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BARRIERS TO ENTRY: INEQUALITY, LOCK-IN, AND THE POTENTIAL FOR CHANGE IN VENTURE CAPITAL

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Venture capital is responsible for hundreds of billions of dollars in investment[1] *that provides innovation opportunities in the United States economy. In many ways, venture capital has been an organically successful experiment, with other countries seeking to emulate aspects of the American experience. However, venture capital is not without its share of problems, including locking out women and demographic minorities from both firm and startup participation.*

Complexity theory provides a useful lens under which to understand defining characteristics of the venture capital market. Common network phenomena like power law distributions and preferential attachment have emerged in venture capital as expected and predicted by complexity theory. Some of these phenomena, like the focus on extremely high growth potential startups, have

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1. *See* NAT'L VENTURE CAP. ASS'N, *NVCA Yearbook*, https://nvca.org/nvca-yearbook/ (last visited Mar. 6, 2025).

not emerged in parallel innovation markets like crowdfunding campaigns. This indicates that our current market is not inevitable, but rather one that is crafted through network inputs and responses.

To address the way that the venture capital market effectively locks out many potential participants, this Note seeks to understand market behavior through the lens of complexity theory and compare it to adjacent markets. It explores the feasibility of proposed policies that would expand access to venture capital both for investors and founders. By questioning the current state of the venture capital market and how it has developed, this Note seeks to propose ways to open the market to new opportunities that are currently being overlooked.

I.
INTRODUCTION

Due to built-in bias, many believe that individuals and systems grow linearly.[2] For example, one may suppose that the

2. *See generally* Matthew Levy & Joshua Tasoff, *Exponential-Growth Bias and Lifecycle Consumption*, 14 J. EUR. ECON. ASS'N, 545, 545 (2015).

success of an artist is directly proportional to their talent. Often, it is not that simple.[3] Instead, the systems in which we live tend to exhibit power law distributions where a small number of participants capture a large majority of resources.[4] This is not only a feature of such systems, including the economy, but a systemic attribute that is anticipated by complexity theory.

Complexity theory is a cross-disciplinary science that examines systems of interacting nodes.[5] This definition is necessarily generic because complexity theory encompasses systems that otherwise appear dramatically different. For example, social media platforms like Instagram represent a complex system where the nodes are the individual accounts, and the edges are the follower connections those accounts have. But complex systems do not need to be social systems. Molecular biology also represents a complex system where the molecules are nodes and their interactions are edges, and it similarly displays power laws where a small number of molecules engage in a high volume of chemical reactions.[6] Both of these disparate examples are complex systems because they have the shared feature of a large number of interacting nodes.

In this Note, I will focus on one such complex system: the venture capital market. The venture capital market can be analyzed as multiple potential complex systems. The interactions between founders and firms represent one system while the interactions of venture capital backed startups and the public

3. For example, a study of cultural markets revealed that the same songs could perform very differently over multiple iterations. While there is some correlation between quality and success, the correlation is far from linear. *See* Matthew J. Salganik et al., *Experimental Study of Inequality and Unpredictability in an Artificial Cultural Market*, 311 SCIENCE 854, 854 (2006) [hereinafter Music Lab Experiment].

4. Power law distributions are ones in which a small minority of nodes have a much larger impact than the majority. For example, consider social networking platforms like TikTok where even among influencers, the top accounts have several orders of magnitude more followers than average. *See* Laura Ceci, *Distribution of TikTok Influencers in the United States in 2021, by Number of Followers*, STATISTA (Jan. 18, 2024), https://www.statista.com/statistics/1166139/usa-tiktok-influencer-distribution-number-followers/. For a comparison of power law distributions to normal distributions, *see infra* Part II.B.

5. *See* ALBERT-LÁSZLÓ BARABÁSI, LINKED: THE NEW SCIENCE OF NETWORKS 23 (2022) (defining complex systems).

6. Michal Shur-Ofry, Law and Complexity: An Introduction 33 (November 2024) (unpublished manuscript) (on file with author) [hereinafter Law and Complexity].

offering market represent another. Either of these systems can then be zoomed in or out to get a new system. For example, a single venture-backed firm likely represents many interactions between its own network of investors at each stage on one side, and employees and suppliers on another side. Like much of our world, the venture capital market is a network of networks. While each view of venture capital tells a different story, this Note will largely focus on the interactions between startups and their investors.

Additionally, this Note will focus on two particular features of complex systems that venture capital markets exhibit: power law distributions and preferential attachment. A power law distribution is a feature of complex systems where a small number of nodes get a vast amount of the available resources.[7] Such distributions are often described as "scale-free" because any calculation of an average fails to accurately reflect systemic traits while also misrepresenting the majority of the nodes in the network, the nodes receiving the most resources in the network, or both.[8]

Preferential attachment, abstractly, refers to the fact that the more connected a node is, the more likely it is to receive additional connections.[9] In other words, complex systems consistently have nodes which demonstrate characteristics that cause them to accumulate more connections than other nodes. In venture capital markets both investors and founders (the "nodes") tend to have limited racial and gender diversity and be from a handful of, often Ivy League, schools.[10] General partners

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7. *See id.* at 76.

8. *Id.* at 81.

9. Albert-László Barabási & Réka Albert, *Emergence of Scaling in Random Networks*, 286 SCIENCE 509, 511 (1999).

10. *See* Janhvi Patel, *Achieving Gender Equality in Venture Capital: The Case for Federal Regulatory Intervention*, 15 WM. & MARY BUS. L. REV. 625, 632–33, 635 (2024) (discussing the lack of female founders and partners); Kamal Hassan et al., *How the VC Pitch Process Is Failing Female Entrepreneurs*, HARV. BUS. REV. (Jan. 13, 2020), https://hbr.org/2020/01/how-the-vc-pitch-process-is-failing-female-entrepreneurs. Schools like Stanford, Harvard, and MIT routinely top the numbers for founder counts. *See* PITCHBOOK, *PitchBook Universities: Top 100 Colleges Ranked by Startup Founders* (Aug. 30, 2024), https://pitchbook.com/news/articles/pitchbook-university-rankings. Yet the University of Cincinnati was recently found to be the school most likely to produce billion-dollar startup founders despite being noticeably absent from the top of Pitchbook's list. *See* Diana M. Lara, *UC Outshines Ivy League Schools Graduating Billion-Dollar Unicorn Founders*, UNIV. CINCINNATI (Mar. 1, 2024), https://www.uc.edu/news/articles/2024/02/university-of-cincinnati-outshines-ivy-league-schools-cultivating-unicorn-graduates.html. Even more

and other officers of venture capital firms also demonstrate a stark lack of diversity.[11] Based on preferential attachment, we can predict that individuals sharing the characteristics of these rather insular groups will be more likely to make connections.

The structure of venture capital markets has been largely under analyzed from a legal perspective.[12] The perspective and insights provided by complexity theory can help us develop a better and more robust understanding the venture capital system. While complex systems share common traits, legal practitioners should seek to understand the actual reasons for these emergent traits to craft the best possible regulatory incentives. As I will discuss further in this Note, venture capital is currently well incentivized to promote risky ventures and, by extension, fund productive innovation. However, the system also works to freeze out some societal inputs due to the limited investor pool created by structural decisions in firms. Similarly, venture capital markets' fixation on high growth potential startups results in a corresponding dearth of support for high social value startups that promise only modest returns. Taken together, these features can help explain the inequitable statistics of venture capital as a result of substantial barriers to entry. To highlight the extent of these barriers, I will compare venture capital to alternative markets which, while still not achieving perfect equity, nonetheless, achieve better gender and racial parity.

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worrisome, Black founders continue to be only 1% of venture capital-backed founders despite evidence that diverse leadership produces more profitable firms. *See* Ilene H. Lang & Reggie Van Lee, *Institutional Investors Must Help Close the Race and Gender Gaps in Venture Capital*, HARV. BUS. REV. (Aug. 27, 2020), https://hbr.org/2020/08/institutional-investors-must-help-close-the-race-and-gender-gaps-in-venture-capital.

11. Patel, *supra* note 10, at 633–34 ("Yet, shockingly, fewer than 5% of all venture capital firms have any women on their executive teams, and only 2.7% have female CEOs.").

12. Christopher Gulinello commented similarly that "[l]egal scholarship on the U.S. venture capital market, however, has offered surprisingly little analysis on why venture capital fund investors are passive." Christopher Gulinello, *Venture Capital Funds, Organizational Law, and Passive Investors*, 70 ALBANY L. REV. 267, 267 (2006). In fairness, Gulinello then laid out a comprehensive evaluation of possibilities for the venture capital market's use of passive investment strategies. *See generally id.* However, it does so without touching on the inequities that have manifested, like racial disparities, and the class of investors that this structure has locked out. On the other side, scholarship that does look at inequity often does not look at the structure of the venture capital market, like the popular limited partnership form, but only at the results. *See, e.g.*, Patel *supra* note 10, at 636. This Note attempts to bridge that gap, asking questions about both structure and results.

In Part II, I further explore the aspects of power law distributions and preferential attachment in venture capital markets. In Part III, I will explore both the positive and negative implications of these system features. Additionally, I will look at examples of markets adjacent to traditional venture capital. By looking at both sides of the coin, we can better understand the interventions, if any, that should be made by the regulatory state. In Part IV, I will discuss the potential reorganization of the venture capital corporate form and the benefits of promoting alternative market-based avenues to traditional venture capital. I will conclude with a synthesis of the challenges facing venture capital which may be solved through targeted interventions and suggest avenues for future research including agent-based models and those most effective incentives for a venture capital market.

II.
Venture Capital, Power Laws and Preferential Attachment

A. *Venture Capital Financing*

To understand how venture capital functions as a complex system, it is important to first explain the basic structure of the market. Venture capital is a type of private equity investment, typically in early stage startups.[13] Businesses seeking venture capital funding typically raise a seed round, meant to bring an initial product to market, followed by multiple funding rounds to facilitate growth (with each round named Series A, Series B, and so forth).[14] While venture capital firms and individuals are not the only players in the startup funding game, they do represent the vast majority of investment into early-stage, high-growth businesses, many of which have become massive companies over the

13. Adam Hayes, *What Is Venture Capital? Definition, Pros, Cons, and How It Works*, Investopedia (Oct. 18, 2024), https://www.investopedia.com/terms/v/venturecapital.asp.

14. *Id.* The exact number of rounds may vary, with some startups only going through an extremely early "angel" investing round and nothing else. Still, the practice of raising multiple rounds of funding is the norm as startups require additional capital to fuel their early-stage growth until revenues catch up.

last few decades.[15] Venture capital investment is done with an eye on a successful "exit": an opportunity to cash in the value of the private equity investment via an acquisition or an initial public offering ("IPO").[16] By definition, these startups are closely held by their investors up to the moment of their exit. This means that the shareholder pressure these startups receive are largely from the venture capital firms who invest. Venture capitalists often are significantly more involved in operations of a startup than shareholders are in a widely-held corporation, offering mentoring and monitoring services to these firms.[17] Additionally, venture capital firms tend to be structured as limited partnerships and provide its limited partners with "double insulation" not seen in public corporations.[18] Startups are closely held corporations which are primarily owned by another closely held corporate form, the limited partnership, unlike a publicly held corporation that is directly answerable to public shareholders.[19]

B. *Power Law Distributions in the Venture Capital Market*

A common trait of complex systems is that resources are distributed according to power laws.[20] We can contrast a power law distribution to other common distributions such as normal distributions. Normal distributions, or bell curves, typically have the majority of events at the average, with events declining symmetrically on either side (see, for example, the graph of SAT scores below in Figure 1). This means that the median of a normal distribution is often representative of the majority of the data as well. Conversely, an important aspect of power law distributions is that they are "scale free," meaning that the average can be a value that lacks meaning when looking

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15. *See* Darian M. Ibrahim, *Corporate Venture Capital*, 24 U. PA. J. BUS. L. 209, 210–11 (2021). Examples of venture capital backed startups include Google, Airbnb, Uber, Lyft, and DoorDash.

16. *See id.* at 216.

17. *See id.*

18. Limited partnerships are also a closely held corporate form that firms use to pool assets and choose investment vehicles. *See Venture Capital vs. Hedge Fund*, PEAK CAPITAL, https://peak.capital/venture-capital-vs-hedge-fund (last visited May 2, 2025).

19. Directly answerable, with the caveats of the typical corporate problems relating to the collective action and rational apathy of those public shareholders.

20. Law and Complexity, *supra* note 6, at 76.

at any particular subsection of the distribution.[21] Despite the previously mentioned bias towards a belief in linear growth, examples of power law distributions are still immediately accessible. A quick look at the number of trailing zeroes makes it easy to understand the vast difference between a billionaire and the average American.[22] The question for regulators is how to approach such distributions. In a scale free system, regulation targeted at the average—in any calculation of that value—may fail to adequately consider the aspects of the majority of the nodes in the system, or it may fail to adequately consider the nodes possessing the most resources, or even both.

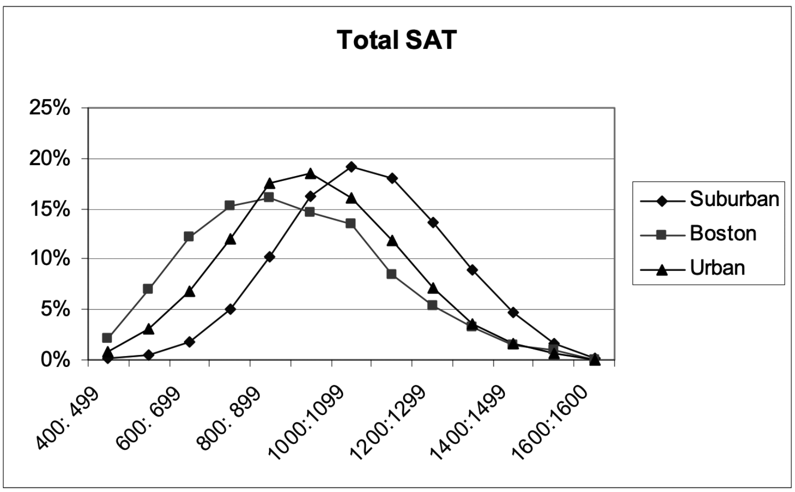

FIGURE 1: A NORMAL DISTRIBUTION OF SAT SCORES BY GEOGRAPHIC REGION IN THE BOSTON AREA.[23]

To see how venture capital markets display power law distributions, we can look at the valuations of Y Combinator[24]

21. *Id.* at 81.

22. The average U.S. annual salary for Q4 of 2023 was $59,384. USA TODAY, *Average Salary in the U.S. in 2024*, https://www.usatoday.com/money/blueprint/business/hr-payroll/average-salary-us (last visited May 2, 2025).

23. Joseph B. Berger et al., *Race and the Metropolitan Origins of Postsecondary Access to Four Year Colleges: The Case of Greater Boston*, C.R. PROJECT HARV. UNIV. (2004).

24. Y Combinator is a "startup accelerator" that tries to create an atmosphere for early-stage startups to quickly develop their ideas with investment and guidance from Y Combinator. *See* Y COMBINATOR, *What Happens at YC*, https://www.ycombinator.com/about (last visited May 2, 2025).

startups that went through the famed startup accelerator in 2017 or earlier.

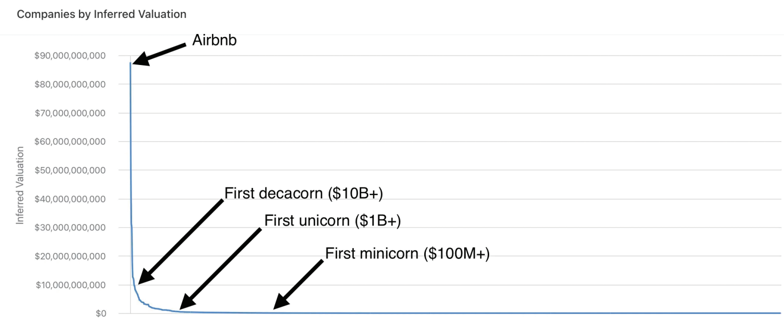

FIGURE 2: ALL Y COMBINATOR STARTUPS BY LATEST INFERRED VALUATION (2005–2017 Y COMBINATOR CLASSES).

The x-axis contains all 1,390 firms held by Y Combinator over that time period with the highest valuations on the left and the lowest valuations on the right.[25] "Unicorn" is commonly used in venture capital to refer to startups that achieve a one-billion-dollar valuation. "Decacorns" then are those that reach ten billion, while "minicorns" are those that have reached a hundred million dollar valuation.

Less than a third of the 1,390 companies represented had a successful exit (meaning they had a positive return on investment), yet the average return was thirty-three times the seed value.[26] One can intuit just from looking at the chart the outsized influence that Airbnb is having on the average return. This is true across all of venture capital, where a tiny percentage of firms receiving venture capital represent a huge portion of the returns to investors.[27]

25. *See* Jared Heyman, *On the Power Law of Y Combinator Startups*, MEDIUM (Apr. 30, 2024), https://jaredheyman.medium.com/on-the-power-law-of-y-combinator-startups-19cfb39863d6.

26. *Id.* Y Combinator's standard seed round invests $500,000 in each company (with options for more funding in later rounds), meaning the average seed round return is around $16.5M. *See* Y COMBINATOR, *supra* note 24.

27. One study found that 75% of venture capital-backed startups fail to return to investors at all. Faisal Hoque, *Why Most Venture-Backed Companies Fail*, FAST COMPANY (Dec. 12, 2012), https://www.fastcompany.com/3003827/why-most-venture-backed-companies-fail.

This is a critical point: venture capital investors know the risk and reward of their market and form their investment strategies accordingly to target high growth firms while hedging against risk.[28] Venture capital investors do not evaluate the market based on averages but instead take a portfolio approach to diversify the risk involved in early-stage investments.[29] Both the risk and reward of investing in venture capital can be elegantly described in a single graph of the few big winners and the many, many losers. The game then is often hunting for that one investment that, like Airbnb, makes all the misses worth it. This means that venture capital investors are searching for startups with high return opportunities, which is likely to lead to a mismatch in the market. Some firms that would benefit from venture capital investment will simply not have the potential for growth necessary to balance the risk of such an investment.

Another way that venture capital firms represent power law distributions is in the use of limited partnerships as their preferred form.[30] These limited partnerships are generally accessible only to high-net-worth individuals with the minimum investment being approximately $250,000.[31] Comparatively, the median American at any age has a net worth of less than $500,000.[32] In order to even be eligible to invest in private securities like venture capital, individuals have to qualify as "accredited investors" by either having a net worth over $1 million or annual income over $200,000.[33] We can then imagine the same graph as the Y Combinator startups above, where the long flat portion represents the vast majority of Americans who do not and never will have private equity investments, while

28. *See* Hayes, *supra* note 13 (explaining that venture capital is "high risk, high reward" and that investors typically built a portfolio of companies to diversify investment).

29. *See* Heyman, *supra* note 25 ("This is why you need a sound portfolio strategy when it comes to early-stage venture investing—a few random bets here and there is way too risky.").

30. *See* Gulinello, *supra* note 12, at 268–69 ("[T]he preferred organizational form for U.S. venture capital funds, the limited partnership, contributes to investor passivity.").

31. *See* PEAK CAPITAL, *supra* note 18.

32. Cheyene DeVon, *Here's Americans' Net Worth at Every Age—for People Under 35, It's Up 142%*, CNBC (Oct. 28, 2023), https://www.cnbc.com/2023/10/28/americans-median-net-worth-by-age.html.

33. *See* U.S. SEC. & EXCH. COMM'N, *Accredited Investors*, https://www.sec.gov/resources-small-businesses/capital-raising-building-blocks/accredited-investors (last visited May 23, 2025).

Airbnb represents mega-investors like Peter Thiel and Mark Cuban who have made hundreds private equity investments and reaped massive returns.[34]

This observation leads us to what might be an obvious conclusion to anyone familiar with venture capital: startups funded through venture capital have a different relationship with their investors than do widely held companies. The average investor has no impact on the venture capital market, because the average investor is precluded from engaging the venture capital market due to the obstacles like the accredited investor rules.[35] The double insulation feature of startups means that they will be more in tune with the pressure of their stakeholders, venture capital firms, than to the public market as a whole.[36] I return now briefly to the question of how regulators should deal with these scale-free systems. Regulation of venture capital should recognize the lack of traditional market forces that operate in the public market.[37] In Part III, I will discuss these market forces further and the potential types of regulatory response that may be effective including opening up alternative markets.

Many venture capital-backed firms do go public of course, and when they do, they represent another power law distribution. In recent years, venture capital backed firms represented 50% of IPOs despite only 0.2% of overall firms receiving venture capital funding.[38] There are many reasons that a firm may not

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34. Mark Cuban has made successful investments in companies like Dropbox and Truepill, while Peter Thiel was an early investor in Meta in addition to founding startups like PayPal and Palantir. *See* PITCHBOOK *Mark Cuban Overview,* https://pitchbook.com/profiles/investor/105884-29# (last visited May 3, 2025) (listing the investments of Cuban); *see also* PITCHBOOK *Peter Thiel Overview,* https://pitchbook.com/profiles/investor/106062-40#data (last visited May 3, 2025) (listing Thiel's investments).

35. *See also infra,* Part III.C (discussing the limitations on crowdfunded securities).

36. For an example, see the discussion on the Pebble Smartwatch at *infra* Part III.B.

37. For example, an analysis of the internal data from AngelList suggests that early-stage venture capital performance is uncorrelated with the public market. One potential reason advanced for this is that venture capital investments are bets on what will happen in the *future* and thus it should not be surprising that they move independently of the public market. For example, Uber took ten years to ultimately IPO and return its investment. *See* Abe Othman, *Innovation Isn't Correlated with the Markets*, ANGELLIST (May 11, 2020), https://www.angellist.com/blog/no-correlation-venture-public-markets.

38. Kaplan and Lerner in 2010 found that 50% of IPOs were originally backed by venture capital despite only 0.2% of firms overall receiving venture capital. *See* Steven N. Kaplan & Josh Lerner, *Venture Capital Data: Opportunities*

reach IPO or may not want to remain as a closely held company, yet it is clear the venture capital firms exert a disproportionate influence on the IPO market.

The choices of investors interested in IPOs then are largely influenced by the venture capital market which produces and grows these companies. It is worth considering this in conjunction with the high barriers to entry for investing in venture capital. Individuals who are largely frozen out of the venture capital market due to high minimum investment and net worth requirements are then presented venture capital-backed firms as the majority of their IPO investment opportunities. Accredited investor rules generally exist to protect investors from making unsound investment decisions.[39] However, such policies are certainly paternalistic, and the distributions described above demonstrate how companies that were once an unsound investment decision requiring consumer protection, in the eyes of the current regulations, can quickly become widely available IPOs soliciting investment from the public at large. While the IPO process, with its multitude of disclosures, is built to cure potential deficiencies, it is worth considering what is lost in creating this stark dividing line for investment opportunity.[40]

C. *Preferential Attachment in Venture Capital*

Preferential attachment, the insight that well-connected nodes are more likely to receive new connections,[41] is also readily identifiable in venture capital. For example, a significant gender gap exists in startup funding where female founders get 2% of venture capital investment despite accounting for 28% of founders.[42] This disparity persists throughout the various funding stages, as founders continually pitch new venture capital

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and Challenges, *in* MEASURING ENTREPRENEURIAL BUSINESSES: CURRENT KNOWLEDGE AND CHALLENGES 351, 351 (John Haltiwanger et al. eds., 2017).

39. Thomas Murphy, *Playing to a New Crowd: How Congress Could Break the Status Quo by Raising the Cap on the JOBS Act's Crowdfunding Exemption*, 58 B.C. L. REV. 775, 796 (2017) (discussing investor protections for crowdfunded securities).

40. *See* U.S. SEC. & EXCH. COMM'N, *Going Public*, https://www.sec.gov/resources-small-businesses/goingpublic (last visited July 8, 2025) (explaining and linking to the required filings to publicly list securities).

41. Barabási & Albert, *supra* note 9, at 511.

42. Patel, *supra* note 10, at 632–33.

investors, and those investors continually show preferential deference towards men.[43]

This is prototypical preferential attachment. At the initial stages, men, on average, tend to get more investment, making them "well-connected" nodes. These well-connected nodes are then more likely to receive more funding in future rounds as well, making them even more well connected.[44] This "rich get richer" pattern is exactly what the theory of preferential attachment predicts. Before moving on, it is worth noting that preferential attachment is facially neutral in complexity. That is to say that, while some nodes are expected to disproportionately receive connections, the presence of preferential attachment alone does not indicate inequity in the system. That is why, in any complex system, it is important to understand the reasons why preferential attachment emerges. In a purely meritocratic system, preferential attachment would only exist based on the quality of the startup as an investment opportunity instead of based on demographic characteristics of the founder like gender.

43. Studies in 2014 and 2017 found that identical slides prompted different questions and produced different results when pitched by men instead of women. *See* Hassan et al., *supra* note 10.

44. The reason behind more future investment is not necessarily limited to gender bias. For example, these firms could also receive more funding in the future due to the fact that they have already received substantial funding and thus are viewed as a more "promising" venture. Complexity theory observes the consistent emergence of preferential attachment across many different forms of network systems, while individual disciplines provide their own answers. For example, some market products naturally tend towards monopoly, rewarding highly adopted nodes. *See* Mark Lemley & David McGowan, *Legal Implications of Network Economic Effects*, 86 CAL. L. REV. 479, 484 (1998).

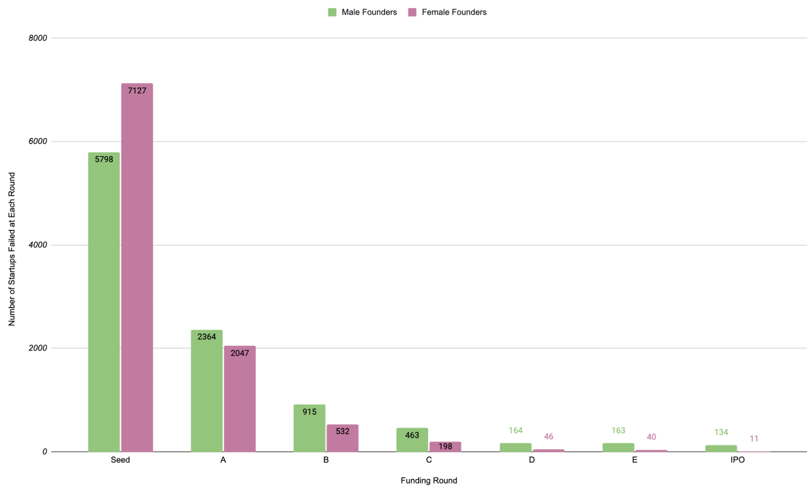

FIGURE 3: AGENT-BASED MODEL OF FOUNDERS PITCHING TO VENTURE CAPITAL FIRMS.

Despite this model giving female founders 98% of the chance of success of a male founder to succeed in any given pitch presentation, only 10% of the modeled firms that reach IPO are female-led.[45]

45. This is a simple agent-based model with the following basic characteristics: each startup has one founder, each founder makes 100 pitches per funding round, female founders are 98% as likely as men to receive funding in each pitch, and about 1% of male firms should reach IPO. Notably, as long as a pitch is successful, the founder receives exactly the same funds regardless of gender in this model. Random samples of 10,000 male and female founders show that despite women being 98% as likely to get funding from any individual pitch, only about 10% as many female founders reach IPO. This, in my view, probably represents the reality that the failure to get funding is multiplied both over the number of pitches in each round and also across rounds. Startups must constantly get enough runway to survive and advance to the next funding round before ultimately exiting (in this case, presumably by an IPO). That means that, with each round, gender disparities in pitch responsiveness jeopardize the ability to advance to the next round. In other words, every time a founder in this model reaches the next round, they get the opportunity for 100 new pitches. Note that, like the early Thomas Schelling model on community segregation, the parameters of this model were chosen to demonstrate how small differences in success rates can lead to disparate results and *not* based on data showing women are 98% as likely as men to be successful in pitches. Future research would benefit from studies measuring what the real-life difference in success rates are likely to be to construct a more exact model. Ian Mundy, *VC Agent-Based Model*, GITHUB, HTTPS://gist.github.com/Imundy/f2e11b683; *see also* ALLEN B. DOWNEY, THINK COMPLEXITY 91 (Green Tea Press, Version 1.2.3 2012) (for an explanation of agent-based

This same pattern of gender diversity also holds for general partners and other managers in venture capital firms.[46] Over 65% of venture capital firms do not have a single female partner.[47] It may not be immediately clear how this example represents preferential attachment. After all, each employee or partner has exactly one attachment in this bifurcated network: a connection running from the individual employee to the firm. However, it is important to view the gender gap in a broader social context. A model examined by James D. Montgomery demonstrates that small differences in gender or racial bias can lead to massive disparities in income due to job referral networks.[48] Partnership and executive management flow to those who have developed the professional connections to reach that level of management.

These gender disparities represent yet another barrier to entry in venture capital for underrepresented groups. The difficulty of either getting venture capital funding or being involved in venture capital investing is made more difficult for those in the out group. In this regard, venture capital is emblematic of the societal trend for opportunities to preferentially attach themselves to men either due to bias or due to pre-existing structural problems, potentially extrinsic to the firms, preventing women from becoming serious candidates.[49]

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modeling) https://greenteapress.com/complexity/thinkcomplexity.pdf. 04684acc7423864778910e9 (containing the code for this model) (last visited May 4, 2025). While this model is extremely simplified, and only tuned to approximate the assumption that 1% of startups reach IPO, it still demonstrates the dramatic disparity that can manifest from slight biases in the process.

46. Patel, *supra* note 10, at 636 ("Yet, shockingly, fewer than 5% of all venture capital firms have any women on their executive teams, and only 2.7% have female CEOs.").

47. *Id.*

48. *See* James D. Montgomery, *Social Networks and Labor-Market Outcomes: Toward an Economic Analysis*, 81 AM. ECON. REV. 1408, 1408 (1991). The problem is even more dramatic than one might initially think as men do not benefit only from having higher network densities, but also benefit disproportionately from crossties to the networks of women. "An increase in network density redistributes income from referred workers to referring workers; as a male network density rises relative to female network density, income flows from referred females to referring males." *See id.* at 1413. *See also* Troy Tassier, *Referral Hiring and Gender Segregation in the Workplace*, 34 E. ECON. J. 429, 430 (2008) (using modeling to suggest that reliance on referral hiring can generate significant levels of gender disparities in workplaces).

49. I point this out to note that we should not reduce the causes of preferential attachment to any one cause. While there could be bias in venture capital firms, we may see gender disparities in the absence of firm bias due

Additionally, once inside the firm, opportunities find successful investors; this is not a novel concept. It is the exact premise of successful accelerators like Y Combinator.[50] What is interesting about venture capital, compared to other investment opportunities, is the group of individuals who benefit from venture capital returns on investment. As mentioned previously, both the SEC and minimum investment requirements contribute to making venture capital investments only available to very wealthy individuals and venture capital firms prefer to organize as wealthy partnerships with high minimum investments.[51] Individuals with significant wealth generation then are presented new, exclusive opportunities to generate wealth in the venture capital market. Compare this to an extremely successful investment firm like Berkshire Hathaway which, while still benefitting the insiders like Warren Buffett, also benefits public investors.[52] In venture capital, these public connections are categorically unavailable to less wealthy and less connected individuals.

For anecdotal examples of these network driven opportunities at the investor level, consider Mark Cuban and Troy Carter's investments in Uber. Although Mark Cuban ultimately turned down the investment, he received the Uber opportunity after developing a relationship with Travis Kalanick that grew from investing in Kalanick's prior startup.[53] Troy Carter, a former

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to other structural problems in society. For an example of how even a small number of individuals in a society holding biased views can dramatically alter the structure of society, *see* THOMAS C. SCHELLING, MICROMOTIVES AND MACROBEHAVIOR 147–55 (1978) (describing and graphing how even small biases in individuals can lead to significant segregation in neighborhoods); *see also* Saksham Aggarwal, *Simulating Racial Bias in the Neighbourhood*, YOUTUBE (Aug. 23, 2021), https://youtu.be/E9IQY8LzzO8 (demonstrating the Schelling model with a more modernized analysis).

50. *See* Y COMBINATOR, *supra* note 24.

51. *See supra* Part II.B.

52. Berkshire Hathaway has returned a compounded average return of 19.8% from 1965 to 2023. While Buffett, as the largest voting shareholder, has benefitted substantially from those gains, so have the many investors who have been able to purchase Berkshire Hathaway stock on public exchanges. Keith Speights, *3 Reasons Buying Warren Buffett's Favorite Stock is Smarter Than Investing in an S&P 500 ETF*, MOTLEY FOOL (Sept. 11, 2024), https://www.fool.com/investing/2024/09/11/buying-warren-buffett-favorite-stock-sp-500-etf/.

53. *See* Gabrielle Olya, *Mark Cuban Reveals the Missed Investment Opportunity That Cost Him Billions*, YAHOO! FINANCE (Sept. 7, 2023), https://finance.yahoo.com/news/mark-cuban-reveals-missed-investment-140042932.html.

music manager turned successful serial Silicon Valley investor, was the only investor to back both Uber and Lyft during their seed rounds, and one of only four seed investors in Lyft.[54] At least part of the reason that Carter was able to make these investments was that, in 2010, his success and wealth placed him in the same room as other Silicon Valley investors and founders.[55] Investor networks play a huge role in venture capital financing, and also, as a result, individual investor preferences can have a significant impact on their investment choices.[56]

Some aspects of venture capital, such as the limited partnership form, display both power law distributions and preferential attachment. While it may not be surprising, it is worth noting that this does not have to be true. While an increased number of connections may contribute to amassing more of the resources in a complex system, the two ideas are still separate concepts. Like much of complexity theory's aspects, they are often interrelated and reinforcing,[57] but power laws and preferential attachment can also be independent. Consider, for example, a musical artist who has a tremendous amount of influence on other musicians but does not become independently economically successful in the same way as a Taylor Swift. It is possible their number of connections could be significantly higher, and indeed the freedom from an obligation like touring could even make amassing connections easier. However, the two concepts, preferential attachment and power law distributions, not only appear to be overlapping in venture capital—they appear to also be mutually reinforcing.

In conclusion, the ability to predict emergent properties, like power law distributions and preferential attachment, is one of the key value propositions with which complexity theory

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54. *See* TIME, *Music Manager Who Became a Silicon Valley Force*, https://time.com/collection/american-voices-2017/4512203/troy-carter/ (last visited May 5, 2025). *See also* PITCHBOOK (on file with author) (see under Lyft and Uber company profiles: Deals, Seed Round Investors) [hereinafter PitchBook database].

55. *See* TIME, *supra* note 54.

56. For example, Peter Thiel, already a highly successful investor at the time, was presented with an early opportunity to invest in Tesla but turned it down because he was skeptical of the reality of climate change. *See* Dorothy Cucci, *Peter Thiel Thinks Elon Musk is a 'Fraud,' and 6 Other Unexpected Details about the Billionaires' Love-Hate Relationship*, BUSINESS INSIDER (Dec. 2, 2022), https://www.businessinsider.com/peter-thiel-elon-musk-relationship-contrarian-book-max-chafkin-2021-9.

57. A fact considered later in a discussion of lock-in, *see infra* Part III.

provides us and why it is a helpful framework under which to analyze legal problems. The idea that "the rich get richer" is an intuition that most people have about the market, and it is unsurprising to see it play out in the venture capital market. Complexity theory not only gives us language to describe the phenomenon, but also helps us separate the observation into these two predictable, and definable qualities of a complex system. On initial observation, both power laws and preferential attachment appear to describe the barriers to entry in the venture capital market. In the following section, I will look more closely at the implications and insights of both phenomena before I turn to any suggestions for change.

III.
Implications of Complex System Characteristics

Complex systems naturally exhibit the characteristics of power law distributions and preferential attachment. However, this does not intrinsically mean that the analyzed system needs change. Further, complex systems commonly exhibit resiliency making them adaptative to any changes introduced.[58] Resilience does not have to mean that the system must have a single equilibrium state to which it will always return. Instead, it is possible for systems to have a wide range of equilibrium points that can easily be transitioned between without requiring disastrous changes of state.[59] While the American economy has not been without disaster, it has been incredibly resilient to change.[60] This resiliency has shown that American markets have a wide range of equilibrium points without approaching full scale

58. Sometimes adaptability also means that a system is resistant to change and maintains a single state. *See* J.B. Ruhl, *General Design Principles for Resilience and Adaptive Capacity in Legal Systems—With Applications to Climate Change Adaptation*, 89 N.C. L. Rev. 1373, 1374 (2010) ("These two properties—resilience and adaptive capacity—have become central themes for researchers studying a wide array of ecological, social-ecological, and social systems under the banner of resilience theory. More broadly, they are important focal points of the science of complex adaptive systems as it has been applied in natural and social sciences.") (footnote omitted).

59. *Id.* at 1376–77 (describing different types of resilience).

60. For example, consider the recent collapse of Silicon Valley Bank and the relatively quick recovery by the market without lasting harm to venture capital. *See* Rob Copeland, *One Year After Bank Crisis, a Struggle Over What Needs to Change*, N.Y. Times (Mar. 10, 2024), https://www.nytimes.com/2024/03/10/business/silicon-valley-bank-one-year-regulations.html.

collapse. On the other hand, some systems become locked in to very narrow points, which while they may still be resilient, make them very difficult to change at all.[61]

Knowing that complex systems exhibit resiliency, the questions asked need not be in the form of radical change—such as what a ground-up replacement for the venture capital market would look like—but rather can be questions about satisfaction with the current state of equilibrium reached. If the current state is not satisfactory, then we can ask what change is needed knowing that the trait of resiliency can act in multiple ways: both incorporating change into the existing system without catastrophe but also potentially making the equilibrium point resistant to movement despite the incorporation of such changes.

A. *Lock-in and the Lack of Diversity in Venture Capital*

Arguably, the most problematic aspect discussed in Part I is the dramatic lack of diversity in venture capital firms. This is detrimental even to the firms themselves, as more diverse venture capital firms tend to be more profitable.[62] This is consistent with trends in the broader market, which shows that diverse teams lead to more innovation and better financial results.[63] However, the aspect of lock-in, which entrenches the manifestation of power law distributions and preferential attachment, can act to make venture capital resistant to change.[64] For example, the rate of women serving as CEOs in venture capital firms significantly trails the rate in the S&P 500, suggesting that, while pervasive, the problem is worse in venture capital than the market as a whole.[65]

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61. *See* Ruhl, *supra* note 58, at 1377–78 (discussing engineering resilience).

62. Michael Blanding, *Diversity Boosts Profits in Venture Capital Firms*, HARV. BUS. SCH. (Oct. 4, 2018), https://hbswk.hbs.edu/item/diversity-boosts-profits-in-venture-capital-firms.

63. *See* Stuart R. Levine, *Diversity Confirmed to Boost Innovation and Financial Results*, FORBES (Jan. 15, 2020), https://www.forbes.com/sites/forbesinsights/2020/01/15/diversity-confirmed-to-boost-innovation-and-financial-results/?sh=6fae59ecc4a6.

64. *See* Daria Roithmayr, *Barriers to Entry: A Market Lock-in Model of Discrimination*, 86 VA. L. REV. 727, 743 (2000) (explaining in the market lock-in model that "'history matters' a great deal to the workings of an economy").

65. Women occupied 8.2% of S&P 500 CEO positions in 2023 as opposed to 2.6% of venture capital CEOs. *See* Li He & Toni M. Whited, *Underrepresentation of Women CEOs*, HARV. L. SCH. F. ON CORP. GOVERNANCE (Jan. 5, 2024)

Is this an issue that can or should be solved through regulation? Corporations, recognizing the importance of diversity, have invested in diversifying their workforces even if they have not so far achieved parity.[66] It has been suggested that adding too much legal and regulatory scrutiny to these efforts could disincentivize this investment by moving the capital spent to regulatory response.[67] Regulatory frameworks relating to diversity, such as the joint standards introduced by the SEC, therefore, have provided optional disclosures rather than heavy handed regulation,[68] and do not apply to venture capital firms at all.[69]

Even if venture capital firms were subject to more stringent reporting requirements on their diversity efforts, would this be sufficient to apply any more pressure to those firms than the market benefits of diverse teams already do? This leads back into our other aspect contributing to both power law distributions and preferential attachment: limited partnerships as the preferred form for venture capital firms. This corporate form affects the possible inputs to the firm. Contrast this with widely held public corporations, where corporate social responsibility proposals ("CSRs") have been an increasingly used method for shareholders to communicate priorities to directors.[70] Venture capital firms are missing inputs like the activist shareholder pressure commonly found in CSRs when startup shareholders are not widely dispersed but rather concentrated into limited partnerships that work closely with founders.

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https://corpgov.law.harvard.edu/2024/01/05/underrepresentation-of-women-ceos/; Patel, *supra* note 10, at 636.

66. *See* Stephen M. Rich, *Whose Diversity? The Contest for Control over the Law and Culture of Work*, 39 BERKELEY J. EMP. & LAB. L. 177, 183–84 (2019) ("As support for traditional affirmative action has waned, private sector employers have poured billions of dollars into the pursuit and management of diversity.").

67. *See id.* at 184.

68. *See* U.S. SEC. & EXCH. COMM'N, *Diversity Assessment Report for Entities Regulated by the SEC*, https://www.sec.gov/files/OMWI-DAR-FORM.pdf. (last visited May 6, 2025).

69. *See* Patel, *supra* note 10, at 642 ("Additionally, the SEC's narrow definition of 'regulated entities' excludes venture capital firms.").

70. *See* H. Rodgin Cohen & Glen T. Schleyer, *Shareholder vs. Director Control Over Social Policy Matters: Conflicting Trends in Corporate Governance*, 26 NOTRE DAME J.L. ETHICS & PUB. POL'Y 81, 124 (2012) ("A survey published in the Manhattan Institute's Proxy Monitor indicated that 51% of 2011 shareholder proposals at Fortune 100 companies related to social policy issues, up from 38% for the period 2008–2010, with the absolute number of social policy proposals increasing 16% from 2010 levels.") (footnote omitted).

While the limited partnership is an effective a way for investors to pool their money to pursue joint ventures,[71] these firms also, due to their small size, could lead both to potential investors self-selecting into like-minded firms and to firm partners that reinforce or mirror the unconscious biases of the existing partner group.[72] Given the high minimum investments needed to buy into venture capital firms, we may expect that prospective partners will shop around their investment for a partnership that feels like the right "fit" before taking such a substantial step. For example, New York requires that the new limited partners be approved by all of the existing limited partners.[73] Roithmayr has previously suggested that markets exhibit lock-in, where existing markets dominated by one social group develop culturally specific characteristics that continue to favor that group.[74] This lock-in is consistent with the "path dependence" feature of complex systems. Path dependence means that the initial conditions of a network significantly affect systemic outcomes.[75] In other words, slightly altering the initial conditions of a network can lead to dramatically different results. Specifically, in this context, market lock-in perpetuates inequality even as intentional bias disappears from the market in the same way that monopolists can continue to dominate markets without actually exercising their monopoly power.[76]

If one group is locked in, then other groups are being locked out. Limited partnerships in venture capital strongly exhibit this lock-in bias, possibly because limited partnerships create a form of double insulation from market forces. Instead

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71. Limited partnerships feature at least one general partner who faces unlimited liability and one or more limited partners, who give up some measure of control in exchange for limited personal liability. *See* Jessica Gibson, *Limited Partnership (LP): What It Is, Pros and Cons, How to Form One*, INVESTOPEDIA (Apr. 10, 2025), https://www.investopedia.com/terms/l/limitedpartnership.asp.

72. For an adjacent dive into the law firm context, LeeAnn O'Neill explained how the highly subjective nature of partnership decisions can lead to unconscious bias playing a role even if self-selection may explain some percentage of decisions, LeeAnn O'Neill, *Hitting the Legal Diversity Market Home: Minority Women Strike Out*, 3 AM U. MODERN AM. 7, 7–8 (2007).

73. *See* N.Y. P'SHIP LAW § 114 (McKinney).

74. *See* Roithmayr, *supra* note 64, at 735 ("I will argue that we might usefully understand white dominance in legal education and employment to be the product of a locked-in, culturally specific network standard that favors whites.").

75. *See* Law and Complexity, *supra* note 6, at 84.

76. Roithmayr, *supra* note 64, at 789–90.

of feeling social pressure directly from widely dispersed shareholders, all societal pressure is filtered through the limited partners. That is, while limited partners may observe broader societal trends and choose to pressure their partnership to change, they also may choose to ignore these trends or even push directly in the opposite direction. This insulation is similarly true for the underlying startups backed by venture capital, which are also privately held corporations. In some instances, this insulation may mean that startups do not need to prove market success or sustainability while backed by venture capital which funds their growth at significant losses.[77]

As a result, public pressure that incentivizes widely held firms to diversify their leadership and workforce may be entirely absent in startups unless venture capital firms choose to apply that pressure directly. Given the self-selection previously discussed in limited partnerships, any biases that a firm unconsciously applies to their startups is likely to perpetuate without outside intervention. It is extremely important to recognize this double insulation from the public in venture capital backed startups and the questions it raises, one of which I will turn to now.

B. *Does Venture Capital Produce the Most Socially Beneficial Companies?*

This question asks not only whether the societal benefits of venture capital, and the startups it launches, outweigh the harms, but also if those companies are optimized for social benefit. For example, we may weigh the various ways in which social media keeps us connected to our loved ones against the way that it can allow misinformation to rapidly disseminate.[78] This section attempts to analyze what the goals of venture capital are

77. For example, consider the first near-decade of Tesla where it failed to turn a profit. In 2018, Tesla had raised $19 billion since its IPO but produced -$9 billion in cash flow despite huge infusions of government subsidies alongside the substantial cash infusions. *See* Jim Collins, *A Brief History of Tesla: $19 Billion Raised and $9 Billion of Negative Cash Flow*, FORBES (Apr. 25, 2018), https://www.forbes.com/sites/jimcollins/2018/04/25/a-brief-history-of-tesla-19-billion-raised-and-9-billion-of-negative-cash-flow/.

78. *See, e.g.*, Danielle Citron & Bobby Chesney, *Deep Fakes: A Looming Challenge for Privacy, Democracy, and National Security*, 107 CALIF. L. REV. 1753, 1764–66 (2019) (discussing how the ability to rapidly disseminate video content on social media has helped cause misinformation, including in the form of deepfakes, to spread like wildfire).

in its current form, and how aligned those goals are with producing socially beneficial products.

To start, given the negative implications of market disruption, we must ask if venture capital funds produce socially beneficial outcomes at all. In 2022, there was an estimated $290 billion committed in capital to venture capital firms.[79] Additionally venture capital has produced important and ubiquitous startups in our society such as Google, Facebook, Uber, Lyft, Airbnb, DoorDash to name only a few. Some of these companies have seriously distorted the industries they sought to disrupt, such as Uber's catastrophic effects on the New York City taxicab market.[80] Many of these startups have led to repeated clashes over the definition of employees with wide-ranging implications in the broader labor market.[81] Simultaneously, these same startups place local pressure on municipalities attempting to navigate the appropriate regulatory responses.[82] In the past, legislators tasked with this response have demonstrated minimal comprehension of how new technology actually works.[83]

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79. Micah Rosenbloom, *Startups, Don't Pin Your Hopes on VC Dry Powder*, HARV. BUS. REV. (Oct. 18 2022), https://hbr.org/2022/10/startups-dont-pin-your-hopes-on-vc-dry-powder.

80. *See* Faiz Siddiqui, *Uber and Taxicabs Strike an Unlikely Partnership, Years After Ride-Hailing Destroyed the Business*, WASH. POST (Mar. 24, 2022), https://www.washingtonpost.com/technology/2022/03/24/uber-taxis-nyc/.

81. *See* Erin Chow, Note, *App-Based Drivers, Employees or Independent Contractors?: Big Tech's Fight to Classify Drivers as Independent Contractors Prioritizes Flexibility and Innovation over Labor and Class Implications*, 29 SUFFOLK J. TRIAL & APP. ADVOC. 89, 80–90 (2023).

82. A less charitable interpretation would be that startups intentionally flout legal requirements in ways that municipalities find difficult to respond to. *See* Kellen Zale, *When Everything is Small: The Regulatory Challenge of Scale in the Sharing Economy*, 53 SAN DIEGO L. REV. 949, 1007–10 (2016). Adding to this problem is that ex post regulation may not be effective. For example, New York City significantly curtailed short term rentals that were contributing to the housing shortages, but so far, the measure has done little to decrease rents. This could be because of aspects like lock-in, non-linearity, and path dependence, but it would be best explored in a future article. *See* Amanda Hoover, *New York Cracked Down on Airbnb One Year Ago. NYC Housing Is Still a Mess*, WIRED (Sept. 5, 2024), https://www.wired.com/story/new-york-city-airbnb-law-one-year-results/.

83. Senator Ted Stevens famously referred to the internet as a "series of tubes" on the senate floor. Evan Dashevsky, *A Remembrance and Defense of Ted Stevens' 'Series of Tubes,'* PC MAG (June 5, 2014), https://www.pcmag.com/news/a-remembrance-and-defense-of-ted-stevens-series-of-tubes. While the comment may not have been quite so egregious in context, it nonetheless highlighted for many of us who grew up on the internet how little our Senators seem to know about the digital world.

That is not to say that these startups are without benefits. On the contrary, they can contribute immense value to society, and I have personally benefited from many of them.[84] The usefulness of these venture-backed firms is obvious from the convenience they have conferred upon us. Instead, I point out the negatives to emphasize that venture-backed firms are not without significant complications. For example, startups may demonstrate a form of self-regulation wherein they rely on societal norms to keep goods and services in check.[85] Self-regulation, at first glance, appears to be a synergistic benefit to society because it can allow companies to design their own compliance systems that may be even more effective at protecting societal interests than legally mandated alternatives.[86] However, the legal systems of regulation do far more than just impose costs on businesses. Most importantly, self-regulation by venture backed firms fails to ensure that all voices in our democracy are afforded an opportunity for their input.[87] As a result, when self-regulation rather than legal regulation pervades, individuals may be denied the procedural guarantees of being heard such as one would find in notice and comment rulemaking. Venture capital startups may pursue self-regulation, and the lower costs it imposes on them, at the expense of ensuring that more voices are heard through formal regulatory processes.

Returning to the power distributions displayed in venture capital returns, I also want to observe how such a distribution can affect which startups firms choose to invest in. For example, the most profitable firm in the Y Combinator portfolio, Airbnb, is prototypical of a company that is attempting to capture the network effect.[88] In a market that is purely based on the network effect, like telephones, an individual product is only as valuable as the network to which it provides access to.[89] Substantial ben-

84. I was an engineer and technical lead at Google for over five years.

85. *See* Zale, *supra* note 82, at 998 ("T]here are public goods that private regulation, whether in the form of norms, architecture, or markets, will fail to adequately address because 'private regulators can focus on maximizing value to shareholders while avoiding the broad range of duties a national legal system must accommodate.").

86. *See id.* at 997.

87. *See id.* at 998 (discussing the effectiveness of internal background checks at Uber and Lyft compared to formal fingerprinting requirements).

88. *See generally* Lemley & McGowan, *supra* note 44, at 488–94 (describing markets that are more or less prone to network effects).

89. *Id.* at 488–89 ("Telephones and fax machines are classic examples of actual network goods; owning the only telephone or fax machine in the

efits can be conferred to the early movers in markets prone to network effects as they are able to capture a substantial portion of the market and can exercise monopoly power.[90] It is understandable that venture capital firms prioritize high potential growth startups like Airbnb given that a large percentage of firms in their portfolios may fail to ever return an investment.[91] However, these market incentives have several implications for the society.

First, it's worth considering whether this desire for high growth startups with the goal of successful exits creates unsustainable businesses looking for their moment. For example, Tesla raised nearly $1 billion in capital prior to its 2010 IPO where it raised another $275 million.[92] Tesla was then able to sustain itself for almost a decade while burning through billions of dollars at significant losses.[93] In the middle of this stretch, Tesla was able to raise an additional $2 billion in a secondary public offering.[94] Despite all of this, the company has come out of that period with a valuation that says it is "worth" more than several of the largest car manufacturers combined.[95] There are a huge number of potential reasons for this, but that doesn't mean the valuation is intrinsically rational. More recently, Tesla

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world would be of little benefit because it could not be used to communicate with anyone. The value of the telephone or fax machine one has already purchased increases with each additional purchaser, so long as all machines operate on the same standards and the network infrastructure is capable of processing all member communications reliably.").

90. *See id.* at 501–502 (examining how Microsoft's early capture of the operating system market, boosted by network effects and early movement, helped it exercise monopoly power in adjacent markets). This is not to say that Airbnb was not also competing with other products like traditional hotels, but only that they were an early mover to the booming short-term rental market.

91. *See infra* Section I.A.

92. *See* PITCHBOOK *Tesla Deals,* https://my.pitchbook.com/profile/10377-37/company/deals (last visited July 8, 2025) (listing the Tesla funding rounds).

93. For example, consider the first near-decade of Tesla where it failed to turn a profit. In 2018, Tesla had raised $19 billion since its IPO but produced -$9 billion in cash flow despite huge infusions of government subsidies alongside the substantial cash infusions. *See* Collins, *supra* note 77.

94. *See Tesla Deals*, *supra* note 92.

95. *See* Sean Williams, *Tesla Is Just a Car Company, and It's Time Wall Street Valued It as Such*, MOTLEY FOOL (Jan. 26, 2024), https://www.fool.com/investing/2024/01/26/tesla-is-just-a-car-company-wall-street-valued-it/.

sales, along with its stock, have plummeted.[96] While the funding for electric vehicles ("EVs") may align with societal needs arising from the climate crisis, it is not clear at all, at a glance, that Tesla's path was either the most efficient one or was driven by perceived societal benefit. It is hard to exactly attribute which portion of Tesla's outsized valuation relative to sales can be attributed to its perceived public benefit versus a pure view of the stock as an investment vehicle, especially as other electric vehicle manufacturers have caught up. If Tesla's valuation was purely based on the societal benefit advanced intrinsic to EVs, we may compare it to a company like BYD, another EV manufacturer which ships a similar number of EVs. But BYD does not even approach Tesla's market cap.[97]

The irrationality of a company's valuation cuts against some of the fundamental principles of the securities market. Stock purchasers "rel[y] generally on the supposition that the market price is validly set and that no unsuspected manipulation has artificially inflated the price, and thus indirectly on the truth of the representations underlying the stock price . . . ."[98] For IPOs, this concept relies heavily on the valuation and representations of the venture capitalists who are also seeking to successfully sell their investments. While IPOs, and public securities in general, are heavily regulated to avoid material misrepresentations that mislead the market,[99] it is still worth questioning the incentives in the context of venture capital. For a dramatic example that, fortunately, did not reach IPO we can consider the many, many red flags that investors ignored on the way to a $9 billion valuation for Theranos.[100] A more benign example would be Cue Health, a health tech startup that sold

96. While much of this can be attributed to the recent negative backlash to Elon Musk personally, it is worth noting that annual sales declined in 2024, before Musk's direct involvement in slashing federal programs. *See* Neil Vigdor, *Tesla for Sale: Buyer's Remorse Sinks In for Elon Musk's E.V.-Owning Critics*, N.Y. TIMES (Mar. 3, 2025), https://www.nytimes.com/2025/03/03/business/tesla-boycott-elon-musk.html.

97. *See* Derek Saul, *Tesla and Chinese Rival BYD's $649 Billion Valuation Gap Unjustified, Bernstein Says*, FORBES (Nov. 27, 2023), https://www.forbes.com/sites/dereksaul/2023/11/27/tesla-and-chinese-rival-byds-649-billion-valuation-gap-unjustified-bernstein-says/.

98. Blackie v. Barrack, 524 F.2d 891, 907 (9th Cir. 1975).

99. *See Going Public*, *supra* note 40.

100. *See* Sara Ashley O'Brien, *The Rise and Fall of Theranos: A Timeline*, CNN (July 7, 2022), https://www.cnn.com/2022/07/07/tech/theranos-rise-and-fall/index.html.

an at home COVID-19 test that approached the accuracy of lab PCR tests, filed for bankruptcy less than three years after going through a $200 million IPO at a nearly $3 billion valuation.[101] While the at-home testing business was eminently relevant in an IPO in the aftermath of COVID-19's peak, it is worth considering how a company that had essentially a single product with declining demand at the time of IPO could be valued so highly.[102] In other words, how validly set was the price of Cue Health's IPO and how much of the price was pushed by venture capital firms who knew this was an opportunistic moment to exit an investment with little long-term promise?

This question is especially salient given that there are numerous available methods for the valuation of IPOs.[103] The choice of the valuation methodology can have broad impacts on initial price of the stock and can take into account difficult to measure concepts like the "corporate narrative."[104] Ultimately, an investment bank acting as the underwriter will have to make the evaluation.[105] For a variety of reasons, this process may result in stocks that are significantly overpriced or underpriced on their first day.[106] Examples like Cue Health show how an IPO can be "successful"—meaning they raise significant capital—despite being imminently close to failure.[107]

101. Conor Hale, *Update: Home COVID Testmaker Cue Health Shuts Down Operations, Lays Off Staff*, FIERCE BIOTECH (May 22, 2024), https://www.fiercebiotech.com/medtech/home-covid-testmaker-cue-health-shut-down-operations-lay-staff-report.

102. *See id.* ("Diagnostics manufacturers across the industry have reported massive declines in that area of sales—but, for Cue, its COVID test was essentially its only product.").

103. *See* Olga Ferraro, *A Brief Overview of the IPO Valuation Methods*, 15 INT'L J. OF BUS. AND MGMT. 12, 41 (2020).

104. *See* Sham Gad, *How an Initial Public Offering (IPO) Is Priced*, INVESTOPEDIA (July 01, 2025), https://www.investopedia.com/articles/financial-theory/11/how-an-ipo-is-valued.asp.

105. *Id.*

106. For example, some theorize that IPOs during the internet bubble were routinely "underpriced" relative to the market because the underwriters felt uncomfortable legally signing off on a valuation that matched the market trends of the moment. While this may have been salient given the collapse the internet bubble, it also resulted in IPOs that raised less funds. *See* Jay R. Ritter et al., *A Review of IPO Activity, Pricing, and Allocations*, 47 J. OF FIN. 4, 1807–08 (2002).

107. For that matter, the discussion of valuations of the internet bubble also demonstrates how IPOs can raise vast sums of money for companies that are swiftly headed into the abyss. *See id.*

Second, if the goal of venture capital is to find a successful exit for the investment with a focus on high growth potential, are firms likely to turn down less promising ventures regardless of the potential social benefit? While venture capital is already competitive and difficult for startups to receive, the failure rate of startups means that venture capital firms naturally focus on firms with high growth potential.[108] Consider Airbnb again.[109] If a firm lands that one investment, it makes all the misses worth it. The fact that a huge portion of venture capital firms fail to return any money at all to investors shows both the risk and need for diversification in venture capital.[110]

Further, the private nature of venture capital limits the ability to spread risk because each startup only has a limited number of initial investors.[111] This means that investors need a broad portfolio to capture returns from the high-growth companies in order to make all of their $0 investments worthwhile. Rationally, investors in such a market should pass on any ventures that present risk without the same potential monetary reward. For example, non-profits often pursue valuable social goals but eschew the pursuit of high financial returns for their services or products. In venture philanthropy, which seeks to apply venture capital principles to create philanthropic funds that return and reinvest profits, this means that some non-profit partners will be fundamentally opposed to the model of venture capital that demands a return on investment.[112] This may mean either that venture capital will not be well suited to these pursuits, or even, that venture capital may taint valuable social goals by imputing a powerful profit incentive.[113]

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108. *See supra* Part II.B (discussing power law distributions and AirBnB's effect on the overall returns of Y Combinator).

109. *Id.*

110. *See* Hoque, *supra* note 27.

111. Consider, for example, trying to create an index fund for the venture capital market. It is certainly impossible to do this in any literal sense. Even if one could discover all of the available startups, there would not be an opportunity to invest a small stake in each one.

112. *See* Kathy Giusti & Richard Hamermesh, *Venture Philanthropy Done Right*, HARV. BUS. SCH. KRAFT PRECISION MED. ACCELERATOR, at 6, https://www.hbs.edu/kraft-accelerator/assets/pdf/Aug_Venture%20Philanthropy%20Done%20Right_v3.pdf (last visited May 6, 2025).

113. For example, vaccine hesitancy has been linked to the distrust created by the profit incentives of vaccine manufacturers. Eugene McCarthy, *The Regulatory Production of Vaccine Hesitancy*, 86 BROOK. L. REV. 81, 133 (2020)

This focus on high growth is a defining aspect of venture capital compared to other investments. Unlike venture capital, which is equity based, other investment instruments may be based on debt.[114] Debt-based investment is incompatible with venture capital, as the required interest rate would have to be unfathomable to make up for the risk of default in a business with little to no assets that creditors can depend on.[115] In fact, the concept of "venture debt" exists only in tandem with venture capital.[116] Instead of looking at other more traditional financial instruments like bank loans to better understand venture capital's implications, it is more helpful to look at markets that are also focused on speculative investment.

C. *Adjacent Markets to Traditional Venture Capital*

Consider one such parallel market to venture capital: crowdfunding. Websites like Kickstarter allow individuals to back projects in exchange for the promise of some benefit, like the tangible product.[117] While some of these crowdfunded projects, like the Pebble smartwatch,[118] resemble high-growth startups and even receive independent venture funding, many others are creative projects like films, videogames, and works of art that would be unlikely to receive traditional venture capital funding.[119] With over $8 billion pledged on Kickstarter,

("Many U.S. citizens distrust vaccines because the people who test, approve, recommend, and mandate vaccines too often stand to profit from them.").

114. *See* Hayes, *supra* note 13.

115. *See* Ibrahim, *supra* note 15, at 219–20.

116. *Id.* at 220.

117. For a description of how Kickstarter works, see Guy Noyes, *Kicking Start-ups Out of Online Financial Markets: Why the FTC Should Regulate Websites to Supplement the SEC*, 19 INTELL. PROP. L. BULL. 29, 30 (2014).

118. The original Kickstarter campaign for the Pebble smartwatch, which launched in 2012, raised over $10 million from nearly 70,000 backers. KICKSTARTER, *Pebble: E-Paper Watch for iPhone and Android*, https://www.kickstarter.com/projects/getpebble/pebble-e-paper-watch-for-iphone-and-android (last visited May 6, 2025).

119. *See id.* Ironically, some think that Pebble's ultimate failure and sale was the result of venture capital pressure that caused the company to move away from the very vision that made it so successful as a Kickstarter project. *See* Andrew Orlowski, *Who Killed Pebble? Easy: The Vulture Capitalists*, REG. (Dec. 8, 2016, 2:59 PM), https://www.theregister.com/2016/12/08/the_vulture_capitalists_killed_pebble/. Pebble ultimately ran into financial difficulties and had to refund the backers of its second Kickstarter project after Fitbit acquired much of its assets. Pebble moved from its DIY maker roots to a more health-based vision in order to facilitate this acquisition. The incentives of

crowdfunding has been extremely successful in getting a wide variety of projects off the ground.[120] Crowdfunding allows consumers to play a direct role in bringing to market products that they see value in. While the rewards are, by regulatory necessity, definitely not securities, backers are nonetheless happy to put money in simply for the promise of the preorder of a distant project.

There is potentially some middle ground between these two markets. While crowdfunded securities do exist, their ability to raise funds is significantly limited by the CROWDFUND Act.[121] Crowdfunded securities have an annual limit of $1 million.[122] This means that Pebble would have needed over ten years to raise the same amount in privately crowdfunded securities as it did in one Kickstarter round. Pebble did not have that kind of runway; it was liquidated only four years after its first Kickstarter project was funded.[123] The story of Pebble's rise and fall illustrate how the perceived value of the product differed dramatically between investors and Kickstarter backers. Could similar projects succeed if there were other investment avenues available?

As previously mentioned, there is also a narrow portion of venture capital known as "venture philanthropy" devoted to publicly beneficial ventures. This area seeks to apply the principles of venture capital that helps get early startups off the ground to the non-profit sector with an eye on social and economic goals.[124] However, venture philanthropy remains an extremely small and concentrated area.[125] Some traditional venture capital firms have also looked to social impact as an

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venture capital to find a way to exit their investment not only changed Pebble, it helped bring the project to an end.

120. For example, the biggest projects include Brandon Sanderson novels, the Pebble Time Smartwatch, the Frosthaven board game, Travel Tripod by Peak Design, and the Valerion VisionMaster projector. *Most Funded*, KICKSTARTER, https://www.kickstarter.com/discover/most-funded (last visited May 7, 2025). *See also Stats*, KICKSTARTER, https://www.kickstarter.com/help/stats?ref=updates.kickstarter.com (last visited July 8, 2025).

121. Jumpstart Our Business Startups Act (JOBS Act), Pub. L. No. 112-106, 126 Stat. 306 (2012) (the "CROWDFUND Act").

122. Noyes, *supra* note 117, at 42.

123. *See* Andrew Orlowski, *supra* note 119.

124. *See* Janet E. Kerr, *Sustainability Meets Profitability: The Convenient Truth of How the Business Judgment Rule Protects a Board's Decision to Engage in Social Entrepreneurship*, 29 CARDOZO L. REV. 623, 654 (2007).

125. *Id.* at 655.

avenue for potential investments, yet not all opportunities fit this mold. As one firm describes it: "some of our 'social impact' interests also make for great businesses, such as alternative energy, or can at least be viable businesses."[126] While venture capitalists may look to social impact for ideas, they still must create a portfolio that has the potential for growth necessary to allow these returns. Overall, the atmosphere of venture capital creates incentives to invest in companies that have the potential for both high growth and a path to a potential exit.

While venture capital is targeted at speculative investments with often the potential for both innovation and high growth, it is not the only market that can provide an influx of runway to startups. Alternative markets, like crowdfunding, can provide startups, including startups with high potential social value, with infusions of cash and have substantially different barriers to entry than the insular network of traditional venture capital. The inputs and players in each of these markets is different, with many of those who participate in crowdfunding campaigns likely locked out of traditional venture capital investment. Yet, products like Pebble prove that there can be public demand for products rejected by venture capital firms. Similarly, new strategies such as venture philanthropy have sought to find a way to bridge this gap by applying venture capital principles to areas traditionally reserved for the non-profit sector. Yet, venture philanthropy does nothing to alleviate the opposite concern—providing broader societal access to the venture capital market.

In the next section, I will discuss how venture capital could be made a more accessible form of investment.

IV.
Making the Market More Accessible

Fortunately, complex systems are remarkably resilient.[127] Our own market reflects this with its ability to recover from dramatic, even catastrophic, events like the sub-prime mortgage crisis or, more recently, the collapse of Silicon Valley

126. *Id.* at 657 (emphasis added).
127. Complex systems are "[s]table (but not static) and dynamic (but not chaotic)." *See*, Law and Complexity, *supra* note 6, at 83. *See also* Ruhl, *supra* note 58, at 1385.

Bank.[128] While we want to encourage and expand this resiliency, we should also be open to influencing the market dynamics through regulatory change knowing that the market will absorb and respond to the changes. The changes discussed below are targeted at increasing the size of the investor pool for venture capital. The benefits of this are twofold: startups should have access to a larger funding pool and there will be broader public participation in the venture capital market. Since venture capital firms themselves lack diversity, broader public participation also likely means more diverse inputs to firms.

A. *Incentives and Intervention for Market Change*

Before discussing the options for market change, it is important to recognize that some forms of incentives and intervention may be more effective than others. For example, research in innovation incentives suggests that when the probability of success is high and the elasticity of supply in research is high, research contracts can significantly outperform both patents and research prizes.[129] While Silicon Valley startups have earned a reputation for innovation, the market dynamics of venture capital encapsulate not just the inventive aspect of problem solving but also the commercialization of solutions. Intervention then, needs to address more than simply encouraging innovation.

While I am not trying to highlight every possible type of intervention that could be made, I do want to point out the range of options briefly. On one side, the government could directly intervene at the funding level by providing grants to early-stage startups. This has some support in the proposition that success breeds success—in other words, an initial investment by a government grant could lead to further success in raising funds from traditional venture capital.[130] On the other

128. UNIV. WASH. SCH. L., *The Silicon Valley Bank Collapse Explained* (Mar. 24, 2023), https://www.law.uw.edu/news-events/news/2023/svb-collapse.

129. *See* Brian D. Wright, *The Economics of Invention Incentives: Patents, Prizes, and Research Contracts*, 73 AM. ECON. REV. 691, 702–03 (1983).

130. *See* Arnout van de Rijt et al., *Field Experiments of Success-Breeds-Success Dynamics*, 111 PROC. NAT'L ACAD. SCIS. 6934, 6937 (2014) (observing the success-breeds-success phenomena across multiple networks that feature social feedback). Kickstarter itself has also picked up on this phenomenon and attempted to create a more diverse crowdfunding ecosystem through their Forward Funds program. *See* KICKSTARTER, *Building a More Diverse Creative*

side, the government could indirectly engineer a more diverse venture capital market through what are essentially indirect subsidies to the industry.[131] For an example of these subsidies, when Taiwan sought to create a venture capital market in the 1980s, it created regulations that specifically sought to promote venture capital investment for startups in the high-tech sector.[132] While venture capital firms could opt out of the regulations and invest in other sectors, doing so would mean firms lost tax incentives and access to direct government investment.[133] If we were to apply this to the United States, a direct investment or tax incentive strategy in underfunded industries could be paired with regulatory responses to address the current lack of diversity in venture capital. While direct investment would manipulate the inputs to the venture capital market, by providing runway to early-stage ventures currently being passed over, regulatory changes to the venture capital firms would attempt to affect the machinery itself.

This is an area that deserves further research in both law and economics to craft the correct regulatory approach. For the rest of this section, I will primarily focus on interventions at the investment level that would open up the opportunity to more individuals to invest and to receive investment. While I am not making the claim that these are the *best possible* interventions, I am emphasizing that the current market should be understood as a product of the current policy choices that we have made and not as the entropic result of random forces.

B. *Encouraging the Reorganization of Venture Capital Firms*

As noted earlier, the preferred corporate form for venture capital firms is the limited partnership. There are two primary reasons advanced for this: (1) limited partnerships receive pass-through taxation and (2) by remaining passive limited partners,

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Ecosystem Through Forward Funds, (Oct. 7, 2022), https://updates.kickstarter.com/building-a-more-diverse-creative/.

131. For example, while much of the American venture capital market has grown organically since its early days, Taiwan fabricated a venture capital market out of nothing through direct government intervention in the market. *See* Christopher Gulinello, *Engineering a Venture Capital Market and the Effects of Government Control on Private Ordering: Lessons from the Taiwan Experience*, 37 Geo. Wash. Int'l L. Rev. 845, 855–56 (2005).

132. *Id.* at 864.

133. *Id.* at 861.

investors also obtain limited liability.[134] This is in stark contrast to overall market dynamics. In 2023, less than 6% of businesses incorporated in Delaware were limited partnerships or limited liability partnerships.[135]

Pass-through taxation allows the business owners to report profits by the company on their personal tax returns and avoid "double taxation" where both the corporation is taxed on its income and the individual is taxed on their income from the corporation.[136] There are many reasons why pass-through taxation may be preferable for venture capital investors, but I will highlight two of them here. First, venture capital firms are often the beneficiaries of the qualified small business stock ("QSBS") exception that allows investors in startups worth less than $50 million to exclude the greater of $10 million or ten times the gain in the value of stock from income if they sell after holding for five years or more.[137] Notably, this exception is specifically only available to a "taxpayer other than a corporation,"[138] which incentivizes individual partners to claim the exception, both through compliance with the QSBS and by multiplying the exception across each partner which ultimately holds the stock. Second, tax-exempt entities, like university endowments, will want to avoid paying any corporate tax on their investments.[139]

However, there are other entities that avoid double taxation.[140] Real Estate Investment Funds ("REITs") also receive

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134. *See* Gulinello, *supra* note 12, at 269 n.7 ("In order to receive both limited liability and pass-through taxation, the investors in the fund become limited partners.").

135. *See* Amy Simmerman et al., *Delaware's Status as the Favored Corporate Home: Reflections and Considerations*, HARV. L. SCH. F. ON CORP. GOVERNANCE (May 8, 2024), https://corpgov.law.harvard.edu/2024/05/08/delawares-status-as-the-favored-corporate-home-reflections-and-considerations/; DEL. DIV. OF CORPS., *Annual Report Statistics*, https://corp.delaware.gov/stats/ (last visited May 7, 2025).

136. *See* WILLIAM H. CLARK JR., CORPORATE ATTORNEY'S PRACTICE GUIDE § 1.11[3][a]–[c] (2024).

137. Manoj Viswanathan, *The Qualified Small Business Stock Exclusion: How Startup Shareholders Get $10 Million (or More) Tax-Free*, 120 COLUM. L. REV. 29, 30–32 (2020); I.R.C. § 1202(b)(1)–(2).

138. I.R.C. § 1202(a)(1).

139. The reality is not quite so simple. Tax-exempt entities route funds through foreign "blocker" corporations that invest the funds and create the opportunity for pass-through, tax-exempt capital gains. *See* Calvin H. Johnson, *Why Do Venture Capital Funds Burn Research and Development Deductions?*, 29 VA. TAX REV. 29, 52 (2009).

140. S Corporations also receive pass through taxation but come with significant limitations on what corporate form can be selected. *See* IRS,

tax advantages by avoiding taxation at the corporate level.[141] To qualify as an REIT, the trust must return at least 90% of its taxable income to shareholders.[142] As a result, REITs are able to be widely held investments and hundreds of REITs trade on major American markets.[143] Being widely held is not only a feature of REITs, it is actually required to achieve their tax advantaged status.[144] Similarly, REITs are required to primarily invest in real estate and cannot function as active trading vehicles.[145]

REITs were originally enabled by federal legislation in 1960 to allow small investors to pool their assets and improve their access to large commercial real estate opportunities.[146] Of course, this same reasoning could be used to describe venture capital investments which are also unavailable to small investors without the ability to pool their money. While venture capital has substantial cash requirements, investors have previously accomplished this pooling through the limited partnership. However, the limited partnership is difficult to scale, with most

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S Corporations, https://www.irs.gov/businesses/small-businesses-self-employed/s-corporations (last visited May 7, 2025). For example, they must have one class of stock and no more than 100 shareholders. *Id.* As a result, they are inappropriate for public companies.

141. *See* Jack H. McCall, *A Primer on Real Estate Investment Trusts: The Legal Basics of REITs*, TRANSACTIONS: TENN. J. BUS. L. (SPECIAL ISSUE) 3 (2001) ("A REIT generally is not subject to corporate income tax to the extent that it distributes the lion's share of its earnings to its shareholders on a current basis."). *See* also J.P. MORGAN ASSET MGMT., *Tax advantages of Non-Listed REITs*, J (Apr. 18, 2023), https://am.jpmorgan.com/us/en/asset-management/adv/insights/portfolio-insights/alternatives/tax-advantages-of-public-non-listed-reits/.

142. Mark P. Cussen, *The Basics of REIT Taxation*, INVESTOPEDIA (July 30, 2024), https://www.investopedia.com/articles/pf/08/reit-tax.asp.

143. *See, e.g.*, NEW YORK STOCK EXCHANGE, LISTINGS DIRECTORY (last accessed July 9, 2025) https://www.nyse.com/listings_directory/reits (showing well over 100 publicly listed REITs when filtered by REITs).

144. *See* McCall, *supra* note 141, at 2 ("[A]ll REITs, both public and private, are required to meet certain tax tests. These [include] . . . ownership tests, designed to ensure that their shares of capital stock are widely held—the latter being a factor that tends to make REITs ideal candidates for public company status.") (emphasis omitted).

145. *See id.* at 3.

146. *Id.* at 1 (describing "A Brief History of REITs"). One may note the parallel between REITs being targeted at small investors and the qualified "small business" stock exception. Despite both being facially targeted at small investors or small businesses, they have been utilized primarily by those who are, relatively, quite wealthy.

venture capital firms having only 10 to 20 limited partners[147] while REITs are required to have at least 100 shareholders.[148]

A structure similar to REITs, designed for venture capital, could facilitate widely held investment and establish corporations as the preferred corporate form for venture capital.[149] This would be significant, as it would remove substantial barriers to entry that exist for prospective investors in the market today. It would also remove the accredited investor requirement, lower the typical minimum investment amount, and avoid the need for approval by all other partnership members.[150] Without these barriers, how many more people would put their money into the venture capital market and how much money could be accessed by founders?

While being widely held would not completely hinder the ability of a small number of powerful investors to control the corporation, it does give small investors the opportunity to (1) invest in venture capital and (2) align those investments with their values. Similarly, it could give shareholders the power to invest in strong firms and to submit corporate social responsibility proposals and seek to influence corporate policy.[151] While boards are not legally compelled to adhere to social responsibility proposals, failing to do so can put them in a precarious position should a proxy fight for control arise.[152] The fact that such proposals, even without binding authority, are effective demonstrates the power of broad public access to firms.

147. *See What Is an LP in Venture Capital*, PEAK CAPITAL, https://peak.capital/what-is-an-lp-in-venture-capital/ (last visited May 7, 2025).

148. *See* McCall, *supra* note 141, at 3.

149. I want to note as well that there are substantial differences between real estate and venture capital that should not be ignored. Real estate has the potential to immediately produce cash, meaning that regular dividends may flow from investment. On the other hand, venture capital investments tend to return all the cash all at once when the startup successfully exits. While this is a significant obstacle to realizing the corporate form in the same way, the principle of pooling money to achieve pass-through taxation remains a solid guiding principle.

150. *See supra* Part II.B (discussing the accredited investor requirement and minimum investment requirement for venture capital). While partnerships are free to amend their rules, the default rules in the Uniform Limited Partnership Act provide that a person becomes a limited partner "with the affirmative vote or consent of all the partners". *See* UNIF. LTD P'SHIP ACT § 301(b)(3) (UNIF. L. COMM'N 2013).

151. *See* Cohen & Schleyer, *supra* note 70, at 124–25.

152. *See id.* at 126–27.

Reorganization from limited partnerships to public corporations would subject the firms to the SEC's Joint Standards for Assessing the Diversity Policies and Practices Regulated by the Agencies ("SEC Joint Standards").[153] These voluntary standards encourage corporations to divulge information related to the diversity of their directors, managers, and employees along with any diversity initiatives they are pursuing.[154] While the SEC Joint Standards are voluntary, they can be effective for the same reason that corporate social responsibility proposals are: shareholders want corporations to divulge this information and will pressure them to do so. Additionally, shareholders can and should want to increase their value and the evidence shows that diverse firms perform better.[155]

While a change to the corporate form of venture capital firms is necessary to expand the class of investors, it should not be necessary to increase the diversity of firms. Right now, due to the SEC's definition of regulated entities, venture capital firms likely are exempt from even the voluntary SEC Joint Standards.[156] This lack of transparency leaves even the SEC in the dark as to the composition of both firms and founders. If the SEC were to strengthen the reporting requirements, we would at least have a clear picture of the landscape. Additionally, founders themselves may change the venture capital firms they choose to target if they had more transparency as to the composition of the partners and management.[157] A simple improvement would be to include venture capital firms within the definition of regulated entities, which already includes many other investment businesses yet fails to mention venture capital firms.[158] Additionally, the standards focus on businesses with 100 or more employees, but would do well to include venture capital firms

153. *See* Patel, *supra* note 10, at 640–41.

154. *Id.*

155. *See supra* Part III.A.

156. *See* Patel, *supra* note 10, at 642 ("Additionally, the SEC's narrow definition of 'regulated entities' excludes venture capital firms.").

157. For a more in-depth treatment of some of these proposals, *see infra* Part V.

158. U.S. SEC. & EXCH. COMM'N, *Standards for Assessing the Diversity Policies and Practices of Entities Regulated by the Securities and Exchange Commission - Frequently Asked Questions*, https://www.sec.gov/files/OMWI-DAR-FAQ.pdf (last visited May 7, 2025).

who make large investments, say over $100 million, regardless of the number of people they employ.[159]

Today, venture capital firms are able to organize with little transparency and with few investors. By doing so, they erect towering barriers for entry to new investors in the venture capital space. These network conditions, and the incentives of venture capital, have produced a lack of diversity in both firms and startups. However, the limited partnership and its dearth of diversity is not the inevitable form of venture capital, but one that is encouraged through the current regulatory scheme. If pass-through taxation is the key to the limited partnership, the federal government should allow an REIT-like exception for venture capital firms to encourage these entities to be widely held. Short of that, they should at least increase the reporting requirements for these firms to be more transparent.

C. *Encouraging Alternative Markets*

Complex systems also exhibit path dependence, meaning that small changes in the initial conditions can lead to vastly different outcomes.[160] Combined with resiliency, this initial path can develop into systemic lock-in which makes the complex system extremely difficult to change.[161] To further complicate change, complex systems also exhibit nonlinearity which means that small changes may produce big results while big changes may produce small results.[162] This could mean that, even if the changes above were implemented, the venture capital market would still resist change. While new corporate forms would open up access to more capital, they would have to compete with existing firms that have the advantage of already being in the market. And ultimately, even if the market moved towards widely held corporations, those corporations may exhibit the same proclivities as existing venture capital firms.

To that end, encouraging the growth of alternative venture capital markets could avoid the pitfalls of lock-in and path dependence. For an example of alternative markets in the United States, we have to look no further than the legalization of marijuana over the last decade. In the early states that have

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159. *Id.*
160. *See* Law and Complexity, *supra* note 6, at 11.
161. *See supra* Part III.A.
162. *See* Law and Complexity, *supra* note 6, at 27.

legalized marijuana, there are significant racial disparities in the ownership of cannabis businesses.[163] This is despite studies that have found that marijuana is not only used at the same rate across racial demographics, but also sold at nearly the same rate.[164] However, as the marijuana market has become legitimized, racial disparities have emerged in ownership and employment in the new, legitimate market.[165] Some of the policies enacted have directly encouraged this racial disparity.[166] By bringing marijuana to the mainstream market, we introduced it to a complex system with its own lock-in that has resulted in inequitable distribution of opportunities and resources, including lack of access to capital.[167] Put in other words, our traditional market has barriers to entry that did not exist in the prior black market, and these barriers result in depressing the participation of those systemically prevented from overcoming them. There are multiple lessons to take from this example. First, the same business, like the sale of marijuana, will develop significantly different characteristics based on external factors like market conditions and regulatory choice. The second is that regulation is a choice that drives market organization, such as when Washington State chose to exclude those with recent felonies from the legal marijuana business.[168] Lastly, is that a

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163. For example, in Washington state in 2015, fewer than 3% of owners in the marijuana retail store industry were Black and fewer than 4% were Latino. Michael Vitiello, *Marijuana Legalization, Racial Disparity, And the Hope For Reform*, 23 LEWIS & CLARK L. REV. 789, 808 (2019). *See also* SUNY ROCKEFELLER INST. OF GOV'T, DISPARITY IN WORKFORCE AND OWNERSHIP IN NEW YORK'S MEDICAL CANNABIS INDUSTRY 5 (2023) (finding that women and people of color are underrepresented in New York's medical marijuana industry, especially in management and ownership, and attempting to identify structural reasons for the disparity).

164. *See* Vitiello, *supra* note 163, at 804–05.

165. *See id.* at 808.

166. Consider, for example, that Washington's original law prevented people with recent felonies from owning dispensaries. *See id.* at 809. This policy had a clearly disparate racial impact due to the way that drugs have long been policed inequitably in the United States. *See id.* at 804. Of course, many of those locked out of ownership had felonies for the very thing that was now legal: the sale of marijuana. This is not to say that all black markets are more equitable in participation. For example, there is a global black market for organ sales. *See* Steve P. Calandrillo, *Cash for Kidneys? Utilizing Incentives to End America's Organ Shortage*, 13 GEO. MASON. L. REV. 69, 94 (2004).

167. *See* Daria Roithmayr, *Locked in Segregation*, 12 VA. J. SOC. POL'Y & L. 197, 209 (2004) (a complex-systems take on how segregation display qualities of lock-in, and the way this has resulted in inequitable social networks).

168. *See* Vitiello, *supra* note 163, at 809.

new market, like legal marijuana, can develop significantly different characteristics as a result, even when the prior market was well established.

Similarly, I have already explored how crowdfunding can lead to different results than traditional venture capital. Consider again the example of the Pebble Smartwatch which, after failing to raise enough venture capital to bring the product to market, subsequently raised over $10 million through a crowdfunding campaign on Kickstarter.[169] The two markets reached opposite conclusions: venture capital rejected the product while crowd funders made it the most successful Kickstarter of its era. These two markets continued to oppose each other even after the initial Kickstarter. When venture capital firms subsequently acquired a stake in Pebble, they pressured the company to develop a fitness tracker that was ultimately a failure.[170] Immediately after this failure, Pebble launched another crowdfunding round which raised over $20 million for a new generation of the Pebble watch, this time with no fitness tracking.[171]

The differences between traditional and venture capital and crowdfunding is not limited to occasionally producing different products. With regards to participation by women, Kickstarter also produces dramatically different results. While women do lag behind in the percentage of "project leaders" and total funded projects, they have a higher success rate in hitting funding goals than men.[172] Additionally, women are overrepresented in some project types like Dance, while being underrepresented in other types like Technology.[173] Despite these obvious disparities, it is still important to recognize that many of these project categories are likely to be entirely ignored by traditional venture capital's drive for growth and return on investment. In other words, the gender gap in venture capital is not a foregone conclusion.

169. *See supra* Part III.B.

170. *See supra* Part III.C. *See also* Chandra Steele, *A Look Back at Pebble's Rise and Fall*, PC MAG (Dec. 7, 2016) https://www.pcmag.com/news/a-look-back-at-pebbles-rise-and-fall.

171. *See* Andrew Orlowski, *supra* note 119.

172. *See* Hadar Gafni et al., *Gender Dynamics in Crowdfunding (Kickstarter): Evidence on Entrepreneurs, Backers, and Taste-Based Discrimination*, 25 REV. FIN. 235, at 237, 250–52 (2021).

173. *See id.* at 246. While not focused on gender, Kickstarter has also noted the disparities in funding between both categories of projects and demographics of the creators. *See* KICKSTARTER, *supra* note 117.

Panel A		Distribution of entrepreneurs				Distribution of contributions (%)			
		All projects (%)		Successful projects (%)		Funding goal ($)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Projects	Male	Female	Male	Female	Male	Female	Male	Female
Dance	308	22.7	77.3***	20.5	79.5***	2,847.4	3,208.3	32.0	68.0***
Fashion	261	41.0	59.0***	35.9	64.1***	6,333.4	5,158.4	38.6	61.4***
Food	392	44.6	55.4**	43.2	56.8***	8,973.7*	7,638.5	40.5	59.5***
Art	1,204	54.4***	45.6	52.8**	47.2	4,891.6	4,211.2	46.1	53.9***
Theater	966	55.3***	44.7	54.3***	45.7	4,110.4	3,802.8	42.0	58.0***
Publishing	1,209	59.6***	40.4	58.2***	41.8	5,283.7	5,148.8	48.1	51.9***
Photography	606	59.9***	40.1	57.3***	42.7	4,752.0	4,522.1	44.1	55.9***
Music	3,072	69.0***	31.0	67.5***	32.5	4,130.1	4,820.2***	52.1***	47.9
Film and Video	4,530	70.1***	29.9	68.9***	31.1	9,888.8	10,439.9	52.0***	48.0
Design	517	76.0***	24.0	73.0***	27.0	14,525.1***	6,784.5	77.32**	22.7
Technology	207	83.6***	16.4	84.0***	16.0	15,469.8	18,715.0	78.7***	21.3
Comics	411	84.9***	15.1	83.4***	16.6	4,385.7	4,913.3	71.2***	28.8
Games	389	91.8***	8.2	91.8***	8.2	66,062.3	8,455.0	85.9***	14.1
Total	14,072	65.3***	34.7	63.6***	36.4	9,468.3	6,468.4	55.2***	44.8

FIGURE 4: GENDER DISTRIBUTION OF KICKSTARTER PROJECTS BY CATEGORY.[174]

I noted previously that crowdfunded securities are already available subject to severe restrictions. In particular, the JOBS Act limits the amount that can be crowdfunded to $1 million annually.[175] This is despite the fact that successful startups, on average, raise $41 million from angel investors and venture capital firms, making the annual cap a dramatic obstacle to crowdfunding as a legitimate option.[176] Despite these obstacles, there is clearly a market for more of this type of crowdfunding. In 2011, two individuals launched a campaign to buy Pabst Brewing Company and raised over $200 million from more than five million participants before the SEC sent them a cease-and-desist letter.[177] The point is not that crowdfunding is a perfect system, but only that it succeeds in producing different result. The annual limit imposed by the JOBS Act stands as an obstacle to capital intensive startups and limits the scope of what is attainable through crowdfunded securities. Additionally, it

174. *See* Gafni et al., *supra* note 172, at 246.
175. *See* Murphy, *supra* note 39, at 780.
176. *See id.* at 779–80.
177. *See* Uriel S. Cari, *Protecting the Crowd Through Escrow: Three Ways That the SEC Can Protect Crowdfunding Investors*, 19 FORDHAM J. CORP. & FIN. L. 681, 692–93 (2014).

effectively makes traditional venture capital the only viable path to funding for these startups. Raising the annual limit on crowdfunded securities could mitigate diversity problems in startups by removing the insular network of venture capital firms from the equation.[178]

While raising the limit is an option, it is not clear that there should be any specific cap on crowdfunded securities at all. There is already an individual limit that caps the individual risk that can be incurred.[179] There are also already rules for accredited investors contributions to private securities.[180] Beyond the risk to individuals, there also requirements that can be imposed on crowdfunding portals to limit risk such as requiring that funds be kept in escrow after the close of the campaign.[181] In general, the SEC can impose a sliding scale framework requiring additional disclosures and monitoring by crowdfunding portals or independent auditors as the amount of capital raised grows. This increased scrutiny could increase the overhead costs of raising large amounts of capital through crowdfunding, but that may be a fair tradeoff to protect small investors from a disaster like Theranos. Additionally, increased regulatory scrutiny could act to discourage fraudsters from pursuing crowdfunding knowing that funds will be held in escrow.

By opening up this crowdfunding market, startups may be able to break free of the constraints and barriers of the current venture capital markets. Additionally, creating a pathway for tax advantaged venture capital corporations could create capital raising machines that can challenge the power of the small and insular networks of limited partners. Given the way path dependence and lock-in manifest in complex networks, creating new paths to venture funding may be necessary to

178. *See* Murphy, *supra* note 39, at 804 ("Having some connection to a venture capitalist or being able to network your way into a meeting with a venture capitalist has become an unwritten requirement to securing venture capital financing."). Murphy additionally suggests that the limit should be raised to $5 million. *Id.* at 780.

179. *Id.* at 806 ("[W]ithout changing the limits on how much each individual investor could invest in a year, investors' exposure to risk would not be affected.").

180. *See* discussion *supra* Part II.B.

181. *See* Cari, *supra* note 177, at 703 ("[C]apital should be released from escrow directly to the parties necessary for the planned development or expansion of the business. This would require crowdfunding entrepreneurs to clearly state the intended purpose of the capital raised from a campaign, as well as the parties intended to realize that purpose.").

circumvent the current barriers and mitigate the manifested inequities in venture capital. The way that alternatives markets have emerged and succeeded should give us hope for an alternative path forward should internal change not be attainable in venture capital.

V.
Conclusion

Complexity theory can be a useful tool in analyzing legal systems by not only giving a language to the common phenomena that arise, but also telling us which phenomena to look for. This allows us to transform basic intuitions like "the rich get richer" into a systemic analysis that expects power law distributions to arise alongside other phenomenon like preferential attachment.

This complexity-minded analysis is useful in looking at the venture capital market which has long been under analyzed and reserved as a space for wealthy investors to increase their gains. We have allowed venture capital to erect substantial barriers to entry both for investors and startups. These barriers have emerged for reasons including the incentive to find a viable exit strategy for the investors and high risk associated with early-stage startups. But the patterns are not just incentive based. They also arise from structural considerations such as the preference for pass through taxation and the high level of capital needed to be a participant in the venture capital market.

This has led to unquestionably inequitable outcomes both within firms and among startups. Women and other minority groups remain woefully underrepresented among venture capital partners and managers. Startup founders fare little better, as they also tend to be from a small and insular group of schools and companies. In addition, both firms and startups are largely insulated from the shareholder pressure that more traditionally widely held corporations would face.

One way to enact change is to lower the barriers to entry. This assumes that venture capital is reinforcing broader societal trends that lock certain players out of the market. However, before we can think about changing the venture capital market, we must first understand the ways that complex systems exhibit resilience and path dependence. These features tell us both that the status quo of venture capital may be difficult to change but also that it is likely to self-organize to adapt to even dramatic changes.

With this in mind, multiple options emerge to influence the venture capital market. First, if pass through taxation is the primary motivator for the limited partnership form, then regulators should make such tax treatment more widely available. The REIT example provides a potential reference point to begin shaping a corporate exception for venture capital investors in order to facilitate broader investment in venture capital firms. This could potentially shift the balance of power so that smaller investors can enter a market that has historically been foreclosed to them. Second, the annual limit on crowdfunded securities should be dramatically raised to create new access to capital for founders. This could create an entirely parallel venture capital market that is not subject to the same lock-in as the current market.

While these options are promising, more research is needed to understand their effects. More complex agent-based models could be developed to evaluate the way that gender disparities effect participation in venture capital. Additionally, an economic analysis on incentives and intervention in venture capital would help better understand which possible regulatory responses could be most effective at producing the desired result of increased access. While I have suggested some possibilities, others, like direct grants to startups, could prove to be even more effective upon further investigation. In doing so, future research should continue to consider how a complex system may respond and incorporate change.