

Community Development

INVESTMENT REVIEW

Articles

Innovative Activity in Rural Areas:

The Importance of Local and Regional Characteristics

David L. Barkley, Mark S. Henry, and Doobee Lee

Financing Rural Innovation with Community Development Venture Capital: Models, Options and Obstacles

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Commentary

Senator Jay Rockefeller

U.S. Senate

Kerwin Tesdell

Community Development Venture Capital Alliance

Jarratt Applewhite

New Mexico Community Capital



Community Development INVESTMENT REVIEW

The Community Affairs Department of the Federal Reserve Bank of San Francisco created the Center for Community Development Investments to research and disseminate best practices in providing capital to low- and moderate-income communities. Part of this mission is accomplished by publishing the *Community Development Investment Review* three times a year. The *Review* brings together experts to write about various community development investment topics including:

Finance—new tools, techniques, or approaches that increase the volume, lower the cost, lower the risk, or in any way make investments in low-income communities more attractive:

Collaborations—ways in which different groups can pool resources and expertise to address the capital needs of low-income communities:

Public Policy—analysis of how government and public policy influence community development finance options;

Best Practices—showcase innovative projects, people, or institutions that are improving the investment opportunities in low-income areas.

The goal of the *Review* is to bridge the gap between theory and practice and to enlist as many viewpoints as possible—government, nonprofits, financial institutions, and beneficiaries. As a leading economist in the community development field describes it, the *Review* provides "ideas for people who get things done." For submission guidelines and themes of upcoming issues, visit our website: www. frbsf.org/cdinvestments. You may also contact David Erickson, Federal Reserve Bank of San Francisco, 101 Market Street, Mailstop 620, San Francisco, California, 94105-1530.

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Foreword

By David Erickson December 2006

Center for Community Development Investments

ohn Maynard Keynes cautioned that market forces alone were not sufficient to keep an economy at its peak capacity; governments would have to intervene and guide economic activity. Friedrich von Hayek's response was that government, from the top down, did not have enough information to make the millions of efficient economic decisions that were necessary for economic growth. This debate dominated much of the economic policy discussion in the 20th century, but remains at the heart of the problem faced by rural economies. The market is not delivering the same growth in rural areas that metropolitan regions enjoy. Yet past government interventions, such as expensive tax incentives to lure industry, or substantial subsidy programs in agriculture, have not delivered robust economic growth either.

As the articles in this issue of the *Community Development Investment Review* explain, there may be more value in a blend of Keynes and Hayeck; an approach that combines the market information on the ground in rural communities, with the resources, information, and capital that can come from government. In a vein similar to James Willard Hurst's explanation that changes in legal principles in the 19th century brought about a "releasing of energy" in communities across the country, a change in rural community development financing might re-release that energy in the 21st century. So, this issue of the *Review* wrestles with how rural entrepreneurs can find the financing they need to release the energy of their local communities.

We have gathered a variety of perspectives in this issue of the journal—from leading academics and community development practitioners to politicians who are helping to shape a new approach to growing rural economies. David Barkley and Mark Henry discuss the challenges that many rural communities face in terms of generating new innovations and Julia Sass Rubin focuses on options and obstacles to financing new ventures in rural areas with community development venture capital (CDVC). L. Ray Moncrief and Grady S. Vanderhoofven, two leading practitioners in rural CDVC, also discuss current challenges to their work, but focus too on trends that point to a stronger future for rural economic development. There are also two articles about specific and promising new approaches to funding rural business: (1) state government-sponsored venture funds (George Lipper), and (2) rural angel investor networks (Steve Mercil). Finally, we have a collection of essays from Senator Jay Rockefeller, a leading advocate of rural investment, Kerwin Tesdell, the executive director of the primary trade organization for CDVC, and Jaratt Applewhite, the head of a CDVC organization in New Mexico.

It is our hope that we can keep this conversation going with subsequent articles and conferences. We look forward to hearing from you on which ideas you think show the most promise to grow rural economies.

Finally, I want to draw special attention to the fact that this issue would not be possible without the help of Ray Daffner, the Entrepreneurship Initiative Manager for the Appalachian Regional Commission. He brought direction, contacts, and energy to this issue and we owe him a great deal for his help.

Innovative Activity in Rural Areas: The Importance of Local and Regional Characteristics

David L. Barkley, Mark S. Henry, and Doohee Lee

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nnovation, supported by a developed and active entrepreneurial system, long has been recognized as critical to regional economic competitiveness.¹ According to Porter (1990, 1996, 1998), regional competitiveness is driven by gains in productivity, and advances in productivity result from sustained innovative activity. Innovation also plays an essential role for rural economic development as these regions respond to the challenges of competing in the global economy. Specifically, Drabenstott and Henderson (2006) propose two key ingredients to a rural development strategy: (1) the twin force of innovation and entrepreneurs, and (2) a critical mass of human, financial, and social capital to support the evolving innovative and entrepreneurial activity.² Empirical support for the role of innovation in regional economic growth is provided in a study of county-level differences in 2002 per capita incomes and 1997 to 2002 per capita income growth (Schunk, Woodward, and Hefner, 2005). The authors used county-level utility patents and university research and development expenditures as measures of local innovation and innovative capacity. Their findings indicate that "roughly two-thirds of the variation in county-level per capita income across the U.S. can be explained by variations in these measures of innovation and innovative capacity" (9), and "counties with higher levels of patents and university research and development also appear to see faster rates of growth" (11).

The innovation-economic development relationship is good economic news for regions with significant innovative capacity (such as the Research Triangle in North Carolina) or the resources to attract a major research and development center (Florida and the Scripps Institute, for example). Unfortunately for many local economies, however, innovative capacity and activity are distributed very unevenly across the country. For example, among the 1,343 counties in the thirteen southern states, twenty-six counties averaged 100 or more utility patents a year from 1990 to 1999, while 681 counties averaged less than one utility patent per year for the same period. A clustering of patenting activity would not necessarily be detrimental to the economic development prospects of areas with little innovative activity if there exists the spillovers of jobs and income from the innovation centers to other areas. Evidence of such spillovers is relatively limited. Acs (2002, 165) concluded that "we have established a striking correlation between local R&D and subsequent high-technology employment in the same MSA (metropolitan statistical area) and three-digit industry cluster. There is apparently no spillover relationship from R&D in other industry groups." These findings were duplicated by Shapira (2004), who noted that Georgia's innovation and technology development initiatives had little "trickle-down" impact outside the Atlanta

metropolitan region. Finally, Barkley, Henry, and Nair (2004) found a strong correlation between local indicators of innovation and innovative capacity and measures of economic growth and development for metropolitan areas in the South. Little of the metropolitan growth spilled over to proximate nonmetro counties. Nonmetro county employment growth was positively associated with innovative activity in nearby metro areas only if the metro area was a highly active center of innovation and entrepreneurship.

The absence of strong and widespread spillover effects from metropolitan clusters of innovative activity may contribute to a divergence of economic development trends between metropolitan and rural areas. Yet many nonmetropolitan counties have a history of innovative activity, and this base of innovation may serve as the foundation for an endogenous development strategy for these areas. The goal of this research is to identify the local and regional characteristics associated with innovative activity in nonmetropolitan counties in the South. Innovative activity will be measured by utility patent counts for the ten-year period 1990 through 1999. Of special interest are the determinants of innovation in nonmetropolitan counties near metropolitan clusters of innovation. Specifically, is patenting activity in nonmetro counties associated with activity in the metro core, and, if so, what characteristics of rural counties contribute to increased innovation?

In this article, we provide an overview of innovative activity in the metro and nonmetro South from 1990 to 1999. A statistical indicator of spatial association (the Local Moran I) is used to identify the cores of clusters of innovation among southern counties. Next, we estimate knowledge production functions for the nonmetropolitan counties in labor market areas with a metropolitan core to determine the influence of local and regional characteristics on innovative activity in the nonmetro counties. Our findings indicate that innovative activity is strongest in nonmetro counties with a skilled and technical labor force, diverse industrial structure, natural amenities, a relatively large number of small or large establishments, and innovative activity in nearby counties. Innovative activity in metropolitan areas had only a small impact on rural innovation. The findings for southern nonmetro counties suggest that policies promoting innovation and an entrepreneurial support system offer the potential for employment and income growth in small towns and rural areas. Alternatively, investments in research and development in metro areas provide little benefit to rural areas because the associated spillovers of innovative and economic activity are spatially limited.

Patents as Proxy for Innovation. Previous measures of the innovative process in a region generally focused on: (1) inputs into the process such as public and private expenditures for research and development or employment in scientific and technical occupations; (2) an intermediate output measure such as patents; or (3) proxy measures for innovative output and capacity as reflected in employment in high technology and information technology industries, new product development as reflected in trade and technical publications, or venture capital funding for new enterprises (Barkley, Henry, and Nair, 2006). Among these alternatives, patents have become a popular measure for innovative activity at the local level (for example, county or metropolitan area) because annual data are readily available from the

Annual

Average

5.0+

U.S. Patent and Trademark Office. Alternatively, innovation measures such as new products, private research and development expenditures, and venture capital funding are not available for many nonmetropolitan counties because of data collection costs or data disclosure regulations.

Patent counts are not without shortcomings when used to represent innovation. First, all inventions are not patented, and all patented inventions are not of equal consequence with respect to new products or production processes (Griliches, 1984).³ Second, Zucker and Darby (2006) claim that the key to new high-technology industries is the presence of "star scientists" and not the scientists' "disembodied discoveries." The authors note that patents tend to diffuse over time, while the science and engineering stars become more concentrated. Third, patenting activity is concentrated in manufacturing. Innovative activities in trade and service industries are less likely to be patented, and the use of patent data may overrepresent the relative innovative activity of counties with significant manufacturing sectors. Finally, patents are credited to the home address of the lead scientist on the patent. This location may not be the same county where the research and development occurred or where the new product/process was implemented. Acs, Anselin, and Varga (2000) recognize the shortcomings

Number of Counties (55.3%)

115 (11.9%)
(11.9%)

54 49 43 (5.6%) (5.1%) (4.6%)

Figure 1. Distribution of Patenting Activity Among Southern Nonmetropolitan Counties, 1990-1999

2 - 2.9

3 - 4.9

1 - 1.9

43

0 - .9

of patent data, but their research finds a reasonably high (.79) correlation between patent and SBA innovation counts at the metropolitan level, plus patent and innovation counts are associated in a similar manner to explanatory variables included in regional knowledge production functions. The authors conclude that "the empirical evidence suggests that patents provide a fairly reliable measure of innovative activity" (28).

Table 1. Southern Nonmetropolit	n Counties That Averaged More T	Than 10 Patents per Year, 1990–99

County	State	Patents 1990–99
Washington	Oklahoma	554
Stephens	Oklahoma	480
Montgomery	Virginia	327
Hall	Georgia	193
Roane	Tennessee	188
Henderson	North Carolina	174
Iredell	North Carolina	148
Indian River	Florida	145
Payne	Oklahoma	143
Franklin	Texas	128
Bradley	Tennessee	127
Kay	Oklahoma	121
Monroe	Florida	113
Kleberg	Texas	108
Oktibbeha	Mississippi	107
Oconee	South Carolina	105
Beaufort	South Carolina	104

Patents 1990–99. The innovative activity in southern nonmetropolitan counties (as reflected in utility patents 1990–99) varied markedly across the 965 counties (1990 nonmetro designation). For example, 115 nonmetro counties (11.9 percent) reported no patents for the ten-year period (see Figure 1). Another 534 counties (55.3 percent) averaged less than one patent per year for the time period. In sum, over two-thirds (67.2 percent) of the southern nonmetropolitan counties had fewer than ten patents over the ten-year period. Alternatively, a relatively small number of nonmetro counties were very active in innovation. Seventeen nonmetro counties (Table 1) averaged more than ten patents per year from 1990 to 1999. These seventeen counties accounted for 3,255 patents or 25.7 percent of all patenting activity among the 965 southern nonmetro counties. Among the most innovative nonmetropolitan areas are counties with major research universities (Oktibbeha, Mississippi, and Payne, Oklahoma); counties near major federal research centers (Roane, Tennessee, and Indian River, Florida); counties with large employment in the oil industry (Washington and Stephens, Oklahoma): and counties near metropolitan areas (Hall, Georgia, and Bradley, Tennessee).

Metropolitan areas, as expected, had significantly more patenting activity than nonmetro counties (Table 2). The average metropolitan county had 287.4 patents from 1990 to 1999 for an average of 18.7 patents per 10,000 residents. Nonmetro counties averaged only a total of 13.1 patents and 5.1 patents per 10,000 population. Proximity to a metro area did not necessarily result in greater patenting activity for the nonmetro county. The average number of patents (13) and patents per 10,000 residents (5) were almost identical for the 591 nonmetro counties in Labor Market Areas (LMAs) with a metro core versus the 374 nonmetro counties in LMAs consisting entirely of nonmetro counties.⁴

Table 2. Mean	Values of Patenting	Activity	1990-99 h	County	Type.	Selected	Counties
100000 21 1110000	TOURS OF I DUCTIONS	2 2000000	1//0//////	Commy	1 / P U 9	Server	COMMINICO

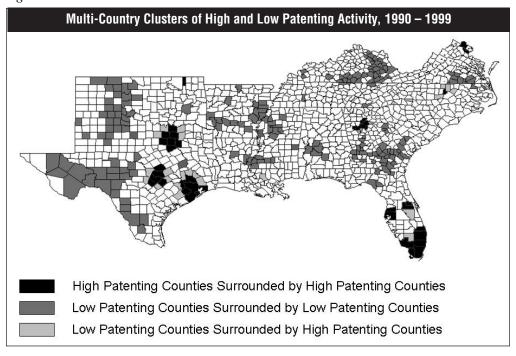
County Type	Mean Total	Mean Patents per 10,000 Population			
Metropolitan (393)a	287.4	18.7			
Nonmetropolitan (965)	13.1	5.1			
Nonmetro Subgroups					
Metro LMA (591)	13.1	5.1			
Nonmetro LMA (374)	13.0	5.1			
Regional Innovation Systems Nonmetro S	Regional Innovation Systems Nonmetro Subgroups				
Outliers (31)	16.7	6.2			
High (44)	19.3	7.4			
College Towns (24)	7.1	3.9			
Medium (135)	15.2	5.2			
Below Average (320)	10.7	4.4			
Low (36)	18.1	8.2			

⁽a) Number of southern counties in the category

Spatial Concentrations. Previous research indicates that innovative activity is positively associated with the availability of industry clusters and the business services and entrepreneurial environment provided in urban areas (see, for example, Gordon and McCann, 2005, and Anderson, Quigley, and Wilhelmsson, 2005). In addition, the existence of limited geographic spillovers from innovative activity (Acs, 2002) suggests that patenting activity will remain clustered in these locations with significant R&D inputs and supportive environments. Of particular interest to this study are the identification clusters of innovation in the South and the participation of nonmetro areas in these clusters.

Multi-county clusters of innovative activity were identified using the Local Moran I as the local indicator of spatial association (LISA).⁵ Figure 2 provides the counties identified as clusters of high innovative activity and clusters of little or no patenting activity. Clusters of high patenting activity (46 counties) are evident in Texas (Houston, Austin, and Dallas); Atlanta; South Florida; Raleigh–Durham, North Carolina; Northern Virginia; and Washington County, Oklahoma (home of Conoco/Phillips Petroleum). All but three of the

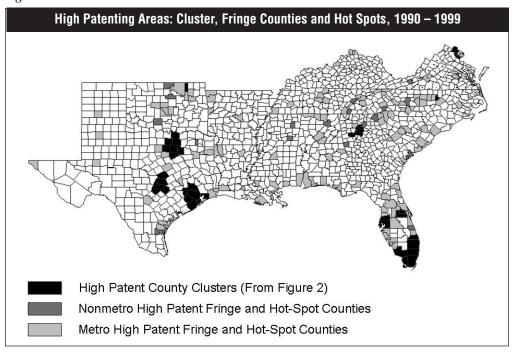
Figure 2



forty-six counties in the "high-innovation" clusters are metro counties. Also evident in Figure 2 are numerous clusters of low innovative activity. These agglomerations of counties with few patents occur in Appalachian Kentucky, the Mississippi Delta, the Deep South Cotton Belt, and Western Texas and Oklahoma. The low-innovation clusters are dominated by nonmetro counties.

The LISA clusters of high total patents may understate innovative activity in the South because the Local Moran I identifies only the cores of the clusters of innovation. Missing from Figure 2 are the fringe counties to the clusters of innovation, counties that have high-patent values but lack high-patent neighbors in most directions. Also missing are "hot spots" of patenting activity. These "hot spot" counties have high total patents, but the patenting activity in their neighboring counties is insufficient for inclusion as a core in a cluster of innovation. To help identify the "fringe" and "hot spot" counties, we add all counties with eighty-nine or more patents from 1990 to 1999 (89 is the fewest number of patents for a county included in a high-high cluster). We identified 150 additional counties using the modified selection criteria—18 nonmetro and 132 metro counties (Figure 3). Some of these 150 counties are fringe counties of the clusters of innovation, especially in the case of Florida and the Raleigh–Durham area of North Carolina. In general, however, the additional counties represent "hot spots"—counties with high patent totals surrounded by counties with a mix of patenting activity. These areas may represent "emerging" clusters of innovation if spillovers to nearby counties are significant.

Figure 3



In summary, 195 southern counties are identified as members of high-innovation clusters, high-innovation fringe counties to these clusters, or innovation "hot spots." Only 21 of the 195 counties are nonmetropolitan counties, thus, the urban-rural economic gap in the South will continue to widen unless rural areas can generate more innovations and the entrepreneurial support system to convert these innovations to jobs and income. The following discussion addresses the local and regional characteristics associated with an environment conductive to innovative activity.

County Characteristics Related to Innovative Activity

Regional Knowledge Production. Griliches (1979) and others developed the concept of a regional knowledge-production function to help identify factors contributing to an area's innovative activity.⁶ This function assumes that output from the innovative process is the result of inputs into the process (for example, industry and university R&D) and local characteristics supportive of innovation and the spread of innovative activity throughout the regional economy (industrial structure and characteristics of the local labor market).

The regional knowledge production function may be expressed as:

(1)
$$I = f(PR, UR, Z1..., Zn)$$

where *I* measures innovation output, *PR* is private industry R&D, *UR* is university R&D, and Z1 to Zn represent county and regional characteristics relevant to the local innovative and

entrepreneurial environment. The proxy variable selected for PR is the percent of county employment in scientific and technical occupations, and the proxy measure for UR is the number of individuals in the county enrolled in college. County and regional characteristics found in earlier research to be associated with innovative activity are (a) employment in high-tech industries (Riddel and Schwer, 2003); (b) size, structure, and diversity of the local economy (Anderson, Quigley, and Wilhelmsson, 2005); (c) education and skills of the local labor force; (d) proportion of small and large firms in the area (Gordon and McCann, 2005); and (e) the presence of innovative activity in nearby locations (Lim, 2004; Acs, 2002).

Table 3. Summary of Estimated Relationships Between Nonmetro County Patent Totals and Local and Regional Characteristics

Alternative Measures of Metropolitan Innovative Activity in the Nonmetro County's Labor Market Area				
Nonmetro County and Regional Characteristics	Patents, 1990–99	University Research Expenditures	Percent of Employment in Scientific and Technical Occupations	
% Manufacturing % High-Tech Emp	NSa NS	NS NS	NS NS	
Total Employment Distance to MSA	+b -c	+	+	
% Science and Tech Occ College Enrollment	+ NS	+ NS	+ NS	
Industrial Diversity Small Establishments	++	++	+ +	
Large Establishments Amenities	++	+++	++	
Regional Patent Total MSA Patent Total	++	+	+	
MSA Univ. R&D MSA Science and Tech Occ		NS	NS	

Source: Lee (2006).

Determinants of Innovation. Table 3 summarizes the influences of local and regional characteristics on nonmetro innovative activity. Each model uses total county patents from 1990 to 1999 as the measure of innovation, and the models are estimated for the 591 southern nonmetro counties in labor market areas with a metropolitan core. A different measure of metro innovative activity (patents, academic R&D, and industry R&D) is included in each model. Table 4 provides a list of local and regional characteristics selected and the data sources used.⁸

a Relationship between county characteristic patent total was not statistically significant.

b Positive relationship between county characteristics and county patent totals.

c Negative relationship between county characteristic and county patent totals.

LARGE EST

AMENITY

REG PATENTS

MSA PATENTS

MSA UNIV R&D

MSA SCI-TECH

MANUFACTURING Percent of total county employment in manufacturing, 1990 (County Business Patterns, CBP) HIGH-TECH Percent of total county employment in high-technology manufacturing, 1992 (Census of Manufacturers) **EMPLOYMENT** Total county employment, 1990 (CBP) DISTANCE Miles from largest city in county to the core city in LMA's metro area. SCI-TECH Percent of employment in scientific and technical occupations-computer science; engineering; natural, physical, and social sciences; 1990 (Bureau of Labor COLLEGE Number of college students in county, 1990 (U.S. Census of Population) DIVERSITY Industry diversity, inverse of the two-digit SIC Hirschman-Herfindahl Index, 1990 (CBP) SMALL EST Number of small establishments (employment less than 20) per capita, 1990 (CBP)

than 500) per capita, 1990 (CBP)

Research Service, USDA)

total employment, 1990 (BLS)

Number of large establishments (employment greater

McGranahan index of natural amenities, 1999 (Economic

Average of 1990–99 patent totals in contiguous counties (U.S. Trademark and Patent Office, USTPO)

MSA patent totals, 1990-99 for core metro area in LMA

MSA University expenditures for research and development, 1997–99 (National Science Foundation)

MSA scientific and technical employment as percent of

Table 4. County Characteristics and Data Sources

Nonmetro patent totals are positively associated with the size (employment) of the local economy. However, a relatively large manufacturing sector in the county is not related to patent activity. The absence of an association between innovation and a dominant manufacturing base may reflect conflicting forces. Patenting among manufacturers is high relative to other sectors, yet Glaeser and Saiz (2003) find that innovative firms avoid traditional manufacturing communities. Similarly, no significant relationship is evident between high-technology employment in nonmetro counties and patent totals. Acs (2002) notes that the presence of high-technology industries facilitates the spillover of innovation in metropolitan areas. However, a base of high-tech firms in a nonmetro area appears to offer little advantage in terms of increased patenting activity. This is consistent with earlier findings by Barkley, Dahlgren, and Smith (1988) that nonmetro high-tech firms differ little from firms in traditional nonmetro manufacturing industries.

The structure of the local economy, as reflected in industrial diversity and establishment size, is hypothesized to influence innovative activity. An increase in local industrial diversity

provides enhanced opportunities for inter-firm sharing of information. ¹⁰ Also, innovative activity is highest among small and large firms. Small firms have the flexibility to experiment with new products and processes (CHI 2002, 2004), and large firms have the resources to be actively involved in R&D (National Science Board, 2000). The findings for nonmetro counties are consistent with earlier research. Patenting activity was strongest in nonmetro counties characterized by a diverse industrial structure and a relatively large number of small establishments (employment fewer than twenty) or very large establishments (employment greater than 500).

The availability of local amenities and proximity to metro areas are positively associated with nonmetro patent totals. These findings may indicate that the more innovative firms are located in nonmetro counties with higher amenities and access to metro areas. Alternatively, the lead scientists on patents may reside in adjacent, high-amenity nonmetro counties but work in metro areas. Thus, these results may reflect residential rather than production location choices.

Nonmetro industry R&D (measured by the percentage of the labor force in science and technology occupations) and university R&D (measured by college enrollment) are proxy variables for inputs into the county innovation process. Both types of inputs were positively associated with patent totals for nonmetro areas. A local industry or university research base appears important to the development of new products and processes as reflected in patents. The college enrollment, however, is correlated with county size. Thus college enrollment may reflect agglomeration economies as well as university R&D expenditures.

Of principal interest to this study is the role of innovation spillovers in nonmetro county patent activity. A positive association is found between the patent totals in a county and patent activity in surrounding counties. That is, nonmetro counties with low patent totals tend to cluster, and counties with high patent totals tend to locate near similar counties. Recent research also finds evidence of technology spillovers within regions (Fischer and Varga, 2003; Lim, 2004; and Acs, 2002); however, this research also notes that these spillovers dissipate with distance. Evidence of the spread of innovative activity from metro areas to nearby nonmetro and rural counties is mixed. Patenting activity in nonmetro counties is positively associated with total patents in the labor market area's metro core. These findings are consistent with urban-to-rural knowledge spillovers. However, no significant relationships are found between nonmetro patent totals and (1) private R&D in nearby metro areas (as reflected in employment in scientific and technical occupations) or (2) expenditures for academic R&D in the metro counties. The absence of a strong link between nonmetro innovation and metro R&D is consistent with previous research. For example, in a study of innovation in Finland, McCann and Simonen (2005, 18) find "very little support for the argument that cooperation with universities, research institutes, or consultants plays any role in promoting innovation." Andersson, Quigley, and Wilhelmson (2004), however, find a positive relationship between university-based research in Sweden and the productivity of labor in the community, but they conclude that the external benefits are highly concentrated geographically. Finally,

Zucker and Darby (2005) propose that star scientists are becoming more concentrated over time as they move to areas with many in their discipline. This concentration of "stars" may further limit the possibility of knowledge spillovers to nonmetro counties not near these centers of science and technology.

Conclusions

The findings of this research indicate that innovative activity exists in select areas of the nonmetro South, and this activity may serve as an engine for local economic development. The nonmetro areas with significant innovative activity are characterized by large employment bases, diverse industry structures, a relatively large share of employment in scientific and technical occupations, relatively large numbers of small or large establishments, high amenity ratings, and proximity to a metro area. Unfortunately, these centers of innovation in rural areas in the South are relatively rare. Only about twenty nonmetropolitan counties are identified as innovative "hot spots" or members of clusters of innovation. However, numerous nonmetropolitan counties have the foundations necessary for evolving into areas of significant innovation. Assets available to rural communities include local colleges and universities, state and federal government research centers, indigenous entrepreneurs and small businesses, and the natural amenities and quality of life to attract innovative and entrepreneurial resources from metropolitan areas. Nonmetropolitan areas that leverage these assets will remain competitive in the New Economy.

Alternatively, public R&D programs and policies that focus resources on current centers of innovation likely will lead to further concentration of economic activity in a relatively small number of metro areas and a few fortunate nonmetro counties near these metro centers of innovation. For most nonmetro counties in the South, centers of innovation in metro areas will be benign at best or detrimental if significant backwash effects exist. Therefore, programs and policies targeted at innovation and entrepreneurship in nonmetro areas will be needed if the nonmetro counties are to participate in the knowledge economy. Increased R&D expenditures at universities and government research centers in nonmetro counties may be helpful in stimulating innovation in these areas. In addition, the quality of the local labor force and the entrepreneurial environment must improve if increases in innovative activity are to result in new economic activity.

Endnotes

- See Chesire and Malecki (2004) for a review of the literature on the role of innovation in economic development.
- 2. Throughout this discussion, "rural" and "nonmetropolitan" are used interchangeably to refer to nonmetropolitan counties. Similarly, "urban" and "metropolitan" are used to represent metropolitan statistical areas (MSA). The 1990 designation for metropolitan and nonmetropolitan is used in this study.
- 3. Gordan and McCann (2005) suggest that there are three common features of all innovations: newness, improvement, and the overcoming of uncertainty. It is unlikely that all patents equally provide the three features of innovation.
- 4. Labor Market Areas (LMAs) are multi-county regions that capture the inter-county commuting flows in the region. The procedures followed to delineate LMAs are documented in Tolbert and Killian (1987).
- 5. The Local Moran I is calculated using the following equation.

Ii = Zi

Where Ii = Local Moran for county i

Zi = standardized value of patent counts (density) for county i

Zj = standardized value of patent counts (density) for county j

Wij = 1/n if i and j are contiguous, 0 otherwise

The selected spatial weights matrix (W) is a contiguity matrix where wij = 0 if counties i and j are not contiguous and 1/n if the counties share a boundary (n = number of counties contiguous to county i). The county attributes are total patents for the period 1990–99.

- 6. The knowledge production function approach also is used by Jaffa, Trajtenberg, and Henderson (1993); Fritsch (2002); and Acs (2002).
- 7. Total R&D expenditures at universities and colleges are available from the National Science Foundation; however, only seven southern nonmetro colleges and universities were included on the NSF data base. Thus, we substituted the number of college students as a measure for potential university R&D. Scientific and technical professions (the PR measure) are defined as computer science; engineering, except civil; and natural, physical, and social sciences.
- 8. The dependent variable in the knowledge production functions, nonmetro county patents 1990–99, is count data with an overdispersion of observations of zero or near zero. All explanatory variables except metro patents and metro university R&D expenditures use 1990 values to control for possible endogeneity issues. The Zero Inflated Negative Binomial estimation procedure was used to account for overdispersion and zero values of the dependent variable (patent counts). See Lee (2006) for the complete estimation results.
- 9. The classifications for high-technology industries followed that of Markusen et al. (2001).
- 10. Industrial diversity is measured by the Krugman index. The Krugman (1991) index of county r is defined as:

$$D_r = \frac{1}{S_r} \text{ and } S_r = \sum_{i=1}^n \left| \frac{Emp_{i,r}}{Emp_r} - \frac{Emp_{i,us}}{Emp_{us}} \right|$$

where Emp = employment, i = industry (one-digit SIC level), r = region (county in this study), and U.S. = nation, n = number of one-digit SIC industries. A small value for Dr reflects a local industry that is concentrated in a few sectors relative to the nation.

References

Acs, Z. J. 2002. Innovation and the Growth of Cities. Northampton, Mass.: Edward Elgar.

Acs, Z. J., L. Anslein, and A. Varga. 2002. "Patents and Innovation Counts as Measures of Regional Production of New Knowledge." Policy Research 31: 1069–85.

Anderson, R., J. M. Quigley, and M. Wilhelmsson. 2005. "Agglomeration and the Spatial Distribution of Creativity." Papers in Regional Science 84(3): 446–64.

Anderson, R., J. M. Quigley, and M. Wilhelmsson. 2004. "University Decentralization as Regional Policy: The Swedish Experiment." Journal of Economic Geography 4:371–88.

Barkley, D. L., M. S. Henry, and S. Nair. 2006. "Regional Innovation Systems: Implications for Nonmetropoltian Areas and Workers in the South." In Growth and Change (forthcoming).

Barkley, D. L., R. Dahlgren, and S. M. Smith. 1988. "High-Technology Manufacturing in Rural Areas: Gold or Just Glitter." American Journal of Agricultural Economics 70(3): 560–71.

CHI Research, Inc. 2004. "Small Firms and Technology: Acquisitions, Inventor Movement, and Technology Transfer." Office of Advocacy, Small Business Association, Washington, D.C., January.

Chesire, P. C., and E. Malecki. 2004. "Growth, Development, and Innovation: A Look Backward and Forward." Papers in Regional Science 83: 249–67.

Drabenstott, M., and J. Henderson. 2006. "A New Rural Economy: A New Role for Public Policy." The Main Street Economist 1(4), Federal Reserve Bank of Kansas City, Kansas City, Mo.

Fritsch, M. 2002. "Measuring the Quality of Regional Innovation Systems: A Knowledge Production Function Approach." International Regional Science Review 25(1): 86–101.

Glaeser, E. L., and A. Saiz. 2003. "The Rise of the Skilled City." NBER Working Paper 10191, National Bureau of Economic Research, Cambridge, Mass., December.

Gordon, I. R., and P. McCann. 2005. "Innovation, Agglomeration, and Regional Development." Journal of Economic Geography 5: 523-43.

Griliches Z. 1979. "Issues in Assessing the Contribution of R&D to Productivity Growth." Bell Journal of Economics 10: 92-116.

Griliches, Z., ed. 1984. R&D, Patents and Productivity. Chicago: University of Chicago Press.

Isserman, A. M. 2005. "In the National Interest: Defining Rural and Urban Correctly in Research and Public Policy." International Regional Science Review 28(4): 465–99.

Jaffe, A. B., M. Trajtenberg, and R. Henderson (1993). "Geographic Localization of Knowledge Spillovers as Evidenced by Patent Citations." Quarterly Journal of Economics, 577–98.

Jaffe, A. B. (1986). "Technological Opportunity and Spillovers of R&D: Evidence from Firms' Patents, Profits, and Market Value." American Economic Review 76(5): 984−1001.

Lee, Doohee. 2006. "Regional Innovation Systems in the U.S. South: The Role of Characteristics of Regional Innovation Systems on Rural Development." Ph.D. diss., Department of Applied Economics and Statistics, Clemson University.

Lim, U. P. 2004. "Knowledge Spillovers, Agglomeration Economies, and the Geography of Innovative Activity: A Spatial Econometric Analysis." The Review of Regional Studies 34(1): 11–36.

Markusen, A., K. Chapple, G. Schrock, D. Yamamoto, and P. Yu. 2001. "High-Tech and I-Tech: How Metros Rank." The Hubert H. Humphrey Institute of Public Affairs, University of Minnesota Minneapolis, August.

McCann, P., and J. Simonen. 2005. "Innovation, Knowledge Spillovers, and Local Labor Markets." Papers in Regional Science 84(3): 465–86.

McGranahan, D. 1999. "National Amenities Drive Population Change." Agri. Econ. Report 781, Economic Research Service, USDA, Washington, D.C., September.

National Science Board, 2000. Science and Engineering Indicators, 2000. Arlington, Va.: U.S. National Science Foundation.

Orlando, M. J., and M. Verba. 2005. "Do Only Big Cities Innovate? Technological Maturity and the Location of Innovation." Economic Review, Federal Reserve Bank of Kansas City, Second Quarter: 31–57.

Porter, M. E. 1998. "Clusters and Competition: New Agendas for Companies, Governments, and Institutions." In On Competition. Boston: Harvard Business School Publications, 7:199–271.

—1996. "Competitive Advantage, Agglomeration Economies, and Regional Policy." International Regional Science Review 19:85-90.

—1990. The Competitive Advantage of Nations. New York: Free Press.

Riddel, M., and R. K. Schwer. 2003. "Regional Innovative Capacity with Endogenous Employment: Empirical Evidence from the U.S." The Review of Regional Studies 33(1): 73–84.

Shapira, P. 2004. "Innovation Challenges and Strategies in Catch-Up Regions: Development Growth and Disparities in Georgia, USA." In Rethinking Regional Innovation and Change: Path Dependency or Regional Breakthrough, ed. G. Fuchs and P. Shapira. Norwell, Mass.: Kluwer Academic Publishers.

Schunk, D., D. Woodward, and F. Hefner. 2005. "Innovative Capacity as a Determinant of U.S. County Per Capita Income." Paper presented at the Regional Science Association, International North American Conference, November 10–12, Las Vegas.

Tolbert, C. M., II, and M. S. Kililan. 1987. "Labor Market Areas for the United States." Agriculture and Rural Economy Division, ERS, USDA, Staff Report No. AGES870721, August.

U.S. Patent and Trademark Office, 2005. Utility Patents by County 1990-99, http://www.uspto.gov.

Woolridge, J. M. 1991. "On the Application of Robust, Regression-Based Diagnostics to Models of Conditional Means and Conditional Variances." Journal of Econometrics 47:5–46.

Zucker, L. G., and M. R. Darby. 2006. "Movement of Star Scientists and Engineers and High-Tech Firm Entry." Working Paper 12172, National Bureau of Economic Research, www.nber.org/papers/W12172.

Financing Rural Innovation with Community Development Venture Capital: Models, Options and Obstacles

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ccess to equity capital is a critical component of business entrepreneurship. Young companies lack the cash flows necessary for debt repayment. They need patient capital, such as equity and near-equity, to develop and get their products ready for market. As Barkley and Henry confirm in this issue of the *Review*, the creation and growth of such companies is the path to economic prosperity for many rural regions. It also is a means to economic opportunity for rural residents.

Rural economies, however, rarely attract traditional venture capital (see Lipper and Moncrief in this issue). This is due in part to the structural impediments they pose for the traditional venture capital model. Because the primary driver of traditional venture capital is profit maximization, the industry tends to gravitate to geographies that maximize potential investment opportunities and minimize operating costs. Areas such as Silicon Valley in California and Route 128 in Massachusetts embody such geographies and consistently draw a disproportionate share of traditional venture dollars.

Such geographies have a critical mass of potential investment opportunities and the supporting infrastructure in the form of technological, managerial, legal and financial expertise necessary to take ideas to market. Their proximity to desirable quality-of-life amenities also enables these geographies to attract venture capitalists, who can minimize travel time and operating expenses by living near their investments.

By contrast, rural geographies are characterized by limited deal flows and supporting infrastructures, and large distances that make oversight difficult. Because of these structural impediments, the venture capital that exists in rural areas tends to be developmental in nature. Unlike traditional venture capital, which has a primary objective of financial returns for investors, developmental venture capital is designed to foster both social and financial returns. In the case of rurally-focused developmental venture capital firms, the social returns are often in the form of economic growth, either general or specifically targeted at helping low-and moderate-income populations.

Community development venture capital (CDVC) is one form of developmental venture capital that has evolved in rural areas. Like traditional venture capitalists, CDVC providers make equity and near-equity investments in small businesses.¹ However, their investments

¹ Equity investments consist of preferred and common stock. Near-equity investments consist of debt that is convertible to equity and debt with warrants, royalties or participation payments. Near-equity can be structured to act like equity, with deferred payments that give young firms the patient capital they need in their early years.

are predicated on a company's potential for high-quality job creation for low- and moderate-income individuals as well as its likelihood of rapid economic growth. As a result of this dual-bottom-line, CDVCs are willing to invest in companies in numerous industries, stages of development, and locations. This flexibility, as well as the operating model that it has fostered, further differentiates CDVC funds from traditional venture capital, and makes this model particularly well suited to address the structural impediments that rural areas present.²

The earliest community development venture capital funds, formed during the 1970s and 1980s, had a primarily rural focus. They included the Kentucky Highlands Investment Corporation (KHIC), Northeast Ventures, Coastal Ventures Limited Partnership, Development Corporation of Austin, and the Minnesota Technology Corporation Investment Fund (MIN-Corp). While most of the subsequent CDVC funds targeted broader geographies, the industry also has seen the creation of new CDVC funds focused on the rural regions of Oklahoma, New Mexico, Ohio, Tennessee, Virginia, West Virginia, North and South Carolina, Georgia, Alabama, and Mississippi.

The obstacle to growing more rurally-focused CDVC funds is this model's need for subsidy. The present economic, political and normative environments seem hostile to overtly subsidy-based models, particularly those intended to benefit low- and moderate-income populations. This has limited both the growth of new CDVC funds and the capitalization levels of existing ones. This hostility must be overcome in order to foster the innovation and entrepreneurship that will enable rural areas to participate in the knowledge economy.

The CDVC Model

In order to understand the CDVC model, it is helpful to contrast it with traditional venture capital. Although CDVCs differ from traditional venture capital funds in a number of ways, these differences all stem from CDVCs' double-bottom line objective. The social bottom-line for rurally-focused CDVCs is their commitment to economically developing a particular non-metro geography. To do so, they must find ways to overcome the structural limitations such geographies present for venture capital investing.

The first structural limitation of rural geographies is their lack of the supporting infrastructure that venture capital requires. In particular, small populations often translate into few experienced company managers with the knowledge to guide young firms. CDVCs address this limitation with technical assistance, either directly from CDVC fund staff or indirectly from outside experts. In either case, this technical assistance translates into higher costs for the fund.

Another structural limitation of rural geographies is a scarcity of high-quality deal flow. By definition, rural areas have smaller populations, which translate into fewer entrepreneurs and fewer firms. While traditional venture capitalists may review hundreds of potential

² This section draws on the author's ongoing research on community development venture capital.

investments in order to select the most promising one, a venture fund operating in a rural geography may have only a few dozen investment options to consider. Additionally, the quality of their investment options may not be comparable to those reviewed by a traditional venture fund.

One way that rurally-focused CDVC funds maximize their investment options is by investing in a broad range of industries. This differentiates them from traditional venture funds, which concentrate their investments in those technologically intensive sectors that offer the greatest promise for significant returns. As discussed by Barkley and Henry, such high-tech investments are particularly difficult to find in rural areas. Thus, most of the investments made by rurally-focused CDVC funds have been in lower-tech, primarily manufacturing firms. These investments lack the potential financial volatility, both positive and negative, of traditional venture, but meet the social objective of economic development and job creation.

The lack of deal flow in rural areas also means CDVC funds must invest in companies at various levels of development. In particular, rural CDVC funds have had to "create deals" by investing in early-stage firms. Traditional venture capitalists are reluctant to make early stage investments because they are higher risk than those in firms that have demonstrated their market potential.³ Early stage investments also are more expensive for venture capitalists because they involve both longer timeframes and intensive oversight to develop a successful company. This can result in additional costs related to delayed exits – when the company can be sold to investors or another company.

All venture capitalists must exit their investments in order to make a profit and free up capital for new investments. The longer it takes a venture fund to exit an investment, the more operating costs it accrues. Unless the longer holding time results in a higher exit price, it also translates into lower returns for the venture fund, which cannot re-invest the capital until it exits its original investment.

In general, exits are critical to the ability of venture capitalists to make a profit. The majority of traditional venture funds make a profit by exiting a few investments so successfully that the returns are sufficient to offset losses on the rest of their portfolio. Such exits, whether by initial public offering or buy-out by another firm, are not uncommon when investing in the technologically-intensive industries favored by traditional venture funds.

development that is probably not fully operational.

³ Seed/start-up stage investments accounted for only 2.11 percent of all dollars invested by traditional venture capitalists in 2005 (PriceWaterhouse Moneytree 2006). While comparable figures are not available for CDVC funds, almost fifty percent of rural CDVC fund investments through the end of 2000 were in seed/start-up stage firms. Even these statistics understate the differences between CDVC and traditional venture capital funds because of the variation in how each defines seed/start-up stage investments. Rural -CDVC funds, for example, are willing to invest in business opportunities that they identify themselves and subsequently find entrepreneurs to help develop. By contrast, PriceWaterhouse Moneytree defines the Seed/Start-Up Stage investments for traditional venture funds as those in companies that usually have been in existence less than 18 months and have a concept or product under

Their high-quality deal flow also enables traditional fund managers to invest only in those firms that have the greatest promise of rapid growth, thus further maximizing the possibility of a highly profitable exit.

While exits are challenging for all community development venture capitalists, they present a particular challenge for rurally-focused CDVC funds. In large part, this reflects the primarily low-tech, moderate-growth, early-stage firms in which rural CDVC funds invest as a result of their limited deal flow. Such companies are not likely to qualify for initial public offering and have fewer potential buyers (Rubin 2001).

An additional factor complicating exits for CDVC funds is the unwillingness of many CDVC fund managers to force an exit that would be detrimental to their social objectives of high-quality job creation for low- and moderate-income individuals and economic development for rural geographies. Managers of rurally-focused CDVC funds must always weigh the social and financial benefits of any exit opportunity against its social costs. If, for example, an acquiring firm closes down a facility or moves it to another location, the social benefits to a rural area, in the form of jobs created by that firm, would be negated. This would detract from the financial benefits that the exit might provide for the fund (Rubin 2001).

As this section has demonstrated, the innovations rurally-focused CDVC funds have adopted to overcome the structural limitations of their environments have resulted in higher operating costs and lower financial returns. These have reinforced the difficulty these funds face in raising investment capital from the pension funds, endowments, financial institutions, and wealthy individuals that make up the bulk of traditional venture capital investors. Such investors are interested primarily in profit-maximization and perceive rurally-focused CDVC funds' commitment to a specific geography and their dual bottom line as diversions from that objective.

To date, sources of capital for rural CDVCs have consisted of investors who prize the social objective primarily or equally with the financial one. These have consisted mostly of federal, state and local governments and foundations, as well as a few local utilities, wealthy individuals, and commercial banks aiming to fulfill their Community Reinvestment Act (CRA) obligations. These "social" sources of capital have been fairly limited in the dollars they were willing to invest in CDVC funds (Rubin forthcoming; Rubin 2001).

The difficulty that rurally-focused CDVC funds have encountered in raising capital has left them with smaller capitalization levels than traditional venture funds. While the median fund size for a traditional fund is now \$209 million (VentureOne 2006), most of the large CDVC funds raise between ten and twenty million dollars. Because they have less capital to invest, and because their portfolio companies lack the growth potential to justify a large investment, CDVC funds make smaller investments than traditional venture funds. However, venture capital costs are labor-based, driven by the number versus size of investments that fund managers must select and manage. Thus, rather than resulting in cost savings, the smaller fund and investment sizes of CDVCs have contributed to higher operating expenses as a percentage of investment capital (Rubin 2001).

Traditional venture funds cover their operating expenses via an annual fee equal to two to three percent of capital under management. While this is a substantial amount for a two hundred million dollar fund, it provides much less financial flexibility for a twenty million dollar one. Thus, most CDVC investors require a subsidy to fund their operations. This subsidy can take the form of lower salaries for CDVC fund managers, lower returns to investors, or foundation and government grants to a non-profit partner that provides technical assistance on behalf of the CDVC. Most rurally-focused CDVC funds require all three forms of subsidy.

The current economic and political environments are not friendly to subsidy-based models (Rubin forthcoming). This has created significant challenges for the capitalization of new CDVC funds. The next section reviews existing sources of CDVC capital as well as potential new funding opportunities for the industry.

Existing Sources of CDVC Capital

Community Development Financial Institutions (CDFI) Fund

The CDFI Fund of the U.S. Department of the Treasury is an important source of capital for community development venture capital. Under the Bush Administration, the Fund has seen a dramatic reduction in funding from \$118 million in 2001, the last budget under President Clinton, to \$55 million in 2006 (CDFI Coalition 2006). In addition to reducing overall funding levels, the administration also has limited the Fund's flexibility in utilizing its allocation by pushing it to focus more of its resources on evaluation, and by prioritizing NMTC administration and the Bank Enterprise Award (BEA) program over other spending. For example, at least \$11 million of the \$55 million the Fund received for 2006 may be used for BEA and an additional \$13.5 may be used for administration of the NMTC, leaving only \$30 million for all other Fund activities.

New Markets Venture Capital

The New Markets Venture Capital (NMVC) program was designed to increase the supply of equity and near-equity capital flowing into distressed communities. The program, which is administrated by the Small Business Administration of the U.S. Department of Commerce, was intended to provide 10 to 20 new NMVC Companies with matching capital -- \$100 million in debt for making investments and \$30 million in grants to offset overhead expenses. The program would have resulted in a significant expansion of the financial resources available to the CDVC industry.

Six NMVC Companies were given final approval in the first round of the program, four of which included a focus on rural geographies. The SBA expected to run a second round of the program starting in the spring of 2003. In March of that year, however, funding for the second round was deleted from the 2003 Fiscal Year Omnibus Appropriations Bill during the budget reconciliation process. Efforts to obtain future allocations for the NMVC program have been unsuccessful to date.

Rural Business Investment Program

The Rural Business Investment Program (RBIP) was designed to promote developmental venture capital investments in smaller enterprises located in rural areas. It was created by the 2002 Farm Bill and modeled on the NMVC program. The original legislation indicated that the program would make available approximately \$280 million of investment as well as operational grants to provide technical assistance to portfolio companies. In 2003, the U.S. Department of Agriculture reached an agreement with the SBA to have the latter administer the program.

The 2005 budget allocated \$10 million for the program, which would have supported two to three Rural Business Investment Companies. The SBA conditionally approved three RBIP Companies, giving them a year to raise the \$10 million in equity capital required to become fully approved. Upon full approval, each of the companies would have been eligible for \$20 million of government guaranteed debentures for making investments and a \$1 million operational assistance grant for the provision of technical assistance to those companies that received investments.

Only one of the three, Meritus Ventures, was able to raise the necessary capital and become a Rural Business Investment Company. The Budget Reconciliation Act of 2005 subsequently rescinded funds appropriated for the program that were not obligated by October 1, 2006 and repealed the authority to spend funds in the future, ending any future funding for the program.

New Markets Tax Credit Program

The New Markets Tax Credit (NMTC) program was designed to combine public and private sector resources in order to bring \$15 billion in new investments to impoverished rural and urban communities. The program came into existence with strong encouragement and support from the CDVC industry. When the program was being designed, there was great hope that it would be a significant new source of equity capital to fund business lending and investments. Due to several statutory and regulatory provisions, however, the program has so far been used almost exclusively to finance real estate-related transactions (Rubin & Stankiewicz 2005; 2003). The highly competitive nature of the program and the expense and expertise required to meet its legal and compliance requirements have also precluded all but the largest and most sophisticated organizations from being able to take advantage of an NMTC allocation.

Conventional Financial Institutions

Commercial banks have been a very important source of capital for CDVCs, particularly since the 1995 regulatory revisions to the Community Reinvestment Act (CRA), which instituted the investment test and expressly recognized community development financial institutions as qualifying CRA investments and borrowers (Barr 2005; Pinsky 2001). Both of

these changes gave commercial banks a significant incentive to financing CDVCs (Benjamin, Rubin and Zeilenbach 2004). Recent changes to the CRA, however, have reduced the number of banks expressly evaluated for their investment activities. This change, in combination with the dramatic consolidation in the banking industry and the growth of alternative options that meet the investment test while providing a market-rate return, has made it much more difficult for CDVCs to raise capital from banks.

The CRA was passed by Congress in 1977 in order to encourage regulated financial institutions to meet their "continuing and affirmative obligations to help meet the credit needs of the local communities in which they are chartered" (NCRC 2005). In 2004 and 2005, the four federal agencies that enforce the CRA issued amendments to the Act that, in part, created a new category known as intermediate small banks, which consists of institutions with assets of between \$250 million and \$1 billion, which would no longer be evaluated on their investment and service activities. Instead they would be eligible for evaluation under the small bank lending test and a flexible new community development test. The new regulations did not change the evaluations for banks with assets of more than \$1 billion or less than \$250 million (Marsico 2006).

The National Community Reinvestment Coalition found that as a result of the intermediate small bank category changes "1,508 banks with 13,643 branches and total assets of \$679 billion were no longer subject to the more rigorous lending, investment, and service tests for large banks" (Marsico 2006, 540). This has significant implications for CDVCs. The CRA investment test has played a critical role in motivating banks to invest in the industry (Rubin forthcoming; Benjamin, Rubin and Zeilenbach 2004). Any reduction in the number of banks that must meet the investment test makes raising new CDVC funds more challenging. This is particularly true for rural-focused CDVC funds, which were already disadvantaged in being able to attract bank investments because of the paucity of larger bank branches in rural areas (Rubin 2001).

Over the last few decades, the U.S. banking industry has gone through significant consolidation through mergers of increasingly large organizations. The ten biggest US commercial banks now control 49 percent of all domestic banking assets, a substantial increase from the 29 percent they controlled a decade ago (*Economist* 2006).

This consolidation has had both positive and negative affects for the CDVC industry. On the positive side, banks planning to acquire or be acquired have been more likely to be concerned about their CRA rating and thus to make community-development related investments, even unprofitable ones (Bostic et al 2002; Avery et al 2000). This benefit has been watered down somewhat by the recent decrease in large-bank mergers.

One of the negative consequences of consolidation has been a reduction in absolute sources of capital for community development finance that occurs when large institutions merge. Anecdotal evidence indicates that the post-merger institutions do not provide as much community development capital as the total of what the two merging entities did separately, resulting in a reduction of overall capital availability. Mergers among larger banks

also leave fewer sources of capital for CDVCs to approach, reducing the overall odds of them being able to obtain a capital commitment.

Bank consolidation also has resulted in an increased emphasis on profitability by the larger banks, which have felt pressure to justify the mergers to their shareholders. This has led them to consolidate activities and cut costs (Tully 2006). The increased profitability pressures have translated into less subsidized capital available for CDVCs as banks increasingly view their CRA-related activities as profit centers (Rubin forthcoming). This is made easier by the recent increase in investment options created specifically for the purpose of providing financial institutions with market-rate or near-market-rate returns while enabling them to receive investment test or similar credit under the CRA. These include mutual funds, such as the Access Capital Community Investment Fund and the CRA Qualified Investment Fund, which invests in economically and geographically targeted fixed income instruments. They also include separately managed accounts that groups such as CRA Fund Advisors can set up to suit the particular investment objectives of banks, pension funds, and foundations.

Even developmental venture capital alternatives have mushroomed. The minority-focused venture capital industry has grown significantly in the last decade (Bradford, Bates and Rubin 2005), and funds such as UrbanAmerica, LP, the Canyon-Johnson Urban Fund, and the Genesis Family of Funds invest in inner-city real estate with the goal of achieving both market-rate returns and economic development for their under-served residents. These options pose a significant competitive challenge for CDVCs by promising investors higher rates of financial return for comparable levels of risk.

CDVCs seeking bank investments must also contend with higher interest rates, which translate into a higher cost of capital for banks, and subsequently for their borrowers. Higher interest rates mean banks are looking for higher rates of return on equity investments to offset the higher cost of capital. This makes CDVCs a tougher sell, since they have yet to document sufficient financial returns to justify their longer holding periods.

The losses that many banks experienced from their Small Business Investment Company (SBIC) investments following the market correction of 2001 have also hurt CDVCs' ability to raise capital. Although CDVCs have not pursued the internet-related investments that led so many SBICs to lose money, they have been hurt by the connection some bankers have made between them and SBICs, as equity investments in both enable banks to meet the CRA investment test (Rubin forthcoming).

Foundations

Foundations have been a small but important source of capital for CDVCs. Over the last decade, a handful of large foundations, including The Ford Foundation, The John D. and Catherine T. MacArthur Foundation, and the F.B. Heron Foundation, have made numerous investments in the industry, while others have supported specific organizations and/or initiatives.

In the last few years, foundation support for community development venture capital has declined. This is due partly to the stock market decline that began in 2000, which shrank foundation assets and led to an overall reduction in foundation giving. More significant, however, have been decisions by the most active foundation investors to change the nature of their support for the sector or to withdraw support entirely. Foundations generally view their dollars as seed money, intended to catalyze other sources of capital and ultimately lead to organizational or project sustainability. For CDVCs, this has meant that the subsidized dollars that foundations provided to many organizations in the industry's beginnings have become rare or unavailable.

Even those few foundations that have continued to fund individual CDVCs evaluate these investments relative to the range of other community development options available, such as the fixed instrument and equity funds discussed previously. As one foundation official pointed out, "There has been a lot of activity in the last five years and its reshaped the landscape a lot and signaled to foundations and banks that they can have the same impact with a better return" (Rubin forthcoming).

Nor do the dollars that foundations commit to CDVCs from their charitable disbursements equal those they invest in more market-rate funds via their endowments. This is true even for those foundations, such as F. B. Heron, which commit a portion of their endowment investments to mission related opportunities. In 2004, for example, the foundation invested \$1.5 million in four CDVC funds via program related investments, and \$10 million of endowment funds in six socially-oriented market-rate equity funds, such as UrbanAmerica, L.P. (F.B. Heron 2004).

New CDVC Funding Opportunities

State and Local Governments

State and local governments have been a source of capital for CDVCs since the industry's beginnings, accounting for eleven percent of all capital raised by the industry as of the end of 2000 (Rubin 2001). As alternative sources have dried up, however, states have become an increasingly attractive option for CDVC funds trying to raise new capital. This may be particularly true for rurally-focused CDVC funds, as state governments may be closer and thus more accountable to their rural constituents than the federal government.

The power of state-level initiatives is best illustrated by California, where public-sector activity over the last decade has encouraged the creation of numerous innovative sources of capital to fund community development finance. In 1996, The Community Organized Investment Network (COIN) was established in the state at the request of the insurance industry as an alternative to state legislation that would have required insurance companies to invest in underserved communities. As of 2003, it had facilitated over \$740 million in insurer investments in affordable housing and economic development projects. The COIN program also certifies California Community Development Financial Institutions, which then become eligible for investments from the COIN managed pool of capital.

In May 2000, the State's Treasurer Phillip Angelides launched The Double Bottom Line: Investing in California's Emerging Markets initiative, "to direct investment capital – through state programs and the State's pension and investment funds – to spur economic growth in those California communities left behind during the economic expansion of the past decade" (Angelides 2001, 1). As part of this initiative, Angelides successfully encouraged the boards of two of California's largest public pension funds, on which he serves, to invest in real estate and businesses in the state's poorest communities. The two pension funds, the California Public Employees' Retirement System (CalPERS) and the California State Teachers' Retirement System (CalSTRS), have so far allocated \$4.34 billion to real estate and \$1.09 billion to business investments in such communities (Angelides 2006).

One indication of how successful these initiatives have been is a forthcoming report by the Milken Institute that found-contrary to national trends—that developmental finance institutions in the state are not experiencing any difficulty raising capital (Zeidman 2006). Not surprisingly, the three-year-old Bay Area Equity Fund, the largest CDVC fund raised to date, is based in California.

Pension Funds

U.S. pension funds control over seven trillion dollars in assets (Anand 1998). Historically, most pension fund assets have been very conservatively invested in fixed income, public equities and real estate. In the last few decades, however, pension funds have expanded their parameters to include "alternative" investments such as venture capital. Pension funds now account for over 50 percent of all the capital placed in venture funds (National Venture Capital Association 2006).

Some of the public and Taft-Hartley pension funds have also incorporated economically targeted investments (ETIs) into their portfolios. ETIs are "investment programs designed to produce a competitive rate of return as well as create collateral economic benefits for a targeted geographic area, group of people, or sector of the economy" (McNeill and Fullenbaum 1995 as quoted by Small Business Administration, 1). Conservative estimates place the ETI commitments of public pension funds at more than \$43 million (Democracy Collaborative 2005).

To date, most of the pension fund ETI investments have been in fixed income and real estate. Pension funds generally have been reluctant to make private equity ETI investments, for reasons of both cost and risk. Only a few of the most innovative pension funds have expanded their ETI investments to include private equity. The most notable among these is the CalPERS' \$500 million California Initiative to target companies in the state's underserved markets (Hess 2006). In 2001, the California Initiative selected ten private equity firms to receive a capital commitment of \$475 million (Hess 2006). Pacific Community Ventures, a San Francisco based CDVC, was among these ten and received a \$10 million investment (Pacific Community Ventures 2005). The CalPERS investment makes Pacific Community

Ventures the second CDVC to receive pension capital. The Reinvestment Fund attracted investments from Taft-Hartley pension funds for its CDVC funds (Kostelni 2003).

While pension investments in CDVCs are still the exception, they are likely to increase if the CDVC funds can demonstrate an appropriate risk-adjusted rate of return and an ability to absorb larger investments. Despite CalPERS' willingness to invest \$10 million in Pacific Community Ventures, pension funds generally prefer to make larger investments as the costs of due diligence are the same regardless of investment size.

More pension funds also are adding private equity to their ETI portfolios, including the New York City Employees' Retirement System (NYCERS), which set out a policy in August of 2005 to move into private equity investments and to target low-moderate income areas in the five boroughs of New York City (Hess and Hagerman 2005). Given the geographic nature of most public pension fund ETI investments, community development venture capital funds that invest in states whose public pension funds are willing to make private equity ETI investments have a much greater chance of attracting pension fund capital.

Individual Investors

Although some CDVC funds have been able to attract investments from individuals, they accounted for only six percent of all CDVC investments as of 2000, the last year for which this data is available. As the field of social investing continues to evolve, however, CDVCs increasingly are looking at individuals as a potentially important source of future capital.

Individuals can invest directly in most limited-life CDVC funds (those structured as limited partnership or limited liability corporations) via equity investments of \$50,000 or more (MacDonald 2005). SJF Ventures, a fund that invests in companies whose competitive advantages include environmental or workforce innovation, has found individual investors increasing receptive to investing in its funds. Many of these individuals have experience as angel investors and have found it easier and safer to invest via a CDVC. Although their investments are generally smaller than those of commercial banks, such individuals are high value-added investors because they provide additional due diligence on individual deals and refer potential portfolio companies to the fund. Individuals also can invest in CDVCs via the Community Development Venture Capital Alliance, the industry's trade association, which has a central fund that accepts individual loans of as little as \$10,000 for a period of ten years.

Conclusion

Given the important role that patient capital plays in entrepreneurial development, the future economic vitality of rural communities rests, at least in part, on their ability to access such capital. Community development venture capital is a particularly adept model for overcoming the structural obstacles that rural geographies present for venture capital investors. This model, however, requires subsidy to offset the extra costs that overcoming such obstacles involves.

Historical sources of subsidized capital, including the federal government, foundations, and commercial banks, have all declined since the 1990s, making it extremely challenging for new CDVC funds to form. Changes in public policy are necessary to encourage the federal government and commercial banks to continue their support for the industry.

There also are several funding sources that could play a greater role in capitalizing new CDVC funds, including state governments, pensions funds, and individual investors. Once again, public policy is essential in providing incentives for these actors to play a greater role. As the California example demonstrates, a well-coordinated policy approach can result in significant resources for economic development from the public and private sectors, which helps create healthy and vibrant communities.

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BIBLIOGRAPHY

Anand, Vineeta. "Market Contributions Boost Pension Assets." Pensions & Investments, October 19, 1998.

Angelides, Philip. "The Double Bottom Line: Investing in California's Emerging Markets." Ideas to Action, June 2001.

Angelides, Philip. "Double Bottom Line Investment Initiative Five Years Later: Delivering on Both Bottom Lines," 2006. http://www.treasurer.ca.gov/publications/dbl/five_years.pdf

Avery, Robert B, Raphael W. Bostic & Glenn B. Canner. "The Performance and Profitability of CRA-Related Lending," Economic Commentary, Federal Reserve Bank of Cleveland, November 2000.

Barr, Michael S. (2005). "Credit Where it Counts: The Community Reinvestment Act and Its Critics." New York University Law Review, Vol. 80 (May 2005): 513.

Bates, Tim, William Bradford & Julia Sass Rubin. "The Viability of the Minority-Oriented Venture-Capital Industry Under Alternative Financing Arrangements." Economic Development Quarterly, Vol. 20, No. 2 (2006): 178-191.

Benjamin, Lehn, Julia Sass Rubin, and Sean Zielenbach. "Community Development Financial Institutions: Current Issues and Future Prospects." Journal of Urban Affairs 26, no. 2 (2004): 177-95.

Bostic, Raphael, Hamid Mehran, Anna Paulson and Marc Saidenberg. "Regulatory Incentives and Consolidation: The Case of Commercial Bank Mergers and the Community Reinvestment Act." Federal Reserve Bank of Chicago Working Paper 2002-06, (2002).

CDFI Coalition. "CDFI Coalition Newsletter." February 7, 2006. http://www.cdfi.org/Uploader/Files/e-news2-7.html.

Democracy Collaborative. Building Wealth: The New Asset-Based Approach to Solving Social and Economic Problems. Washington, DC: The Aspen Institute Nonprofit Sector Research Fund, April 2005.

Economist. "Thinking Big." Economist, Volume 379, Issue 8478 (2006): 3-6.

F. B. Heron. "2004 Annual Report." http://www.fbheron.org/2004ar.pdf

Hebb, Tessa. "Public Pension Funds and Urban Revitalization. California Case Study A: Private Equity CalPERS' California Initiative." (2006). http://urban.ouce.ox.ac.uk/research.html

Hess, Tessa and Lisa Hagerman. "Best Practices in Pension Fund Urban Investments." Presentation at the Pension Funds and Urban Revitalization seminar, Hartford, Connecticut, October 25, 2005. http://urban.ouce.ox.ac.uk/notes051025.pdf

Kostelni, Natalie. "Fund Seeks Profits and New Jobs." Philadelphia Business Journal. September 9, 2003.

MacDonald, G. Jeffrey. "For Investors With a Conscience, Options Grow." The Christina Science Monitor, September 19, 2005.

Marsico, Richard D. "The 2004-2005 Amendments to the Community Reinvestment Act Regulations: For Communities One Step Forward and Three Steps Back." NYLS Clinical Research Institute Paper No. 05/06-20, (2005).

McNeill, Mariana and Richard Fullenbaum. "Pension Funds and Small Firm Financing." M&R Associates, Rockville, MD, 1995.

NCRC. "Policy." NCRC, http://www.ncrc.org/policy/cra, (2005).

National Venture Capital Association. "The Venture Capital Industry – An Overview." National Venture Capital Association, http://www.nvca.org/def.html, (2006).

Pacific Community Ventures. "About Us: Our Team. Our Commitment to Public/Private Partnerships." http://www.pacificcommunityventures.org/aboutus/statementofcommitment.html, (2005).

Pinsky, Mark. "Taking Stock: CDFIs Look Ahead After 25 Years of Community Development Finance." Capital Xchange, December 2001. http://www.brookings.edu/metro/capitalxchange/article9.htm

PriceWaterhouse MoneyTree. "MoneyTree Report." http://www.pwcmoneytree.com/moneytree/nav.jsp?page=historical

Rubin, Julia Sass. "Financing Organizations With Debt And Equity: The Role Of Community Development Loan And Venture Funds," In Community Development Finance, Edited by Julia Sass Rubin. New York, NY: Russell Sage Foundation, forthcoming.

Rubin, Julia Sass. "Community Development Venture Capital: A Double-Bottom Line Approach to Poverty Alleviation." In Proceedings of the Changing Financing Markets and Community Development, Second Federal Reserve System Community Affairs Research Conference: 121–154. Washington, DC: Federal Reserve System, April 2001.

Rubin, Julia Sass and Gregory M. Stankiewicz. "The New Markets Tax Credit Program: A Midcourse Assessment." Community Development Investment Review, San Francisco Federal Reserve, Volume 1, Issue 1 (2005).

— "Evaluating the Impact of Federal Community Economic Development Policies on their Targeted Populations: The Case of the New Markets Initiatives." Paper Presented at the Sustainable Community Development: What Works, What Doesn't and Why, Third Federal Reserve System Community Affairs Research Conference, Washington D.C. (2003).

Tully, Shawn. "In This Corner! The Contender." Fortune/CNN.com, March 29, 2006:10:24AM EST. http://money.cnn.com/magazines/fortune/fortune_archive/2006/04/03/8373068/index.htm

VentureOne. "U.S. Venture Capital Funds Raise \$4.26 Billion In First Quarter, 69% More Than A Year Ago." Press Release. May 3, 2006. http://www.ventureone.com/ii/V1_1q06_USFundsPR.pdf

Zeidman, Betsy. Interview with author, June 2006.

A Vision for the Future of Rural Developmental Venture Capital

L. Ray Moncrief Grady S. Vanderhoofven

Kentucky Highlands Investment Corporation

he era of recruiting smokestack industries and getting deep subsidies from the federal government to revitalize local economies is over. The economic future of struggling economies across the country will come from those communities themselves, based on local assets, local ideas, and driven by local entrepreneurs. To spark this growth, rural communities will need community development venture capital (CDVC) to help bring them back into the economic mainstream. At Kentucky Highlands Investment Corporation (KHIC), we know there is opportunity in rural places, because we see good deals go unfunded every day.

How Do We Get From Here to There?

Currently, rural economies are inadequately served by venture capital. As noted in other articles in this *Review*, traditional venture capital is concentrated in very few places. While the venture capital industry in the United States is generally very robust, rural areas have not benefited from the activity in the broader venture capital industry. Pricewaterhouse Coopers reports that the vast majority of U.S. venture capital for the 2nd quarter of 2006 was invested in urban areas. Almost 50% went to Silicon Valley and urban New England, as these areas received approximately \$3 billion out of the \$6.3 billion total invested.

There are many exceptions to this overall trend, however. Rural CDVC firms like ourselves, state-sponsored venture funds, and a growing number of angel investors are making local investments in their local entrepreneurs. But there are many obstacles to this work. The road ahead for rural CDVC is difficult and made even tougher by some significant challenges that include:

- Insufficient or nonexistent funding of innovative federal programs such as The Small Business Investment Company program, as well as the New Markets Venture Capital program, and the Rural Business Investment Program;
- Potentially waning interest from traditional financial backers, including national and regional banks, and foundations;
- A stalled policy environment at the federal level;
- The difficulty in attracting capital from nontraditional sources, such as pension funds, or university endowments;
- No substantial delivery vehicle to aggregate and invest the needed capital;

- The lingering perception from the prospective investor base that rural investment is too risky and that there is not a significantly developed entrepreneurial mentality outside of the farm-focused farming community;
- Substantially less investment capital, particularly equity, available in rural areas than in traditional venture capital markets;
- The pool of entrepreneurs that is neither as broad nor as deep in rural areas as it is in traditional venture capital markets; and
- The lack of the infrastructure required to support the growth of venture capital and venture-backed companies in rural areas, which means rural companies generally only have limited access to sophisticated and knowledgeable consultants (lawyers, accountants, executive recruiters, and employee support services).

In spite of these obstacles, there are strong trends that point to a future where rural CDVC unleashes the energy of rural entrepreneurs. Rural areas are becoming a richer investing environment thanks to: (1) new technological breakthroughs, (2) the promise of leveraging local intellectual resources such as universities or government laboratories, and (3) "in-sourcing" of jobs from areas with higher living costs (as opposed to sending those jobs overseas).

Generally speaking, some of the greatest opportunities for venture capital investment in rural areas involve technology-based companies that are focused on overcoming infrastructure limitations. For example, the need to improve the delivery of healthcare and related services represents a wellspring of business opportunities in rural areas. Similar opportunity can be found in the need to bring broadband wireless communication and the Internet to rural communities lacking a wired infrastructure. Going one step further, companies that are leveraging the Internet and/or wireless technology (broadband or otherwise) in rural areas are creating some compelling businesses.

In Etowah, Tennessee (population 3800), for example, a company named NuMarkets leveraged the Internet to create a business that allows people in rural east Tennessee to sell consigned products via eBay and similar on-line venues to people all over the world. Antique cash registers that historically had been peddled by a local seller only to local customers or to antiquing tourists driving through Etowah are now sold to buyers throughout the United States and even Europe at prices that are substantially higher than what was once thought possible in Etowah. Tens of thousand of items as unique as antique tractor seats have been found to be in demand as far away as Canada, Europe, Asia, and South America, but that fact was unknown before NuMarkets opened its doors for business and created a conduit for revenue to flow into rural east Tennessee from all over the world. While rural markets frequently are not large enough in and of themselves to support companies in rural areas, the increasing globalization of the economy and the constant shrinking of the world due to technology advances create new opportunities for rural companies that traditionally may have been somewhat isolated or cut-off from large markets.

Universities and similar institutions (for example, national laboratories and community colleges) in rural areas are becoming increasingly proactive and aggressive as engines

of economic development and business creation. These institutions not only generate technology that can become the basis of products or services for rural companies, but they can provide access to special equipment and facilities, as well as technical and business know-how to supplement organic know-how in rural companies. For example, SemiSouth Laboratories, Inc. in Starkville, Mississippi was spun out of Mississippi State University (MSU) by two entrepreneurial faculty members. SemiSouth is a leading developer and manufacturer of silicon carbide electronics and electronic material. Silicon carbide (SiC) is a high-power, high-temperature, rad-hard semiconductor being developed and brought to market for exciting new radar, power conversion, and space applications. Applicability in these markets is driven by SiC's power density, stability in harsh environments and thermal tolerance. Specific electronic components that can be made of SiC include power switches, power rectifiers, RF transistors, and sensors. MSU has become the technology center of an evolving cluster of silicon carbide semiconductor companies in rural Mississippi, and MSU seems to understand the myriad benefits to be derived from its active engagement in the company creation process.

Oak Ridge National Laboratory (ORNL) in rural east Tennessee has explicitly and publicly stated a desire to leverage its world-class research and development facilities to spawn and support nanotechnology-based companies. Using discretionary funding derived from the licensing of technology developed by its researchers, ORNL has even provided direct financial support to the Center for Entrepreneurial Growth, a virtual incubator in rural east Tennessee, and ORNL has unveiled plans to locate a technology business incubator physically on the ORNL campus.

The concept of "in-sourcing" or "rural sourcing" seems to be gaining momentum as companies look for ways to out-source in a cost effective manner, while avoiding some of the issues that may be associated with sending work and jobs outside the United States. For example, Mid South Electronics, Inc., in rural East Kentucky, is an electro-mechanical manufacturer of subassemblies for the appliance industry. The vast majority of this type work is moving offshore in search of cheaper labor. Mid South, however, has found a profitable niche where it can provide a quick turnaround on shorter production runs. Mid South is very important to companies like General Electric that sources the majority of its product offshore.

Ways to Keep the Momentum Going for Positive Trends

There are a number of changes that are necessary to make sure these trends continue. Some changes require both a continuation and expansion of promising public policies. Others speak to the need to foster a more entrepreneurial culture in rural areas. And still others are as simple as success will breed success.

There are a number of policy strategies that are promoting a future where rural CDVC helps struggling rural economies. In 2002 Congress approved a farm bill that included the creation of the Rural Business Investment Program. Within that legislation, a provision was made to start Rural Business Investment Companies (RBICs). RBICs are modeled after the

SBA's Small Business Investment Company and New Markets Venture Capital programs but are targeted primarily to rural America. The program provides for 300 percent leverage of private capital through the use of federally guaranteed, discounted debentures. In other words, for one dollar of private capital (called "regulatory capital") raised by a licensed RBIC, that RBIC can borrow three dollars that will be guaranteed by the USDA. The debentures are "discounted debentures" because five years of interest is deducted on a pre-paid basis, allowing the net proceeds to be invested as equity because there is not a need to generate current income to service interest payments.

The current administration issued a Notice of Funds Availability on June 8, 2004 that would create three RBICs after a national competition. Two applications received "conditional" approval on June 1, 2005, and the two funds were given one calendar year to raise their regulatory capital of \$10 million. Only Meritus Ventures, L.P. successfully raised its regulatory capital and was licensed in September 2006.

The Community Development Venture Capital Alliance (CDVCA) is strongly advocating for the inclusion of the RBIC program in the 2007 Farm Bill. Senator Tom Harkin (D-IA) will head the Senate Agriculture Committee in January. He is a strong RBIC advocate and will be a key player in deciding the structure of the 2007 Farm Bill. It is important that additional RBIC's be formed throughout rural America, so that key legislators can point to the success of the RBICs in their home states.

Another key component of rural private equity becoming available is the Farm Credit System. In early 2007, the USAgBank will hold a training program for the System's Chief Executive Officers. The Farm Credit Administration is permitting System institutions to get more actively involved in investing in rural economic development activities, including venture capital.

And some state governments are making important contributions to rural CDVC development. In Arkansas and Oklahoma, state legislatures have produced legislation that has led to the creation of "fund of funds" targeting regional venture funds, but the same cannot be said for a number of similar, rural states.

More than Just Government: Finding New Sources of Capital

A number of organizations in rural areas have recognized the need to support the process of creating companies that have the potential to attract outside investment and grow successfully. Examples of these types of organizations include Technology 2020 in Tennessee, Kentucky Science and Technology Corporation, Advantage West in North Carolina, Mississippi Technology Alliance, and Arkansas Capital Corporation Group. These groups often sponsor venture forums, manage physical or virtual incubators, provide coaching or mentoring support to budding companies and entrepreneurs, and generally work to facilitate introductions between companies and prospective sources of outside capital.

Similarly, some of the large pension funds (e.g., state and municipal pension funds) and university endowments in rural areas must become active investors in rural-focused venture funds.

Colleges and universities are in a position to donate more than just good ideas and well-trained employees; they are trustees of large pools of capital in their endowments. The University of Kentucky, whose president is a serial entrepreneur, has invested in rural-focused venture funds. These investments from endowments remain generally the exception and not the rule despite the potential multi-faceted benefits to universities in rural states seeking not only to grow their endowments but also to create companies and jobs to "keep the best and brightest" closer to home after graduation.

Changing the Rural Culture to Foster Economic Innovation

Making rural areas more fertile ground for venture capital investment will require developing a culture that is conducive to the creation and nurturing of entrepreneurs. Venture capital, whether in Silicon Valley, along Route 128, in Austin, TX, or in rural areas of the country, is a tool in the hands of an entrepreneur. Educational and research institutions, banks, foundations, endowments, economic development entities, and venture funds are supporters of entrepreneurial activity. The most important players in the company creation and growth process are the entrepreneurs. Without an energetic, hopeful, capable entrepreneur driving a business, the supporting infrastructure has little likelihood of producing profit-generating, job-producing, shareholder-enriching companies.

While some might suggest entrepreneurs cannot be created, and people must be, in fact, born with an entrepreneurial gene, it clearly stands to reason that communities that don't teach the concept of entrepreneurism are less likely to produce entrepreneurs. Communities that do not celebrate successful entrepreneurs or that unduly criticize those who start business that ultimately aren't successful are less likely to produce entrepreneurs.

Rural communities must establish entrepreneurial support and education systems. This concept goes far beyond building a "bricks-and-mortar" incubator and may not, in fact, even include the creation of facilities or buildings. Putting a person in an office building doesn't make him or her an entrepreneur any more than putting that same person in a garage makes him or her a car. Universities and community colleges, and even high schools, in rural areas should include entrepreneurism in their curriculum. At the Kentucky Entrepreneurship Coaches Institute, Joseph A. Kayne, the Cintas Endowed Chair of Entrepreneurship at Miami University of Ohio, presented the following sobering perspective: "Government (federal, state, and local) spends \$18 - \$20 billion every year on economic development, excluding tax incentives. However, it is estimated that less than 2 percent of that expenditure supports the development of new entrepreneurs."

A multi-semester course on technology-based entrepreneurship was offered at the University of Tennessee in Knoxville several years ago, and produced half a dozen technology-based start-up companies. One of those companies, Protein Discovery, successfully raised two rounds of venture capital, attracted experienced senior management team members from the West Coast, and is currently alive and growing in a low-income area in east Tennessee.

Fund management teams in rural areas must be willing to roll up their sleeves and work to find quality investments and to support, coach, mentor, manage, and nurture those investments once they are made. Generally speaking, there is little (if any) low hanging fruit to be found with respect to investment opportunities in the typical rural setting. Opportunities can be found, but doing so requires a degree of sifting and searching on the part of fund management teams. Once opportunities are identified, a venture investor in a rural setting will likely find that he must invest substantial time educating the entrepreneur in the prospective investee company about the venture capital process. Once an investment is made, the venture capitalist will likely invest time and energy introducing the company to networks of contacts that can be helpful to the company and must be committed on an ongoing basis to support the maturation of the management team, as well as future fundraising efforts. Being a venture capitalist in Silicon Valley entails a vastly different job description than it does in rural areas of the country, despite the fact that the job title is the same. Succeeding as a venture capital investor in rural areas will require the same financial discipline as is required in more traditional markets, and the industry must be able to attract or create fund management teams that recognize this fact, but it will also require a different degree of engagement.

Success Breeds Success

A vital aspect to managing the future of rural CDVC is to make sure that all the interests in the activity—entrepreneurs, investors (for-profit, public, and socially-motivated), and communities—are considered. But in the end, rural CDVC funds must make money. Short-term job creation is not a substitute for long-term financial viability. At the end of the day, profit-producing, self-sustaining companies will create jobs and increase wealth in rural areas. Investors in rural-focused venture capital funds will need to invest in fund management teams that can successfully raise capital, deploy it in a manner that produces positive returns for the investors, and subsequently raise more capital. In other words, rural development venture capital funds will have to be able to successfully execute the same cycle that traditional venture funds must execute.

Ultimately, when investors are ready to make investments in rural-focused venture funds, it is imperative that those investments be made in capable and qualified management teams. Rural developmental venture capital will have a short lifespan if the management teams that are deploying the capital are not capable of producing returns that warrant continued and increasing investment by successful investors. To that end, it is critical that practitioners in the industry ensure that key legislators understand the necessity of building capacity in the ranks of rural venture fund managers, so an adequate cadre of professionally trained and experienced rural venture fund managers are available to aggregate and manage capital targeted for investment in rural areas.

Conclusion

Participation in the "new economy" requires an understanding of current realities. It is a truism that most new jobs in America today are created by small businesses, and small businesses are created by entrepreneurs. Growing small businesses and creating jobs and wealth in rural areas will require the availability of capital to be used as a tool in the hands of entrepreneurs, and the proficiency with which that tool is utilized can be improved and accelerated by including professionally-managed, rural-focused venture capital funds in the process.

Our rural communities are standing at the fork in a road. One path, one of underinvestment, leads to a future that is marked by a vicious cycle of out-migration of jobs, capital, and people. Those who are left behind will be forced to struggle in a place that is increasingly cut off from its metropolitan neighbors. Another path takes stock in the assets and ideas that all communities have, and invests capital in them to generate growth, high-paying jobs, and a more viable economic future. We know rural CDCV is a tool that can help rural communities reach their economic potential. Our challenge now is to make sure all rural communities have the chance to choose the path toward economic growth.

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Grady Vanderhoofven is a graduate of Yale University with both an undergraduate and a graduate degree in Mechanical Engineering. He has seven years in deal structuring and venture investing, ten years in technology commercialization and business creation (12 start up companies) and a strong technical, engineering, and intellectual property background. Grady co-manages three CDVC funds.

State Governments Start Investing Capital for Entrepreneurs to Grow the Local Economy and Keep Jobs

George Lipper

National Association of Seed and Venture Funds

quity capital for entrepreneurs is a scarce commodity in most of states in the United States. This is particularly true for states that are predominantly rural. The extraordinary concentration, both geographically and by stage of development, of venture capital investing over the past two decades has dramatically altered the economic landscape for entrepreneurial start-ups in the United States.

While the venture capital industry often portrays itself as the fount of economic growth, basking in the glow of such wealth- and job-creating giants as Fed-Ex, Microsoft, and Dell, statistics show clearly that as the industry has aged, so has its appetite for larger funds, from which it invests larger amounts of money into later-stage companies.

Upon careful reflection, that change presents no great surprise. As the venture capital industry's success stories gathered media attention, it was able to raise larger funds, requiring fewer, larger investments for more lucrative and manageable portfolios. And the industry tended to concentrate its work closer to the centers for research and entrepreneurship: the San Francisco Bay Area, Boston's Route 128, North Carolina's Research Triangle, and Seattle.

Institutional venture capital, as measured by the "Money Tree," the most commonly used reference, has now nearly abandoned the start-up-seed-capital stage of investing, placing only 2 percent or 3 percent of its capital in such firms. In fact, roughly 80 percent of all venture capital is invested in expansion and later-stage companies.¹

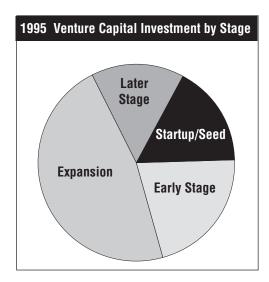
The average-size venture capital fund has nearly tripled to more than \$200 million of capital under management (that's other people's capital), exacting more efficiency in its investing practices, translating into later-stage, larger deals that are geographically concentrated.

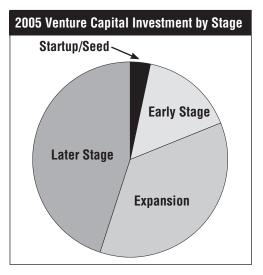
So, while the venture capital industry's trend lines are perfectly logical, the consequence for that portion of the nation that has come to be known as "fly-over" states is a brain drain, a loss of prospective high-growth entrepreneurial companies, and an array of economic challenges.

Just as U.S. Supreme Court Justice Louis Brandeis nearly a century ago envisioned state legislatures as "laboratories of democracy," willing to tackle new and innovative approaches in meeting the needs of the citizenry, once again the states are obliged to step to the plate, launching a variety of ideas for making equity capital available for their entrepreneurs.

Economic development, job creation, and retention of talent are most frequently cited as reasons for the state to get involved. And after more than a decade of experience with

Annual reports of 1995 and 2005 of the PricewaterhouseCoopers, National Venture Capital Association, Thomson Financial survey of institutional venture capital investments.





such programs, many states have come to recognize that it is appropriate, even desirable, to include a profit motive, that is, to treat the state's investment, whether it be direct or by tax credit, in a manner similar to how venture capitalists treat their limited partners.

Connecticut often is credited with launching the first initiative, then called the Connecticut Product Development Corporation, a program by which entrepreneurs with compelling ideas could obtain state equity capital investments to create a company. It proved to be a success, and eventually was copied and massaged by other states that found themselves challenged to retain their more capable entrepreneurs.

During the past few months, the National Association of Seed and Venture Funds (NASVF) conducted a study to get a picture of what state governments are doing today to promote or create equity capital. Our researchers uncovered more than 150 programs in 45 states with a combined \$5.8 billion in committed capital. Such programs are scattered through the bureaucracies of state governments—governors' offices, treasury departments, departments of economic development, state pension systems, and special objectives funds, such as clean energy. Most target early-stage investments in companies aligned with the state's priorities (job creation, for example).

Only about 40 percent of the programs, however, provide the state with an equity position for its investments. Many funds are restrained by constitutional prohibitions. Additionally, state universities, particularly those with research programs, have increasingly recognized an economic-development responsibility to their states and have created programs to assist both the transfer of technologies and the creation of businesses.

State involvement in creating equity capital to finance entrepreneurial businesses continues on an evolutionary path as state legislators look for more effective ways to retain their entrepreneurial talent. As such, the process commands continued scrutiny to identify and share best practices.

Among the more promising approaches is a program originally launched in Oklahoma in the mid-1990s. The program, frequently called a fund of funds, uses contingent tax credits to raise funds that are, in turn, invested in established venture capital firms willing to evaluate and invest in potential Oklahoma growth companies. Variations of the model have also been established in Arkansas, Iowa, Oregon, Ohio, South Carolina, and Michigan.

NASVF's study also illuminated what we do not know about state involvement in equity capital formation. States often showcase anecdotal data about successful and failed programs. And just as radio stations are wont to claim, "We're number one," so also do states like to pronounce their claims of success. Responses to the NASVF survey suggest that a more detailed examination of programs would be valuable in determining what really works well in creating economic benefits from state-sponsored equity-investment programs. In fact, a more critical analysis could provide vital information for state policymakers, particularly in the "fly-over" states, as to what works and what does not. Taxpayers as well as entrepreneurs would welcome more clarity.

One of the more revealing responses to the NASVF survey is that many of the states operating equity capital programs do not consider return-on-investment a priority for the state. Most look to job creation or other economic-development measures as their metric.

Lessons Learned

States tried many experiments to increase capital access in recent years and have learned much from both the failures and the successes. What has become clear is that initiatives of government support and policy direction combined with private-sector market discipline appear to offer an effective formula for creating equity capital for local entrepreneurs. Government as the direct investor engendered a poor track record. State officials are rarely in a position to make disciplined business investment decisions. The reward system in a bureaucracy punishes risk-taking, a critical factor in early-stage investing. State direct-investment programs are also challenged to fit an investment manager into their pay-classification programs. However, relying exclusively on the private sector to meet the changing needs of today's entrepreneur leaves many states watching and waiting while other regions jump ahead.

Based on our research of all the state-sponsored venture capital funds, we have identified nine key themes that are necessary for success. Consider the following:

Demonstrate Leadership

In the best programs, state leaders take the initiative in getting a program launched, and they help set a long-term direction. In Iowa, for instance, a coalition of the Iowa Bankers Association, the Greater Des Moines Partnership, the Iowa Taxpayers Association, and others organized a statewide campaign to establish a fund of funds venture capital program. It is supported by contingent state tax credits and successfully attracts out-of-state institutional venture capital to the Hawkeye State. The contingent tax-credit approach to creating state-sponsored venture capital, first developed in Oklahoma, is also being tried in Arkansas, South

Carolina, Oregon, and several other rural states. It relies on experienced, private managers to make day-to-day investment decisions. States must be actively involved in selecting managers, using rigorous standards common in the venture capital industry, and then regularly monitoring the progress and performance of the managers over time.

Promoting Knowledge Is as Important as Providing Capital

The best programs recognize that the challenge of capital formation is not so much about money as it is about knowledge—how the business community understands seed and venture capital, the steps involved, the do's and don'ts, and what it looks like and feels like to build a world-class company. Creating visible access to an abundant source of capital is just one key to supporting the growth of this culture and helping young people develop the courage to venture. In every state, someone is doing good work in this arena. State leaders should take care to build on this existing momentum.

Insist on a Long-Term Perspective

Making good investments takes a lot of time, and building an industry that is prepared to make and manage these investments takes even longer. The state should expect no measurable impact for at least five years and should do nothing that would compromise the integrity of the investment process. Many states have taken shortcuts, only to be embarrassed. A fund must take all the time needed to find the right people, and all the time needed to make the right investments. The good deals are there.

Be Financially Fair

The best programs treat the state as a valued financial partner. When states commit capital, or support programs with tax incentives, or bear risk in any way, they should be compensated for this financial commitment with an opportunity for financial returns commensurate with the risk they take. This may seem counterintuitive, but in this form of economic development, when capital or tax credits are simply given away, the integrity of the program gets compromised and the results become disappointing.

Do Not Be Afraid to Make Money

The best programs focus on access to capital, not cost of capital, and adopt the philosophy that the most effective economic development is produced by those firms that are growing rapidly and are profitable. These are good investments, the type that disciplined investors want to find.

Do Not Oversell the Program, and Be Mindful of Competing Interests

Policymakers must recognize that the varied expectations of stakeholders and customers may be at odds. The business customers may expect that state-sponsored funds will be a source of low-cost money; the investment community may see them as a competitor; and economic development organizations will expect them to create jobs quickly. There is no way that any program can satisfy all those expectations at once.

Be Big to Be Effective

The best programs are large enough to make a difference. Big funds and little funds all require the same processes and, ultimately, the same amount of work (little funds often take more work). Creating a substantial, visible source of seed and venture capital will help generate a willingness on the part of would-be entrepreneurs to take the plunge. This is not to say that a large program must deploy its capital within a fixed time frame.

Build In a System of Evaluation

The best programs build in achievable outcome measures from the beginning. Keep track of program results and evolve as conditions change.

Be Flexible

Finally, the best programs are governed not by encoded rules but by the exercise of discretion by trained professionals and experienced laymen. Statutory programs often get packed with details and constraints, to the point that the best investment managers will want nothing to do with them. Quality programs are built on carefully selected, quality people. Do everything possible to get capable professionals on board from the very start.

On the Wings of Angels

Too important to ignore is another relatively recent development regarding state government involvement in creating equity capital for entrepreneurs—the rapid growth in the creation of angel investing groups. Angel investors have gone from being isolated individuals to well-organized teams of investors. Many states are using tax credits to encourage the formation of angel investment groups, which now number more than 200. For more detail on this phenomenon, see the article by Steve Mercil in this issue of the *Review*.

Angel groups are important for two reasons. By their very existence, more equity capital becomes available to more worthy entrepreneurs. And greater public awareness sends a message to worthy entrepreneurs that the opportunity to fund their enterprises exists locally.

While angel group activity is highly encouraging, it is too recent a phenomenon to provide measured results. But clearly there is economic benefit for angels, working in teams, to offer more in-depth analysis regarding the potential of a business plan, as well as to mentor the entrepreneur in executing it. The shared responsibility for due diligence and mentoring reduces the burden and increases the prospects for creating successful new companies.

Angel investing is extremely important in aggregating capital for entrepreneurs. The Center for Venture Research at the University of New Hampshire estimates that angels provide more equity capital for entrepreneurs than institutional venture capital. State tax credit involvement offers a relatively small risk for taxpayers in exchange for more visibility for both entrepreneurs and investors.²

² Jeffrey Sohl, "The Angel Investor Market in 2005," Center for Venture Research, University of New Hampshire, March 2006.

Creating or encouraging the creation of equity capital for entrepreneurs is a challenge for state governments, especially for rural states that have experienced an out-migration of people, jobs, and capital. The blend of state sponsorship, market discipline, and a growing—albeit inchoate—culture of entrepreneurship appears to be a winning combination to develop businesses in rural communities.

George Lipper is editor of NASVF Net News, the popular weekly newsletter of the National Association of Seed and Venture Funds. Net News is a free weekly electronic newsletter aggregating current stories dealing with capital formation, seed and early stage venture and angel investing, technology transfer and other subjects related to technology-based entrepreneurial activity. He is a former broadcast journalist. Lipper worked at radio and television stations in Texas, Michigan, Iowa and Illinois. He has been involved in both civic and political activities and currently resides in Las Vegas.

Organizing Angel Investment to Benefit Angels, Companies, and Communities

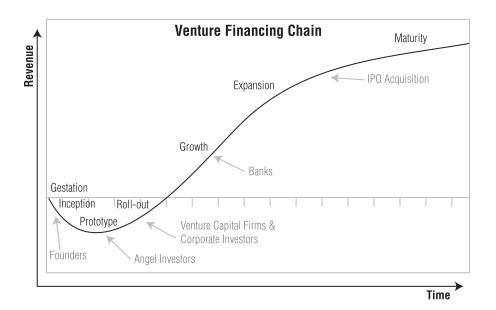
Steve Mercil

CEO, RAIN Source Capital

cross the country, thousands of promising small companies need financing and sound business counsel if they are to grow and meet their potential. Many of these companies are in rural communities not targeted by traditional venture capital—communities that could benefit enormously from the jobs, wealth creation, and quality of life that growing companies provide. These same communities are also often home to wealthy individuals who have an interest in investing their money in ways that provide a return and also contribute to their community.

The Role and Challenges for Angels

Angel investors are the largest private source of capital for early-stage entrepreneurs, and they are the most likely source of seed and early-stage capital. While venture capital is typically aimed at companies that are more developed and are ready for larger investment dollars (\$5 million or more), angel investors provide private financing for emerging growth companies that are too small to attract venture capital but too big to rely on funding from family or friends. Even though the amount is less than venture dollars (anywhere from \$50,000 to \$1 million or more), angel dollars often come at critical points in a company's development, enabling it to get past funding and growth hurdles in its early years.



Angel investors are defined as individuals with income exceeding \$200,000 or having a net worth of more than \$1 million. Our experience is that 60 percent or more of angel investors are often self-made, cashed-out entrepreneurs who have capital and business experience and are interested in helping other companies grow.

There are an estimated 20 million prospective angels nationwide, but only about 227,000 to 350,000 angels who are actively investing. The Center for Venture Research indicates that in 2005 angels invested \$23.1 billion in 49,500 companies. And unfortunately for rural ventures, most of the active investors tend to be in major metropolitan areas.

According to the Angel Capital Education Foundation, approximately 90 percent of outside equity capital in seed/start-up companies comes from angel investors. Angels also invest more money in a greater number of companies than the venture capital community, and they have a better record of companies that go public than those invested in by the venture capital community. In addition to money, angels invest time and expertise in companies that can help them be more successful.

The challenges for angels trying to invest by themselves can be daunting. Deal sourcing and reading business plans are time-consuming; due diligence may require locating and using outside experts, sometimes at a cost; and legal support can be expensive. In addition, it requires time and expertise to monitor the investments and determine follow-on or exit strategies. One way to overcome those obstacles is to join a group of angel investors because members share the work, the expertise, the risks, and the rewards of investing.

RAIN Funds and the RAIN Fund Network

This intersection of growing companies, investment interest, and community needs has helped fuel the development of RAIN Source Capital, an organization that organizes, capitalizes, and manages groups of angel investors into RAIN angel funds. RAIN Source Capital is a growing multi-state network of RAIN®funds that works with angel investors who are interested in supporting growing companies. RAIN Source helps bring together like-minded angel investors to form individual RAIN funds, and then provides these funds with additional capital, a process for due diligence, legal templates, management support, access to deal flow, and other resources. In fact, RAIN funds share expertise, deals, and experience between and among the RAIN funds to support growing companies throughout the area.

RAIN Source Capital got its start in July 1998 as the Minnesota Investment Network Corporation, with initial capitalization from a quasi-state agency in Minnesota. The organization increasingly gained the interest and support of institutional investors and foundations, and led to expanding opportunities beyond its initial geographic focus of Minnesota. In early 2006, we became RAIN Source Capital, with a focus on developing RAIN funds in

¹ "The Angel Investor Market in 2005," Center for Venture Research, University of New Hampshire Whittemore School of Business and Economics. The report is available at: http://www.unh.edu/news/docs/CVR_2005.pdf.

Minnesota, Iowa, North Dakota, South Dakota, Montana, Oregon, Idaho, and Washington, with ongoing interest coming from other states.

As of November 2006, the RAIN network included 19 funds, with more than \$20 million invested in 40 companies. Funds range in size from seven to 61 members, and they have pooled anywhere from \$500,000 to \$2 million. Through RAIN Source Capital,

- members can co-invest with other funds, enabling funds to consider more investment opportunities and leverage the expertise available throughout the network
- members have access to RAIN®street, a proprietary Web-based deal flow and due diligence tool
- members meet annually at the RAIN®makers conference to hear national speakers, share strategies, and build on the success and experience of individual RAIN funds

The RAIN fund concept grew organically, based on the experience we gained from working in venture capital, seed funds, and economic and community development. More recently, two other models for working with groups of angel investors have emerged. The first is a club model, where people pay an annual fee and attend luncheons featuring presentations by pre-screened companies. Individual investors follow up with the companies they are interested in funding. The second model is the formation of a limited liability corporation (LLC) that is professionally managed. Members pay a fee to join, and a formal management team makes the investment decisions. RAIN Source Capital operates as a hybrid of these two approaches, even though it predates both of them.

The RAIN fund model offers several advantages. First, it allows us to bring small towns into the game of investing in a meaningful way. Essentially, our model is an example of what Thomas Friedman describes in his book *The World Is Flat*, as opportunities for the "small being able to act really big" and from anywhere—you don't have to be in a big city to be an entrepreneur or an investor.

Second, because individual funds can tap into other funds in the entire network, they can leverage the broad base of intellectual and financial capital. That allows an investor with a \$100,000 commitment to have a network of 200 experts and many millions of dollars in capital support. In addition, experience has demonstrated that most RAIN fund members invest about the same amount of capital side-by-side in the local RAIN fund as they commit to their local fund. For example, a member who commits \$50,000 to a local RAIN fund will often also invest another \$50,000 side-by-side in deals their RAIN fund invests in. Now multiply that by 20 members, each of whom does the same thing. The result may be another \$1 million of leverage.

The process of forming a fund has three stages:

■ **Formation**—potential members begin to develop trust, gain an understanding of the RAIN fund and angel investing concept, and establish fund leadership. Individual fund members must be accredited angel investors, with an average investment of anywhere from \$25,000 to \$100,000 in the fund.

- **Capitalization**—members develop the focus of their fund and raise initial capital. We require at least \$500,000 in capital before a fund can be launched.
- **Operation**—fund members start operating as a group and begin actively pursuing and reviewing potential deals.

Along the way, we have experienced a few obstacles in developing new funds. For example, before the stock market bubble burst in 2000, many investors felt they could make money in stocks and did not need to consider other options. Then, after the bubble burst, it took time for people to get back to the reality of what a normal return on investment looks like and what a normal timeline is for investing. So at least in the late 1990s, it was not the easiest environment presenting the message about RAIN funds. That's different today. There is a lot more understanding and interest in being an active investor and in having colleagues who share the work.

Monitoring the RAIN funds is relatively easy because RAIN Source Capital is an active investor in each of the funds. We are at the table for investment meetings and know what is happening. In addition, we have developed proprietary software that provides value-added tools to each RAIN fund, and that software also enables us to help support and appropriately guide fund activities.

RAIN Source Capital and its network of RAIN funds have supported a variety of companies. For example:

- The network aggregated \$700,000 of capital to help finance the turnaround of a rural electronic repair business employing 450 people.
- Another rural enterprise turnaround was 100 percent financed by the network with \$1.5 million invested. RAIN Source Capital and a lead RAIN fund put the financing together, organized the Board of Directors, and brought in new management team members.
- A rural medical-device company has had support from the network since its seed stage. The network has provided \$3 million of the total \$13 million raised by the company, which is now completing its FDA application.

By design, RAIN funds both meet the needs of potential angel investors and benefit entrepreneurs and communities. "Angel investment groups can have an enormous difference in the number and quality of deals that angel investors can consider, as well as in the amount of potential capital available in a given region," said Marianne Hudson, director of angel initiatives for the Kauffman Foundation's Angel Capital Education Foundation, based in Kansas City. "Through its RAIN funds, RAIN Source Capital adds an excellent structure that makes investment options much more streamlined for angel investors. This also helps fill a huge capital gap for entrepreneurs."

Angel Funds Benefit Investors, Entrepreneurs, and Rural Communities

Formed as LLCs, RAIN funds are member-led groups of like-minded angel investors who pool their finances, their expertise, and their time to invest in companies. The best candidates for membership in RAIN funds are people who have money to invest, are interested in becoming active investors in growing companies, and see fund membership as part of their social and community involvement. In addition to individual investors, funds can also include participation by banks, local units of government, foundations, and other institutional members, as determined by the individual fund.

Member-led, each RAIN fund determines what industry it will focus on and the type and level of financing it will provide, based on the interests and expertise of the fund members. The members decide which companies to invest in, the amount of the investment, and the length of time to invest.

RAIN Source recommends how a fund can be structured, but each fund determines roles and responsibilities of specific members. Just like any group, some fund members are more active than others. Some members may want to play an active role in due diligence or monitor a company's performance. Others would rather just attend meetings and vote on the issues in front of them.

"RAIN Source Capital provides a solid template that makes it possible for people who would like to be active investors to step up to the plate," said John Reid, a RAIN fund member. "Through the RAIN funds, individual angel investors can share the expertise, the capital, the work, the risk, and the financial and emotional rewards of supporting entrepreneurs, building growing companies, and having a positive impact on their community, as well as making money."

RAIN Source Capital and the RAIN funds work to help entrepreneurs by building and nurturing their solid growth companies. In addition to capital, RAIN funds contribute strategic, financial, and operational expertise to help companies grow.

RAIN Source Capital has developed a procedure that makes it relatively easy for entrepreneurs to receive initial consideration for funding. Companies may contact RAIN Source Capital at any time by phone or e-mail to start the process of funding consideration. Initial screening involves providing preliminary information and answering six proprietary questions. Companies selected for a next level of screening are given the opportunity to make a presentation to a RAIN fund.

Companies in a variety of industries and with different growth needs are eligible for funding. In general, emerging companies that need early-stage capital, or need financing to support expansions, turnarounds, ownership transitions, and related growth opportunities, are eligible to be considered for financing. Ideal candidates for financing consideration are businesses that have already raised some capital from angel investors (family and friends) and have the potential to become a \$10 million company within five years. The only restrictions are that RAIN funds do not typically invest in restaurants, retail operations, or in mining or timber companies.

RAIN Source Capital works to provide timely feedback and expedite companies through the process. If a company is selected for financing, the process may take two to five months from the company's initial inquiry until the first check is mailed. The organization offers competitive investment terms and conditions commensurate with the geographic business environment. Through RAIN Source Capital's multi-state network, companies have the opportunity to be considered by more than one fund. Companies that receive financing can be considered for follow-on funding by one or more RAIN funds.

Finally, RAIN funds provide a vehicle for rural communities to harness and focus their capital on local business ventures. These networks are particularly beneficial in bringing the power of angel investing to smaller communities that are home to emerging entrepreneurial companies but are not typically targeted by equity funding sources. RAIN funds benefit communities by:

- Creating a sustainable investment fund
- Providing a source of capital and expertise critical to early- and high-growth companies
- Helping to recruit and nurture technology companies that pay good wages
- Building the capacity for local wealth creation
- Growing businesses that create good jobs

For example, one rural company had two employees before the investments by the RAIN funds; today that company has 22 employees, the majority of whom are in technical, highwage jobs.

In addition, one fund usually cannot support a company's growth needs. Through the RAIN fund network, communities can draw from the entire network of RAIN funds as a local company grows.

"Launching our fund is the realization of a long-term idea for some of us," said Duane (Dewey) Tietz, chairman of a North Dakota RAIN fund. "For the past four years, we have been trying to put together something like this, where individuals have an easy way to help invest in our local companies. But we weren't able to get it structured and off the ground. Then we heard about RAIN Source Capital and its RAIN funds, and we realized this is exactly what we have been trying to do. We will be able to benefit from the business model developed by RAIN Source Capital and support area entrepreneurs, inventors, and small businesses that want to grow. In doing so, we can also help create the kind of dynamic, prosperous environment that provides opportunities for young people to stay and work in the area."

Future Growth: Opportunities and Challenges

Various reports estimate that by 2013 the number of millionaires in America will triple, thanks to inheritances from World War II–generation parents. If that's the case, we have even more opportunity for up-and-coming investors to support growing companies.

RAIN Source Capital is proceeding with a growth plan that includes forming at least one RAIN fund a month. To do so, we are educating potential angel investors through seminars and other outreach programs, as well as providing them with tools for organizing and establishing RAIN funds.

We are also building infrastructure and resources to help fund members take full advantage of what the network has to offer, because, in this case, we know that the sum truly is greater than the parts. With each new fund that we add, the opportunities for RAIN fund members grow exponentially. Through the network of funds, we are unlocking the door to more angel investor dollars, expanded deal flow, and more experience to tap into.

All around us are examples that underscore the importance of angel investors. Amazon. com, Google, and many other companies point to angel investors as having been instrumental in providing them with the funding they needed at the right time in order to survive and grow.

For the angels who participate in RAIN funds, the stories can be even more compelling, because RAIN fund angel investors are often motivated by helping other entrepreneurs and having a positive impact on the community, as well as making money. In fact, that is really how RAIN Source Capital got started. Before RAIN Source, I ran a seed fund that helped make an investment in a southwestern Minnesota company, a company that was in the business of making dumb valves smart-by putting controls and intelligence into valves used in a variety of industries, from hazardous waste control to other applications. Local members of the community also wanted to invest, and talked about wanting to figure out ways to work together to leverage our knowledge as well as our capital. Those discussions really led to the first RAIN fund. In addition to providing funding, RAIN Source Capital and the RAIN fund helped the company round out its board of directors, implement good governance procedures, hone its business strategies, and connect it with an ongoing financial manager. In addition, RAIN Source Capital served as a partner in negotiating the company's sale in a way that enabled the company to continue to grow and provide jobs in its community. That sale also became the fund's exit strategy. This is one of many examples that are occurring across the network of RAIN funds.

Our goal is to increase the expertise and the size of the angel investor community in areas of underinvestment. Angel capital is a long-term investment that gives investors the opportunity to take an active role in supporting growing companies. It can be very rewarding not only to be part of a company's success, but to see its broader contributions to the community as well.

Steve Mercil is the founder, president, and CEO of RAIN Source Capital. A board member of the Angel Capital Association, he is a pioneer in bringing angel investment opportunities, which have historically been clustered on the coasts, to states across the country and to the often-ignored rural areas of those states.

Attracting Venture Capital

Senator Jay Rockefeller

U.S. Senate

he Appalachian Mountains that run through West Virginia bring enormous natural beauty to our state, beauty that makes us the envy of many people in the region and across the country. But those same beautiful mountains also bring serious economic challenges. We must deal with the fact that only four percent of our land is flat and easily developable. That topographical dilemma, in addition to our being a rural state, means that we must be innovative in our effort to attract jobs, businesses, and venture capital investment to our state.

Part of our strategy is to make West Virginia a more attractive place to do business. For example, we are making it a priority to provide high-speed broadband Internet access to 100 percent of West Virginia's businesses and homes.

At the same time that we're working to improve our infrastructure, we're also attempting to showcase the unique qualities that West Virginia and its legendary workforce can offer venture capital companies. Every company that comes to West Virginia discovers the enormous productivity of our workers. This work ethic is something that, for instance, Toyota discovered fully after it opened its Buffalo plant in Putnam County in 1996. Over the last five years, the Harbour Report, the industry's benchmark for quality, has named the Buffalo plant the most productive automotive plant in the United States. That record is unprecedented, and it is a testament to our West Virginia workers.

While businesses continue to realize that the dedication of our workforce is unrivaled, many also are finding out the same thing about our prime location, abundant natural resources, and even our unique topography. In fact, the very geographical features that present a challenge for us to attract industry can serve as an attribute. For example, our geography has already attracted one company, the Information Manufacturing Corporation, which is storing vital records in the recesses of our mountains. And because of our proximity to the nation's capital, West Virginia is becoming more widely recognized as an ideal location for government and corporate "continuity of operations" activities. In fact, Orrick, Herrington, and Sutcliffe, a large international law firm, chose to open a global operations center in West Virginia that will provide all accounting, finance, technology, payroll, and benefit administration services to Orrick's offices around the globe.

Then, we have our commodities—the natural resources with which West Virginia has been abundantly blessed. Through the most plentiful of these—coal—we are hoping to help resolve one of the nation's most pressing problems, our continued reliance on foreign oil. At an upcoming summit on this very issue, we will discuss ways that we can better attract companies that want to harness the potential of new uses of coal, including coal liquefaction and gasification.

Having a well-founded infrastructure, a strong workforce, and unique qualities are important, but they would diminish in importance without an economic apparatus to help us attract investment. In West Virginia, we have used state government and public/private partnerships to attract and fund venture capital. Since 1992, West Virginia's Jobs Investment Trust (JIT), a state entity, has been an active investor in bringing new enterprises to the Mountain State. These include companies like Augusta Systems, which provides sensor intelligence solutions; Protea Biosciences, which is commercializing new proteomics technology; and Sino Swearingen Aircraft, which is producing the world's newest, fastest, highest-flying corporate jet.

West Virginia has also been fortunate to have private investment groups, such as Mountaineer Capital, and nonprofit entities outside state government helping us in this effort. The Discover the REAL West Virginia Foundation, for instance, has played a vital role in connecting West Virginia to the global economy. Through a series of trade missions, the Foundation has helped attract international companies, resulting in thousands of goodpaying jobs for our citizens.

Further, in the last few years, the West Virginia Venture Connection (WVVC) has been formed to encourage the expansion of venture capital activity in West Virginia by connecting entrepreneurs, investors, service providers, and policymakers. WVVC is also participating in an innovative Web project overseen by the nonprofit Chemical Alliance Zone (CAZ), which is developing new opportunities for our state's exceptional base of chemical experts and facilities. The "CAZconnect" Internet system will use leading-edge informatics to connect our state's best business, technology, and financial minds online.

In the end, the success of West Virginia is dependent on its people. That's why we've worked hard at cultivating our homegrown talent and encouraging the efforts of West Virginians. In that effort, we are enlisting our universities to serve as incubators for the next generation of entrepreneurs. The West Virginia University Entrepreneurship Center, for instance, is conducting its student business plan competition again this year, with \$10,000 available to the winning team. And Marshall University's Institute for the Development of Entrepreneurial Advances (IDEA) assists students and faculty innovators as they progress from new discoveries through business start-up to fully producing businesses.

There is no question that West Virginia faces unique challenges as we attempt to attract greater venture capital. Our leaders, whose talent, experience, and commitment are equal to that in any other state, are honest about the problems that exist because of our isolated geography, small population, and historical economic deficits. But through our efforts to develop our infrastructure and to invest in the brilliant new ideas of entrepreneurs, we are working hard to overcome these obstacles. Situated in a strategic region with vital energy and chemical resources, we are being innovative in seeking every avenue to educate firms that the Mountain State is not just wild and wonderful—it also is a perfect host for venture capital.

Jay Rockefeller has served West Virginia in the U.S. Senate for 20 years, where he is a strong advocate for community economic development.

Community Development Venture Capital: A Strategy for Rural America

By Kerwin Tesdell

ommunity development venture capital (CDVC) funds focus their equity investments in underinvested markets, often in rural areas. CDVC funds provide attractive financial returns to investors, and at the same time are a powerful force for economic growth and job creation. Venture capital is in short supply in rural America. Traditional venture capitalists talk privately about the "one-plane" rule: if they have to change planes to visit an investment, they are loath to make the trip. What happens when visiting a prospective investment requires not only changing planes, but also renting a car after landing for a two-hour drive? To quantify an answer, the Community Development Venture Capital Alliance (CDVCA) geocoded a broad database of businesses receiving investments from traditional venture capital funds. We found that less than one percent of the investments were made in rural areas. By comparison, our database of CDVC investments shows a much healthier level of rural investment—about the same proportion of rural to non-rural investments as the overall number of businesses in these locations.¹

CDVC funds focus on markets where other venture capitalists typically do not compete. Rather than participating in bidding wars for pieces of Silicon Valley high-tech firms, rural CDVC funds nurture long-term relationships with entrepreneurs in their regions. When an excellent investment opportunity arises, they have the relationship to capture the investment at a favorable valuation on attractive terms. CDVC fund managers have deep ties to their communities and markets, where they have the capacity not only to pick winning investments, but also to add significant value to investee companies. They sit on the boards of these companies, and help with strategic planning, marketing, lining up additional financing, and anything else necessary to make the businesses in which they invest successful. After all, they are financial partners in these businesses. Traditional venture capitalist funds from outside of a CDVC fund's region are often eager to co-invest with a CDVC fund—despite the required plane change—knowing that they have a dedicated and knowledgeable local investment partner.

Investors are finding that community development venture capital funds can offer attractive financial returns and diversity for their investment portfolios. The CDVC industry is still young, so the newer, traditionally-structured limited partnership and LLC funds have not completed their investment and harvest cycles. Early exits, however, indicate the potential for excellent financial results. A CDVCA study of a portfolio of exits (including all

¹ CDVCA. "Assessing the Availability of Venture Capital in the US: A Preliminary Analysis." (2003); "Most Venture Capital Flows to a Handful of States." Wall Street Journal 5 Nov. 2002: B3.

write-offs) achieved by three older, not-for-profit, perpetual-life CDVC funds yielded a 15.5 percent internal rate of return.² Higher returns may be expected from the newer, traditionally-structured funds, under pressure from investors to exit in a timely manner and to provide superior returns. The positive judgment of investors is demonstrated by funds operated by management groups such as Coastal Venture Partners in Maine, Kentucky Highlands/Tech 2020 in Kentucky and Tennessee, and Adena Ventures in Ohio, as well as a number of more urban CDVC funds. They are successfully attracting increasingly larger and more sophisticated investor groups, as they raise larger second and third funds.

For banks, CDVC funds can offer a particularly attractive investment opportunity. In addition to satisfying the CRA Investment Test, CDVC funds can be an important economic partner, helping banks to develop their business lending markets. Fast-growing ventures nurtured by CDVC funds are excellent future lending clients. And once CDVC portfolio companies have reached a level of maturity that can accommodate senior debt, venture capital equity investments are often accompanied directly by larger bank loans. Every banker knows the importance of the ratio of equity to debt in making senior lending possible, and venture capital funds provide the vital commodity of equity capital.

The term "community development" evokes inner-city urban communities, where community development corporations develop low-income housing and address other social needs. But the pioneers of community development venture capital are rural funds, and still many of the most experienced and accomplished CDVC funds focus on rural markets. Business development and job creation are at the heart of the rural agenda to promote economic well-being. However, in many cases, this involves smokestack-chasing: state and local governments luring large companies or manufacturing plants to a small community for the jobs they bring. All too often, this zero-sum strategy just moves jobs from one community to another, and job gains ultimately prove temporary, as these highly mobile companies move on to the next opportunity to take advantage of tax breaks and low wages, either in the U.S. or abroad. By contrast, CDVC funds nurture indigenous entrepreneurs—individuals with deep roots in communities who build fast-growing and lasting business enterprises tied to a local labor force. The positive-sum CDVC strategy creates permanent jobs and indigenous wealth, deeply rooted in rural communities.

Kerwin Tesdell is the president of the Community Development Venture Capital Alliance, a network of venture capital funds that provide equity financing for rapidly growing businesses in underinvested rural and urban areas in the United States and throughout the world. He is also an adjunct professor at New York University, where he teaches courses in double bottom line finance at the business school and community development law at the law school.

² CDVCA. "CDVCA Report on the Industry 2004." (2005)

Rural Entrepreneurs Need More than Good Advice

Jarratt Applewhite

CEO, New Mexico Community Capital

ural entrepreneurs are talented at their work, but growing their businesses and creating new jobs is a challenge because they lack both capital and the know-how to expand. Capital of course is important, but our experience in New Mexico makes us believe that capital cannot come into play until the organization develops the internal capacity to manage its growth. And building that capacity requires more than a technical assistance grant or training class; it requires skilled partners who are willing to get into the trenches with these companies and help them develop.

The mission of New Mexico Community Capital is to deliver disciplined development investment capital to underserved areas in our state. Our problem is that sometimes our most compelling financing opportunities are with enterprises that are not yet in a position to accept our capital. We can provide financial backing only to companies that have a clear vision of their future and precise plans for how to secure that destiny.

The issue is not that these businesses are not led by talented people; the leaders are experts on the product or service they sell. More important, they have strength of character, an amazing work ethic, and impressive intuitive intelligence. Although many of them do not have a college degree and none of them knows how to use the Black Scholes model, it would be a privilege to be their partner.

To fulfill our mission, therefore, we have to assist our investment prospects in acquiring the skills they need for capacity building. A direct correlation seems to exist between the degree of rural isolation of potential investees and their need for capacity-building services. Our ability to achieve our social objectives (primarily the creation of good jobs) in these communities is almost impossible unless we learn how to help companies acquire an array of skills ranging from finance to marketing and product development. And there's the rub.

In even the most remote communities, entrepreneurs have access to basic business instruction, and most of them are also supported by economic development personnel at the regional, state, and federal levels. But there are several problems with these services. First, most of these businesspeople are consumed by the day-to-day challenges of their jobs, and they usually work extraordinarily long hours just to meet their work and family demands; they don't have time to attend classes. Second, few of these entrepreneurs prosper in an academic environment; the vast majority is more attuned to experiential learning. Finally, people with little hands-on operational experience provide the vast majority of this schooling, which may not be the right kind of teacher.

In addition to education, business consultants can be sources of expertise and capacity building. But truly competent advisors are expensive, and their services are often beyond the financial reach of most entrepreneurs in underserved locales. The bigger issue, however, is that even if small business owners had the wherewithal to hire experts, the resulting work product would have little utility without an aggressive implementation plan. Most of the companies we encounter are managed by individuals who have startling insight into their own operational deficits. They can give themselves good advice!

We find the best strategy to translate an entrepreneur's intuitive insights into a business plan for growth is a partnership with an advisor who is immersed in the enterprise, shoulder to shoulder with the local team. This strategy is immensely difficult but hugely rewarding. Finding experts in different fields who are willing to get in the trenches with a promising company is a challenge. Recruiting practitioners ranging from executives on loan from existing companies to retired businesspeople who embrace our mission and are willing take an active role in building great companies is a large part of my job. We partner with companies as advisors, too. For example, our CFO spends half his time performing financial services for our investees and providing hands-on help to entrepreneurs, as do I.

New Mexico Community Capital is in the early stages of developing its delivery model, but it is underpinned by two principles:

- Our capacity-building services are distinct from our financing activities. Our advisees do not have an inside track to our capital. In fact, if we can help a company increase the scale of its operation to the point that it becomes a viable candidate for other investors or lenders, we consider this a very satisfactory outcome.
- The work we do is valuable, but much of its worth would be lost if we provided our services for free. Doing so would exacerbate a grant/handout mentality that is pervasive in New Mexico. This environment stifles innovation and fosters a risk-averse culture. While we subsidize the cost of the services we provide, we insist that our customers pay a reasonable amount. We typically negotiate a manageable down payment and tie the balance of our compensation to meeting a specific goal, such as acquiring predetermined revenue or acquiring new capital. We would consider receiving some consideration in the form of a sweat-equity position if we could be certain that doing so would not create unmanageable future conflicts.

Community development investment organizations are absolutely capable of generating respectable double-bottom-line results. But when investing in these entrepreneurs—especially in rural communities—elbow grease trumps instruction or advice.

Jarratt Applewhite is a founder of New Mexico Community Capital (www.nmccap.org) and serves as its CEO. He has a broad array of entrepreneurial and public service experience spanning three decades, including founding several successful businesses and holding elective office as a member of the Board of Education in Santa Fe.

Community Development INVESTMENT REVIEW

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