value “breakthrough” companies. The University has made much progress in the last decade or so generating innovations with commercial potential (as measured by patents and licenses and options). It has put into place a mechanism to help commercialize innovations—i.e., UC-Connect. The next step is to develop a stronger, more agile ability to move innovations into the marketplace as the seeds of new companies.

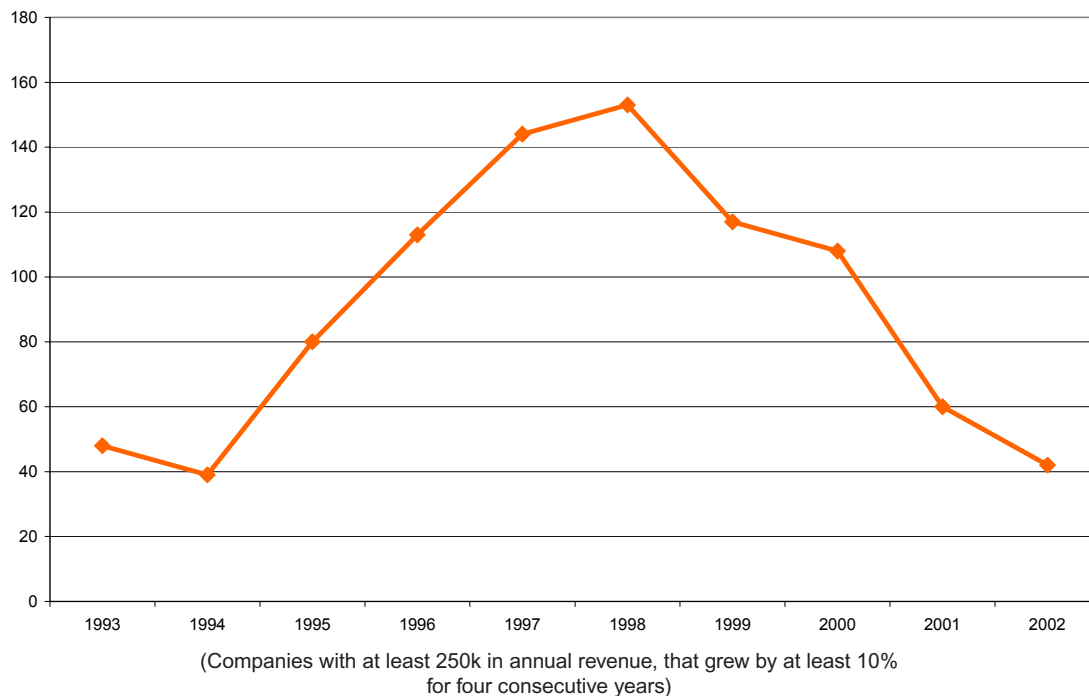
For UC-Davis, the challenge is to go beyond what is working well for the institution in the short-run and focus on what will produce larger economic benefits for both the university and the region over the long-term. For example, the University has experienced substantial financial gain from licensing arrangements, but the flow of new companies from new innovations could be larger. Entrepreneurs and venture capitalists interviewed for this report suggest if the University were to negotiate more attractive terms with start-up companies, there would be many more “deals” annually. More deals mean an expansion and acceleration of the flow of innovations into the marketplace. And, as one venture capitalist remarked, this change needs to be coupled with “an acceleration of the number of opportunities put in front of potential partners—innovations that are not only scientifically significant, but actually market-capable—in other words, have the potential of being start-ups.”

From a patchwork of entrepreneurship programs to a regional system of entrepreneurial support

Despite the impressive contributions of entrepreneurship to regional economic development, entrepreneurial firms have a difficult time sustaining growth over a period of years. As Figure V-2 shows, the number of firms with at least \$250,000 in revenues that were able to sustain at

least four straight years of 10% growth never grew to more than 150 in any year between 1989 and 2002. Recently, as few as 40 firms achieved this growth trajectory. Regardless of the year, the number of sustainable, high-growth companies has remained very small in comparison to the total of more than 125,000 firms that currently exist in the region. This reality means the entrepreneurial habitat may be conducive to starting many companies, but not as supportive of growing them steadily over time. Put another way, if the region had been successful in preventing the closure of just 1% of the firms that did shut down during the 1989 to 2002 period, the regional economy would have more than 1,000 additional companies.

FIGURE V-2: FIRMS WITH SUSTAINED, HIGH GROWTH



Source: NETS Database

There are dozens of programs and initiatives that provide some kind of entrepreneurial support in the region. For the most part, these are individual programs. There is not a visible, well-linked continuum of support geared to different kinds of entrepreneurs in different situations. In some regions, like Silicon Valley, the natural “habitat” of assets and linkages has developed over decades. In the Sacramento Valley, it is gradually evolving. This evolution can be accelerated by investing in connecting organizations and networks, as well as in the capacity of individual programs and initiatives to develop collaborative arrangements with other programs and initiatives. A stronger habitat could help more companies achieve a higher-growth trajectory.

At the same time, folding all the pieces into one or a few organizations is a formula for failure. Entrepreneurship in the region is diverse and widely dispersed—from very urbanized to very rural settings. One size would not fit all. Instead of one or a few big organizations or the other extreme—a patchwork of programs—the Sacramento Valley can follow a third course: better link

existing and new entrepreneurial support elements into a cohesive system that entrepreneurs of all kinds can access. As the leader of one entrepreneurial support organization has remarked:

We are resource rich with all kinds of public and private entities providing support. One of the challenges is to catalog those resources and make them visible to entrepreneurs. We need a roadmap to help them through the maze, so wherever they start in the system they are referred to the proper entity. This is especially important for the large influx of people coming from the Bay Area and Southern California in recent years.

To begin this shift, a first step could be to map, strengthen, and launch a regional system of entrepreneurial support. First, it will be necessary to document the full range of existing entrepreneurial support efforts in the region, identifying them with input from the entrepreneurial community. With the “system map” identified, targeted investments from public, private, and community sectors could fill gaps, increase capacities, and improve connectivity within the system. In particular, it would be essential to develop a communications and referral network that can provide a single starting place for entrepreneurs in search of assistance.

From local leaders helping local entrepreneurs to regional stewards of innovation and entrepreneurship

All the shifts described above will be difficult, if not impossible, to achieve without a core of leaders who can work together across jurisdictions to make them happen. Today, there are many local leaders helping local entrepreneurs succeed—and that should continue and grow. However, few are focused on the regional habitat for entrepreneurship, how to connect a patchwork of programs into an effective system of support, and how to carry the message of an Entrepreneurial Sacramento Valley across the region—and outside the region to potential entrepreneurs and investors.

To begin this shift, a first step would be to put out a call to stewardship. There are individuals who are already championing entrepreneurship, many of them serving as advisors to this Project. Those who answer the call—from public, private, and community sectors—could design and launch the Entrepreneurial Sacramento Valley campaign, encourage jurisdictions to conduct entrepreneurial performance reviews, work with universities to set or raise their goals for entrepreneurship, and drive the effort to transform a patchwork of local programs into an effective regional entrepreneurial support system. They should be “Ambassadors of Sacramento Valley Entrepreneurship,” taking the message across and beyond the region. And, over time, like good stewards, they should keep the region accountable for progress, publishing specific measures focusing on the entrepreneurial people, firms, and habitat of the region—periodic updates on the State of the Entrepreneurial Sacramento Valley.

Like entrepreneurship, in the end, stewardship about people stepping up, articulating a vision, taking a risk, and persisting through inevitable setbacks. The future of entrepreneurship in the Sacramento Valley will depend not only on the region’s entrepreneurs, but also the region’s stewards of innovation and entrepreneurship.

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VISIT THE ONLINE APPENDIX
www.greatvalley.org/nvc/entrepreneurship

The Online Appendix lists for each county in the Sacramento Valley region the industry sectors (at the four-digit SIC level) that experienced the largest net gains in the number of new firms and the industry sectors that experienced the largest net losses in the number of firms during the 1989-2002 period. These lists provide a starting point for discussion and further exploration by local jurisdictions and organizations.

The source of this information is the National Establishment Time Series (NETS) database, which itself is based on information collected by Dun and Bradstreet.

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