Federal Reserve Bank of Boston
2007 Issue 1

New England Community Developments

Emerging Issues in Community Development and Consumer Affairs

Venture Capital in New England Secondary Cities

By Carole Carlson and Prabal Chakrabarti

Over the past two decades, venture capital, defined as at-risk equity investment provided by investors to privately held companies with perceived long-term growth potential, has been one of the major drivers of the U.S. economy. As a source of financing for early stage companies, venture capital investors make high-risk, high-reward investments that support high growth companies and foster innovation. Companies that received venture funding between 1970 and 2003 accounted for 10.1 million jobs in 2003.[1]

Venture capital investment is unevenly distributed: fully two-thirds of U.S. venture capital investment takes place in five concentrated geographic areas (Silicon Valley, New England-primarily metro Boston, metro New York, Texas, and Los Angeles/Orange County).

The venture capital industry has organized itself to maximize profits by focusing on a select group of high growth industries and on specific geographies. As a result, the benefits of venture capital investment are unevenly distributed: fully two-thirds of U.S. venture capital investment takes place in five concentrated geographic areas (Silicon Valley, New England-primarily metro Boston, metro New York, Texas, and Los Angeles/Orange County), and the economic areas of the Silicon Valley and metro Boston account for nearly one-half of all investment. Given this geographic concentration of investment, an important question to ask is, why do some investors choose to invest *outside* of these five areas? This article examines venture capital investment in secondary cities, cities outside of the 40 largest U.S. metropolitan statistical

Inside

areas (MSAs), and takes a detailed look at investment in New England secondary cities. We identify factors that may explain how certain smaller cities attract venture capital and make recommendations about how secondary cities can design policies aimed at increasing the flow of this type of capital to their industries.

Background

Venture-backed companies play an important role in economic development. While it remains a challenge to determine the direct effects of venture capital investment on firm behavior, it is clear that venture-backed firms are more innovative and grow more quickly than others.[2] One study found that venture capital is three to four times more effective in stimulating patent activity, a critical measure of innovation, than the equivalent amount of traditional R&D spending.[3] This suggests that venture capital, while averaging less than 3 percent of corporate R&D, accounts for about 10 percent of U.S. innovation. There is also compelling evidence of the positive effect of venture capital on a company's revenues and earnings.[4] Anecdotally, many large and successful New England firms were venture-backed, from software firms like voice-over-internet specialist Sonus to national retailers like Staples.

However, secondary cities have received far less than their proportionate share of private equity deals and dollars.[5] The figures we cite below come from our study conducted with the Initiative for a Competitive Inner City (ICIC), which uses data from ICIC's State of the Inner City Economies database and covers the time period of January 2003 to August 2005. According to our analysis, secondary cities received 13 percent of all deals and 20 percent of total investment dollars, despite the fact that secondary cities accounted for 51 percent of the U.S. population, 49 percent of the number of business establishments, and 38 percent of the U.S. payroll.

In the six New England states, the disparity between population and establishment share in secondary cities compared with the total investment dollars they receive becomes even more pronounced. The region's secondary cities, or those cities located outside of metropolitan Boston, account for 68 percent of the population of New England, 69 percent of the business establishments, and 58 percent of the payroll.[6] During the study period, however, they received only 22 percent of all deals and 23 percent of total investment dollars.[7]

By failing to attract capital at similar rates to larger cities, secondary cities are missing a major engine of job and wage growth. Not all secondary cities are the same, however. A number of these cities have managed to assemble the right combination of factors to significantly outperform their peers in terms of the amount of venture capital they have been able to attract. Clearly, metro Boston has attracted far more venture investment than the rest of New England. Yet, New England has some particularly successful secondary cities, with eight of the top 20 high-performing secondary cities (measured in terms of the investment they have been able to attract) located in the region. Figure 1 shows these 20 cities. New England cities are shown in black.

Figure 1: **Twenty Highest-performing Secondary Cities in the United States**

Rank	Secondary City
1	Boulder CO
2	Salt Lake City UT
3	Westborough MA
4	Ann Arbor MI
5	Norwalk CT
6	Providence RI
7	Southborough MA
8	Stamford CT
9	Melbourne FL
10	New Haven CT
11	Branford CT
12	Durham NC
13	Madison WI
14	Tucson AZ
15	Bakersfield CA
16	Santa Barbara CA
17	Louisville KY
18	Nashua NH
19	Princeton NJ
20	Tulsa OK

Source: Initiative for a Competitive Inner City. Cities are ranked by number of private equity deals per city.

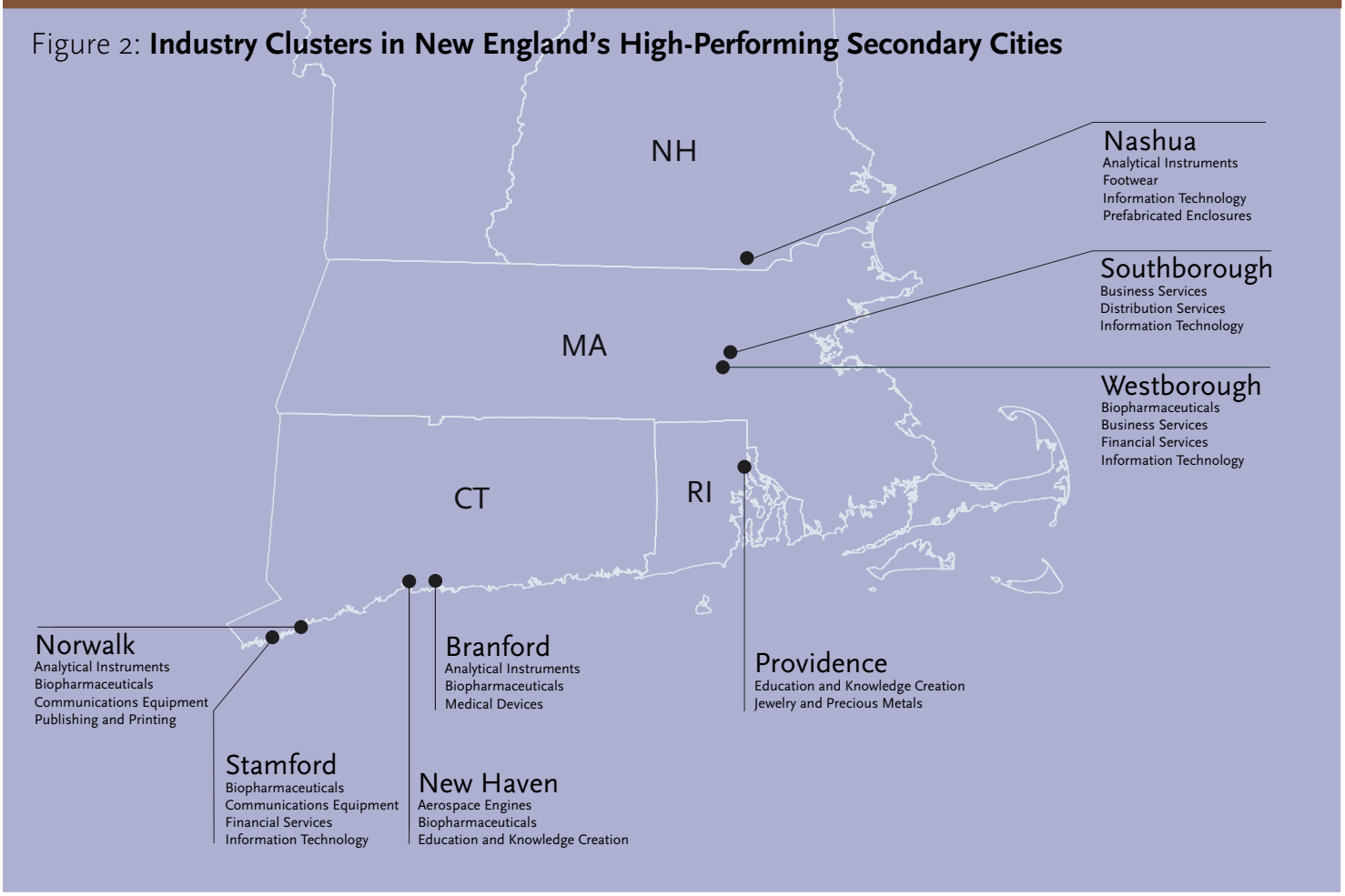
Investigating Success in Certain Secondary Cities

There are myriad potential explanations for high performance by some secondary cities. To understand the drivers of venture capital and private equity investment in secondary cities across the country, we interviewed the leaders of 17 venture firms, including national and regional firms representing more than one-half of the top 10 investors in secondary city markets. We also interviewed and surveyed 53 companies in secondary city markets that successfully received venture capital investment funds as well as industry experts and venture funding facilitators. From these interviews and surveys, we identified six factors that industry representatives cited as having helped secondary cities attract more venture capital than their peers.

1. Clusters and Networks

The most valuable factor involves connections. First, connections between firms are important. These company-based links are exhibited by industry clus-

Figure 2: **Industry Clusters in New England's High-Performing Secondary Cities**



Source: Harvard Business School Cluster Mapping Project.

ters, which are defined as "geographic concentrations of interconnected companies, specialized suppliers, service providers, and associated institutions in a particular field."[8] Secondary cities that are able to attract the most venture capital benefit from holding a high concentration of a particular cluster, i.e., a higher share of jobs in that cluster out of total jobs in the city compared with the share of jobs in that cluster for the United States as a whole.

Second, smaller cities that attract venture capital have strong connections among individuals within the industries. Often these personal networks are organized by professional societies and are part of well-functioning clusters. They are critical to securing equity capital investments: both venture capital firms and companies report that networking is the dominant channel they use for identifying potential deals. Conversely, the heavy reliance on personal networks exacerbates the challenges for cities that lack clusters to support the formation of such networks.

Figure 2 shows the high-concentration clusters present in the eight New England cities listed in Figure 1. These cities have some clusters that are especially attractive to venture capitalists. In particular, we see clusters that have traditionally received large shares of deals in such fields as biopharmaceuticals and medical devices (Norwalk CT), information technology (southern New Hampshire), communications technology (Stamford CT), and business services (Southborough and Westborough MA).

In some cases, there are clusters that did not receive venture investment during the study period but may be associated with other clusters that did receive such capital. For example, one cluster that does not traditionally receive venture capital was nonetheless present in half of New England's high-performing secondary cities: Education and knowledge creation was over-represented compared with the United States as a whole in four high-performing New England secondary cities, and was well represented in two additional cities. The strong presence of institutions of higher education in New England is likely associated with another of the factors that our research identified as important in attracting venture capital: intellectual capital and technology transfer (described below).

2. Investor Presence

Another important factor in attracting venture capital to secondary cities is an already established investor presence. Some firms investing in secondary cities specialize in these markets. In other cases, firms investing in secondary cities are national or international firms that allot a small portion of their funds to these markets.

Angel investors are an important part of the funding cycle for many entrepreneurs. For rapidly growing firms, repeated capital infusions are often necessary to bridge the gap between an entrepreneur using personal resources and the time when a firm can attract venture capital financing. These funds are critical to many secondary-city companies (our research found that nearly half of the companies receiving private equity had received prior angel funding) and may also take the place of some early-stage venture investors in some locations. However, angels have a mixed reputation among venture capital investors because of their varying levels of expertise in finance. There is a growing movement to professionalized angels and angel groups – a movement that has the potential to significantly improve capital access in secondary cities.

3. Historical Returns

Capital flows to markets where it can attract reasonable returns. One of the factors negatively impacting the ability of secondary markets to attract venture capital investment is the perception that the return on venture capital investment in these markets has been below average.

4. Intellectual Capital and Technology Transfer

Our research found a significant correlation between deal flow in secondary cities and the presence of national research universities. Technology transfer from universities can be a major engine of innovation and firm formation. Our study also showed a close link between deal flow in secondary cities and the share of jobs that require high levels of education.

5. Community Attractiveness

Our research identified a strong correlation between the ability of communities to successfully attract venture capital and the quality of life in these communities. It appears that this correlation has to do with both ease of recruiting high-level technical and management expertise to attractive communities and the propensity for such highly mobile talent to have already migrated to such places.

6. Accessibility

The presence of direct transportation access from major funding centers is an important factor for attracting venture capital. Venture capital firms dislike investing in companies in remote locations because of the difficulty of finding and vetting deals in these locations, the higher cost of having staff from the venture firm or other experts serve as company board members and mentors, and concerns about the ability to attract management talent to remote areas. This is particularly true for early stage investments, which typically require more intensive hands-on involvement from venture capital firms.

The six factors described above comprise the "secret sauce" that enables some cities to be successful in their attempts to attract venture capital. Moreover, these factors may be some of what draws the entrepreneurial firms that ultimately attract the venture capital. New England secondary cities boast several advantages over their peers in attracting venture capital – strong local clusters, proximity to Boston, which has one of the country's highest concentrations of venture capital and private equity firms, access to significant intellectual capital from the region's universities, and a trained workforce. The challenge for the region is to leverage these assets to create fertile ground for entrepreneurial firms and their investors.

Opportunities

In New England and nationally, there is no one-size-fits-all approach to improving capital flow to secondary cities. A city's ability to utilize levers will depend on its size and unique mix of assets and liabilities. For example, some cities may have less potential as locations for venture capital investment because of their geographic isolation or the limited presence of research universities, but may still be able to encourage capital flow by organizing angel networks. Others will have to develop long-term plans to improve education/workforce development and quality-of-life assets so that they can attract and nurture growing firms. There will also be some communities that have either such significant scale barriers or so few natural assets that an economic development strategy based on encouraging entrepreneurship and attracting capital is not a productive use of resources.

There are likely, however, a number of secondary cities that can use policy levers to help attract venture capital. While the venture capital industry's fast moving and entrepreneurial nature makes it challenging to use traditional economic development tools to encourage investment, a number of opportunities exist for policymakers, community leaders, and foundations to participate with high-potential secondary cities to improve their competitiveness in attracting private equity investors.

Strengthen Clusters and Networks

Given the role that clusters and networks play in firm formation and capital attraction, one approach secondary cities can take is to work with groups that help clusters grow and facilitate networking. To identify and strengthen clusters, cities can work with groups like ICIC's City Advisory Practice, which helps communities develop strategies to increase competitiveness and remove barriers to growth for high-potential local business clusters. Cities can also work with organizations that foster networks, such as the MIT Enterprise Forum, the Wayne Brown Institute, and ICIC's Inner City Economic Forum. These relationship-builders can play roles ranging from directly establishing networks to introducing entrepreneurs to potential capital sources. Industry associations and trade groups can also play a productive role in fostering networks.

There may also be an opportunity to build "virtual clusters" that are located in different geographic locations. Organizations can identify high-potential industries and connect promising companies in these industries from multiple locations, creating a pool of prospective investments for venture capital firms.

Encourage a Continuum of Capital

Our research identified that it is important for secondary cities to have a continuum of equity capital available, from angel financing through early and then later stage venture financing. It is true that many entrepreneurial firms secure capital from outside their regions, particularly in the later stages. However, during the initial period – when firms' capital needs are modest, the relative transaction costs of traveling to seek capital are high, and companies require a lot of hands-on involvement from investors – the availability of angel capital is critical.

An opportunity exists in many secondary cities to encourage the development of angels' expertise and the growth of angel groups. Support for the angel capital industry can take the form of providing training to angels, supplying operating support to angel groups, and making capital commitments alongside angel investors. Cities and organizations interested in supporting angel groups can also sponsor the use of web-based technology to bring education programs to angels in remote locations, to promote angel networks, and to inform and educate potential angel investors. Currently, the Ewing Marion Kauffman Foundation has taken a lead role in educating individuals to enable them to form angel groups nationwide. In addition, Rain Source Capital is working to develop angel groups in numerous mid-sized and rural communities.

Increase Investment Levels

One way to increase investment levels is to show that secondary cities have been good performers in terms of the rate of return on investments. In addition, those interested in promoting investment in sec-

Figure 3: **Innovations in New England Venture Capital**

Two firms with innovative approaches to providing venture capital are **Village Ventures** (Williamstown MA) and **CEI Community Ventures** (Portland ME). They differ from traditional funds by targeting their investment to companies located in areas that do not receive large amounts of venture capital.

Affiliate model: Village Ventures, founded in 2000, is a national firm that acts as a central office for a network of affiliates in predominantly smaller communities, centralizing fundraising assistance, co-investment, and back office services. Its goal is to fuel innovation in areas with high densities of intellectual capital that have been ignored by traditional capital markets. Its affiliated funds, including Worcester Capital Partners (Worcester MA), Long River Ventures (Hadley MA), and Fresh Tracks Capital (Middlebury VT) have invested a total of $150 million in 100 companies. Village Venture's model gives smaller venture firms access to deep domain expertise and talent, professional services, capital, and a national brand, while leveraging the local expertise and deal-sourcing capabilities of its partners.

Place-based model: CEI Community Ventures, Inc. has used a different approach, directly funding small and medium-sized companies in lower income areas of Maine, New Hampshire, and Vermont. It invests in consumer and technology businesses, utilizing funds provided by the U.S. Small Business Administration and leveraged by private fundraising. CEI is innovative in its approach to identifying potential investments – it works with community partners to hold events such as introductory seminars on venture capital for emerging businesses. The company has also developed strong relationships with local businesses, economic development groups, and service providers to deepen its networks in the communities it targets. It provides no-cost operational assistance to help high potential businesses become equity ready. To date, CEI Community Ventures has invested in six growing businesses and has developed particular expertise in the natural/organic processed food and skin care industries.

ondary cities can look to new models of investment that are structured to help mitigate some of the scale and deal identification challenges faced by secondary market investors. Figure 3 provides two examples of these new models.

Another way to increase the flow of equity capital to secondary cities is to seek out new sources of investment. Foundations and public pension funds are two examples of groups that may have an interest in directing investment to venture capital and private equity firms that are targeting specific secondary markets. Another possibility is to expand the use of the public initiatives, such as tax credits, to provide incentive for investment in secondary cities. Although it is targeted to low-income communities and not secondary cities, the New Markets Tax Credit is an example of such an initiative, providing a tax credit for certain kinds of equity investments.

Strengthen Intellectual Capital and Technology Transfer

Governments, trade associations, and foundations can work with universities to strengthen the flow of universities' technology to the business community, especially in key industry clusters. Higher education can also be tapped to provide the specialized training required of employees in regional industries.

Enhance Community Attractiveness and Accessibility

The ways in which local communities can improve the attractiveness of their locations are the same factors that contribute to sustainable economic development:

- improve the quality of education
- facilitate workforce training
- improve the quantity and quality of local amenities
- reduce government regulation to reduce operating costs
- support initiatives to improve the entrepreneurial environment, e.g., local venture groups, collaboration with universities

Communities with a commitment to attracting investment can also have as an objective of their transportation policies to make their location more accessible. A basic way to do this is to encourage more direct flights to the secondary city from key capital markets and to promote easier access to and from airports.

Conclusion

New England secondary cities are particularly well positioned to use venture capital to support economic development. Several boast strong clusters, proximity to the high concentration of venture capital firms in the Boston market, and access to technology transfer and intellectual capital from the region's universities. There are also two new trends that may help increase the flow of venture capital to the region's secondary cities. First, New England's secondary cities are witnessing the emergence of angel groups, networks, and resources to support angel funding. And second, the region is home of some of the most innovative funding approaches to venture capital investment.

Private equity in general and venture capital specifically have proven to be among the fastest moving and most entrepreneurial of industries, and over the years, their impact on the economic landscape of New England communities has been significant. As the industry continues to grow and thrive, proactive planning based on an understanding of industry dynamics will enable New England secondary cities to continue to benefit from the job growth, company formation, and wealth creation fostered by venture capital and private equity investments.

Carole Carlson *is managing director of Carlson Partners Consulting, a consulting firm that advises private sector and nonprofit clients on business strategy, economic impact, and organizational effectiveness. She is an adjunct faculty member at Brandeis University's Heller School for Social Policy and Management.* **Prabal Chakrabarti** *is deputy director of Community Affairs at the Federal Reserve Bank of Boston. Formerly, he served as deputy director of research at the Initiative for a Competitive Inner City (ICIC).* *The study was conducted in partnership with ICIC, with financial support from the W.K. Kellogg Foundation.*

Notes

[1] *Venture Impact 2004: Venture Capital Benefits to the U.S. Economy*. Waltham, MA: Global Insight, 2004.

[2] It is hard to disentangle whether this positive effect derives largely from innovative firms being more likely to choose venture financing or from whether the capital indeed spurs innovation and job growth.

[3] Samuel Kortum and Josh Lerner. "Assessing the Contribution of Venture Capital to Innovation," *RAND Journal of Economics*. Santa Monica, CA: The RAND Corporation, 2000.

[4] Paul Gompers and Josh Lerner. *The Money of Invention: How Venture Capital Creates New Wealth*. Boston, MA: Harvard Business School Press, 2001.

[5] Here, private equity refers to both venture capital (early through expansion stage venture capital) and non-venture private equity such as buyout, leveraged recapitalizations, and other later stage private financing. While this paper focuses primarily on venture capital, data on secondary city investment include both private equity categories. Angel capital refers to individuals or groups investing personal wealth in early stage ventures.

[6] The population figure is from the Census 2000 conducted by the U.S. Census Bureau and uses the 2005 definition of MSAs. Data for business payroll and establishments are from the County Business Pattern series of the U.S. Census Bureau.

[7] During the study period, there were 1,000 private equity deals in New England, accounting for $7.7 billion in venture capital investment.

[8] Institute for Strategy and Competitiveness, Harvard Business School: www.isc.hbs.edu.

New England Updates

Fourth Quarter 2006

By Ricardo Borgos

Across the Region

Ballot Measures

In the November 7 general elections, the New England electorate voted on a number of ballot measures with implications for community development. These are highlighted below. In particular, Maine voters rejected a cap on increases in state spending; New Hampshire voters chose to prohibit the use of eminent domain if the property is to be transferred to another private entity for private development; and Rhode Island voters turned down a proposal to permit a tribal casino but voted to allow the sale of $50 million in affordable housing bonds over the next four years.

New England Ballot Measures in November 2006 General Elections

Maine		
Question 1	**A bill to restrain the growth in state and local government by imposing expenditure limitations on state and local government and by requiring voter approval of tax and fee increases.**	**Status: Fail** (Yes votes: 45.6%)
Question 2	Initiative Petition Deadlines	Status: Pass
Massachusetts		
Question 1	Sale of Wine by Food Stores	Status: Fail
Question 2	Nomination of Candidates for Public Office	Status: Fail
Question 3	Family Child Care Providers	Status: Fail
New Hampshire		
Question 1	**Prohibits the use of eminent domain if the property is to be transferred to another private entity for private development.**	**Status: Pass** (Yes votes: 85.7%)
Question 2	Redistricting	Status: Pass
Rhode Island		
Question 1	**Approval of the amendment to the Rhode Island constitution would authorize a resort casino in the town of West Warwick, to be privately owned and privately operated in association with the Narragansett Indian Tribe, with tax proceeds from the casino being dedicated to property-tax relief.**	**Status: Fail** (Yes votes: 37.0%)
Question 2	Elections – Restoration of Voting Rights	Status: Pass
Question 3	Budget Reserve Account	Status: Pass
Question 4	Higher Education Bonds - $72,790,000	Status: Pass
Question 5	Transportation Bonds - $88,500,000	Status: Pass
Question 6	Roger Williams Park Zoo Bonds - $11,000,000	Status: Pass
Question 7	Fort Adams State Park Recreation and Restoration Bonds - $4,000,000	Status: Fail
Question 8	Department of Environmental Management Bonds - $3,000,000	Status: Pass
Question 9	**Authority for the State of Rhode Island to issue general obligation bonds, refunding bonds, and temporary notes in an amount not to exceed $50 million for affordable housing.**	**Status: Pass** (Yes votes: 66.0%)

Source: Ballot Measures Database (http://www.ncsl.org/programs/legismgt/elect/dbintro.htm).