SAN FRANCISCO — Foreign-born entrepreneurs were behind one in four U.S. technology start-ups over the past decade, according to a study to be published Thursday.

A team of researchers at Duke University estimated that 25% of technology and engineering companies started from 1995 to 2005 had at least one senior executive — a founder, chief executive, president or chief technology officer — born outside the United States.

Immigrant entrepreneurs' companies employed 450,000 workers and generated $52 billion in sales in 2005, according to the survey.

Their contributions to corporate coffers, employment and U.S. competitiveness in the global technology sector offer a counterpoint to the recent political debate over immigration and the economy, which largely centers on unskilled, illegal workers in low-wage jobs.

"It's one thing if your gardener gets deported," said the project's Delhi-born lead researcher, Vivek Wadhwa. "But if these entrepreneurs leave, we're really denting our intellectual property creation.

Wadhwa, Duke's executive in residence and the founder of two tech start-ups in North Carolina's Research Triangle, said the country should make the most of its ability to "get the best and brightest from around the world."

The study comes nearly eight years after an influential report from the University of California, Berkeley, on the impact of foreign-born entrepreneurs.

AnnaLee Saxenian, now dean of the School of Information at UC-Berkeley, estimated immigrants founded about 25% of Silicon Valley tech companies in 1999. The Duke study found the percentage had more than doubled, to 52% in 2005.

California led the nation, with foreign-born entrepreneurs founding 39% of start-ups, even though they make up only 25% of the state's population. In New Jersey, 38% of tech start-ups were founded by immigrants, followed by Michigan (33 percent), Georgia (30 percent), Virginia (29 percent) and Massachusetts (29 percent).

Saxenian, also co-author of the new study, said the research debunks the notion that immigrants who come to the United States take jobs from Americans.

"The advantage of entrepreneurs is that they're generally creating new opportunities and new wealth that didn't even exist before them," Saxenian said. "Just by leaving your home country, you're taking a risk, and that means you're willing to take risks in business.
You put them in an environment that supports entrepreneurship, and this is the logical outcome."

Researchers started with a list of 28,766 companies classified as technology and engineering companies in Dun and Bradstreet's Million Dollar Database, which lists companies with more than $1 million in revenue and at least 20 employees. Researchers were able to reach senior executives to determine the backgrounds of key founders for 2,054 of the tech start-ups.

Immigrants were most likely to start companies in the semiconductor, communications and software niches. They were least likely to enter the defense sector.

One of the study's biggest surprises was the extent to which Indians led the entrepreneurial pack. Of an estimated 7,300 U.S. tech start-ups founded by immigrants, 26% have Indian founders, CEOs, presidents or head researchers, the study found.

Indian immigrants founded more tech start-ups from 1995 to 2005 than people from the four next biggest sources — United Kingdom, China, Taiwan and Japan — combined.

"People who come from India are laser-focused on technology," said Rosen Sharma, who immigrated from India in 1993 and is now president and chief executive officer of Palo Alto-based management software company SolidCore Systems Inc. "They come here and they learn to tell a story and paint a vision. Once you have those two things, you're off to the races."

The Duke researchers also found that foreign-born inventors living in the United States without citizenship accounted for 24% of patent filings last year, compared with 7.3% in 1998.

Without permanent citizenship, inventors are more likely to take valuable intellectual property elsewhere — and U.S. companies would have to compete with them, Wadhwa said.

"The bottom line is: Why aren't these people citizens?" Wadhwa said. "We're giving away the keys to the kingdom. This is a big, big deal once you figure out what this means for U.S. competitiveness."