

## *Silicon Valley's Skilled Immigrants: Generating Jobs and Wealth for California*

Policymakers and scholars have paid a great deal of attention to California's immigrants. However, most of this attention has focused on low-skilled immigrants—in particular, how they affect the employment and wages of native workers or demand for public services. In *Silicon Valley's New Immigrant Entrepreneurs*, AnnaLee Saxenian looks, instead, at highly skilled workers—the foreign-born scientists and engineers in Silicon Valley—and their experiences both as entrepreneurs and as middlemen who facilitate trade and investment links with their countries of origin. Her findings suggest that the policy debate over immigration must be widened to include the evolving relationship between immigrants, trade, and economic development in an increasingly global economy.

### *A New Perspective on Immigration*

In this country, debates over the immigration of scientists and engineers focus primarily on the extent to which foreign-born professionals displace native workers or on the existence of invisible barriers to mobility—the “glass ceilings” experienced by non-native professionals. By contrast, the view from sending countries has historically been that the emigration of highly skilled workers represents a significant economic loss, or “brain drain,” which deprives their economies of their best and brightest.

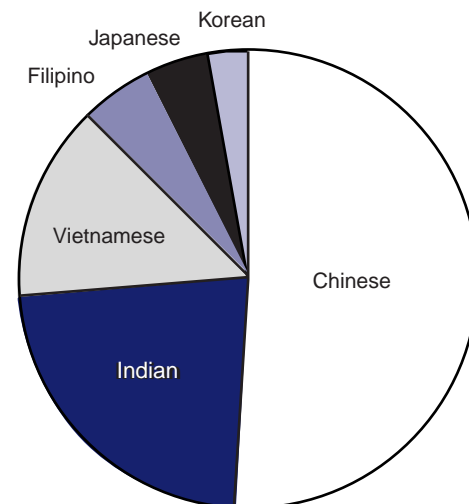
Neither view is broad enough to describe what is happening today in Silicon Valley. The concern that immigrants displace native workers needs to be weighed against the fact that foreign-born scientists and engineers are starting hundreds of new businesses and generating jobs and wealth for the California economy. Nor is it valid to assume that skilled immigrants stay permanently in the United States, as was common in the past. Recent research suggests that the brain drain may be giving way to an accelerating process of “brain circulation” as immigrants who have studied and worked in the United States return to their home countries

to take advantage of promising opportunities. Moreover, many of the immigrants who remain in the United States are playing a growing role in linking businesses in their home countries to those in the United States.

### *Networking Entrepreneurs*

Saxenian used census data and a customized dataset for her analyses. She also conducted more than 100 in-depth interviews with engineers, entrepreneurs, venture capitalists, policymakers, and other key players in Silicon Valley. She undertook another 67 interviews in Taiwan and India with representatives of technology businesses as well as with

Asian-Born Scientists and Engineers in Silicon Valley's High-Technology Workforce, 1990



SOURCE: U.S. Census, 1990.

*Foreign-born engineers and computer scientists are much more likely to come from Taiwan, Mainland China, or India than from other Asian nations.*

national and local policymakers. Her study focuses on Chinese and Indian engineers because they are the largest groups of immigrants in Silicon Valley. The census data show that, in 1990, immigrants accounted for 32 percent of that region's scientific and engineering workforce. Two-thirds of these skilled immigrants were from Asia, and, as shown in the figure, the majority were of Chinese and Indian descent (51 percent and 23 percent, respectively).

Most of these immigrants arrived in the United States after 1970, and their entrepreneurial contributions are remarkable. As shown in the table, Chinese and Indian engineers were running one-quarter of Silicon Valley's high-technology businesses in 1998. In that year, their companies collectively accounted for more than \$16.8 billion in sales and over 58,000 jobs. The pace of immigrant entrepreneurship has also increased significantly. Chinese and Indian CEOs were running 13 percent of Silicon Valley technology companies started between 1980 and 1984 and 29 percent of those started between 1995 and 1998.

The contributions of these highly skilled immigrants are not limited to their direct role as engineers and entrepreneurs. They have created a rich fabric of professional and associational activities that facilitate information exchanges, job search assistance, access to managerial expertise and capital, and ethnic camaraderie. The region's most successful Chinese and Indian entrepreneurs rely heavily on such ethnic resources while simultaneously integrating into the mainstream technology economy.

These networks are not merely local. The new immigrant entrepreneurs are building far-reaching professional

and business ties to regions in Asia. These entrepreneurs are uniquely positioned because their language skills and technical and cultural know-how allow them to function effectively in the business culture of their home countries as well as in Silicon Valley. Their long-distance networks are accelerating the globalization of labor markets and enhancing opportunities for entrepreneurship, investment, and trade both in California and in newly emerging regions in Asia such as Taiwan and India.

### *Maintaining Open Boundaries*

This study illuminates important changes in the relationship between immigration, trade, and economic development in the 1990s. In the past, the primary economic links created by immigrants to their countries of origin were the remittances they sent to those left behind. Today, however, a growing number of skilled immigrants return to their home countries, and even those who stay often become part of transnational communities that link the United States to the economies of distant regions.

Scholars and policymakers need to recognize the growing policy relationships between immigration, trade, and economic development. The economic effect of skilled immigrants, in particular, is not limited to labor supply and wage effects. Some of their economic contributions, such as enhanced trade and investment flows, are difficult to quantify, but they must figure into policy debates. For example, the national debate over the increase of HI-B visas for highly skilled immigrants focused primarily on the extent to which immigrants displace native workers. Yet, as shown in this study, these immigrants also create new jobs and economic linkages in their role as entrepreneurs. Economic openness has its costs, but the strength of the California economy has historically derived from its openness and diversity—and this will be increasingly true as the economy becomes more global.

The experience of Silicon Valley's new immigrant entrepreneurs suggests that California should resist the view that immigration and trade are zero-sum processes. Restricting the immigration of skilled workers, for example, could have substantially more far-reaching consequences for economic development than most policymakers recognize, affecting not only the supply of skilled workers but also the rate of entrepreneurship, the level of international investment and trade, and California's economic growth.

**1998 Sales and Employment of Silicon Valley High-Technology Firms Led by a Chinese or Indian CEO**

	Number of Firms	Total Sales (\$ millions)	Total Employment
Indian	774	3,588	16,598
Chinese	2,001	13,237	41,684
<b>Total</b>	<b>2,775</b>	<b>16,825</b>	<b>58,282</b>
<b>Share of Silicon Valley High-Technology Firms</b>			
	24%	17%	14%

*SOURCE: Dun & Bradstreet, 1998.*

*NOTE: Statistics are for firms started by Chinese or Indians between 1980 and 1998.*

***Indian- and Chinese-led businesses are now a substantial economic force in Silicon Valley.***

*This research brief summarizes a report by AnnaLee Saxenian, Silicon Valley's New Immigrant Entrepreneurs. The report may be ordered by calling (800) 232-5343 [mainland U.S.] or (415) 291-4415 [Canada, Hawaii, overseas]. A copy of the full text is also available on the Internet (www.ppic.org). The Public Policy Institute of California is a private, nonprofit organization dedicated to independent, nonpartisan research on economic, social, and political issues affecting California. This project was supported by PPIC through an Extramural Research Program contract.*