

FINANCING THE NEXT SILICON VALLEY

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Silicon Valley's success has led other regions to attempt their own high-tech transformations, yet most imitators have failed. Entrepreneurs may be in short supply in these "non-tech" regions, but some non-tech regions are home to high-quality entrepreneurs who relocate to Silicon Valley due to a lack of local financing for their start-ups. Non-tech regions must provide local finance to prevent entrepreneurial relocation and reap spillover benefits for their communities. This Article compares three possible sources of entrepreneurial finance – private venture capital, state-sponsored venture capital, and angel investor groups – and finds that angel groups have distinct advantages when it comes to funding innovation in non-tech regions. This entrepreneurial finance story is then supplemented by a "law and entrepreneurship" story – specifically, a look at federal securities laws that might impede optimal levels of angel group financing.

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INTRODUCTION

How might a “non-tech” region transform itself into a high-tech entrepreneurial community? The success of California’s Silicon Valley makes high-tech transformations the holy grail of economic development for regions that continue to lose jobs in manufacturing, agriculture, and other traditional sectors. Many of these regions have pursued high-tech transformations because of the high-paying new jobs, increased tax revenues, and educated workforce they bring. In light of Silicon Valley’s success, there have been any number of Silicon Prairies, Silicon Forests, Silicon Alleys, and Silicon Beaches attempted throughout the United States and abroad.¹

Yet despite a few successes, most imitators have failed.² High-tech firms are important drivers of U.S. economic growth in today’s knowledge economy, yet gains from innovation-based economic growth are highly skewed toward a few regions. As economic developers in non-tech regions have learned, there is no “secret sauce” that will lead to a broader distribution of these gains.³ Causal relationships are exceedingly difficult to draw, and nowhere is that more true than in this area. We may find correlations, but not causation. Therefore, the best we may be able to do is learn from Silicon Valley’s success to better understand the forces that drive entrepreneurship. With the limits of such an undertaking in mind, scholars from multiple disciplines have examined Silicon Valley in an attempt to understand its key elements. Their work has revealed the importance of that region’s history, universities, industry, venture capital market, and culture.⁴

Most would-be imitators will not be so fortunate as to possess all, or even most, of these elements. Probably the best non-tech regions can do, even if successful, is create

¹ This Article confines its analysis to the United States. For discussions of international high-tech communities, *see generally* BUILDING HIGH TECH CLUSTERS: SILICON VALLEY AND BEYOND (Timothy Bresnahan & Alfonso Gambardella, eds.) (2007); DAVID ROSENBERG, CLONING SILICON VALLEY: THE NEXT GENERATION OF HIGH-TECH HOTSPOTS (2002) (discussing Cambridge, Helsinki, Tel Aviv, Bangalore, Singapore, and Hsinchu-Taipei).

² Even Silicon Valley visionary Frederick Terman, discussed in *infra* note __ and accompanying text, could not help other regions recreate his model. *See generally* Stuart W. Leslie & Robert Kargon, *Selling Silicon Valley: Frederick Terman’s Model for Regional Advantage*, 70 BUS. HIST. REV. 435 (1996) (discussing the failures of New Jersey and Dallas but the surprising success of Korea); Stuart W. Leslie, *The Biggest “Angel” of Them All: The Military and the Making of Silicon Valley*, in UNDERSTANDING SILICON VALLEY: THE ANATOMY OF AN ENTREPRENEURIAL REGION 67 (Stanford Press, 2000, Martin Kenney ed.) [hereinafter UNDERSTANDING SILICON VALLEY] (arguing that Terman “overemphasized the university’s value in the Silicon Valley equation, a common pitfall, as subsequent efforts at high-technology regional development would show”); *see also* Timothy J. Sturgeon, *How Silicon Valley Came to Be*, at 47, in UNDERSTANDING SILICON VALLEY, *supra* (“As economic development tools, these schemes [to recreate Silicon Valley through university-industry collaborations] have met with very limited success. However, they continue to absorb the resources of planning agencies and universities in countless locations.”).

³ “There is no secret sauce” (June 9, 2008), <http://www.theconglomerate.org/2008/06/there-is-no-sec.html>.

⁴ *See infra* Part I.

Silicon Valley “lites,” or regions that possess the core elements of a start-up driven-community yet are less dynamic than Silicon Valley as a fully formed entrepreneurial ecosystem. As Martin Kenney astutely observes, the “ultimate result [of cloning efforts] could be regions that, although possibly not as dynamic as Silicon Valley, might become self-reinforcing hotbeds of innovation, with their own set of institutions dedicated to new firm formation.”⁵

How might a non-tech region go about becoming a Silicon Valley lite? This Article will address one critical piece of that puzzle – the financing of local entrepreneurs. Financing is a critical piece for the following reason: While some non-tech regions will suffer from a lack of entrepreneurial talent, anecdotal data reveals that other regions are home to high-quality entrepreneurs who end up relocating their start-ups to Silicon Valley to be close to financing sources. This may seem ironic, as globalization has generally diminished the importance of physical locality. But for reasons that will be discussed, entrepreneurial finance is different, where physical proximity continues to take on much importance.⁶ It follows that non-tech regions must provide *local* finance to prevent entrepreneurial relocation and reap spillover benefits for their communities. This Article offers a comparative analysis of three possible sources of entrepreneurial finance for non-tech regions: private venture capital, state-sponsored venture capital, and angel investor groups.⁷

Venture capital dominates the entrepreneurial finance literature, and with good reason: Private venture capital has a demonstrated record of success in innovation funding. But when it comes to broader distribution of innovation-based gains, private venture capital fails to deliver due to its concentration in existing tech regions and preference for later-stage start-ups. Private venture capital is noticeably absent for those early-stage start-ups seeking funding in non-tech regions. State-sponsored venture capital programs correct these deficiencies but create new ones, namely a lack of market incentives and relevant expertise in technology funding. All of which leads to this Article’s main contribution. Working within the broad framework of building the next Silicon Valley lite, but with a particular focus on the financing of local entrepreneurs, it is here that I take my point of departure from the existing literature and offer a new solution. This Article contends that there is an overlooked source of innovation funding, available in all regions, that does not suffer from venture capital’s drawbacks. That source of funding is the angel investor group.

⁵ Martin Kenney, *Introduction*, in UNDERSTANDING SILICON VALLEY, *supra* note ___, at 12.

⁶ See *infra* notes __ and accompanying text.

⁷ This is not to suggest that these are the only three sources of entrepreneurial finance. Others include Small Business Investment Companies (SBICs) and the federal Small Business Innovation Research (SBIR) program. In addition, banks and private firms provide significant loans to start-ups as “venture debt”; in 2006, nearly \$2 billion. See Pui-Wing Tam, *Venture Funding Twist; Start-ups Increasingly Take on Debt to Keep Businesses Chugging Along*, WALL ST. J. C-1 (Feb. 14, 2007); Darian M. Ibrahim, *Debt as Venture Capital* (working paper, on file with Author).

Angel investors are wealthy individuals who invest their personal funds in high-tech start-ups.⁸ Angels invest smaller amounts than venture capitalists, but in more start-ups, and in the aggregate supply \$25 billion of annual funding to start-ups – the same size as the aggregate venture capital market.⁹ There is a wide range of individuals who fall into the category of “angel,” but the most important angels for purposes of this Article are those professional investors who are now organizing into regional angel investor groups. Angel groups have many theoretical advantages for funding entrepreneurs in non-tech regions, including: wide geographic dispersement and a preference for local investments; a preference for early stage start-ups; market incentives to fund start-ups that will offer the best rate of return; and relevant expertise in technology businesses. All of these advantages will be explored, along with attendant disadvantages.

Finally, some angel group investors have revealed a concern that certain federal securities law might cast a cloud of uncertainty over the typical angel group funding process. My “law and entrepreneurship” analysis, which focuses on private placement and broker-dealer law, finds some cause for concern. Of course, the federal securities laws are only one of many factors that may cause inefficiencies in the angel funding process. Other legal and non-legal infrastructure could have the same effect. Further, there may also be affirmative steps that governments could take, over and above removing legal and non-legal financing impediments they have constructed, to entice higher levels of angel investing. State or federal tax credits for angel investing are an example.¹⁰ However, my preference for letting entrepreneurial communities develop organically, rather than trying to force them, leads me to leave discussion of such issues to others.¹¹

At this point, two important caveats about this project must be set forth. First, my perspective is one of regional economic growth and distribution of high-tech gains rather than aggregate social welfare. In other words, I am not arguing that U.S. start-ups are underfunded, but instead that most of our start-up financiers are concentrated in existing tech regions which causes entrepreneurs to relocate to those regions. Entrepreneurial relocation may or may not decrease social welfare in the aggregate – this is an open question¹² – but it does keep the distribution of innovation-based gains skewed toward existing tech regions. My focus, for better or worse, is not on aggregate social welfare

⁸ See *infra* Part IV.A for an attempt to define “angel investors.”

⁹ See *infra* notes ___ and accompanying text.

¹⁰ [cites]

¹¹ See *infra* notes ___ and accompanying text.

¹² This is a complex question that I do not seek to answer here. Scholars have observed that clustering into existing high-tech regions increases aggregate social welfare through economies of scale, ready supply of suppliers and customers, and deeper labor pools. See, e.g., ALFRED MARSHALL, PRINCIPLES OF ECONOMICS 222-30 (8th ed. 16th prt. 1964) (1890). But there might reach a point, once existing clusters become too large, where aggregate social welfare would be increased through broader geographical distribution of high-tech activity. For instance, if the traffic becomes too bad and cost of living become too high in Silicon Valley (if this isn’t the case already), labor may migrate to other areas that are more affordable and offer a better quality of life.

per se but on broader distribution of innovation-based gains from existing tech regions to non-tech regions. Second, my arguments in favor of angel groups from this distributional perspective should be seen as an attempt at ground-theory building rather than a truism supported by empirical data. Angel groups are only about a decade old, but once they mature past their infancy, empirical studies should be undertaken to test these arguments. For now, I would argue that it is important to construct a theory of comparative entrepreneurial finance that can then be tested.

With this framework and these caveats in mind, this Article proceeds as follows. Part I dissects the literature on Silicon Valley to discover its key elements. Part II narrows the focus of this Article to the base elements necessary to turn a non-tech region into a Silicon Valley lite; namely, human capital and financial capital. It argues that while human capital in the form of high-quality entrepreneurs with new ideas sometimes exists in non-tech regions, a lack of financial capital means that these entrepreneurs relocate to be near funding sources. Part III narrows the focus of the Article even further and fixes its gaze on the funding problem, and in particular on the deficiencies of venture capital (both private and state-sponsored) as a solution. After finding venture capital wanting, Part IV moves into fresh territory by introducing angel investor groups as a promising alternative for innovation funding in non-tech regions. Finally, Part V adds a “law and entrepreneurship” story to the entrepreneurial finance story when it examines some possible legal impediments to optimal levels of angel group financing.

I

THE SILICON VALLEY ECOSYSTEM

As the United States transitions from the “old” manufacturing economy to the “new” knowledge economy, non-tech regions (i.e., those with heavy in old economy sectors) have attempted high-tech transformations for the high-paying new jobs, increased tax revenues, local wealth, and educated workforce those transformations would bring. On a macro level, there are two competing models for undertaking a high-tech transformation. On the one hand, both Silicon Valley and Boston’s Route 128 sprung up organically rather than through centralized government planning. In addition, both are driven by smaller, highly innovative start-ups as opposed to established firms. Compare this to the very different model we see in North Carolina’s Research Triangle Park (RTP). Rather than coming about organically, RTP was entirely planned by state and local officials.¹³ Also, rather than relying on start-ups, the state focused on attracting the research divisions of major corporations.¹⁴ Thus in RTP we see a centrally planned rather than organic process driven by established firms rather than start-ups. Another imitator, Austin, Texas, appears to be somewhat of a hybrid between the two models. It

¹³ See generally ALBERT N. LINK, A GENEROSITY OF SPIRIT: THE EARLY HISTORY OF THE RESEARCH TRIANGLE PARK (1995, Research Triangle Foundation of North Carolina).

¹⁴ See *id.* at 87-93 (discussing some of the early companies, including IBM, and federal research centers to relocate to RTP).

began its transformation under the vision of George Kozmetsky¹⁵ by luring major corporations to the area,¹⁶ but it also houses its fair share of start-ups, including now-giant Dell Computer, as well as a prominent venture capital firm, Austin Ventures.

Despite the relative successes of RTP and Austin, this Article puts centrally planned communities and hybrids to one side and considers cloning efforts that do not, in fact, require any government effort at all. Instead, my focus is on cloning efforts that come about organically through the actions of private actors incentivized by high-tech profit potential. The organic model is, in my view, superior for at least two reasons. First, our manifestations of this model – Silicon Valley and to a lesser extent Route 128 – remain our most notable success stories in high-tech community building. Second, when looking at prior attempts to replicate Silicon Valley, other commentators have expressed skepticism toward centrally planned processes¹⁷ and praise for unplanned spontaneity.¹⁸

By any standard, Silicon Valley is our most prominent example of an organic, start-up driven high-tech transformation. A confluence of factors turned what was as recently as 1950 the “Prune Capital of America” into one of the most advanced and prosperous regions anywhere in the world. Therefore, it is not surprising to find a number of efforts to understand Silicon Valley’s particular brand of success. It bears repeating that even if we understand Silicon Valley, that does not mean we can replicate it. Gordon Moore, one of the founders of Silicon Valley-based Intel, colorfully warns

¹⁵ George Kozmetsky was co-founder of the technology giant Teledyne and “the father of Austin high technology.” Jim Rapp, *The Austin Miracle: Silicon Hills*, available at <http://www.asra.gov.ab.ca/resources/publicdocs/ict/ITCcore08a.html>.

¹⁶ See Jonathan Miller, *Regional Case Study: Austin, Texas or “How to Create a Knowledge Economy,”* Washington, DC: Delegation of the European Commission to the United States, European Union, 1999 (the “watershed event in Austin’s high tech development occurred in 1983 when the city won the nationwide competition for Microelectronics and Computer Technology Corporation (MCC)”). After MCC, Austin was able to recruit major divisions of 3M, SEMATECH, IBM, and Motorola. Joel Wiggins & David V. Gibson, *Overview of US Incubators and the Case of the Austin Technology Incubator*, 3 INT. J. ENTRP. AND INNOVATION MGMT. 56, 59 (2003).

¹⁷ See Timothy Bresnahan and Alfonso Gambardella, *Old-Economy Inputs for New-Economy Outcomes: What Have We Learned?*, in HIGH-TECH CLUSTERS, *supra* note __, at 355 (“Clusters of innovative activity do not respond well to being directed, organized, or jump-started, entrepreneurship being a quirky thing.”); Martin Kenney & Urs Von Burg, *Institutions and Economies: Creating Silicon Valley*, in UNDERSTANDING SILICON VALLEY, *supra* note __, at 239 (Attempts to clone Silicon Valley “have been conceived by government officials and local land developers with little understanding of the historical conditions that evolved into Silicon Valley... We are somewhat pessimistic at the policies aimed at cloning Silicon Valley”); Leslie, *supra* note __, at 48 (“Some localities, following the lead of the Research Triangle, designate technology parks on the theory that if you build it, they – branch plants of multinational corporations – will come”).

¹⁸ See Gert-Jan Hospers et al., *The Next Silicon Valley? On the Relationship Between Geographical Clustering and Public Policy* 7 (2008), available at <http://ssrn.com/abstract=1262979> (“As illustrated by the genesis of the micro-electronics cluster in Silicon Valley, the birth, life and death of clusters is essentially part of a spontaneous order that rests on entrepreneurial discovery and the generation of explicit and tacit knowledge.”).

against a formulaic approach to cloning efforts.¹⁹ Still, it is worth examining the factors that led to Silicon Valley's success to help us better understand the forces that drive entrepreneurship. While the existing literature on Silicon Valley fills books, some central themes emerge.

First, history matters. Both Silicon Valley and Route 128 received significant funding from the U.S. military that jumpstarted their high-tech transformations. MIT was the bigger beneficiary of military funding during World War II due to the political connections of former MIT electrical engineering professor Vannevar Bush.²⁰ Silicon Valley, on the other hand, made more substantial gains due to military funding during the early Cold War.²¹ Without military funding, it is doubtful that either Silicon Valley or Route 128 would exist in their present form.

Second, academic institutions and the clustering of high-tech industries matter. On the academic side, Silicon Valley boasts world-class research universities in Stanford and the University of California-Berkeley. On the industry side, Silicon Valley was home to the burgeoning electronics industry, the epicenter of the Internet revolution, and now a leader in the emerging "clean-tech" movement. Firms in these areas, as well as labor and suppliers, cluster together in the region.²² It is not only the presence of top universities and industry leaders, however, but also the interaction between them. Hewlett-Packard co-founders Bill Hewlett and Dave Packard were Stanford University students and protégés of Frederick Terman, the Stanford engineering professor, dean, and later provost who served as the "spark that transformed orange and walnut groves into the center of high technology."²³ Terman actively encouraged collaborations between

¹⁹ According to Moore and Kevin Davis, the typical formula looks something like: "Combine liberal amounts of Technology, Entrepreneurs, Capital, and Sunshine. Add one (1) University. Stir Vigorously." Gordon Moore & Kevin Davis, *Learning the Silicon Valley Way*, in BUILDING HIGH TECH CLUSTERS, *supra* note __, at 9.

²⁰ See SUSAN ROSEGRANT & DAVID LAMPE, ROUTE 128, LESSONS FROM BOSTON'S HIGH-TECH COMMUNITY 80 (BasicBooks 1992) ("Probably no other state benefited as much from Bush's redirection of government research spending – and the commercial spillover that resulted – as Massachusetts. And without a doubt, no university reaped more rewards than MIT, which became the nation's unofficial center for wartime research.").

²¹ See Leslie, *supra* note __, at 67 (attributing the successful collaboration between Stanford and local industry to "a mutual dependence on the special circumstances of the early Cold War"); *but see* Moore & Davis, *supra* note __, at 24 (arguing that such accounts overemphasize the government's historical role in the development of Silicon Valley because the government emphasized proven ability over innovativeness meaning that "the products the military purchased were rarely at the leading edge of product development").

²² On clustering, *see, e.g.*, Michael Porter, *Location, Competition, and Economic Development: Local Clusters in a Global Economy*, 14 ECON. DEV. Q. 15 (2000).

²³ John C. Dean, *Fueling The Revolution: Commercial Bank Financing*, in THE SILICON VALLEY EDGE: A HABITAT FOR INNOVATION AND ENTREPRENEURSHIP 315 (Stanford Press, 2000, Chong-Moon Lee et al. eds.) [hereinafter THE SILICON VALLEY EDGE]; *see also* Leslie & Kargon, *supra* note __, at 435 ("If anyone deserved to be called 'the father of Silicon Valley,' it was Frederick Terman. As Stanford University Professor, dean of engineering and provost, it was Terman who first envisioned Silicon Valley's unique partnership of academia and industry and trained the first generation of students who made it happen.").

Stanford and the booming electronics industry, and the resulting knowledge spillover ran in both directions. Stanford was a large producer of the first wave of Silicon Valley entrepreneurs, who then returned to campus to share their wisdom with emerging entrepreneurs. The Stanford Research Park, where many of the start-ups were housed, is viewed as integral to these collaborative efforts.²⁴ Accounts of Route 128 and even RTP also emphasize the importance of top universities, innovative industries, and university-industry collaborations.²⁵

Third, venture capital markets matter. Silicon Valley's venture capital market is the most sophisticated in the world. Venture capital markets are defined broadly by Professor Ron Gilson to mean both entrepreneurs and proper funding for their ventures.²⁶ Under Gilson's framework, proper funding consists of both risk capital (the money) and knowledgeable financial intermediaries (the expertise to invest it wisely).²⁷ In Silicon Valley, venture capital firms act as the financial intermediaries with pension funds, endowments, and individual investors supplying the risk capital. Silicon Valley is home to the world's leading venture capital firms, including Kleiner Perkins Caufield & Byers and Sequoia Capital.²⁸ Silicon Valley's entrepreneurs are legendary.

Fourth, support institutions matter. The clustering in high-tech regions includes not only firms and financiers, but also support institutions. For example, Silicon Valley is home to law firms, investment banks, marketing consultants, executive search firms, and intellectual property liquidators with expertise in the high-tech arena.²⁹ While most of these support institutions also operate in other regions, their operation in Silicon Valley is unique. For example, Silicon Valley investment banks specialize in underwriting high-tech IPOs, and Silicon Valley executive search firms boast expertise in high-tech placements.³⁰ Mark Suchman's pioneering work on Silicon Valley law firms

²⁴ See Leslie & Kargon, *supra* note __, at 440-41 (describing Stanford Research Park as "the earliest and perhaps most successful effort to foster academic-industrial cooperation by developing a high technology park on university land"). Stanford Research Park housed, among many other tenants, the legendary Fairchild Semiconductor, the firm in which the integrated circuit was developed. See *infra* notes __ and accompanying text.

²⁵ See ROSEGRANT & LAMPE, *supra* note __, at 13 (attributing Route 128's success to the interplay between MIT, local industry, and the federal government); LINK, *supra* note __, at 4 (theory of RTP was that the region's "three academic institutions could act as a magnet to attract research companies to North Carolina. The location of research companies would lead to the development of new industry, and new industry would in turn spur the state's waning economic base").

²⁶ See generally Ronald J. Gilson, *Engineering a Venture Capital Market: Lessons from the American Experience*, 55 STAN. L. REV. 1067 (2003).

²⁷ See *id.*

²⁸ See TOM PERKINS, VALLEY BOY, THE EDUCATION OF TOM PERKINS 101-125 (2007) (detailing the origins of Kleiner Perkins).

²⁹ Kenney, *supra* note __, at 5; Ronald J. Mann, *An Empirical Investigation of Liquidation Choices of Failed High Tech Firms*, 82 WASH. U. L.Q. 1375, 1390-1391 (2004) (discussing the benefits of California's specialized high-tech liquidators over bankruptcy trustees in disposing of intellectual property assets).

³⁰ Thomas F. Hellmann, *Venture Capitalists: The Coaches of Silicon Valley*, in THE SILICON VALLEY EDGE, *supra* note __, at 291.

reveals a prime example of Silicon Valley's unique support system.³¹ While business lawyers are traditionally thought of as purely economic actors, or in Ron Gilson's terms "transaction cost engineers,"³² Suchman revealed that Silicon Valley lawyers play more of a sociological, networking function between venture capitalists and entrepreneurs than serving traditional economic goals of protecting intellectual property and litigating disputes.³³

Fifth, culture matters. As AnnaLee Saxenian has observed, Silicon Valley is home to unique sociological networks and an open and sharing entrepreneurial culture, even among high-tech competitors.³⁴ Saxenian also explains how Silicon Valley's high degree of labor mobility allows it to experience repeated bursts of innovation over time. It is here that Saxenian differentiates Silicon Valley from Boston's Route 128. Route 128 possessed many of the same initial elements as Silicon Valley – first-rate entrepreneurs like Digital Equipment Corporation's Ken Olson, the first venture capital firm (Georges Doriot's American Research and Development³⁵), and the early advantage in wartime funding. Yet Route 128 failed to build upon its initial success, which allowed Silicon Valley to surpass it as the world's premier high-tech region. Saxenian attributes Silicon Valley's regional advantage to its capacity to reset, repeat, and regenerate, which Route 128 did not possess – self-regeneration that was made possible through high levels of labor mobility and the resulting knowledge spillover it produces. Saxenian credits progressive West Coast cultural norms for the fluid movement of high-tech talent in Silicon Valley, while stodgy East Coast norms kept would-be entrepreneurs within the same, established firms. Finally, Silicon Valley's legal infrastructure matters, but that discussion will be deferred to Part V.

II

THE BASE ELEMENTS OF AN ENTREPRENEURIAL COMMUNITY

Silicon Valley itself is a highly evolved ecosystem with a confluence of multiple elements, not to mention first-mover advantages, that would be incredibly difficult to replicate. Thankfully, my question is more modest: What elements are necessary, at a bare minimum, to turn a non-tech region into a Silicon Valley "lite" – a less dynamic, but nonetheless sustainable, entrepreneurial community? On the most basic level, to undertake a high-tech transformation, non-tech regions must possess both human capital in the form of entrepreneurs with new ideas and financial capital in the form of funding

³¹ Mark C. Suchman, *Dealmakers and Counselors: Law Firms as Intermediaries in the Development of Silicon Valley*, in UNDERSTANDING SILICON VALLEY, *supra* note ___, at 72.

³² Ronald J. Gilson, *Value Creation by Business Lawyers: Legal Skills and Asset Pricing*, 94 YALE L.J. 239, 253-256 (1984).

³³ Suchman, *supra* note ___.

³⁴ See generally ANNALEE SAXENIAN, REGIONAL ADVANTAGE: CULTURE AND COMPETITION IN SILICON VALLEY AND ROUTE 128 (1994).

³⁵ See SPENCER E. ANTE, CREATIVE CAPITAL: GEORGES DORIOT AND THE BIRTH OF VENTURE CAPITAL 129-146 (2008).

for entrepreneurial start-ups.³⁶ Without either, the transformation will not occur. While this Article focuses on financial capital, it will digress briefly to ask how a region attracts human capital.³⁷

Existing high-tech regions replenish their entrepreneurial talent from multiple sources. Universities such as Stanford and MIT supply engineers such as Dave Packard, Jerry Yang, Sergey Brin, and Larry Page. Entrepreneurs also leave existing start-ups to start new ones. For instance, the legendary Silicon Valley company Fairchild Semiconductor spun off from Shockley Semiconductor in 1957.³⁸ The “Traitorous Eight” defectors from Shockley went on to develop the integrated circuit while at Fairchild and later spin off into several more start-ups, most notably Intel.³⁹ Research labs at established firms also produce new entrepreneurs who leave to form start-ups. Consider, for example, the many software entrepreneurs in Microsoft-dominated Seattle or Internet entrepreneurs located near AOL’s headquarters in Northern Virginia.⁴⁰

The presence of top universities, existing start-ups, and established firms attract many of the best entrepreneurs to existing tech regions. This creates a problem for non-tech regions on the human capital side. Other factors can make it even more difficult for non-tech regions to compete for human capital. Richard Florida has argued that factors such as an intolerance for diversity can make a region unattractive to the “creative class” that is likely to include high-tech entrepreneurs.⁴¹ Indeed, this observation would offer a partial explanation for why two places with excellent university programs in high-tech areas – Pittsburgh’s Carnegie Mellon (computer science) and St. Louis’s Washington

³⁶ The focus on combining human capital with financial capital is another way of expressing Professor Gilson’s idea of a venture capital market. *See supra* notes ___ and accompanying text. *see also* Paul Graham, *How to Be Silicon Valley*, <http://www.paulgraham.com/siliconvalley.html> (arguing colorfully that you need only two types of people to create a startup hub: rich people and nerds).

³⁷ *See* Edward L. Glaeser & William R. Kerr, *Local Industrial Conditions and Entrepreneurship: How Much of the Spatial Distribution Can We Explain?* (Harvard Working Paper 2008) available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1280283 at 26 (empirical study suggesting that “people and their human capital are probably the crucial ingredient for most new entrepreneurs,” but which studied only the manufacturing sector).

³⁸ *See generally* Christopher Lecuyer, *Fairchild Semiconductor and Its Influence*, in *THE SILICON VALLEY EDGE*, *supra* note ___, at 158-183.

³⁹ *See generally* LESLIE BERLIN, *THE MAN BEHIND THE MICROCHIP, ROBERT NOYCE AND THE INVENTION OF SILICON VALLEY* (2005). Another Fairchild founder, Eugene Kleiner, went on to found the venture capital firm Kleiner Perkins.

⁴⁰ *See* E. Floyd Kvamme, *Life in Silicon Valley: A First-Hand View of the Region’s Growth*, in *THE SILICON VALLEY EDGE*, *supra* note ___, at 79 (using the examples of Microsoft and AOL to show “how much fruit can come from a single seed”); Susan Preston, *Seraph Capital Forum: National Trends in a Local Context*, in *STATE OF THE ART: AN EXECUTIVE BRIEFING ON CUTTING-EDGE PRACTICES IN AMERICAN ANGEL INVESTING* 63 (John May and Elizabeth F. O’Halloran, eds., 2003) [hereinafter, *STATE OF THE ART*] (discussing the pervasive influence of Microsoft in creating Seattle’s entrepreneurial culture, including “the number of new ventures started by ex-Microsoft employees”).

⁴¹ RICHARD FLORIDA, *THE RISE OF THE CREATIVE CLASS: AND HOW IT’S TRANSFORMING WORK, LEISURE, COMMUNITY, & EVERYDAY LIFE* (BasicBooks 2002) [hereinafter *CREATIVE CLASS*]; *see also* RICHARD FLORIDA, *CITIES AND THE CREATIVE CLASS* (2005) [hereinafter *CITIES*].

University (medical) – have not transformed into high-tech communities.⁴² Both Pittsburg and St. Louis rank at the bottom of Florida’s tolerance scale.⁴³

Despite the difficulties that non-tech regions may have in attracting a steady stream of entrepreneurial talent that would rival existing tech regions, it is sometimes the case that high-quality entrepreneurs *are* found in non-tech regions. The larger problem in these cases is that entrepreneurs cannot locate private venture capital.⁴⁴ Because venture capital bucks global trends and still depends heavily on physical proximity, entrepreneurs must relocate to be near venture capitalists (who, as will be discussed, are heavily concentrated in existing tech regions⁴⁵). It may seem ironic that venture capitalists still invest locally despite the diminishing importance of physical place brought about by technological advances and globalization. Yet on closer examination, we find good reasons for local investment. Venture capitalists are not passive investors; instead, they perform substantial due diligence on potential investments *ex ante* and monitor them very closely *ex post*. For instance, a partner from the venture capital firm typically sits on the board of each start-up that the firm funds. This intensive use of human resources is much easier from nearby than far away, especially consider that the venture capitalist will be invested in a diverse portfolio of start-up firms simultaneously. The risky and fast-paced nature of the start-up world also demands that venture capitalists be able to gather information about their start-ups and respond quickly, which is facilitated by close physical proximity.

Therefore, venture capitalists invest locally, and entrepreneurs in non-tech regions must move to existing tech regions to obtain venture capital. I know of no empirical studies on the topic of entrepreneurial relocation, but at least based on anecdotal data, it is not common. In one well-known example, Facebook could not raise money (in Boston, of all places) so it moved to Silicon Valley for funding.⁴⁶ Another example comes from Florida, where the legislature took up a proposal to create a state venture fund after over twenty-five Miami-based start-ups moved their headquarters after being unable to obtain local funding.⁴⁷ Other recent examples of entrepreneurial relocation can also be found, if

⁴² See Chong-Moon Lee et al., *The Silicon Valley Habitat*, in *THE SILICON VALLEY EDGE*, *supra* note __, at 2 (asking why the IT industry never took off in Pittsburg despite Carnegie Mellon’s presence).

⁴³ See FLORIDA, *CREATIVE CLASS*, *supra* note __, at xxi (Pittsburg is fifth from last and Saint Louis is last on tolerance index); see also FLORIDA, *CITIES*, *supra* note __, at 42, 68 (citing the work of Robert Cushing and Robert Lucas/Edward Glaeser, respectively, for the proposition that regional competitiveness is determined by human capital).

⁴⁴ See Steven L. Brooks, *Comment, The Venture Capital Investment Act of 2001: Arkansas’s Vision for Economic Growth*, 56 ARK. L. REV. 397, 400-401 (2003) (detailing high-tech innovations in Arkansas universities but arguing there is no funding for these ideas).

⁴⁵ See *infra* Part III.A.

⁴⁶ See Paul Graham, *Why to Move to a Startup Hub*, <http://www.paulgraham.com/startuphubs.html>.

⁴⁷ See, e.g., Terrance P. McGuire, *A Blueprint for Growth or a Recipe for Disaster? State Sponsored Venture Capital Funds for High Technology Ventures*, 7 HARV. J. LAW & TECH. 419, 424 (1994).

the reason for the move is not always apparent.⁴⁸ A lack of local financing might not be the only, or the main, reason for entrepreneurial relocation. For instance, the lack of skilled employees who can fill out the start-up's ranks once it grows could cause a start-up to move to a labor market where skilled talent is more plentiful.

While relocation may be a rational move for the entrepreneur, it is a severe detriment to local communities. Entrepreneurial relocation may or may not have social welfare effects in the aggregate, but it does keep distributional gains skewed toward existing high-tech regions. Consider how this happens. Relocation not only removes the promising start-up and its positive externalities (such as jobs in that particular start-up) from the non-tech region, it also deprives the region of *future* entrepreneurial talent. If the start-up were to receive local funding and prosper, it might attract other high-tech employees to the region, who could then spin-off their own ventures.⁴⁹ Similarly, the original entrepreneur might become a serial entrepreneur and form another local start-up, help to develop local university-industry collaborations, or go on to become an angel investor.⁵⁰ When start-ups relocate, it prevents this chain of events. Therefore, if communities can keep their start-ups local, it can generate more local start-ups and permit repeated bursts of innovation.⁵¹ But without funding for local start-ups, entrepreneurs will continue to relocate and any initial success will not be sustainable.

III

FUNDING FOR LOCAL INNOVATION: THE DEFICIENCIES OF VENTURE CAPITAL

Working from the assumption that financial capital is a significant problem for non-tech regions (whether or not the leading problem – a question which only empirical work can answer⁵²), this Part will explore the two sources of innovation funding that

⁴⁸ See, e.g., *Mobile Portal Startup Expands Leadership, Moves HQ to Silicon Valley, Adds Offices to Accommodate Rapid Growth and Support Partnership Strategy*, available at http://findarticles.com/p/articles/mi_pwwi/is_200802/ai_n24272998 (February 2008) (discussing Berggi, a leading start-up in the mobile online applications and services market, which moved its headquarters from Houston to Silicon Valley); *TFS changes name to Fox, moves headquarters to Silicon Valley*, Silicon Valley/San Jose Business Journal (May 3, 2005), available at <http://www.bizjournals.com/sanjose/stories/2005/05/02/daily16.html> (company making e-mail firewall products moves its headquarters to Silicon Valley but will continue to operate its current offices in Herndon, Va., London, and Uppsala, Sweden).

⁴⁹ See Homa Bahrami & Stuart Evans, *Flexible Recycling and High-Technology Entrepreneurship*, in UNDERSTANDING SILICON VALLEY, *supra* note __, at 175-176 (citing numerous examples of inter-firm movement in high technology). [add “apple not far from the tree” paper]

⁵⁰ See James F. Gibbons, *The Role of Stanford University: A Dean's Reflections*, in THE SILICON VALLEY EDGE, *supra* note __, at 208 (“entrepreneurs tend to stay in areas in which their success in a previous start-up is a significant asset in hiring a new team, attracting other funding, and fulfilling the other conditions for a successful start-up”).

⁵¹ See generally Zoltan Acs et al., *The Knowledge Spillover Theory of Entrepreneurship*, Centre for Economic Policy Research Paper No. 5326 (2005).

⁵² The lack of local financial capital does get significant attention from planners and academics. For example, over twenty-five states that have sought to stimulate high-tech growth, and their dominant focus has been on finding local capital for entrepreneurs rather than on finding the entrepreneurs themselves. See

dominate the existing literature: private venture capital and, to a lesser extent, state-sponsored venture capital. It explains why private venture capital is not available for early stage start-ups in non-tech regions and why state substitutes have not proved to be successful alternatives.

A. Private Venture Capital

Private venture capital has a proven record of success in funding high-tech innovation. Venture capital backed the Internet revolution of the 1990s and is now a driving force behind the “clean tech” movement. Under Gilson’s venture capital market framework,⁵³ venture capitalists (the general partners in the venture fund) technically fill only the financial intermediary function. However, their strong track records allow them to attract risk capital from pension funds, endowments, and individuals (the limited partners in the venture fund). Venture capitalists use their expertise to selectively deploy risk capital into the very best start-ups.⁵⁴ When a start-up has an exit, the profits are returned to the fund investors minus the venture capitalist’s management fee and carry.⁵⁵ The process recycles when fund investors reinvest their profits in venture capitalists, who in turn invest in a new group of start-ups.⁵⁶ In addition to funding, venture capitalists offer start-ups critical value-added services including advice on growth and exit strategies and connections to professional managerial talent.⁵⁷

When it comes to non-tech regions, however, private venture capital fails to deliver for two reasons. First, most start-ups in non-tech regions are likely to be in the early stages of development. Yet venture capital is increasingly being channeled to later-

McGuire, *supra* note __, at 427 (“over half the states in the U.S. currently employ venture capital seed funds, grants, or loan programs directed at high technology companies”). In addition, when examining international efforts to create new venture capital markets, Gilson focuses on the funding side of the equation. He assumes that if providers of risk capital and financial intermediaries can be put in place, waiting entrepreneurs will be forced to “reveal themselves.” Gilson, *supra* note __, at 1094 (“Here the hypothesis is simply that the presence of a venture capital framework complete with funding will induce entrepreneurs to reveal themselves.”).

⁵³ See *supra* notes __ and accompanying text.

⁵⁴ Estimates are that only around 1% of the start-ups that seek venture capital are successful in obtaining it. See MARK VAN OSNABRUGGE AND ROBERT J. ROBINSON, *ANGEL INVESTING: MATCHING START-UP FUNDS WITH START-UP COMPANIES – THE GUIDE FOR ENTREPRENEURS, INDIVIDUAL INVESTORS, AND VENTURE CAPITALISTS* 146 (2000). For example, in 1997, a hot year for start-ups, leading venture capital firm Benchmark Partners funded only 9 of the 1,500 business plans submitted to them. RANDALL E. STROSS, *eBOYS: THE TRUE STORY OF THE SIX TALL MEN WHO BACKED eBAY AND OTHER BILLION-DOLLAR START-UPS* 24 (2000).

⁵⁵ The management fee is typically 2% of the risk capital in the venture fund and the carry, or profits, is typically set at 20%. See Paul Gompers & Josh Lerner, *An Analysis of Compensation in the US Venture Capital Partnership*, 51 J. FIN. ECON. 3, 3–27 (1999) (conducting an empirical study that found management fees of 2–3% and a large concentration of carry at 20%); see also Victor Fleischer, *Two and Twenty: Taxing Partnership Profits in Private Equity Funds*, 83 N.Y.U. L. REV. 1, __ (2008).

⁵⁶ See PAUL A. GOMPERS AND JOSH LERNER, *THE VENTURE CAPITAL CYCLE* 3-4 (2000) (discussing the interrelatedness of each piece of venture capital investing).

⁵⁷ See *infra* notes __ and accompanying text.

stage start-ups with some proven record of success. This is both because of the venture capitalist's initial selection criteria and because a healthy portion of venture capital goes toward making follow-on investments in existing portfolio companies. In the first instance, the venture capitalist's preference for later-stage start-ups is a rational one. As noted, each investment requires the venture capitalist to undertake careful due diligence and post-investment monitoring, which in effect limits the number of investments a venture capitalist can make.⁵⁸ The need to be highly selective leads venture capitalists to favor more mature start-ups, which present less risk.⁵⁹ Not surprisingly, the start-ups that do attract venture capital usually have an "in" through a business associate, lawyer, or angel investor.⁶⁰

The practice of investing in later-stage start-ups has become more pronounced as venture capitalists become victims of their own success. After some astronomical returns from Internet investments, investors are directing more and more funds to venture capitalists. But because sheer physical manpower continues to limit start-up investments, however, each start-up now receives more funds, and the venture capitalist's initial financing round has spiked from \$2 million to upwards of \$5 million.⁶¹ This trend toward larger investments serves to further limit the pool of venture capital available to early stage start-ups that need smaller, earlier infusions.⁶²

Second, and an even larger problem for non-tech regions, is that venture capital is often not available *at all* outside of existing tech regions. Venture capitalists are heavily concentrated in existing tech regions, most notably along Silicon Valley's Sand Hill Road. Data reveal that for the ten-year period from 1997-2006, 38.1% of all venture

⁵⁸ VAN OSNABRUGGE AND ROBINSON, *supra* note __, at 23 ("venture capitalists are rarely able to fund small start-up firms..., regardless of the quality of the venture, because of the very specific investment criteria and high costs of due diligence, negotiating, and monitoring"). Even in height of dot.com era, when the joke was that any Stanford student with an idea could obtain venture capital, only 28% of venture capital investments were directed at early stage companies. *Id.* at 49 (citing a 1998 statistic).

⁵⁹ See Jesse M. Fried and Mira Ganor, *Agency Costs of Venture Capitalist Control in Startups*, 81 NYU L. REV. 967, 1009 (2006) ("Many startups are unable to secure VC or other institutional financing in the first year or so of the business, when risk is highest.").

⁶⁰ See Martin Kenney & Richard Florida, *Venture Capital in Silicon Valley: Fueling New Firm Formation*, in UNDERSTANDING SILICON VALLEY, *supra* note __, at 102 ("Venture capitalists receive an enormous number of business plans and fund only a very few. Usually, those funded arrive through recommendations.").

⁶¹ See John L. Orcutt, *Improving the Efficiency of the Angel Finance Market: A Proposal to Expand the Intermediary Role of Finders in the Private Capital Raising Setting*, 37 ARIZ. ST. L.J. 861, 873-874 (2005) (explaining the "\$5 million minimum investment trend"); Preston, *supra* note __, at 68 (venture capital investments are increasing from \$2 million to \$5 million); *Venture Support Systems Project: Angel Investors* (MIT Entrepreneurship Center, February 2000), available at <http://entrepreneurship.mit.edu/Downloads/AngelReport.pdf> [hereinafter MIT Study], at 14 (observing that venture capitalists are funding larger and later stage deals by more established start-ups).

⁶² Smaller and earlier capital infusions are typically necessary for start-ups to reach the point where they can effectively use the larger investments. See VAN OSNABRUGGE AND ROBINSON, *supra* note __, at 64 ("few firms can raise \$5 million until they have raised up to \$500,000 for their early growth and development").

capital investments, representing 42.6% of all venture capital dollars, were located in California.⁶³ The next highest levels were in the 10% range, in Massachusetts (home of Route 128).⁶⁴ Other states in the top ten received *less than 5%* of all venture capital funding.⁶⁵ Also, while the boom times of the late 1990s may have sent some venture capitalists searching for investments in other regions, the data suggest that venture capital is now becoming even more concentrated in California. In 2006, California start-ups received 42.3% of all venture capital investments, representing 48.0% of all venture capital dollars – a slight increase over the preceding ten-year average.⁶⁶ Of course, there are good reasons for venture capitalist concentration – namely economies of scale and the need for consistent deal flow – but that does not address the distributional problem that is this Article’s focus.

While it might seem that the subset of venture capital funds specializing in early stage investments would branch out to more open (and less competitive) markets, the geographic concentration of early stage venture capital mirrors that of its later-stage counterparts.⁶⁷ As noted, non-tech regions do produce at least some entrepreneurial talent, but venture capitalists have not typically branched out to these regions for a couple of reasons. First, there is often not enough entrepreneurial talent in non-tech regions to support the deal flow required to sustain a venture branch.⁶⁸ Second, through the promise of funding and connections, venture capitalists are often able to lure the entrepreneurial talent that *is* found in non-tech regions to Silicon Valley. The resulting entrepreneurial relocation, which has been discussed, means that deserving entrepreneurs get funded – again my argument is not that the market for entrepreneurial finance is necessarily inefficient – but they only get funded after moving to existing tech regions.

B. State-Sponsored Venture Capital

Because private venture capital is not available in non-tech regions, or for early stage start-ups, over half of the states have adopted or considered adopting some form of

⁶³ See George Lipper, National Association of Seed & Venture Funds, *NASVF Net News – Ten Year and \$350B of Venture Capital State by State*, available at http://www.nasvf.org/web/all_press.nsf/pages/14989 (January 29, 2007); see also GOMPERS & LERNER, *supra* note __, at 14 (historical look at investment data shows a very high concentration of venture capital investment in California beginning in 1965 and remaining fairly constant over time).

⁶⁴ See Lipper, *supra* note __.

⁶⁵ See *id.*

⁶⁶ See *id.* It used to be that “California” venture capital was synonymous with “Silicon Valley” venture capital, although now Southern California enjoys one of the largest influxes of venture capital dollars in the country. [cite Financial Times article] While Los Angeles boasts a strong media focus, Orange County is home to medical devices and software, and San Diego is strong in biotech.

⁶⁷ See *id.*; but see Steve Jurvetson, *Changing Everything: The Internet Revolution and Silicon Valley*, in *THE SILICON VALLEY EDGE*, *supra* note __, at 125 (noting that the early stage venture capitalist Draper Fisher Jurvetson has opened branches in a number of U.S. cities).

⁶⁸ See Kenney & Florida, *supra* note __, at 122 (quoting Don Valentine, the founder of leading venture capital firm Sequoia Capital, for the proposition that outside of Silicon Valley, Boston is the only other consistent source of good deal flow).

state-sponsored venture capital fund.⁶⁹ While some of these funds have produced decent returns,⁷⁰ state funds have not proven to be the answer to the local funding problem, and with good reason.

If a state program envisions the state as a direct investor in start-ups, we encounter Gilson's problem of an improper financial intermediary – one without the relevant expertise or proper market incentives for investment.⁷¹ Ex ante investment, private venture capitalists have the expertise to evaluate entrepreneurs and the market potential of their ideas. An increasing trend toward sector-specific investments furthers the private venture capitalist's informational advantage over other investors.⁷² Ex post investment, private venture capitalists are value-added investors that offer expert advice on growth and exit strategies, large rolodexes of professional managers, customers, suppliers, and investment banks, and the discipline to improve start-up governance.⁷³ Bureaucrats, however, do not have the private venture capitalist's expertise in picking the most promising start-ups ex ante or providing them with value-added services ex post. State-sponsored venture capital funds could try to measure up by hiring qualified fund managers from the private sector, but it is unlikely they could match the compensation levels found in private funds, leaving a market for lemons among the fund managers who would accept state positions.⁷⁴

Bureaucrats also lack market incentives for investment. While successful programs may help politicians earn re-election, bureaucrats do not depend on rates of return for their compensation.⁷⁵ Conversely, the private venture capitalist's two-pronged compensation structure – carry that increases proportionate to start-up success and management fees that increase with the ability to attract more risk capital – highly incentivizes the venture capitalist to find and develop the best start-ups. Bureaucrats may have more incentive to select start-ups for political reasons,⁷⁶ including immediate if unsustainable job creation.⁷⁷

⁶⁹ McGuire, *supra* note __, at 420.

⁷⁰ *See id.* at 427 (noting that the Massachusetts and Michigan funds “are widely regarded as the premier programs in the state venture capital field”).

⁷¹ *See* Gilson, *supra* note __, at ____.

⁷² *See* VAN OSNABRUGGE & ROBINSON, *supra* note __, at 149.

⁷³ *See* D. Gordon Smith, *Venture Capital Contracting in the Information Age*, 2. J. SMALL & EMERGING BUS. L. 133, 139-140 (1998) (discussing the venture capitalist's value-added services); Joshua Lerner, *Venture Capitalists and the Decision to Go Public*, 35 J. FIN. ECON. 293, 314 (1994) (on the ability of venture capitalists to offer advice on the most profitable time for exit); Hellman & Puri (on the improved governance of venture-backed start-ups).

⁷⁴ McGuire, *supra* note __, at 445 (“Existing state programs presently offer compensation well below that offered by comparable private firms, and boosting compensation to a competitive level is likely to be difficult given limited state resources.”).

⁷⁵ *See* Gilson, *supra* note __, at 1094-1096 (attributing Germany's failure to build a venture capital community to factors including a lack of incentives to select and monitor portfolio investments).

⁷⁶ *See* McGuire, *supra* note __, at 446-447 (noting that political considerations have caused problems with state-sponsored funds in Virginia and Alaska); Merrill F. Hoopengardner, *Note, Nontraditional*

The discussion so far has assumed a state-sponsored venture capital fund making direct investments in portfolio companies. A better alternative is for states to provide matching funds to private venture capitalists. The hypothesis is that private venture capitalists will be enticed to enter the state by the promise of risk capital, and that the state's deficiencies in incentives and expertise are cured by allowing knowledgeable investors to select and mold the portfolio companies.⁷⁸ This structure recognizes the inability of states to both provide risk capital and invest it and confines their role to the former.

This indirect structure, while preferable to direct state investments, is still problematic for several reasons. First, putting the venture-capitalist buffer between states and start-ups does not mean that the private venture capitalist's investment decisions will be free from state influence. States may put indirect pressure on private venture capitalists to select politically agreeable start-ups, and private venture capitalists who incur sunk costs in moving to the state may cave in to the pressure to keep state funds coming.⁷⁹ Also, government investments involve more red tape than private investments, and could expose notoriously secret private venture capitalists to public disclosure of their investments and returns.⁸⁰ Finally, it is unlikely that the best venture capitalists, now awash in private investments, will avail themselves of state funds, leaving a market for lemons among the venture capitalists who will accept state funds. The relatively small size of state funds, resulting in lower venture capitalist compensation, exacerbates the lemons problem.⁸¹

IV

FUNDING FOR LOCAL INNOVATION: THE PROMISE OF ANGEL INVESTOR GROUPS

The prior Part discussed the deficiencies in private venture capital and state-sponsored alternatives in funding entrepreneurs in non-tech regions. This Part moves into fresh territory by suggesting a more promising alternative: angel investor groups. It

Venture Capital: An Economic Development Strategy for Alaska, 20 ALASKA L. REV. 357, 371 (2003) (observing that political pressures pushes state fund managers to make non-optimal investments).

⁷⁷ See McGuire, *supra* note __, at 435 (unlike venture capitalists, states may focus on local benefits such as job creation at the expense of rates of return); Hoopengardner, *supra* note __, at 369-370 (associating lower rates of return with an attempt to serve a "double bottom line").

⁷⁸ See Gilson, *supra* note __, at 1097 (arguing that Israel's attempt to build a venture capital community was admirable in part because the government fund invested in a venture capital intermediary rather than directly in portfolio investments, and did not help to select those investments).

⁷⁹ *Id.* at 1100 (in an indirect set-up, "government still might try to influence the selection of portfolio companies (and the interaction between the venture capital fund and the portfolio company) informally through the implicit promise of future government funding").

⁸⁰ For example, public pension funds are facing calls in some states to disclose information about their venture fund investments under public-record disclosure laws and through Freedom of Information Act requests. See Pamela A. MacLean, *Seeking a View into Venture Capital Funds, Public Pensions, Schools Want Data*, 28 NATL. L. J. 1 (Jan. 16, 2006).

⁸¹ See McGuire, *supra* note __, at 445.

begins by defining “angel investors” and offering an historical look at the role that individual angel investors – the dominant model of angel investing until the last decade – played in creating Silicon Valley and the early venture capital industry. It then favorably compares the new face of angel investing, angel investor groups, to venture capital as a funding source for innovation in non-tech regions. Finally, this Part constructs an argument, grounded in signaling theory, for how angel groups might attract venture capitalists to non-tech regions.

A. Angel Investing: Definition and History

Defining an “angel investor” is no easy task. Angel investors are typically defined as wealthy individuals, “accredited investors” under the securities laws, who invest personal funds in high-tech start-ups.⁸² If we further limit the definition to those individuals who acquired their wealth and an appetite for start-up investments from being ex-entrepreneurs, we confine ourselves to a relatively narrow class of individuals. A more expansive definition also includes individuals who invest in “lifestyle” firms of a non-technical nature founded by friends or family. While the more professional angels might make per-start-up investments ranging from \$100,000 to a few million dollars for some extremely wealthy individuals,⁸³ the friends and family-type angel variety might invest only a few thousand dollars. Because there are far more angels than venture capitalists, and angels on the whole collectively invest in 30-40 times more start-ups,⁸⁴ the aggregate angels markets is said to match the aggregate venture capital market at \$25 billion per year.⁸⁵

Until the last decade, angel investors operated individually or in small syndicates. Angel investing was more of an informal, hobby-like activity than a professional endeavor. Still, informal angel investing financed many of the foundational start-ups in

⁸² See Jill E. Fisch, *Can Internet Offerings Bridge the Small Business Capital Barrier?*, 2 J. SMALL & EMERGING BUS. L. 57, 74 (1998) (noting that angels who participate in the SBA’s electronic matching services for entrepreneurs and capital providers, ACE-Net, must meet the SEC’s definition of an accredited investor); MIT Study, *supra* note __, at 10 (“the term ‘angel’ or ‘business angel’ refers to high net worth individuals, usually ‘accredited’ investors as defined by SEC Rule 501, who invest in and support start-up companies in their early stages of growth”).

⁸³ John Freear et al., *Angels: Personal Investors in the Venture Capital Market*, 7 ENTREPRENEURSHIP & REGIONAL DEV. 85, 87 (1995) (“A typical angel deal is an early-stage round in the US\$100,000 to US\$500,000 range, raised from six or eight investors.”); Jeffrey E. Sohl, *The U.S. Angel and Venture Capital Market: Recent Trends and Developments*, J. OF PRIVATE EQUITY 7, 14 (2003) [hereinafter *Recent Trends and Developments*] (“The typical angel deal is an early-stage round (seed or start-up) in the \$100,000 to \$2 million range”).

⁸⁴ VAN OSNABRUGGE & ROBINSON, *supra* note __, at 69. Angels fund more new firms because there are more angels and because venture capitalists devote more of their funds to existing portfolio companies. See *id.* at 67 (“venture capitalists spend around two-thirds of their funds on expansion funding of their existing portfolio firms”); Jeffrey E. Sohl, *The Early-Stage Equity Market in the USA*, 1 VENTURE CAP. 101, 108 (1999) [hereinafter *Early-Stage Equity Market*] (many venture capital financings are for start-ups in which they have previously invested).

⁸⁵ See *The Angel Investor Market in 2006: The Angel Market Continues Steady Growth*, available at www.unh.edu/cvr (citing total angel investments in 2006 at \$25.6B).

Silicon Valley and Route 128. Until the formal venture capital industry came about in the late 1960s, individual angels were a common source of innovation funding in Silicon Valley.⁸⁶ If we begin Silicon Valley's history with the founding of the Hewlett-Packard Company in 1938, we learn that HP's founders were not only mentored by Frederick Terman, but that he was an angel investor in the company.⁸⁷ If we date Silicon Valley's beginnings back even earlier to the founding of Federal Telegraph Company in 1909,⁸⁸ we learn that the initial funding for FTC was provided by Stanford president David Starr Jordan and several Stanford faculty members, all angel investors.⁸⁹ Later Silicon Valley start-ups continued to receive angel finance, including Intel, which counted the venture capitalist Arthur Rock among its personal investors.⁹⁰ Individual angel investors were also an early source of finance in Boston. For example, Alexander Graham Bell was able to start the Bell Telephone Company in Boston in 1877 after receiving two angel investments.⁹¹

Individual angels not only helped to create Silicon Valley and Route 128 through their funding of high-tech start-ups, they also played an important role in creating the formal venture capital industry. The best summary of how angel investors transformed individual investing into formal financial intermediation comes from Martin Kenney and Richard Florida.⁹² Kenney and Florida describe how a group of young angel investors (who unimagatively called themselves "The Group") began investing together in Silicon Valley start-ups in mid-1950s.⁹³ These angels, including Reid Dennis, William Bryan, William Edwards, William Bowes, and Daniel McGanney, soon had more

⁸⁶ Kenney & Florida, *supra* note __, at 98 ("Until the late 1950s, an entrepreneur in the San Francisco Bay Area depended on informal investors for small-scale funding."); *id.* at 105 ("in the aftermath of World War II the San Francisco Bay Area was the home to a number of promising young electronics companies, and there were individuals willing to invest in new ventures"); Kvamme, *supra* note __, at 65 (angel investors from the East Coast were still an important source of funding for Silicon Valley companies in the late 1960s before the founding of the venture capital firm Kleiner Perkins in 1972).

⁸⁷ See Gibbons, *supra* note __, at 215-216.

⁸⁸ Sturgeon, *supra* note __, at 19-29 (arguing that the real start of Silicon Valley dates back to the founding of FTC).

⁸⁹ *The Evolution of Silicon Valley*, in *THE SILICON VALLEY EDGE*, *supra* note __, at 153 ("One might start [the history of Silicon Valley] with the founding of the Federal Telegraph Company, a radio operating company, in 1909 (with David Starr Jordan, the president of Stanford, as, in current terminology, an angel investor); Leslie, *supra* note __, at 51 (noting that several Stanford faculty members joined Jordan in making angel investments in FTC).

⁹⁰ Dado P. Banatao & Kevin A. Fong, *The Valley of Deals: How Venture Capital Helped Shaped the Region*, in *THE SILICON VALLEY EDGE*, *supra* note __, at 297.

⁹¹ ROSEGRANT & LAMPE, *supra* note __, at 65 ("When Bell needed money to complete his early experiments, the fathers of two deaf children he had taught to speak – Boston attorney Gardiner Greene Hubbard and Salem leather merchant Thomas Sanders – helped out, and later put up the capital to form the Bell Telephone Company in Boston in August 1877.").

⁹² Kenney & Florida, *supra* note __, at 106.

⁹³ *Id.*

investment opportunities than personal capital.⁹⁴ The federal government presented a solution to this problem in 1958 when it created the Small Business Investment Company (SBIC), which offered matching federal funds for private investments.⁹⁵ The SBIC program caught on with members of The Group, as well as other individuals and financial institutions, for the simple reason that it permitted more investments with less personal risk.⁹⁶ Therefore, while Boston's American Research and Development may have been the first venture capital fund, it was the individual angel investors' use of the government's SBIC program that popularized financial intermediation for innovation funding.

In light of these early successes, it is somewhat of a puzzle why informal angel investing has not spurred even more high-tech transformations. But the reason becomes clear when considering how informal operation suffers from two major deficiencies. First, the informal angel's lack of concern with deal flow and preference for anonymity results in high search costs for entrepreneurs.⁹⁷ Informal angels do not advertise to avoid being inundated with business plans, but instead prefer to learn of potential investments through family members or business associates.⁹⁸ This informal, back-channel mode of operation has led to the description of individual angel investing as an "invisible" market.⁹⁹ Several scholars have argued that the informal angel's preference for anonymity led to a haphazard and inefficient funding process.¹⁰⁰

The second disadvantage of informal angel investing came from the wide variation in the quality of angel funding.¹⁰¹ Some angel funding came from some professional angels (i.e., successful ex-entrepreneurs), but much did not, instead coming from friends and family-type angels or lawyers, accountants, and investors of inherited wealth. These differences in quality can have several negative ramifications for

⁹⁴ *Id.*

⁹⁵ *Id.*

⁹⁶ *Id.* at 106-107; Emilio J. Castilla et al., *Social Networks in Silicon Valley*, in THE SILICON VALLEY EDGE, *supra* note __, at 235 (observing that former student of Georges Doriot and entrepreneur Frank Chambers pioneered the use of the SBIC in Northern California); ROSEGRANT & LAMPE, *supra* note __, at 120-121 (noting the use of SBICs by financial institutions).

⁹⁷ See Freer et al., *supra* note __, at 86 ("There are no directories of business angels and no public records of their investment transactions."). By way of contrast, *Pratt's Guide to Private Equity* gives information on all venture capital firms, and venture capital firms of any repute boast glossy websites. See Orcutt, *supra* note __, at 890 ("From the entrepreneur's standpoint, formal VC funds are not very difficult to find. Numerous sources exist that identify the formal VC funds and provide their contact information.") (citation omitted).

⁹⁸ See VAN OSNABRUGGE & ROBINSON, *supra* note __, at 144.

⁹⁹ See Freer et al., *supra* note __, at 86 (angels "are a nearly invisible segment of the venture capital markets"); William E. Wetzel, Jr., *Angels and Informal Risk Capital*, SLOAN MGMT. REV. 23, 24 (1983).

¹⁰⁰ See, e.g., William K. Sjostrom, Jr., *Relaxing the Ban: It's Time to Allow General Solicitation and Advertising in Exempt Offerings*, 32 FLA. ST. L. REV. 1, 3-4 (2004) (suggesting that early stage markets are inefficient because of high information asymmetries).

¹⁰¹ See Hellmann, *supra* note __, at 291 ("There is much heterogeneity among angel investors").

entrepreneurs. Ex ante, low-quality angels may lack the expertise necessary to select the most promising start-ups. This market failure can be particularly pronounced when angels decide to invest as a favor to friends or family rather than on a critical evaluation of the start-up's prospects. Ex post, those entrepreneurs funded by low-quality angels will not receive the same value-added services that high-quality angels can provide. Because value-added services can be more important than money in determining a start-up's success,¹⁰² the failure to obtain value-added services could result in the failure of even high-quality entrepreneurs.

B. The New Face of Angel Investing: Angel Investor Groups

A sea change in angel investing has put a new, professional face on the practice and now offers more hope for financing the next Silicon Valley. Angels are increasingly abandoning informal operation in favor of organization into regional angel investor groups. Possible reasons for the change include the desire for more consistent deal flow, increased opportunities to interact with other angels and venture capitalists, and the potential to pool capital into larger investments that will justify the transaction costs of preferred stock.¹⁰³

Since the first notable angel group was founded in 1994 (Silicon Valley's Band of Angels), over one hundred fifty more angel groups have been formed.¹⁰⁴ There is at least one angel group in each state, and many states are home to multiple groups. Collectively, those angel groups that enjoy full membership in the Angel Capital Association (ACA) include 6,760 member angels.¹⁰⁵ Angel group members still invest personal funds, although some of the larger groups have also established sidecar funds to co-invest in the group's most attractive deals.¹⁰⁶ ACA data reveals that the average angel group invested \$265,926 per start-up in 2007.¹⁰⁷ Also, while individual angels invest in anywhere from

¹⁰² Carol Sands, *The Angels' Forum and The Halo Fund: The Rise of the Professional Angel*, in STATE OF THE ART, *supra* note __, at 39 (angel group members "believe that the time they have invested in our portfolio companies is a much more important asset than our dollars"); VAN OSNABRUGGE & ROBINSON, *supra* note __, at 65 (angels' value-added services are "priceless for young entrepreneurs starting out and would not normally be affordable by other means").

¹⁰³ Ibrahim, *supra* note __, at 1443.

¹⁰⁴ The Angel Capital Association (ACA), the professional alliance of angel groups, counts 145 full-member groups as of April 2008 and an additional __ partial or non-member groups. These and other figures in this paragraph are from ACA statistics prepared for ACA's Annual Summit held May 7-9, 2008, in San Diego, California [hereinafter ACA Statistics] and on file with Author.

¹⁰⁵ ACA Statistics, *supra* note __.

¹⁰⁶ See Sands, *supra* note __, at 39 (Silicon Valley's Angels' Forum created "The Halo Fund in 2000 [which] allowed our friends and family members as well as institutional investors to co-invest in the group's best deals").

¹⁰⁷ See 2008 ACA Angel Group Confidence Survey, available at _____ [hereinafter ACA Confidence Survey]. These and other statistics are only for the angel groups that reported data to the ACA, which introduces selection bias.

one to four start-ups per year (and probably closer to one),¹⁰⁸ the average angel group invested in 4.5 new start-ups in 2007.¹⁰⁹

Angel groups are professionalizing the practice of angel investing. In the process, they are removing the two main drawbacks of informal angel investing. First, while informal angels prefer anonymity, angel groups are exactly the opposite. Most of them have their own websites, like venture capitalists, and are also easily found through a few clicks on the ACA's website.¹¹⁰ Angel group websites often contain instructions for entrepreneurs on how to submit business plans for the angel group's consideration.¹¹¹ In addition, angel groups hold workshops for entrepreneurs in their local communities to educate them on how to become attractive candidates for funding. As one prominent angel has said, "angel groups attract high-potential companies because entrepreneurs are aware of these groups."¹¹² For these reasons, angel groups stand in stark contrast to their informal angel counterparts in that they operate in a highly visible market. The high visibility of angel groups reduces search costs for entrepreneurs.¹¹³

Second, on average angel group members are of higher quality than informal angels. On an individual basis, angel groups attract the most professional, businesslike angels in a region. Angel groups attract members looking for deal flow, thereby excluding angels who only want to fund only friends or family. The latter group is most likely to include the low-quality angels who are ill-equipped to select the best start-ups for funding *ex ante* or add value for entrepreneurs *ex post*. In addition, a small number of angel groups limit membership to those angels with expertise in a particular industry, furthering these advantages over general investors.¹¹⁴ Some angel groups that do not limit membership by industry do limit membership to angels with technical experience and thereby exclude lawyers, accountants, and other non-techies.¹¹⁵

¹⁰⁸ See Darian M. Ibrahim, *The (Not So) Puzzling Behavior of Angel Investors*, 61 VAND. L. REV. 1405, 1424 & nn. 90-91 (2008).

¹⁰⁹ Reporting angel groups also made an average of 2.8 follow-on investments in existing portfolio companies, leading to a total of 7.3 investments per group in 2007. ACA Confidence Survey, *supra* note __.

¹¹⁰ <http://www.angelcapitalassociation.org/>.

¹¹¹ For example, the front page of the Tech Coast Angels website has a link for entrepreneurs that reads "**SEND IN YOUR APPLICATION**. You can start by making application, right here. There is no fee to apply, or to present." <http://www.techcoastangels.com/Public/content.aspx?ID=EA6BF3BF-964F-11D4-AD7900A0C95C1653>.

¹¹² Preston, *supra* note __, at 68.

¹¹³ See Smith, *supra* note __, at 162-173 (observing the Web's potential to reduce search costs for entrepreneurs seeking funding).

¹¹⁴ See, e.g., Norm Sokoloff, *Tenex Medical Investors: Niche Investing*, in STATE OF THE ART, *supra* note __, at 44 (members of Silicon Valley's Tenex Medical Investors have "substantial life science expertise").

¹¹⁵ Severiens, *supra* note __, at 22 (the Band of Angels' "organizing committee made it clear right from the start that membership in our group would be limited to those with high-tech credentials, and thus lawyers, bankers, real estate developers, and so on were not the kind of members we were seeking")

Perhaps more importantly, angel groups are able to offer entrepreneurs a higher-quality experience due to their advantages as a collective. Angel group members will be diverse in terms of their technical expertise (in the case of non-industry specific groups) and entrepreneurial experiences (in all groups). But because the angel group brings them all together under one umbrella, the group as a collective has advantages in selecting the best start-ups ex ante and adding value ex post.¹¹⁶ It is likely that at least some member of the angel group is an expert in the entrepreneur's technical field and can evaluate the quality of the entrepreneur's start-up.¹¹⁷ In addition, the collective wisdom of the group can be called upon to help entrepreneurs through growing pains after funding.¹¹⁸ It is likely that some angel in the group has dealt with a similar problem before. Individual angels, even when they invest in syndicates, do not possess the same depth or breadth of experience.

C. Comparing Angel Groups to Venture Capital

In this Part we have seen the historical importance of informal angel investors in building our two most important high-tech communities and their financial infrastructures, but also that certain drawbacks have prevented angel investing from making inroads in more regions. We have also seen that angel groups, as the new, professional face of angel investing, do not suffer from the same drawbacks as their informal predecessors. This Section will now compare angel group finance to venture capital, both private and state-sponsored, as a possible source of entrepreneurial finance for start-ups in new regions. It argues that angel groups possess several advantages over venture capital which are particularly acute in non-tech regions. These advantages are: wide geographic dispersement and a preference for local investments; a preference for early stage start-ups; market incentives to fund start-ups that will offer the best rate of return; and, because angel group investors are typically successful ex-entrepreneurs, relevant expertise in technology funding. Each of these advantages will now be discussed in turn.

When it comes to funding innovation in non-tech regions, the first advantage of angel groups is their wide geographic dispersement. Angel groups are located throughout

¹¹⁶ Most angel groups do not invest as a collective, instead allowing group members to pick and choose among the start-ups that come before the group. However, group members have financial and non-financial incentives to help each other out both pre- and post-investment.

¹¹⁷ See *id.* at 22 (“We insist that each serious investment opportunity have a sponsor from within the group; if that sponsor is another respected ‘techie,’ those of us unfamiliar with the specifics of a market or a technology trust that it must be an opportunity worth exploring.”); Sokoloff, *supra* note __, at 45 (“The due diligence investigational process is shared in that the network relies on the expertise of individual members or their contacts.”); William H. Payne, *Tech Coast Angels: An Alliance of Angel Networks*, in STATE OF THE ART, *supra* note __, at 55 (“When you increase the number of angels in a group, you broaden the breadth of experience among the group’s members and increase deal flow.”).

¹¹⁸ See Sands, *supra* note __, at 39 (“If there is a problem [with an investment], the group helps the involved members identify which people to ask for guidance (this is where the broad skills and resources of the group become very important) and what actions to take.”).

the country rather than confined to existing high-tech communities like private venture capitalists. Mark Van Osnabrugge and Robert Robinson, who conducted a large-scale study and literature review on angels, make the point that “angels can be found everywhere, not just in major financial centers.”¹¹⁹ There are good reasons why angels end up being located in more regions than private venture capitalists. Private venture capitalists must locate in existing tech regions to obtain a steady deal flow and earn their compensation. Angels, on the other hand, enjoy geographic flexibility because they are independently wealthy and do not depend on returns from angel investing for their income.¹²⁰ Angels can therefore afford to live in regions with less deal flow, and in turn choose to live in places they hail from, earned their degrees, or simply enjoy living.

An important corollary to the angels’ wide geographic dispersment is their preference for making investments locally in the regions where they live. Local investment means the flow of angel finance to far more regions than venture capital. This bodes well for high-tech development in those regions. According to Van Osnabrugge and Robinson, the wide range of angel locales “is particularly important for regional development since many angels elect to invest in a firm within a few hours’ drive of their homes, thereby helping to retain and recirculate wealth within geographic areas.”¹²¹ Angels invest locally for two main reasons. One, local investment permits easy monitoring, the same reason that venture capitalists invest locally.¹²² Two, an important, non-financial reason for angel investing is the chance for routine participation in start-up development, which would not be possible without close proximity.¹²³ In sum, angel group investing, like venture capital, is a regional practice, but angel groups operate in far more regions.

The angel groups’ second advantage is that they channel most investments to early-stage start-ups, which will comprise the vast majority of start-ups in non-tech regions. A typical angel investment comes during the period after the entrepreneur’s friends and family money runs out but before venture capitalists will invest.¹²⁴ Angels are to some extent limited to the early stages by investing their own cash, but the early

¹¹⁹ VAN OSNABRUGGE & ROBINSON, *supra* note __, at 65 (citation omitted); *but see* Sohl, *Early-Stage Equity Market*, *supra* note __, at 113 (arguing that the angel market is more vibrant in some regions than others, including emerging markets in “North Carolina, Colorado, the Pacific Northwest, Austin, Texas, and central Utah”).

¹²⁰ MIT Study, *supra* note __, at 14 (“Angels enjoy the adrenaline rush of emerging company volatility, but without the 80-hour workweeks and the burden of ultimate responsibility for the company.”).

¹²¹ VAN OSNABRUGGE & ROBINSON, *supra* note __, at 66 (citations omitted).

¹²² *See* Stephen Prowse, *Angel Investors and the Market for Angel Investments*, 22 J. BANKING & FIN. 785, 789 & n.5 (1998).

¹²³ *See* Ibrahim, *supra* note __, at 1439 (discussing participation in the start-up’s development as one of the main non-financial motivations for angel investment); *id.* at 1449 (observing that the chance for participation in a start-up’s development may be less important to angel group investors).

¹²⁴ Angel groups do have the potential, through the pooling of resources, to constitute a more important funding source for entrepreneurs that require larger cash infusions. [cite Preston on filling the funding gap]

stages also offer their preferred risk/return ratio.¹²⁵ But angels also lose their advantages as value-added investors as start-ups mature. In the early stages, angels can offer seasoned advice on initial development strategies, empathy on growing pains, and assistance on obtaining future funding. In the later stages, venture capitalists have the comparative advantage in advising on the most profitable exit strategy or using connections to recruit professional managerial talent.

The foregoing advantages of angel groups are enjoyed over private venture capitalists. But angel groups also remedy state-sponsored venture capital's main deficiencies; namely, the inability to combine Gilson's risk capital and financial intermediary functions necessary for proper innovation funding. The key trait of most sophisticated angels, the type most likely to be found in angel groups, is that they are overwhelmingly *ex-entrepreneurs*. Van Osnabrugge and Robinson estimated that over three-quarters of angel investors are prior entrepreneurs, compared to only one-third of venture capitalists.¹²⁶ The entrepreneurial path to angel investing allows angels to combine the provision of risk capital with its knowledgeable investment in ways that state-sponsored venture capital cannot.

Consider the reasons for this. First, a successful exit from a prior start-up means large financial returns to the entrepreneur-turned-angel, who then has the financial means to invest in new start-ups. As a result of a successful entrepreneurial experience, angels can supply their own risk capital to new entrepreneurs.¹²⁷ Second, entrepreneurial experience provides angels with the expertise to act as the equivalent of knowledgeable financial intermediaries. Pre-investment, the technical expertise that often goes hand-in-hand with being a former entrepreneur enables the angel to evaluate the potential of other start-ups. Post-investment, the angel's prior hands-on experience running a start-up makes her a seasoned expert when it comes to advising other entrepreneurs on how to do the same. Finally, as private actors, angels also possess the private venture capitalist's market incentives for success. Although angels invest for non-financial as well as financial reasons, and while angels do not depend in the same way on start-up returns for their compensation, they are first and foremost driven by the desire for profit.¹²⁸ Some

¹²⁵ See Ibrahim, *supra* note __, at 1406 (angels build the "financial bridge" from friends and family money to venture capital).

¹²⁶ VAN OSNABRUGGE & ROBINSON, *supra* note __, at 108 (concluding that 75-83% of angels have prior start-up experience); *id.* at 110 (concluding that the majority of venture capitalists are "financial-investor types"); see also John Freear et al., *Angels and Non-Angels: Are There Differences?*, 9 J. BUS. VENTURING 109, 111 (1994) (citing studies for the proposition that a majority of angels "have entrepreneurial experience as owners or managers"); Sohl, *Early-Stage Equity Market*, *supra* note __, at 108 (claiming that the majority of angels are "self-made millionaires, first generation money, and are individuals with substantial business and entrepreneurial experience"). With all of these studies, it is unclear exactly how broadly "angel" is defined.

¹²⁷ To a certain extent; angels do not have venture capitalist levels of available finance.

¹²⁸ See VAN OSNABRUGGE & ROBINSON, *supra* note __, at 116-17.

angels have remarked on their dislike for the “angel” moniker because it suggests an altruistic aim rather than a profit motive.¹²⁹

Despite these theoretical advantages of angel groups over venture capital, concerns remain about their ability to translate into financing for the next Silicon Valley. Most significantly, angel groups still constitute a very small percentage of all angel investments – perhaps less than 2% of the entire angels market.¹³⁰ Jeffrey Sohl, who conducts extensive research on angels, attributes as much as 30% of the angels market to angel groups, but it is unclear how he arrives at that figure.¹³¹ It must be stressed that angel groups are still quite new, and we might expect them to occupy a larger share of the angels market in time. The trend is certainly moving in that direction.

D. The Signaling Function of Angel Group Finance

The inability of angel groups to supply enough capital to take many start-ups from the early stages to exit means that private venture capital is still often necessary to follow the angel groups.¹³² Private venture capital is often necessary not only for the added risk capital it can deploy, but also for its different set of value-added services. For both of these reasons, angel groups will often need to attract venture capital to follow their investments. This Section constructs an argument, grounded in signaling theory, for how angel groups could attract venture capital to non-tech regions.

Signaling is an important concept in the financing literature because of the information asymmetries that exist between companies and potential investors.¹³³ Where information asymmetries exist, investors look for signals that help them reduce these asymmetries and make better investment decisions. In the case of high-tech start-ups, where information asymmetries are particularly severe, private venture capitalists play a unique, two-sided role in signaling. That is, private venture capitalists both *send* signals about start-ups and *receive* them.¹³⁴

¹²⁹ *Id.* at 117.

¹³⁰ Using the ACA’s 2007 statistics discussed earlier, only 6,760 of two million estimated angels belong to angel groups. Moreover, multiplying the average angel group investments of \$265,926 times an average of 7.3 investments per group times 145 angel groups yields a total angel group investment figure of under \$282 million – less than 1.2% of the aggregate angels market of \$25 billion. [Discuss concerns with this data in terms of extrapolating from the larger groups that are doing the reporting]

¹³¹ See Hannah Clark, *Are Angel Investors Heaven-Sent?*, Forbes.com, May 4, 2006, http://www.forbes.com/entrepreneurs/2006/05/04/entrepreneurs-finance-angels-cx_hc_0504angel.html (quoting Professor Sohl for the 30% figure).

¹³² Software and Web 2.0 companies may be becoming exceptions where angel financing alone is sufficient to reach exit due to reduced costs in these fields.

¹³³ See generally Michael Spence, *Job Market Signaling*, Q. J. Econ. 355 (1973); JUDITH DONATH, SIGNALS, TRUTH & DESIGN (MIT Press, forthcoming).

¹³⁴ See Bernard S. Black, *Information Asymmetry, The Internet, and Securities Offerings*, 2 J. SMALL & EMERGING BUS. L. 91, 94 (1998) (“The venture capital fund not only gathers information, it also provides it.”).

One role that private venture capitalists play is to send positive signals about the start-ups they fund. These signals are sent to labor markets and later investors, including investment banks and public investors.¹³⁵ Private venture capitalists are able to send credible signals through their investment decisions because it is widely recognized that they have both the expertise and financial incentives to select and develop the most promising start-ups. In addition, as repeat players in the entrepreneurial finance market, private venture capitalists serve as reputational intermediaries, meaning that if the signals they send are not credible, their reputations will suffer.¹³⁶ Finally, venture capital investments are costly, and signaling theory is a better fit in situations where the signal is costly to send and cannot be easily mimicked.¹³⁷ For all of these reasons, private venture capitalists can and will send credible signals through their investment decisions.

The second role of private venture capitalists in signaling theory is to receive signals about the start-ups they evaluate for funding. Of course, venture capitalists will conduct their own thorough due diligence review of potential investments. When conducting due diligence, “the venture capitalist will typically consider numerous factors [including] the entrepreneurial firm’s technology, the managerial ability of the firm’s founders, the dynamics of the market(s) in which the entrepreneurial firm hopes to compete, and the potential responsiveness of the financial markets to a public offering....”¹³⁸ Even after due diligence, however, private venture capitalists remain subject to information asymmetries with entrepreneurs because the start-up environment is rife with both operational and scientific uncertainties.¹³⁹ As a result, private venture capitalists will look to receive signals that will help them make investment decisions.

Where do private venture capitalists look for signals about start-ups? The existing literature suggests at least two places: the start-up’s patents and the terms of the investment contract between the venture capitalist and entrepreneur. First, private venture capitalists look to a start-up’s patent portfolio as a proxy for its quality.¹⁴⁰ In an

¹³⁵ Davila et al., *Venture-Capital Financing and the Growth of Startup Firms* (ssrn link) at 16 (“The support of venture capital – through the funding event – provides a relevant signal to separate startups with different quality”).

¹³⁶ Black, *supra* note __, at 94 (“In what is loosely called the ‘high-tech’ area, where information asymmetry is especially severe because high-tech companies often have short histories and make highly specialized products, we have developed a correspondingly specialized intermediary, the venture capital fund, that functions partly as a reputational intermediary.”); Bernard S. Black and Ronald J. Gilson, *Venture Capital and the Structure of Capital Markets: Banks Versus Stock Markets*, 47 J. FIN. ECON. 243 (1998); Clarisa Long, *Patent Signals*, 69 U. CHI. L. REV. 625, 662 (2002) (“Signalers...must be in the market long enough that observers believe them to have the incentive to invest in credible signaling.”).

¹³⁷ See F. H. Buckley, *When the Medium is the Message, Corporate Buybacks as Signals*, 65 IND. L.J. 493, 531 (1990) (“cost of adopting the signalling strategy will deter low quality firms from emitting that signal”).

¹³⁸ Joel M. Podolny, *Networks as the Pipes and Prisms of the Market*, 107 AM. J. SOCIOLOGY 33, 46 (2001).

¹³⁹ Gilson, *supra* note __, at 1077.

¹⁴⁰ See Mark A. Lemley, *Rational Ignorance at the Patent Office*, 95 NW. U. L. REV. 1495, 1505-06 (2001).

interesting paper, Clarisa Long has set forth a signaling theory for patents.¹⁴¹ After questioning the conventional assumption that patents are simply an entrepreneurial tradeoff between the loss of proprietary information in exchange for patent rents, Long argues that patents can function as signals sent by entrepreneurs to reduce information asymmetries with potential investors.¹⁴² She argues patents can serve as credible signals for several reasons, including that they: are costly to obtain, indicate the start-up's line of research, and lead to penalties if patentees they make misstatements to the Patent and Trademark Office (PTO).¹⁴³

On the other hand, Long concedes that there are problems with patents as signals. First, the *quantity* of patents a start-up owns does not provide much information (other than that the start-up is not sluggish¹⁴⁴), and for the venture capitalist to analyze the *quality* of patents requires verification from attorneys, consultants, or scientists.¹⁴⁵ When investors must go behind a signal to determine its credibility, the signal begins to lose its value as such. Second, entrepreneurs can send a patent signal themselves by applying for and obtaining a patent from the PTO. Although the PTO is a theoretical gatekeeper for patent quality, an increasingly understaffed PTO with examiners subject to tight deadlines does not perform this function well.¹⁴⁶ Finally, Ronald Mann notes that sometimes patent protection is not the sort of thing that investors care about because they might be more interested in first-mover advantages.¹⁴⁷ Because the patent process distracts management from the start-up's business, some investors could actually view patents as a negative signal.

The second place that private venture capitalists look for signals about start-up quality is their investment contracts with entrepreneurs. Private venture capitalists stage their investments in start-ups for several reasons, including the signaling effect of staged financing. When entrepreneurs agree to delay future funding until reaching certain benchmarks, it sends a signal that this is a high-quality entrepreneur who believes these

¹⁴¹ See generally Long, *supra* note __. Trademarks have also been viewed as sending a signal to consumers. See Stacey L. Dogan & Mark A. Lemley, *Trademarks and Consumer Search Costs on the Internet*, 41 HOUS. L. REV. 777, 778 (2004) ("Trademark law, in theory, fosters the flow of information in markets. By protecting against deceptive uses of trade symbols in commerce, the law enables sellers to create their own reliable shorthand to identify their goods and reduce search costs for consumers.").

¹⁴² Long, *supra* note __, at 627 ("Patents can serve as a means of reducing informational asymmetries between patentees and observers. The ability to convey information credibly to observers at low cost is a highly valuable function of patents").

¹⁴³ *Id.* at 647-50.

¹⁴⁴ *Id.* at 654 ("Nobody associates obtaining patents with sloth and shiftlessness.").

¹⁴⁵ *Id.* at 666 ("Verifying anything beyond [patent] quantity presents higher costs. Observers may employ experts such as attorneys, consultants, or scientists to examine individual patents more closely.").

¹⁴⁶ *Id.* at 668 ("Complaints about the PTO's ability to screen patent applications adequately have been increasing. Under tight budgets and notoriously tight time schedules, the PTO lets patents slip through that contain incredible information.") (citation omitted).

¹⁴⁷ Ronald J. Mann, *Do Patents Facilitate Financing in the Software Industry*, 83 TEX. L. REV. 961, 976-77 (2005).

benchmarks will be reached.¹⁴⁸ The same idea applies to convertible preferred stock, the security of choice for private venture capitalists. By selling preferred stock to venture capitalists while holding common themselves, entrepreneurs signal their belief that the value of the start-up will exceed the amount of the venture capitalist's preference.¹⁴⁹ As Michael Klausner and Kate Litvak observe, however, this signal is only credible if the entrepreneur can accurately gauge the value of his business.¹⁵⁰ (The same would be true of staged financing.) This signaling theory also assumes, probably unrealistically, that the entrepreneur would pass up the opportunity for venture capital if he could not back up his signals. It is not a stretch to say that, considering how difficult it is to obtain private venture capital, most entrepreneurs would probably take the financing and see where it led. Thus, the signals that entrepreneurs send through their investment contracts are of questionable credibility.

Angel groups can provide a better signal to private venture capitalists about a start-up's quality than either patents or investment contracts. Angel groups send signals precisely the same way that private venture capitalists do. First, as discussed earlier, angel groups have both the expertise and financial incentives necessary to select and develop the most promising start-ups, which lends confidence to their investment decisions. Also, like private venture capitalists, angel groups are repeat players in entrepreneurial finance who will suffer reputational sanctions if they vouch for poor start-ups. Finally, angel group signals are likewise costly to send – they require a large investment on the part of the angel group. For these reasons, angel groups can credibly signal the quality of their portfolio companies.

Further, angel groups can actually enhance the accuracy of otherwise-flawed patent signals. If a patent was obtained pre-angel group investment, the angel group probably reviewed the patent and viewed it positively. Long recognizes the ability of informational intermediaries to pass on a patent's credibility,¹⁵¹ and in this setting angel groups would be excellent informational intermediaries for reasons given. On the other hand, if a patent was obtained post-angel group investment, venture capitalists might reasonably view obtaining the patent as an angel-approved use of scarce resources. Therefore, whether the angel group investment comes pre- or post-patenting, it can enhance the credibility of the patent signal.

For the reasons above, angel group funding can provide a better signal to venture capitalists than either patents alone or investment contracts. Of course, while signaling

¹⁴⁸ See Gilson, *supra* note __, at 1080.

¹⁴⁹ See Michael Klausner and Kate Litvak, *What Economists Have Taught Us About Venture Capital Contracting*, in BRIDGING THE ENTREPRENEURIAL FINANCING GAP 54, 56 (Michael J. Whincop ed., 2001). Of course this signaling function is only one of the reasons that venture capitalists choose convertible preferred stock as their security. See *id.*

¹⁵⁰ *Id.*

¹⁵¹ See Long, *supra* note __, at 670-71 (discussing the role of “second tier informational intermediaries” like BountyQuest as potential verifiers of a patent's quality, but noting that such firms must acquire reputations before investors will rely on their judgments).

theory is an attractive fit for angel groups, it remains to be seen whether theory will translate into practice. However, there is some indication that angel groups are having success attracting venture capital for their start-ups. The ACA reports that in 2007, two-thirds of angel groups attracted either co- or follow-on investments from venture capitalists. I have been unable to obtain further information on this statistic, such as how many of an angel group's start-ups received venture capital or whether the start-up was asked to relocate to obtain the venture capital.

Even if angel groups can signal quality start-ups in non-tech regions, two outcomes are possible from a regional economic development perspective. One possibility is that private venture capitalists will expand their operations into non-tech regions. Geographic expansion of venture capital could come in the form of branch offices, as early-stage venture capital firm Draper Fisher and Jurvetson has done. As Steve Jurvetson has written, "At [DFJ], we find that there is a positive cycle of entrepreneurship that occurs locally....We have opened affiliate VC offices in nine U.S. locations."¹⁵² Or it could be that private venture capitalists begin to use angel groups as their proxies, relying on angel groups from afar for routine monitoring of start-ups. The other possibility is that venture capitalists will not follow angel groups into non-tech regions, but instead cause better-funded and more mature start-ups (after angel group funding) to relocate to Silicon Valley. This may not be of great concern in at least some cases, as relocation delayed could mean relocation prevented. For example, moving a small entrepreneurial team with no facilities or operations is easy, but moving a large number of employees in a firm that has leased facilities and ongoing operations is more difficult.

V

LAW AND ENTREPRENEURSHIP: DO THE FEDERAL SECURITIES LAWS IMPEDE ANGEL GROUP FINANCING?

The entrepreneurial finance story to this point has been a non-legal one. But, as Gordon Smith and I have discussed in a recent essay, law can be an important determinant of entrepreneurial activity.¹⁵³ In a telling example of how legal infrastructure affects the supply of human capital, Ronald Gilson reveals that a quirk of California history makes non-compete agreements unenforceable in that state.¹⁵⁴ Gilson argues that the legal prohibition on non-competes allows high-tech talent to move between California firms, which results in knowledge spillovers and repeated bursts of innovation. Conversely, he observes that Massachusetts's enforcement of non-competes prevents high-tech mobility and its attendant benefits. Thus, in comparing the regional

¹⁵² Jurvetson, *supra* note 70, at ___.

¹⁵³ See Darian M. Ibrahim & D. Gordon Smith, *Entrepreneurs on Horseback: Reflections on the Organization of Law*, 50 ARIZ. L. REV. 71 (2008).

¹⁵⁴ See generally Ronald Gilson, *The Legal Infrastructure of High Technology Industrial Districts: Silicon Valley, Route 128, and Covenants Not to Compete*, 74 N.Y.U. L. REV. 575 (1999).

advantage of Silicon Valley over Route 128, Gilson layers a legal story on top of AnnaLee Saxenian's cultural story.¹⁵⁵

This Article, however, focuses on the supply of financial capital. Can Gilson's idea of law as a determinant of supply be extended to financial capital? Some conversations with angel group investors and one prominent attorney in this area suggest so. Those discussions revealed some cause for concern about the applicability of federal securities laws to angel group activities. Specifically, the laws mentioned were the ban on general solicitation in private placement transactions and broker-dealer laws. In light of these concerns, I will now analyze the applicability of each of these laws to typical angel group activities. It bears repeating from the Introduction that the federal securities laws are only one example of how legal infrastructure might *impede* the supply of entrepreneurial finance, and this Article eschews a discussion of how governments might *affirmatively* attempt to entice greater supply of entrepreneurial finance through tax credits and the like.¹⁵⁶

A. The Ban on General Solicitation

The first federal securities law that may impede angel group financing is the ban on general solicitation in most private placement transactions. Whenever a start-up issues its own equity or debt in exchange for a cash contribution, the start-up must either register that offering with the SEC (a costly and time-consuming process), or find an exemption. For an exemption, the start-up may argue that the offering involved either an exempt security or an exempt transaction. The first avenue will usually prove fruitless, as start-ups typically organize as corporations and thus issue stock,¹⁵⁷ which is an enumerated security under the federal securities laws.¹⁵⁸ The second avenue is more likely to be successful, as offerings to a small number of accredited and sophisticated investors – such as the investors found in angel groups – often count as exempt transactions, or private placements.

The difficulty, however, lies in an much-criticized requirement for most private placements: that the issuer not engage in general solicitation or general advertising to find investors. The ban on general solicitation is explicit in Regulation D, the widely used

¹⁵⁵ See also ALAN HYDE, *WORKING IN SILICON VALLEY: ECONOMIC AND LEGAL ANALYSIS OF A HIGH-VELOCITY LABOR MARKET* (2003) (expanding upon the work of Saxenian and Gilson).

¹⁵⁶ See *supra* note __ and accompanying text.

¹⁵⁷ See generally Victor Fleischer, *The Rational Exuberance of Structuring Venture Capital Start-ups*, 57 *TAX L. REV.* 137 (2003); Joseph Bankman, *The Structure of Silicon Valley Start-Ups*, 41 *UCLA L. REV.* 1737 (1994).

¹⁵⁸ Securities Act of 1933 § 2(a)(1); Securities Exchange Act of 1934 § 3(a)(10); *Landreth Timber Co. v. Landreth*, 471 U.S. 681 (1985) (stock possessing usual characteristics of stock is a “security”). Even if the start-up is an “uncorporation” (e.g., an LLC or partnership), the sale of its equity interests still probably qualify as investment contracts under the *Howey* test because the investor's profits depend predominantly on the efforts of the entrepreneur. See, e.g., *SEC v. Merchant Capital, LLC*, 483 F.3d 747 (11th Cir. 2007).

safe harbor provisions for private placements.¹⁵⁹ Regulation D contains three separate exemptions: Rules 504, 505, and 506. Rule 504 exempts offerings up to \$1 million in any twelve-month period;¹⁶⁰ Rule 505 ups that limit to \$5 million;¹⁶¹ and Rule 506 allows for an unlimited dollar amount provided other conditions are met.¹⁶² Rules 505 and 506 explicitly ban general solicitations; Rule 504 allows them if the issuer complies with applicable state blue sky laws. If an issuer fails to comply with a Regulation D safe harbor, it can always argue that the offering was a private placement under Section 4(2) of the 1933 Securities Act.¹⁶³

To avoid making a general solicitation, the issuer must have a preexisting, substantive relationship with the potential investor.¹⁶⁴ A preexisting relationship is a relationship that predates the solicitation for the present investment; a substantive relationship means one that “would enable the issuer (or person acting on its behalf) to be aware of the financial circumstances or sophistication of the persons with whom the relationship exists or that otherwise are of some substance and duration.”¹⁶⁵ Therefore, if an entrepreneur simply learns about her local angel group and submits an unsolicited business plan, she may well have engaged in a general solicitation and therefore an unregistered public offering rather than a private placement.¹⁶⁶ At least in California, an entrepreneur’s relationship with one member of the angel group would not carry forward to the other group members.¹⁶⁷

¹⁵⁹ Rule 502(b) provides in part:

Limitation on manner of offering. Except as provided in Rule 504(b)(1), neither the issuer nor any person acting on its behalf shall offer or sell the securities by any form of general solicitation or general advertising, including, but not limited to, the following: (1) Any advertisement, article, notice or other communication published in any newspaper, magazine, or similar media or broadcast over television or radio; and (2) Any seminar or meeting whose attendees have been invited by any general solicitation or general advertising. (emphasis added).

¹⁶⁰ 17 C.F.R. § 230.504 (2008).

¹⁶¹ 17 C.F.R. § 230.505 (2008).

¹⁶² 17 C.F.R. § 230.506 (2008).

¹⁶³ [cite Section 4(2)]

¹⁶⁴ See Sjostrom, *supra* note __, at 13-14 (“the SEC has failed to issue any no-action letter finding the absence of general solicitation in the absence of [a preexisting, substantive] relationship”).

¹⁶⁵ *Mineral Lands Research & Mktg. Corp.*, SEC No-Action Letter (Dec. 4, 1985), 1985 SEC No-Act. LEXIS 2811, at *2.

¹⁶⁶ Implicit in this statement is that the entrepreneur made an “offer” to the angel group by submitting the business plan. “Offer” is construed broadly under the 1933 Securities Act to be any activity that “conditions the market” by arousing interest in the issuer. *In the Matter of Carl M. Loeb, Rhoades & Co.* (1959).

¹⁶⁷ See Willie R. Barnes, *The California Corporate Securities Law: An Overview of the Private Placement Exemption and Other Select Exemptions From Qualification*, 1538 PLI/Corp 465, 503 (citing California Department of Corporations Release 5-C issued January 31, 1969):

[W]here such a close relationship exists only with one or a few members of the investor group, the lack of a relationship to the other investors continues to be indicative of a public offering. In addition, the fact that the investors are relative strangers to the issuer

There are several factors that mitigate against angel groups concerning themselves too much over the general solicitation ban, however. First, the SEC has shown no inclination to challenge the same practice of submitting of business plans to venture capital firms, which has been occurring for considerably longer than angel groups have been in existence. This is probably because venture capitalists, as well as angel group investors, are accredited, sophisticated investors with an expertise in start-up investing who can “fend for themselves” – the central idea underlying the public offering/private placement distinction.¹⁶⁸ Therefore, even if the submission constitutes a general solicitation under a Regulation D safe harbor, angel groups may still meet the fundamental criteria for a private placement under Section 4(2).¹⁶⁹ However, at least one court has read the general solicitation ban into Section 4(2), albeit with some criticism given that safe harbors are designed to be more restrictive than the general rule on which they are based.¹⁷⁰

Second, Rule 504 – which permits general solicitations in offerings up to \$1 million if the issuer complies with applicable state law – may be an available exemption for angel group investments. The average angel group investment in 2007 was \$265,926.¹⁷¹ Even when aggregating these amounts with friends and family investments (typically up to \$100,000) that occur in year preceding the angel group offering results in a total investment well short of \$1 million. Of course, the average venture capital investment is now around \$5 million;¹⁷² therefore, if venture capitalists invest within the same year as angel groups, Rule 504 would not be available for any of the investments.

Third, Section 3(a)(11) of the Securities Act includes within its exemptions offerings that occur solely in a single state where the issuer does business.¹⁷³ As

suggests a public offering, even though they are recruited by persons having a close relationship with the issuer, and even though a relatively close relationship exists among all members of the offeree group.

¹⁶⁸ See *SEC v. Ralston Purina Co.*, 346 U.S. 119, 125 (1953).

¹⁶⁹ To determine whether an offering counts as private under Section 4(2), the SEC looks at several factors, including: the relationship of the offerees to each other and the issuer, the number of offerees, the number of units sold, and the size and manner of the offering. The most important of these factors is the relationship between the issuer and the offeree, which helps determine whether the offeree has “effective access” to the information about the issuer. “Effective access” is established when the offeree both has access to information about the issuer and adequate sophistication to make effective use of it. The combination substitutes for the disclosure that issuers would others have to provide. See *Doran v. Petroleum Management Corp.*, 545 F.2d 893 (5th Cir. 1977).

¹⁷⁰ *In the Matter of Kenman Corp.*, Fed.Sec.L.Rep. ¶ 83,767 (1985) (“The exemption from registration under Section 4(2) is not available to an issuer that is engaged in a general solicitation or general advertising.”). [cite Choi/Pritchard Teacher’s Manual]

¹⁷¹ See *supra* note __ and accompanying text.

¹⁷² See *supra* note __ and accompanying text.

¹⁷³ Securities Act of 1933 § 3(a)(11) (exemption for registration for “[a]ny security which is a part of an issue offered and sold only to persons resident within a single State or Territory, where the issuer of such security is a person resident and doing business within...”).

previously discussed, angel groups are regional in nature, with each state boasting one or more group. So long as the group's members are all drawn from within the single state, and the state is one where the start-up does business, the intrastate exemption should apply. Commentators have noted, however, the SEC's tendency to take a narrow view of the intrastate exemption under the safe harbor of Rule 147.¹⁷⁴

Finally, even if the ban on general solicitation is violated by typical entrepreneurial fundraising practices and the offering does not otherwise qualify as a private placement, angel groups would arguably be the *beneficiaries* of the violation rather than penalized for it. Investors who buy in a public offering that violates the gun-jumping rules are entitled to rescission under Section 12(a)(1). Therefore, if the angels' investment turns out to be a bad one, they could use the fact that a general solicitation took place to argue for recoupment of their investment. On the other hand, there may be reputational reasons not to do this, and the start-up will likely have already spent the funds, making them judgment-proof. A further downside is that other disgruntled investors in an aggregated offering may seek rescission (that would likely come from any remaining angel-invested funds), and the SEC may bring an action to delay a subsequent public offering by the start-up.

B. Possible Broker-Dealer Issues

The second federal securities law that may impede angel group financing is the registration requirement for "broker-dealers." A broker is "any person engaged in the business of effecting transactions in securities for the account of others,"¹⁷⁵ while a dealer is "any person engaged in the business of buying and selling securities for his own account...but not part of a regular business."¹⁷⁶ The terms, though distinct, are often conflated and a person is analyzed not as a potential broker or dealer, but a potential broker-dealer.¹⁷⁷ Through no-action letters, the SEC has provided guidance on who it will view as a broker-dealer or an exempt finder. Whether a person is "engaged in the business" and "effecting transactions in securities" are the key inquiries.¹⁷⁸ One is "engaged in the business" if she participates in the securities business with some regularity, receives transaction-based compensation, and holds herself out as a broker.

¹⁷⁴ Securities Act Release No. 4434 (Dec. 6, 1961) ("the provisions of [Section 3(a)(11)] can exempt only issues which in reality represent local financing by local industries, carried out through local investment. Any distribution not of this type raises a serious question as to the availability of Section 3(a)(11)"). For example, an offer (as opposed to a sale) to a single non-resident could nullify the exemption.

¹⁷⁵ Securities Exchange Act of 1934 § 3(a)(4)(A).

¹⁷⁶ Securities Exchange Act of 1934 § 3(a)(5).

¹⁷⁷ See David A. Lipton, *A Primer on Broker-Dealer Registration*, 36 CATH. U.L. REV. 899, 909 (1987) ("Frequently, in judicial or administrative analysis, both definitions are discussed, and the person in question is characterized as being a 'broker and a dealer' or a 'broker-dealer' without further clarification as to which definition has been satisfied by the person's activities.").

¹⁷⁸ See Orcutt, *supra* note ___, at 904-915 for a discussion of these issues with cites to SEC No-Action letters.

One is “effecting transactions in securities” if she solicits investments, conducts due diligence, provides advice on the merits of the investment, and helps structure and negotiate the transaction.

It may seem odd to think these definitions cause concern for angel group investors, as they are not who we commonly think of as broker-dealers. Yet a particular angel group practice may prove problematic under broker-dealer law. That is, once an entrepreneur has passed an initial screening in front of the full angel group, the members of the group interested in investing will perform further diligence on the start-up. One angel investor will typically take the lead and, should the angels ultimately invest in the start-up, the angel leading the due diligence will receive extra stock in the start-up as compensation for her efforts. The concern with this practice is that because one angel leads the due diligence, recommends the merits of the transaction to the other angels, and receives transaction-based compensation for her efforts, the SEC could view her as a broker-dealer.¹⁷⁹ It is possible that this would entitle other investors in aggregated transactions to rescission that would come from angel funds.¹⁸⁰ This cloud of uncertainty over broker-dealer laws could mean that no angel is willing to take the lead on due diligence, which would impede optimal levels of angel group funding.

The broker-dealer laws appear more of a cause for concern to angel groups than does the general solicitation ban. As with the general solicitation ban, however, there are mitigating factors that argue against the classification angel group investors who lead due diligence efforts and receive transaction-based compensation as broker-dealers. First, although these angels bear some hallmarks of broker-dealers, they lack others. For example, these angels appear to be “engaged in the business” because they receive transaction-based compensation, yet because the angels take turns leading diligence, no individual angel is involved in this practice with “some regularity.”¹⁸¹ In addition, no angel group investor holds herself out as a broker-dealer, which is another factor the SEC considers.¹⁸² Both of these factors cut against the view that angel group investors who lead due diligence efforts are “engaged in the business.” “Effecting transactions in securities,” on the other hand, appears to be more problematic for these angels, as they do have a heavy hand in start-up investments on behalf of themselves and their fellow angels.¹⁸³

¹⁷⁹ See, e.g., Birchtree Financial Services, Inc., SEC No-Action Letter (September 22, 1998), 1998 WL 652137 (“The Division has taken the position that the receipt of securities commissions or other transaction related compensation is a key factor in determining whether a person or entity is acting as a broker-dealer.”); Mr. John R. Wirthlin, SEC No-Action Letter (January 19, 1999), 1999 WL 34898 (“You would also receive transaction-based compensation, one of the hallmarks of being a broker-dealer.”).

¹⁸⁰ See generally Samuel H. Gruenbaum & Marc I. Steinberg, *Section 29(b) of the Securities Exchange Act of 1934: A Viable Remedy Awakened*, 48 GEO. WASH. L. REV. 1 (1979).

¹⁸¹ See Lipton, *supra* note __, at 910-11 (discussing regularity).

¹⁸² See Orcutt, *supra* note __, at __ (discussing holding oneself out as a broker-dealer).

¹⁸³ If an angel other than the one who brought the start-up before the full group leads due diligence efforts, then there would be no “solicitation”. However, as I understand the typical practice, the angel who

Second, even if angel group investors who lead due diligence and receive transaction-based compensation are classified as broker-dealers, the 1933 Act provides an exemption from registration for broker-dealers involved in transactions that are “exclusively intrastate” and do not “make use of any facility of a national securities exchange.”¹⁸⁴ Angel group investments are designed as private placements, as discussed, and therefore do not make use of a national securities exchange. Angel groups are also regional, as discussed, and draw their members from the state in which they are located. Therefore, if there is no syndication of investments with angel groups or venture capitalists in other states, angel group investments should fall within the intrastate exemption from broker-dealer registration. However, this does not completely solve the problem because angels would still be as broker-dealers, albeit ones who are not required to register. Other rules applicable to even unregistered broker-dealers, such as net capital requirements, would still apply.¹⁸⁵

In sum, there are reasons that angel investors who lead due diligence efforts for their groups and receive transaction-based compensation might look like broker-dealers, but there are also reasons to think that the SEC may not challenge this practice. The ban on general solicitation in private placements, the broker-dealer registration requirements, and perhaps other federal securities laws¹⁸⁶ are valid concerns for angel group investors, but my analysis also found mitigating factors that argue against their application in this context.

CONCLUSION

Silicon Valley’s idiosyncratic history and its current status as a highly evolved entrepreneurial ecosystem inevitably leads to a healthy dose of skepticism about the

recommends the start-up to the full group may also be the one who leads due diligence on a potential investment.

¹⁸⁴ Section 15(a)(1) states that “It shall be unlawful for any broker or dealer . . . (*other than such a broker or dealer whose business is exclusively intrastate and who does not make use of any facility of a national securities exchange*) to make use of the mails or any means or instrumentality of interstate commerce to effect any transactions in, or to induce or attempt to induce the purchase or sale of, any security . . . unless such broker or dealer is registered [with the SEC]” (emphasis added).

¹⁸⁵ See 17 CFR 240.15c3-1 (2008) (detailing net capital requirements for brokers and dealers); Steven L. Molinari & Nelson S. Kibler, *Broker-Dealers' Financial Responsibility under the Uniform Net Capital Rule -- A Case for Liquidity*, 72 GEO. L.J. 1, 7 n. 38 (1983) (observing that the net capital rules apply to all broker-dealers, not just registered broker-dealers).

¹⁸⁶ For example, the Investment Company Act of 1940 could apply to angel groups with over 100 members who invest as a group or to angel groups who use “sidecar” funds (made up of angels and their friends/family) with over 100 members. See Duke K. Bristow et al., *Venture Capital Formation and Access: Lingering Impediments of the Investment Company Act of 1940*, 2004 COLUM. BUS. L. REV. 77 (analyzing possible Investment Company Act application to venture capital practice). This is not to mention more obvious securities laws that could affect entrepreneurial finance more broadly, including the Sarbanes-Oxley Act of 2002, which raises the cost of exiting start-up investments through an initial public offering. See, e.g., Dale A. Oesterle, *The High Costs of IPOs Depresses Venture Capital in the United States*, 1 ENTREPREN. BUS. L.J. 369 (2006) [more].

prospects of cloning it elsewhere. This skepticism is well justified, as most cloning efforts have failed. To the disappointment of economic developers, there has been no recipe or blueprint to follow to achieve analogous results.

Do these failures lead to the inevitable conclusion that Silicon Valley cannot be replicated? Perhaps, but it may be the case that Silicon Valley “lites” could be created if human capital and financial capital are both present. Whether human capital or financial capital is the larger impediment to local innovation is a region-specific, empirical question. However, this Article has argued that while innovation funding appears problematic for non-tech regions, the rise of angel investment groups presents an attractive solution for the future. In short, angel groups combine the best features of private venture capital and state-sponsored alternatives – the venture capitalist’s expertise and market incentives, the state’s supply of risk capital and geographic dispersement. This entrepreneurial finance story was supplemented by a “law and entrepreneurship” story, specifically how application of the federal securities laws to angel group financings might impede their activities.

This paper is a first step in building a theory of comparative advantage in entrepreneurial finance. Angel groups are still quite young, and therefore it is too soon to tell whether their theoretical advantages will translate to broader distribution of innovative activity in practice. Once angel groups move past their infancy, empirical studies can be undertaken to test the arguments advanced in this Article.