

Where the Good Jobs Are—and Why

By Enrico Moretti

The American labor market is recovering from a painful recession. But the recovery is geographically uneven. While some parts of the country are booming, others are still stuck in a deep recession. Two groups of localities have been doing particularly well over the past two years. Both are supported by fast-paced technological progress, but one has by far the bigger jobs-multiplier effect.

The first group includes cities endowed with a large number of highly educated workers and innovative employers—places like San Jose, Calif.; Seattle; Austin, Texas; Raleigh, N.C.; Washington, D.C., and Minneapolis. The recession had less impact on these areas, and job growth has been brisk since the recovery began, thanks to sectors like the Internet, software, digital entertainment and biotech.

The most striking example is San Francisco, where the labor market for tech workers is the most dynamic it has been in a decade, average salaries are above their 2006 level, and housing prices have surpassed their pre-recession peak. In the past six months, Twitter and Yelp had to raise salaries to keep employees from moving to a fast-growing number of increasingly aggressive startups.

The second booming-economy group includes areas endowed with oil and gas—Oklahoma, parts

of Texas, New Mexico and Colorado. Here too the labor market is thriving thanks to technological innovation such as fracking, horizontal drilling and computer-based seismic imaging. The most striking example is western North Dakota. Like San Francisco, this

When a high-tech company hires one person, five other new jobs follow.

area is becoming a magnet for workers attracted by raising wages and seemingly insatiable labor demand.

Despite some current similarities, these two groups offer vastly different models of economic development and their fortunes are likely to diverge in the long run. America's brain hubs have been growing for three decades, and there are good economic reasons to expect that they will continue to grow. Recent history suggests that the growth of oil-producing regions will be reversed if energy prices decline.

Take the experience of North Dakota. Its private employment skyrocketed in 1979-80 when oil prices increased 300% after the Iranian revolution of 1979. But that employment declined throughout the 1980s, when oil prices receded, and by the end of the decade employment was almost back where it started.

Cities with a high density of

innovative employers and highly educated workers have also experienced ups and downs, most notably the 2001-03 dot-com bust. But the trend in employment, wages and skills over the past 30 years clearly has been positive. The rise of America's innovation hubs reflects a structural change in the American economy.

Since 1980, data show that the economic success of a city has been increasingly defined by its number of highly educated workers. Cities with many college-educated workers and innovative employers started attracting more of the same, and cities with a less educated workforce and less innovative employers—such as traditional manufacturing—started losing ground.

It is a tipping-point dynamic: Once a city spawns some innovative companies, its ecosystem changes in ways that make it even more attractive to others. For instance, the existence of Salesforce, Twitter and Yelp in downtown San Francisco increases the city's appeal to other high-tech entrepreneurs, and makes them more likely to locate their companies there, along with tech workers from all over the world. Nationwide, high-tech employment has grown 25 times faster than the rest of the economy.

My research shows that scientists and software engineers are not the only ones who thrive as a result. Using data on nine million workers in 320 U.S. metropolitan areas, I found that for each new

innovation-job in a city, five additional jobs are created—not only in professional occupations (lawyers, teachers, nurses) but also nonprofessional occupations (waiters, hairdressers, carpenters). For each new software designer hired at Twitter in San Francisco, there are five new job openings for baristas, personal trainers, therapists and taxi drivers. The most important effect of high-tech companies on the local economy is outside high-tech.

This matters for wages, too. In 1980, salaries for workers with a high-school diploma in Austin and Raleigh were significantly lower than the national average. Then those cities became important hubs for IT and life science, respectively. Salaries are 45% higher, and the gap keeps expanding. High-school graduates in Austin and Raleigh don't work harder or have higher IQs. The ecosystem around them is different.

Most industries have a multiplier effect. But none has a bigger one than the innovation sector: about three times as large as that of extractive industries or traditional manufacturing. Clearly, the best way for a city or state to generate jobs for everyone is to attract innovative companies that hire highly educated workers.

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