

RESEARCH BRIEF

Synergizing Ventures

Based on BFI Working Paper No. 2019-115, “[Synergizing Ventures](#),” by Ufuk Akcigit, Professor in the Kenneth C. Griffin Department of Economics and the College, University of Chicago; Emin Dinlersoz, senior economist, US Census Bureau; Jeremy Greenwood, professor of economics, University of Pennsylvania; and Veronika Penciakova, research economist, Federal Reserve Bank of Atlanta

KEY TAKEAWAYS

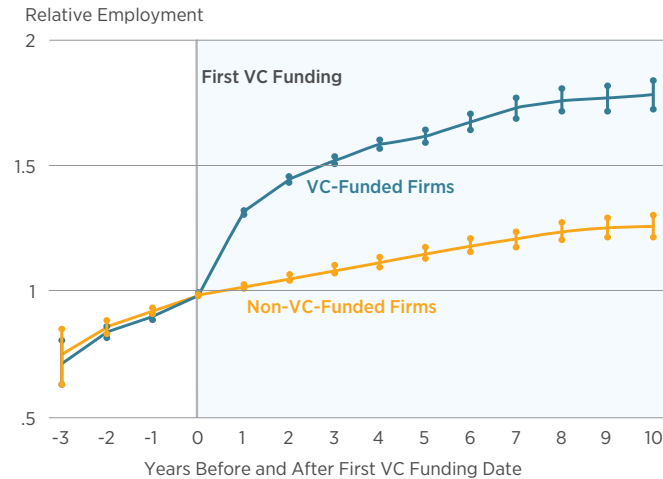
- ✓ Business start-ups benefit from the involvement of venture capital (VC) firms
- ✓ VCs, though, provide more than just money
- ✓ This research reveals that VCs play a key advisory role in the success of new firms, and this role is actually more important than financing
- ✓ Talented entrepreneurs that are paired with experienced VCs not only grow faster and at higher rates of productivity, but their technological advances also benefit the rest of the economy

In the early days of Microsoft, Bill Gates and Paul Allen did not need investors’ money to scale their business. Selling software proved lucrative from the start. Even so, Gates and Allen sold 5 percent of their company for \$1 million to a venture capitalist (VC). The reason? To get a VC to join the board and “give us some adult advice,” Gates said in a 2013 Harvard interview.¹ That \$1 million stayed in the bank and was never touched, according to Gates, but the VC remained on the board for decades and delivered important counsel as the company grew.

This anecdote provides insight into a key finding from UChicago’s Ufuk Akcigit, Emin Dinlersoz of the US Census Bureau, Jeremy Greenwood of the University of Pennsylvania, and Veronika Penciakova of the Federal Reserve Bank of Atlanta.

¹ <https://www.youtube.com/watch?v=cBHJ-8Bch4E>

Figure 1 • The Evolution of Average Employment Relative to VC Funding Date



Note: The observations are relative to average employment (normalized to 1) for VC-funded startups in the year of first VC funding, $t=0$.

In their recent paper, “Synergizing Ventures,” the authors find that one of the important factors determining the success of a new company is its relationship with a VC. And to echo Gates, it’s often not because those infant companies received funding from the VCs, but rather because those VCs provided necessary business guidance.

This somewhat counterintuitive finding, that the biggest returns from VCs come from counsel rather than cash, could inform how policymakers view the role of VCs in the formation and growth of businesses.

A penny for your thoughts

Not every new business venture hits the big time; indeed, most begin small and stay small through their lifecycle. Critically, for the aggregate economy, most new firms also do not make breakthrough innovations that spur productivity growth beyond their business. What sets the game-changers apart from the pack? A number of factors can put a new venture on a path to growth, including the presence of a patent or a trademark, R&D activity, and initial firm size.

However, this research adds another factor to the mix: It turns out that VC backing during the early stages of a start-up is a key ingredient of firm success. More than that, the authors find that such firms are also key contributors to aggregate innovation and productivity growth; that is, these

individual firms introduce technological advances that not only benefit the firms’ bottom line, but that also disperse into the broader economy.

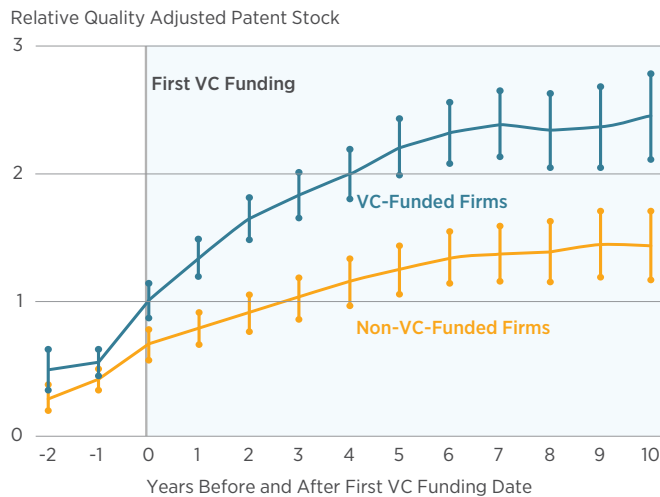
What is special about VCs that fires growth among start-ups? What distinguishes VCs from other funders, like banks? Put another way, if the most important contribution of VCs is money, then why don’t banks provide the same boost to young businesses? Further, beyond the benefits for individual companies, how critical are VCs for the growth of the aggregate economy?

To answer these questions, the authors employ empirical analysis and a theoretical model of innovation and growth, where VCs match with—and nurture—startups. For their empirical analysis the authors employ data on firms that receive VC funding, along with data on all US employer firms from the US Census Bureau from 1980 to 2012. This allows the authors to analyze the lifecycle dynamics of VC-funded vs. non-VC-funded firms, and to understand the differences between them in terms of innovation, survival, and growth.

Key empirical observations

1. Like all start-ups, VC-backed firms are subject to the slings and arrows confronting fledgling businesses—many fail and many remain small. However, VC-backed firms are much more likely to grow and attain “superstar” status than non-VC-backed firms. Further, such firms are increasingly dominating markets within their industries.
2. The second and third points emphasize that the relationship between a VC and an entrepreneur matters—a lot. And those relationships do not begin randomly. It turns out that VCs select the most promising startups to support. The authors’ empirical analysis shows strong evidence of assortative matching between entrepreneurs and financiers (including banks and others); those firms with promising innovation and growth prospects are more typically funded by VCs.
3. Further, not all VCs are created equal: those with more experience and with higher funding capabilities tend to ensure greater success for start-ups. Again, those start-ups backed by more experienced VCs engage, on average,

Figure 2 • The Evolution of the Average Quality-Adjusted Patent Stock Relative to VC Funding Date



Note: The observations are relative to the average patent stock (normalized to 1) for VC-funded firms in the year of VC funding, $t=0$.

in more innovative techniques. Moreover, as measured by patent citations, these more innovative technologies have the largest positive impact on the rest of the economy.

The authors' empirical analysis revealed the following results:

- Employment at VC-funded firms grows, on average, by about 475 percent over the time the VC is involved with the firm, compared with employment growth of about 230 percent for non-VC-funded firms.
- Similarly, VC-funded firms experience much higher growth in patent stock: VC-funded firms' patent stock grows by about 1,100 percent vs. about 440 percent for non-VC-funded firms.

With these facts in hand, the authors built a macroeconomic model that incorporates the unique characteristics of VCs along with data about US start-ups. For example, as in the real world, VCs in their model not only provide money to young firms, but they also establish nurturing relationships and provide counsel as the firms grow. In this model, talented entrepreneurs benefit from pairing with talented VCs. However, not all talented entrepreneurs are lucky enough to find a VC, and so they turn to other sources of financing, like banks. In the model, as in life, banks

do not have as much technological or managerial expertise to benefit an entrepreneur—they mostly provide funding. Likewise, start-ups that are financed through banks or other traditional means start at a disadvantage. On the other hand, those talented entrepreneurs who are paired with talented VCs find that their businesses grow more quickly and with higher rates of productivity.

A unique feature of the authors' model is that it incorporates assortative matching among lenders and entrepreneurs, allowing for an assessment of the various relationships and their impact on a company's future growth. For example, when the model incorporates random instead of assortative matching, aggregate growth is 1 percent lower. Alternatively, when assortative matching is improved in the model—VCs fund only high-quality startups—aggregate growth is 9 percent higher. Further, if the model shuts down synergies between VCs and startups (that is, VCs only provide money and no expertise), growth falls by 28 percent. These results reinforce the authors' two key points: VC selection matters, and it ultimately enhances economic growth; and the real contribution of VCs is their expertise and not their funding.

This research adds another factor to the mix: It turns out that VC backing during the early stages of a start-up is a key ingredient of firm success. More than that, the authors find that such firms are also key contributors to aggregate innovation and productivity growth; that is, these individual firms introduce technological advances that not only benefit the firms' bottom line, but that also disperse into the broader economy.

Conclusion

Synergies and selection are key to understanding the role of venture capital in the development and growth of startups. As the authors' findings reveal, venture capital is so much more than money. VC firms play key advisory roles for start-ups, and these synergies play a defining role in those firms' success, both in terms of growth and technological innovation. And the benefits redound to the aggregate economy, as technologies that are developed by the successful start-ups are transferred to other firms.

Regarding selection, when talented entrepreneurs are matched with talented VCs, the results are even stronger. The role of assortative matching is a key finding from this research. Just as not all entrepreneurs and start-ups begin with the same attributes, the same is true of venture capital firms. For policymakers, understanding the role and importance of assortative matching among entrepreneurs and VCs—for individual firms and the whole economy—is helpful in shaping policies that affect these markets. For example, prevailing tax rates imply lower taxation of VC-funded startups compared to others; if these taxes were made uniform across all startups, the growth rate of the economy would be impeded.

CLOSING TAKEAWAY

Employment at VC-funded firms grows, on average, by about 475 percent over the time the VC is involved with the firm, compared with employment growth of about 230 percent for non-VC-funded firms. Similarly, VC-funded firms experience much higher growth in patent stock: VC-funded firms' patent stock grows by about 1,100 percent vs. about 440 percent for non-VC-funded firms.

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bfi.uchicago.edu/working-paper/2019115

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Research Brief: "Synergizing Ventures"

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