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


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

![Table: 1998 Sales and Employment of Silicon Valley High-Technology Firms Led by a Chinese or Indian CEO](image)

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<thead>
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<th>Number of Firms</th>
<th>Total Sales ($ millions)</th>
<th>Total Employment</th>
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</thead>
<tbody>
<tr>
<td>Indian</td>
<td>774</td>
<td>3,588</td>
<td>16,598</td>
</tr>
<tr>
<td>Chinese</td>
<td>2,001</td>
<td>13,237</td>
<td>41,684</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2,775</strong></td>
<td><strong>16,825</strong></td>
<td><strong>58,282</strong></td>
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| Share of Silicon Valley High-Tech Firms | 24% | 17% | 14% |

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).

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