



2022 Trends in Entrepreneurship Report

Released January 2022



KENAN INSTITUTE
of Private Enterprise



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Welcome to the 2022 Trends in Entrepreneurship Report

The Trends in Entrepreneurship Report brings together expertise and data from academia, industry and policy to highlight relevant topics facing entrepreneurs and investors today.

For the 2022 annual report, we invited researchers to submit trends based on their own emerging research. We welcomed submissions related to current topics in entrepreneurship, with a particular interest on trends related to funding; ecosystems; teams and talent; emerging technologies; and addressing diversity, equity and inclusion in entrepreneurship and small business. Each trend was reviewed for quality and relevance by our [editorial board](#).

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The Rising Bar to Entrepreneurship

- How has the quality of entrepreneurship evolved over the past several decades?
- We propose a measure of *ex ante* startup quality based on entrepreneur characteristics.
- We link the evolution in quantity- and quality-based measures of entrepreneurship.
- Our findings:
 - The **quantity** of startups has decreased while their **quality** has increased.
 - These two trends are linked: the bar to entrepreneurship has risen.
 - The aggregate performance of startups has worsened.

This trend is based on the following working paper: Bonelli, M., Liebersohn, J., & Lyonnet, V. (2021). *The Rising Bar to Entrepreneurship: Evidence from France* (Working Paper).

A Novel Dataset on French Startups

We use several administrative datasets to obtain detailed yet representative data on French entrepreneurs and their startups:

1. Entrepreneur survey conducted every four years from 1998 – 2018
 - Large-scale survey of about one-third of entrepreneurs in the first semester of each year
 - Mandatory survey with a high response rate (85%) -> representative sample
 - Contains a wealth of entrepreneur and startup characteristics (48 variables)
 - Age, education, expertise, experience, motivation, expectations, etc.

A Novel Dataset on French Startups

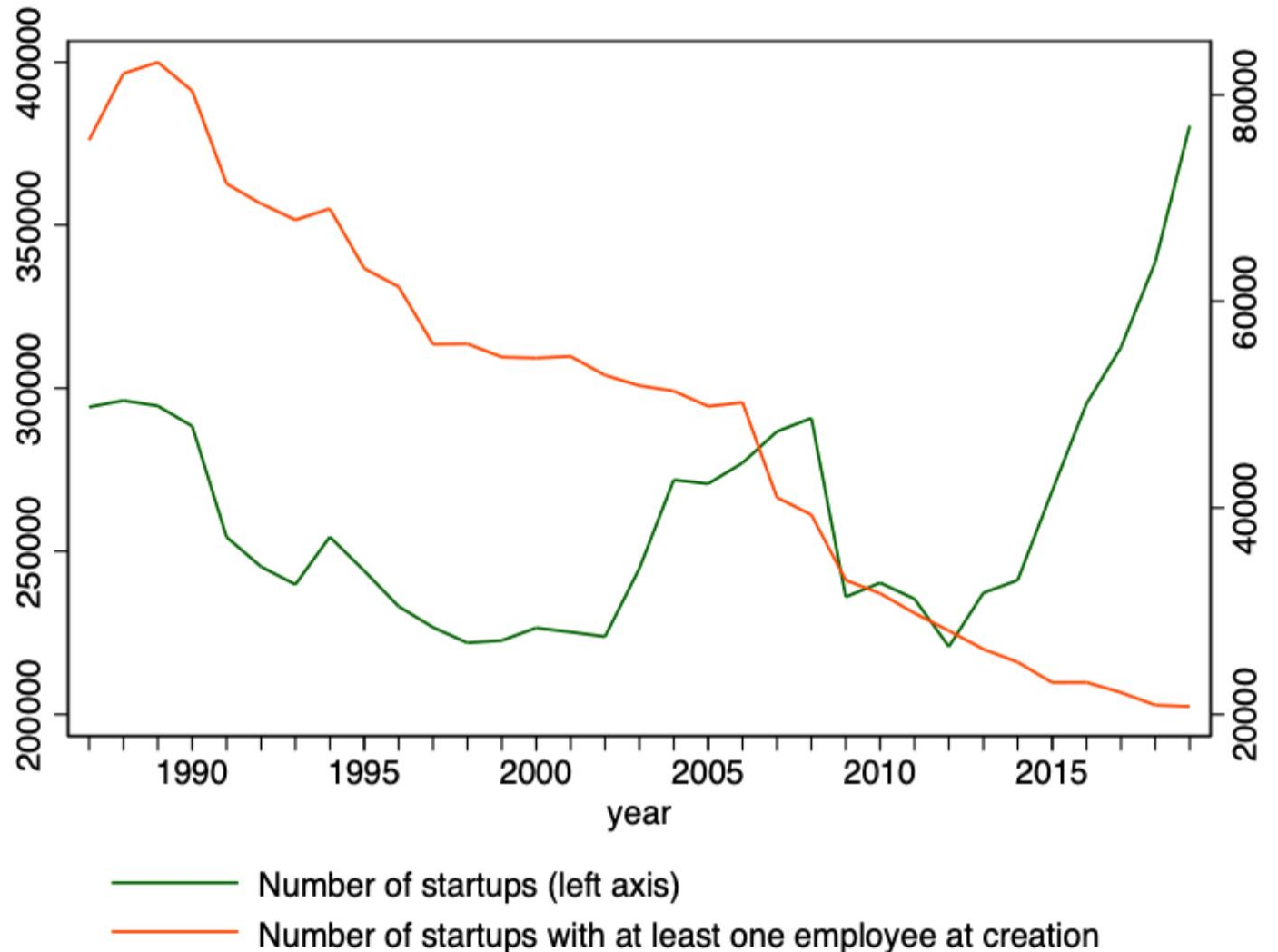
2. Firm registry
 - Universe of startups created (to measure creation trends)
 - List of all existing firms, annual (to measure exit)

3. Tax files
 - All firms under regular corporate tax regime
 - Both proprietorships and corporations
 - Financial statement, annual (to measure value-added)

4. Payroll files
 - All firms hiring at least one employee (to measure employment)
 - Worker wages and occupations

A Declining Number of Employer Startups

As in the U.S. (e.g., Decker et al. 2014, 2016), the *quantity* of French employer startups has declined over the past two decades



Measuring Startup Quality using Machine Learning

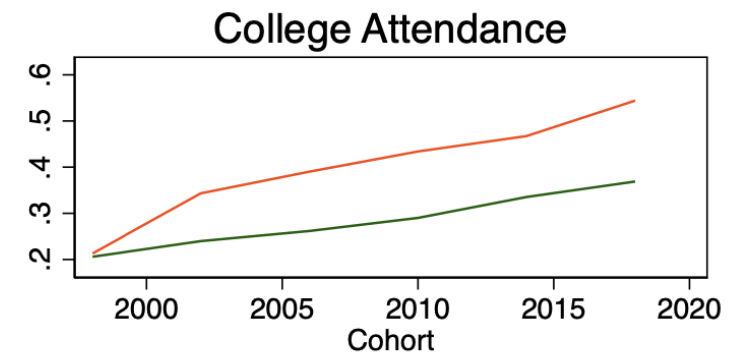
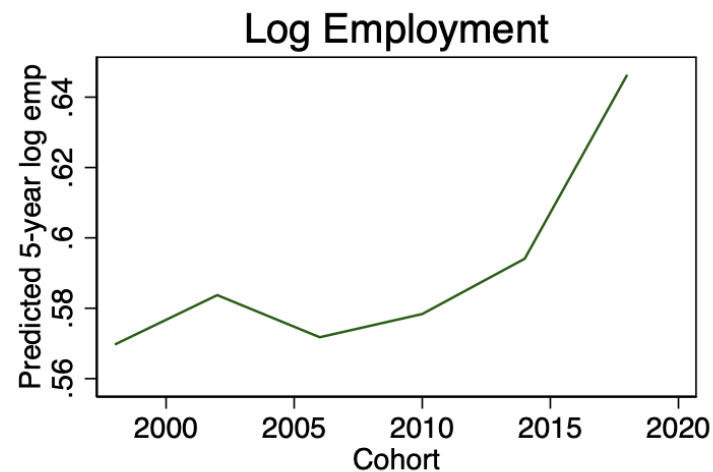
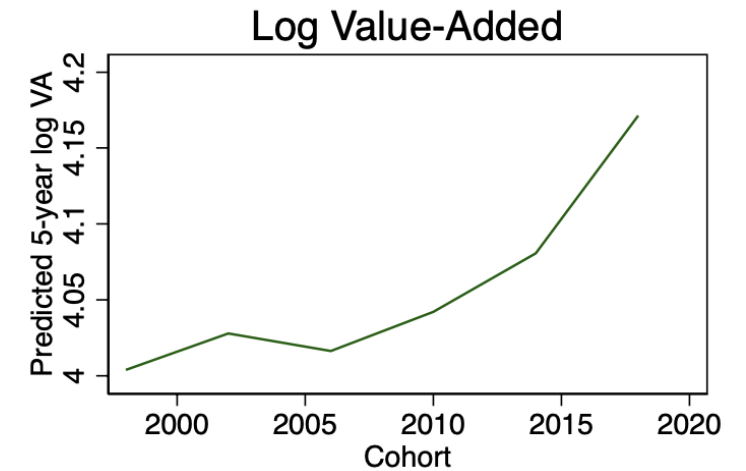
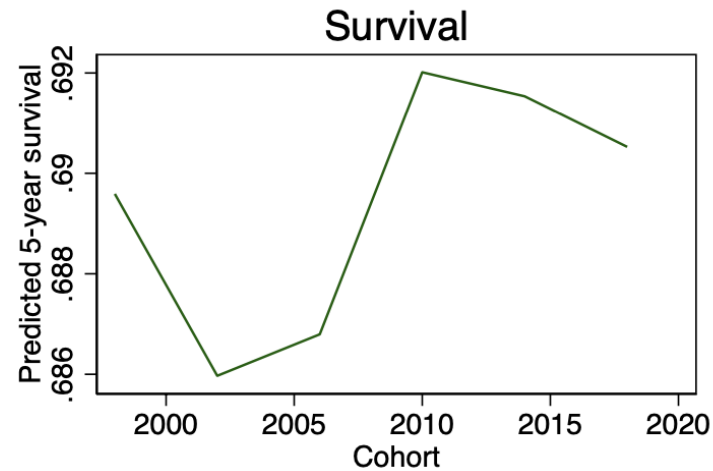
- Entrepreneur survey contains up to 48 characteristics
 - We don't know the true model
- Our strategy: Use ML techniques to predict success
 - Examples of success measures: survival, employment level, value added, at age 5
- After training our algorithm, we compute the *predicted* success of startups irrespective of their *actual* observed success

LASSO-selected Variables for 5-year Startup Success

	1(Alive at age 5)			log(EmploymentAge5)			log(ValueAddedAge5)		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
SameActivityBefore	0.064*** (0.011)	0.065*** (0.011)	0.055*** (0.009)	0.118*** (0.023)	0.106*** (0.022)	0.083*** (0.022)	0.217*** (0.037)	0.201*** (0.036)	0.163*** (0.034)
Female	-0.052*** (0.013)	-0.050*** (0.013)					-0.158*** (0.043)	-0.131*** (0.041)	
AgeFounder	0.004*** (0.001)	0.003*** (0.001)	0.002*** (0.001)						
FromOutsideEU	-0.230*** (0.031)	-0.197*** (0.028)	-0.172*** (0.026)						-0.340*** (0.091)
NoJob	-0.110*** (0.026)	-0.088*** (0.024)	-0.092*** (0.022)						
Bac+5+	-0.067*** (0.015)	-0.060*** (0.014)							
NoCreation	0.055*** (0.014)	0.050*** (0.014)		-0.108*** (0.029)	-0.106*** (0.029)	-0.144*** (0.028)		-0.092** (0.043)	-0.091** (0.041)
Executive				0.300*** (0.036)	0.271*** (0.035)		0.517*** (0.044)	0.429*** (0.046)	0.348*** (0.045)
Working				0.175*** (0.022)	0.160*** (0.021)	0.140*** (0.020)	0.337*** (0.029)	0.290*** (0.029)	0.251*** (0.026)
Intermediate						0.045 (0.037)			
PrevEmployer10-50							0.153*** (0.033)	0.131*** (0.032)	
FromFR								0.228*** (0.060)	
Constant	Yes	No	No	Yes	No	No	Yes	No	No
Zone FE	No	Yes	No	No	Yes	No	No	Yes	No
Zone × Industry FE	No	No	Yes	No	No	Yes	No	No	Yes
Observations	7,474	7,466	7,739	5,684	5,669	5,290	5,410	5,391	5,011
R ²	0.03	0.03	0.02	0.04	0.04	0.02	0.08	0.07	0.05

Result 1: Startup Quality Has Gone Up

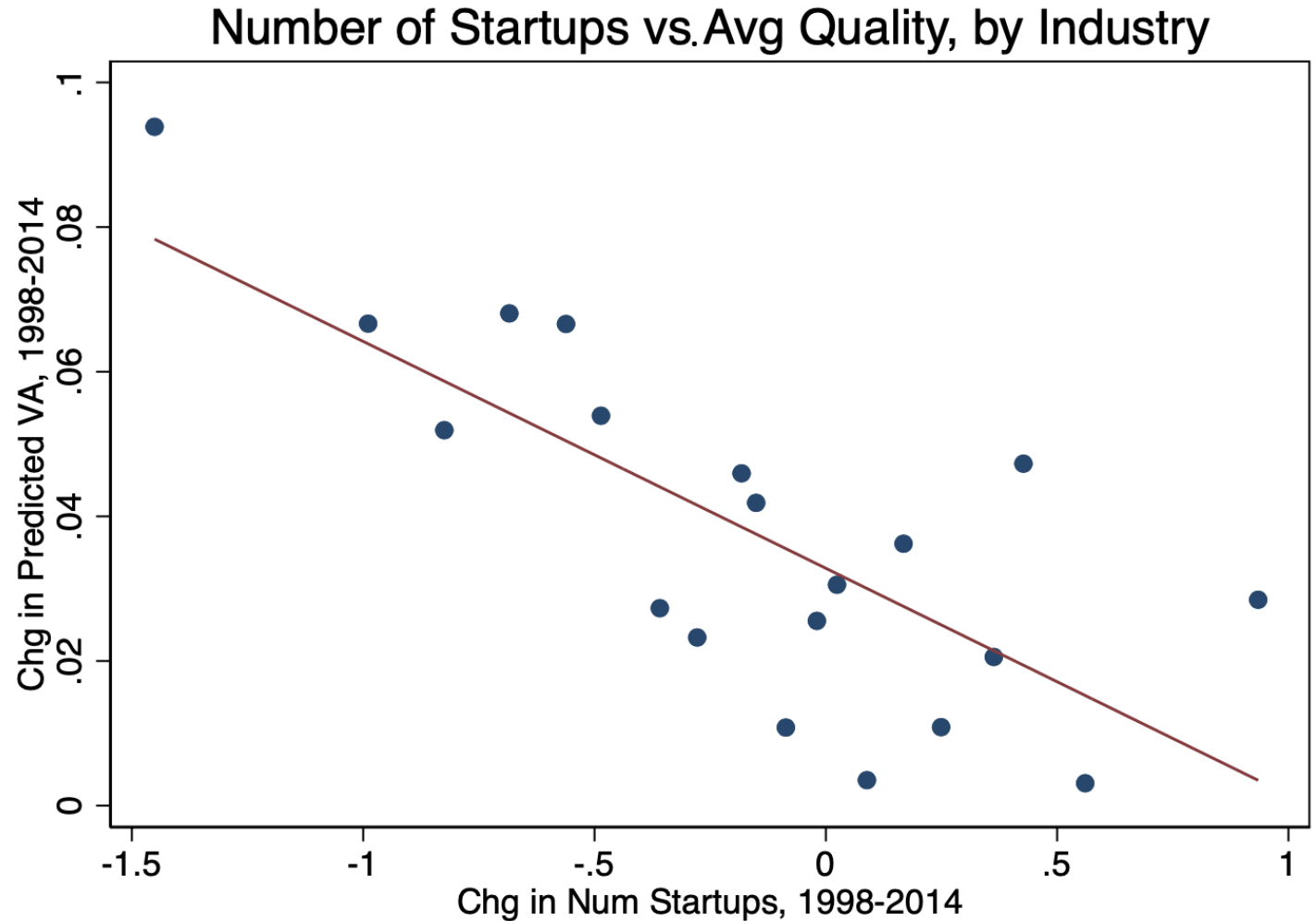
- Startup success based on ex ante entrepreneur characteristics has gone up over the years.



— Frac french pop with college degree
 — Pct entrepreneurs with college degree

Result 2: The Rising Bar to Entrepreneurship

- This increase in startup *quality* comes from industries where the *quantity* of startups has gone down.
- Our interpretation: It has become **harder** to become an entrepreneur, hence lower-quality entrepreneurs have disappeared.





Victor Lyonnet

Assistant Professor of Finance, Fisher College of Business, The Ohio State University

Victor Lyonnet earned a Ph.D. in economics from Ecole Polytechnique after visiting HEC Paris for several years. His research interests include financial intermediation, life insurance, corporate finance and entrepreneurship. He received the 2018 AFFI FNEGE best thesis award in corporate finance.

EXPERT INSIGHT

- Entrepreneurship dynamism is not only about entrepreneur quantity; quality also matters (see also Guzman and Stern, 2016).
- While the quantity of entrepreneurs has gone down, quality has gone up.
 - We find a 50% increase in predicted value-added from 1998 to 2018!
- Even if better entrepreneurs crowded out worse ones, this has not offset the decrease in total number of jobs in startups.
 - Startups don't create as many jobs as they used to (Decker et al. 2014, 2016).

References

Decker, R., Haltiwanger, J., Jarmin, R., & Miranda, J. (2014). The role of entrepreneurship in US job creation and economic dynamism. *Journal of Economic Perspectives* 28 (3):3–24.

Decker, R., Haltiwanger, J., Jarmin, R., & Miranda, J. (2016). Where has all the skewness gone? The decline in high-growth (young) firms in the US. *European Economic Review* 86:4–23.

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Rural Entrepreneurship and the Challenges Accessing Financial Capital

Notable Trends

- Rural America is home to around 46 million people. Before the onset of the COVID-19 pandemic, rural America was showing modest signs of a strengthening economy – though not as significantly as urban areas.
- In recent years, there has been renewed interest from community organizers and policymakers to support and encourage rural entrepreneurship.
- However, since rural areas are more remote to markets, infrastructure and other resources, such as human capital and financial capital, starting a business in a more rural area can be more challenging compared to urban areas.
- A recent report commissioned by the SEC details some of the challenges rural entrepreneurs face when seeking funding, especially compared to their urban counterparts.

All data and information included in this trend is from the following report: Robb, A. (2021). Rural Entrepreneurship and the Challenges Accessing Financial Capital: An Overview of Funding in Rural America.

Rural Projects Underrepresented in Federal SBIR/STTR Awards

Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs encourage research and development by early-stage companies with the potential for commercialization.

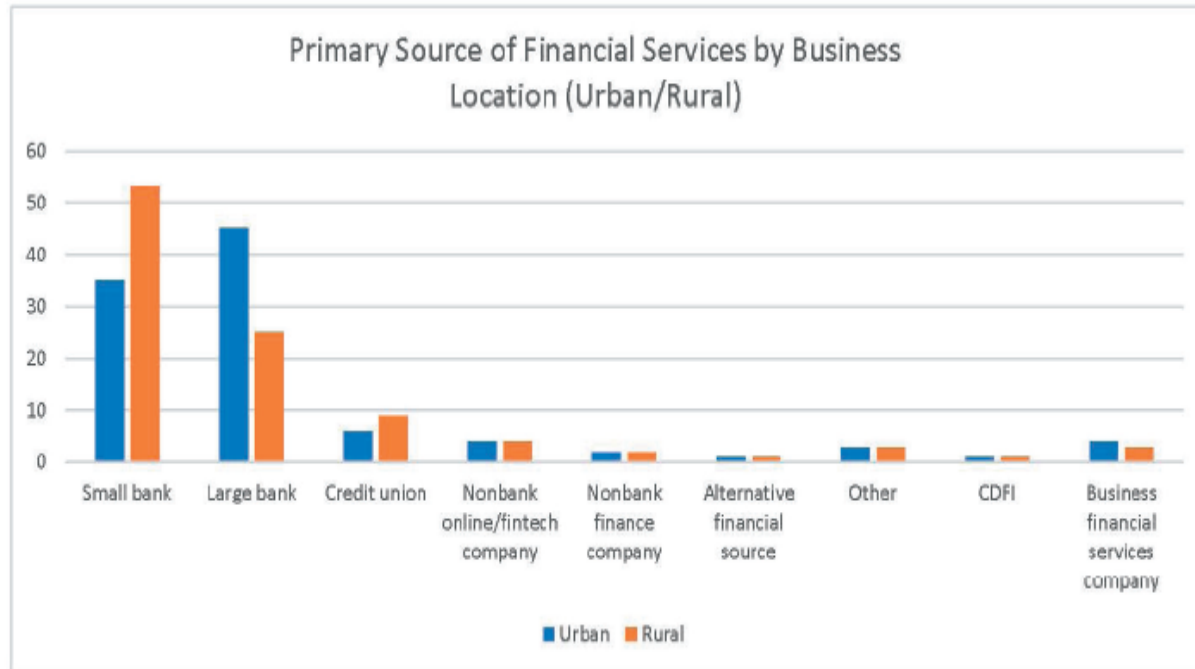
- A review of more than 7,600 awards from 2020 to the early part of 2021 found that about 4.5% were projects located in rural areas.
- Of the \$3.2 billion dollars of funding, rural projects received about 4.2%.

Table 1. SBIR/STTR Awards (2020-2021)

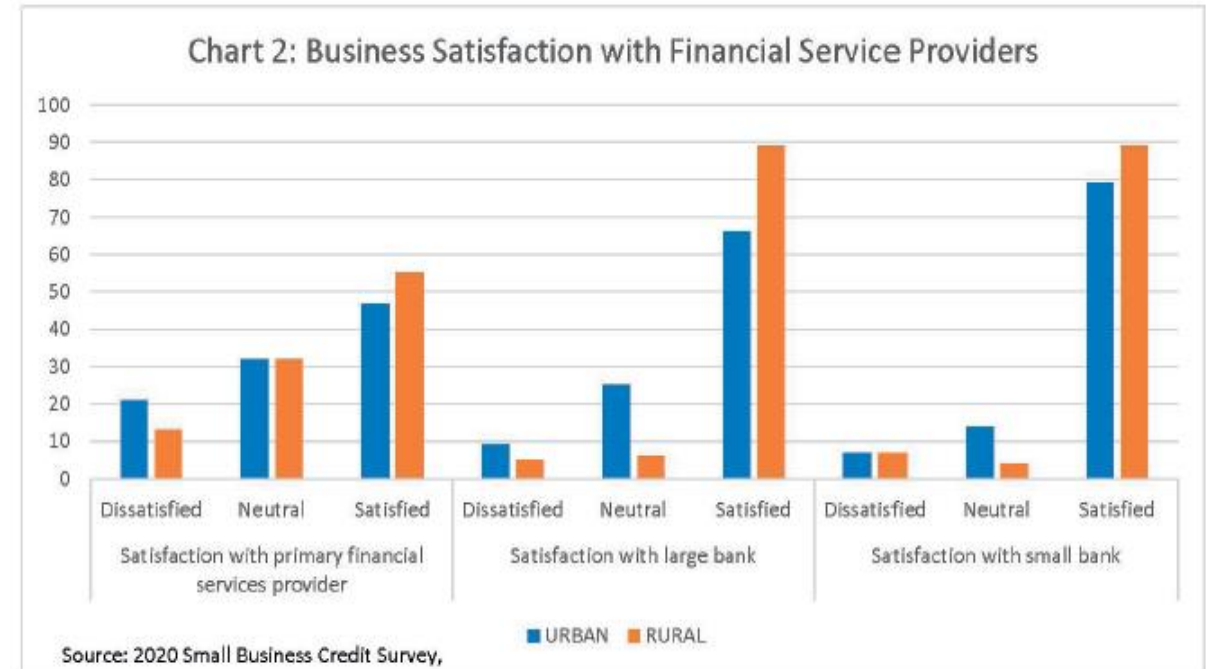
	Awards (#)	Award Amount (\$)
Rural	343	\$ 135,872,265
Urban	7272	\$ 3,098,611,528
Total	7615	\$ 3,234,483,793
% Rural	4.5%	4.2%
	Phase I	Phase II
Rural	65.0%	35.0%
Urban	67.0%	33.0%
	SBIR	STTR
Rural	79.0%	21.0%
Urban	83.7%	16.3%
	% Women	% Socially or Economically Disadvantaged
Rural	11.4%	5.5%
Urban	11.1%	8.5%

Source: <https://www.sbir.gov/sbirsearch/award/all>
Downloaded in August 2021.

Rural Business Owners Rely on Local Financial Service Providers



- Rural businesses are more likely than urban businesses to rely on small banks and credit unions, as well as to have these sources as their primary source of financial services.



- Rural businesses were more satisfied with their financial service provider than were urban businesses (55% versus 47%). Rural businesses were also far more likely to be satisfied with large banks than urban businesses (89% versus 66%) and also more likely to be satisfied by small banks than were urban businesses (89% versus 79%).

Rural Companies Less Likely to Crowdfund

Chart 6: Amount Raised in Reg CF by Urban/Rural (2017-2021)

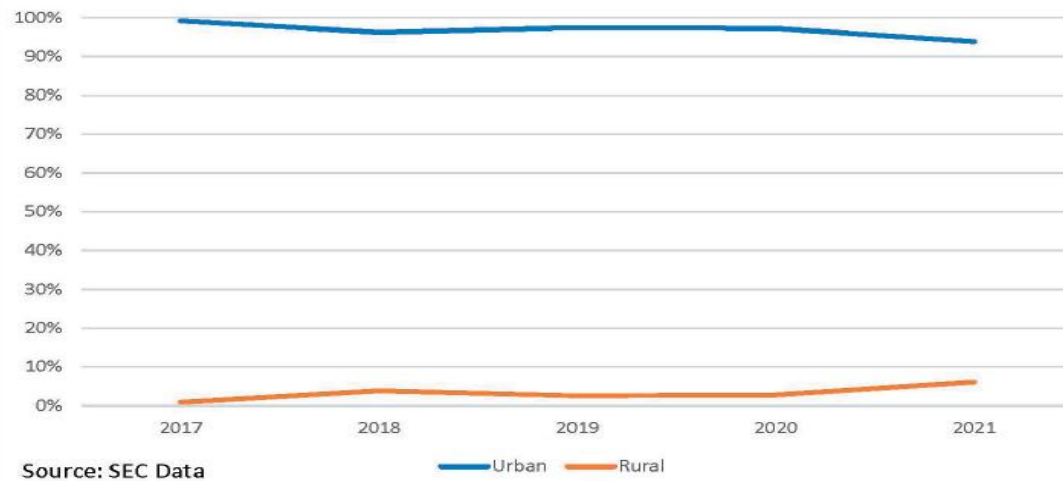
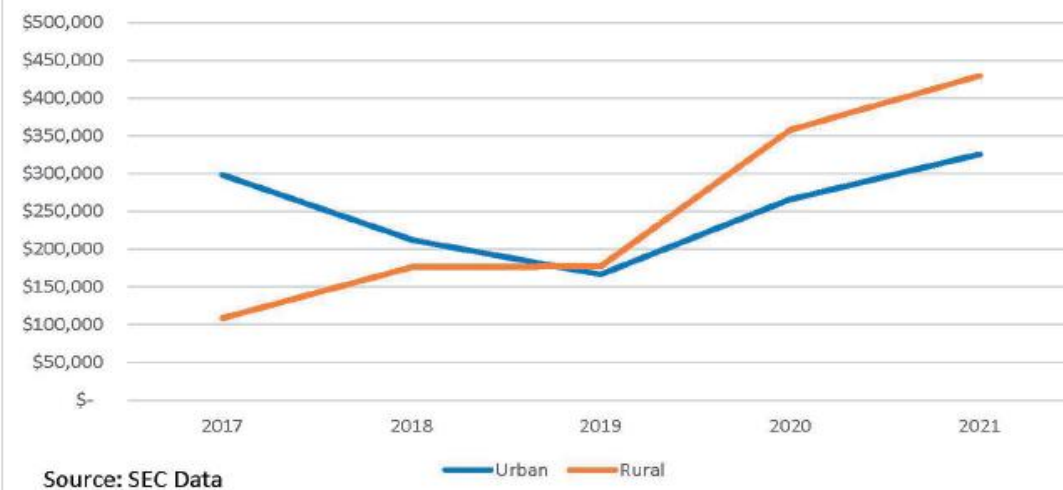


Chart 4: Mean of Amount Raised Through Reg CF (2017-2021)



- Rural companies continue to make up a small fraction of the companies seeking funding as well as the amount of funding sought. However, it's promising to note that rural businesses have increased their share of funding raised significantly, from less than 1% in 2017 to more than 6% in 2021.
- For rural businesses, the mean amount sought in 2017 was about \$108,000, compared with nearly \$300,000 for urban firms. By 2021, the numbers were much closer to one another and rural businesses actually had a higher mean amount raised (\$429,389) than did urban businesses (\$325,586).

Difficult to Measure Angel Investment in Rural Areas

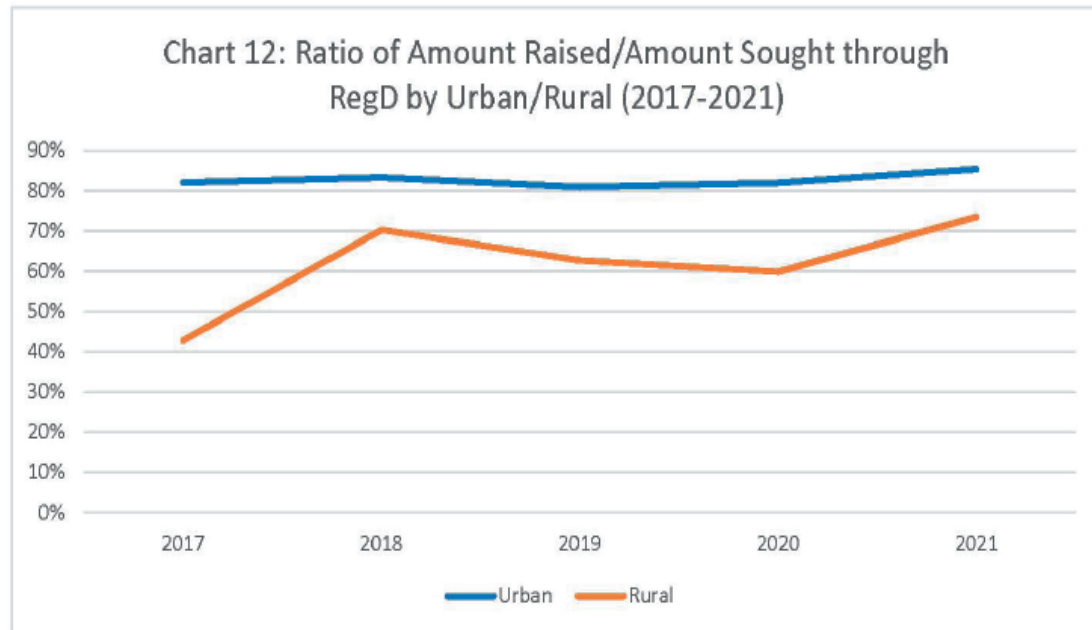
Table 13. Angel Investment by Urban/Rural 2018-2020

Number of Deals	2018	2019	2020	Total
Undetermined	39.7%	48.8%	36.8%	41.6%
Rural %	0.6%	0.9%	1.2%	0.9%
Urban %	59.7%	50.3%	62.0%	57.5%
<hr/>				
Investment Dollars				
Undetermined	36.7%	50.1%	44.3%	44.1%
Rural %	0.5%	0.7%	0.7%	0.6%
Urban %	62.8%	49.2%	55.0%	55.3%
	100%	100%	100%	100%

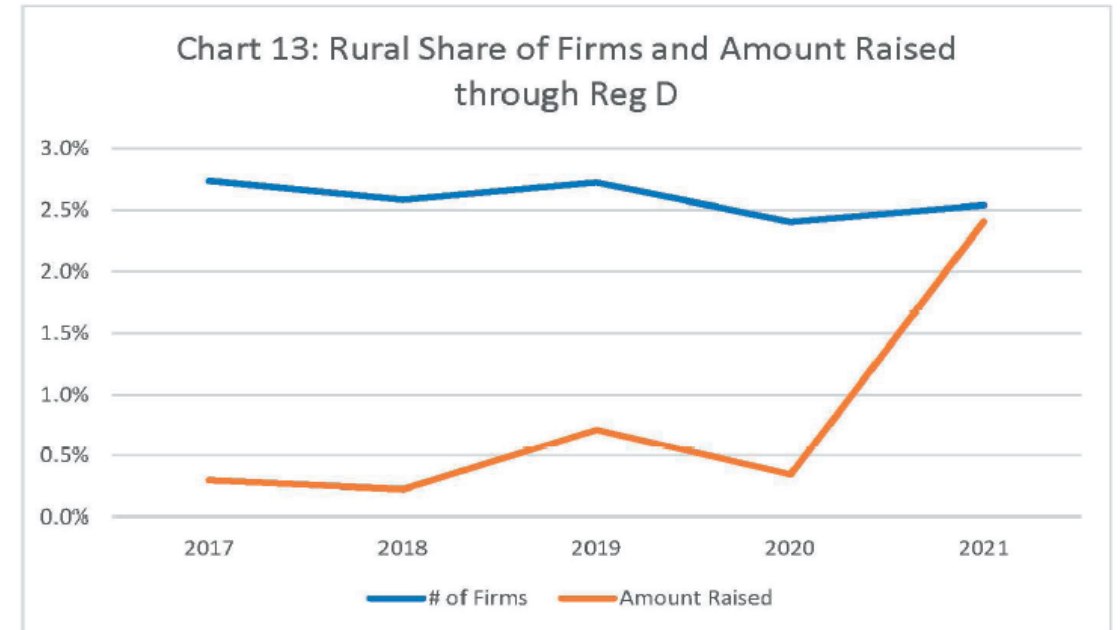
Source: Preliminary Findings from the 2021 Angel Funders Report, Angel Capital Association

- “Undetermined” is when there was not zip code level data on the company receiving investment.
- Note that these are raw numbers and haven’t been weighted to reflect different response rates between small groups (low response) and large groups (high response) rates reporting their data.
- Rural angel groups are relatively small and the underreporting of small groups in general probably undercounts rural angel groups and their investments. These data are also being reported by only those groups that are members of the Angel Capital Association, which tend to be larger and more urban groups.
- While these data reflect actual investments, not the number of companies that applied for funding from angel groups, it is clear that it will be necessary to make a concerted effort to build and grow the angel investor community in rural areas to make this kind of financial capital, as well as the human capital of the investors that comes with it, in the forms of mentoring, advising and board membership, more widely available to businesses in rural communities.

Rural Companies are Small Fraction of VC Investment



- Urban firms raised about 82% of what they sought in 2017 and just over 85% in 2021. Rural firms only raised about 43% of what they sought in 2017, but that increased to more than 73% by 2021.



- Whether we look at amount raised or number of firms raising capital, companies in rural areas made up a small fraction of the companies and funding that could be classified by urban and rural locations.

Few Rural Companies Go Public

- Few public offerings are made by rural companies; however, there are exceptions. For example, Florida-based PureCycle Technologies recently went public and is building its first production facility in Hanging Rock, Ohio.
- Additionally, Homestead Funds, a \$2.7 billion mutual-fund company, recently launched the mutual fund Rural America Growth & Income Fund (HRRLX), which seeks to invest in companies and sectors with roots in the rural economy. (This is defined as having at least 10% of a company or sector's capital expenditures, or at least 10% of its total revenue, coming from rural America, such as agribusiness, consumer products, financial services, health care, transportation, technology and infrastructure.)

Real World Example: NC IDEA

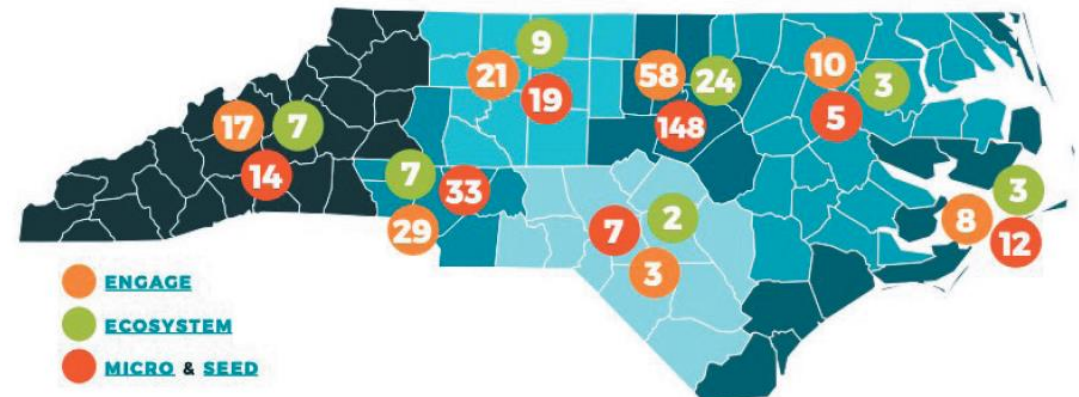
- NC IDEA is an independent private, 501(c)(3) foundation whose vision is to help North Carolinians achieve their entrepreneurial ambition to start and grow high-potential companies.
- North Carolina's rural and underserved communities have deep roots and a wealth of untapped female and minority entrepreneurs. NC IDEA is focused on providing support to these entrepreneurs to help build successful businesses that will create new jobs in these communities.
- Since 2006, NC IDEA has served more than 450 companies and hundreds of communities and partners with more than \$13,400,000 in funding and tens of thousands of support programming hours.
- NC IDEA's newest program, the North Carolina Black Entrepreneurship Council (NC BEC), was established in 2020 to specifically address the challenges of Black entrepreneurship in North Carolina.

NC IDEA FOUNDATION

\$13.4+ million in grants awarded to companies & partners

450+ companies served grants/programs	\$360+ million raised in funding
3,230+ jobs created*	57 companies raised \$1+ million
70% of companies in business today	20 companies raised \$5+ million
19 companies acquired	50% of companies supported under-served

REGIONAL REPRESENTATION OF GRANT RECIPIENTS



Real World Example: Appalachian Investors Alliance

- The Appalachian Investor Alliance (AIA) is a non-profit corporation that is dedicated to growing access to organized capital in Appalachia. Specifically, they help groups organize capital by forming microventure funds structured as member-managed LLCs and providing these groups with various kinds of technical assistance, such as due diligence support, accounting and fund reporting.
- Since 2017, they've investment more than \$21.5 million into 50 companies, with more than \$4.3 million (22%) going to businesses in rural areas (defined as non-metro).
 - These rural companies were able to raise an additional \$302 million from other investors.
 - While the rural companies only accounted for about 20% of the investment dollars that AIA invested, they accounted for more than 45% of the \$667 million of investment dollars leveraged from other investors.



The Appalachian Investor Alliance promotes a blended investment thesis, which takes into account the resources and characteristics of the business population that is located throughout the Appalachian region, and focuses on supporting the businesses where they are at, rather than imposing an ultra-high growth thesis on the business, which is what most venture capital firms do.

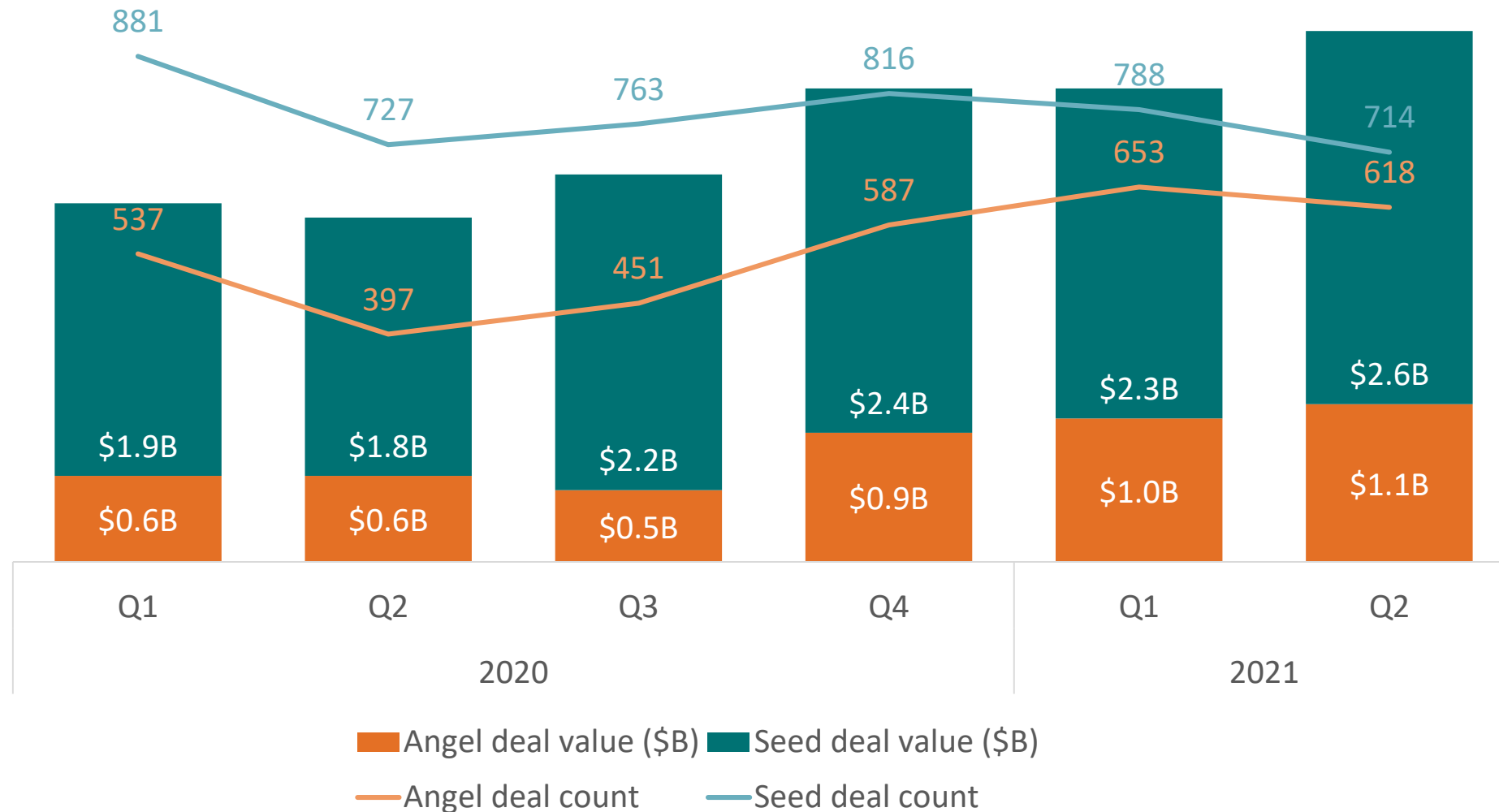
CAPITAL ECOSYSTEMS

Seeding Smaller and Regional Funds to Increase Opportunity

Notable Trends

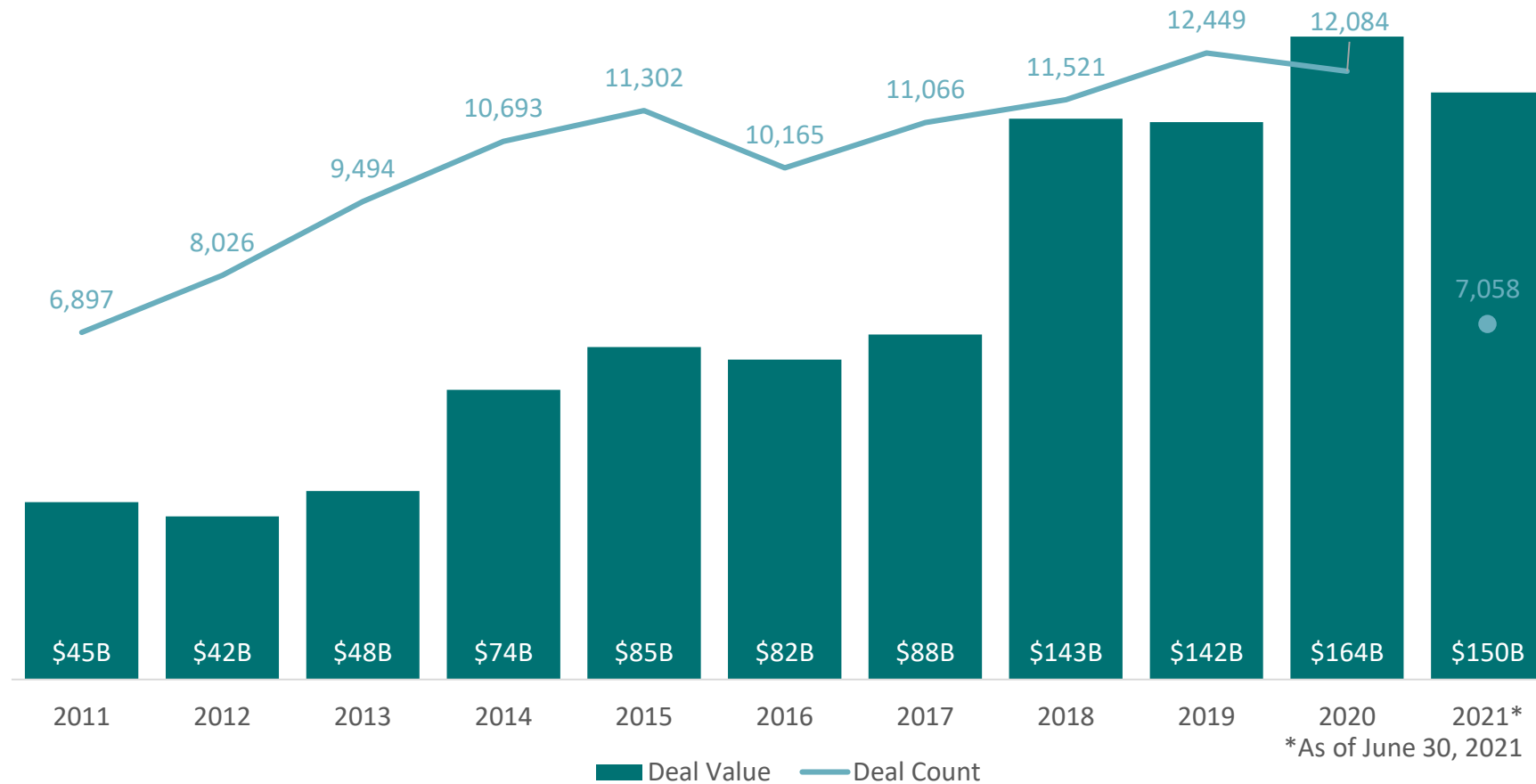
- 2021 was a record-breaking year for venture capital (VC) fundraising, investments, valuations and IPO activity; however, the headlines don't tell the full story.
- Early access to capital remains highly localized. Those located outside of top-tier funding hubs continue to face capital-raising challenges.
- Underrepresented entrepreneurs—especially women and minorities—raised record nominal amounts last year, but lower proportionate amounts of capital.

Angel and Seed Activity On the Rise in 2020 and 2021



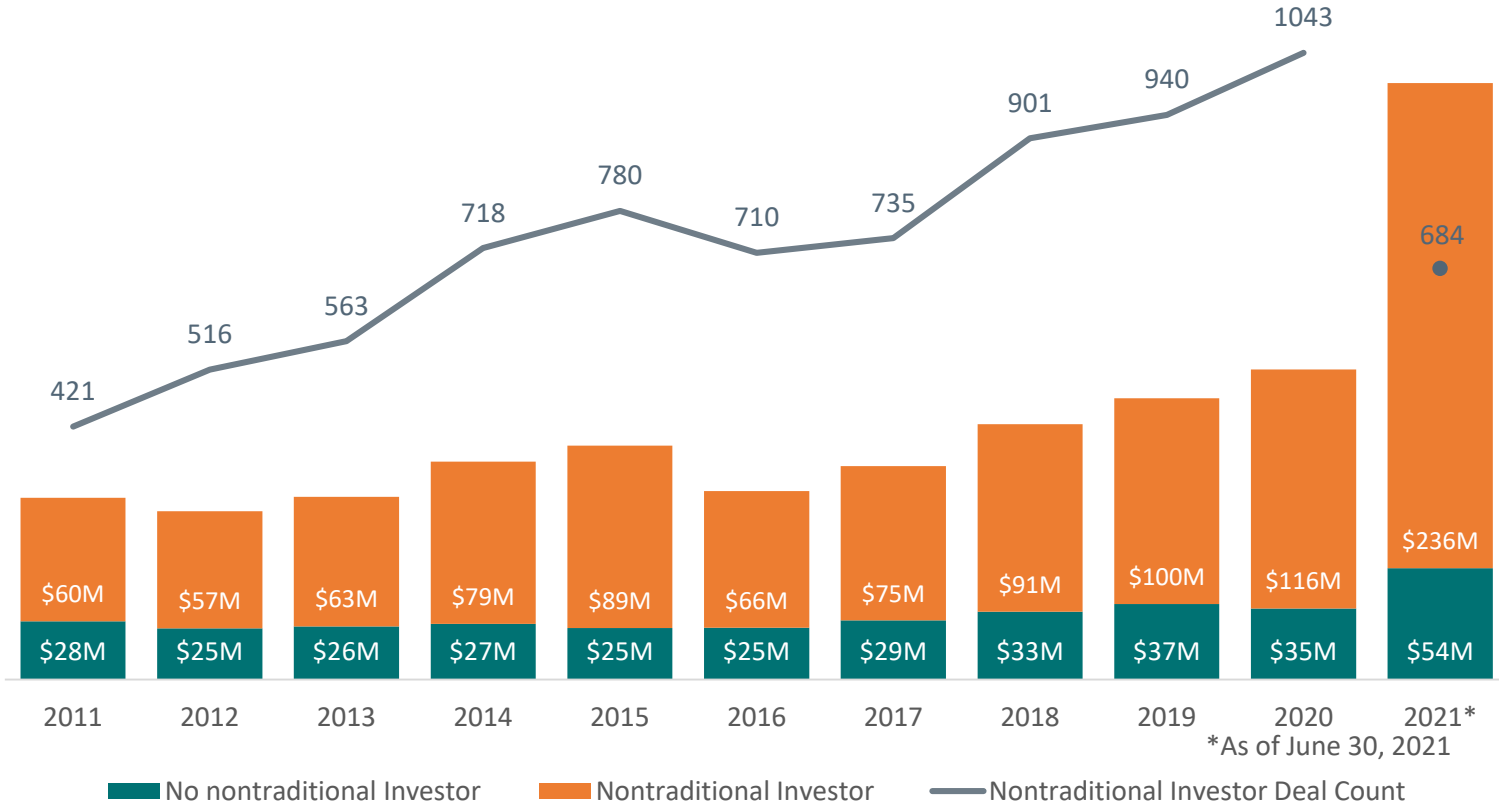
Source U.S. Securities and Exchange Commission OASB (2021) as cited in and Pitchbook and NVCA (2021)

Similarly, VC Deal Value Has Surged in Recent Years, Breaking Records in 2021



Source U.S. Securities and Exchange Commission OASB (2021 as cited in Pitchbook and NVCA (2021))

Nontraditional investors Are Driving Many of these Shifts in Valuations and Deal Size



Nontraditional VC investors have increasingly crossed over from the public markets to also invest in mature and later-stage financing rounds, often with dramatic impacts on company valuation and deal size.

Nontraditional investors may include private equity funds, corporate venture investors, hedge funds, mutual funds and other asset managers.

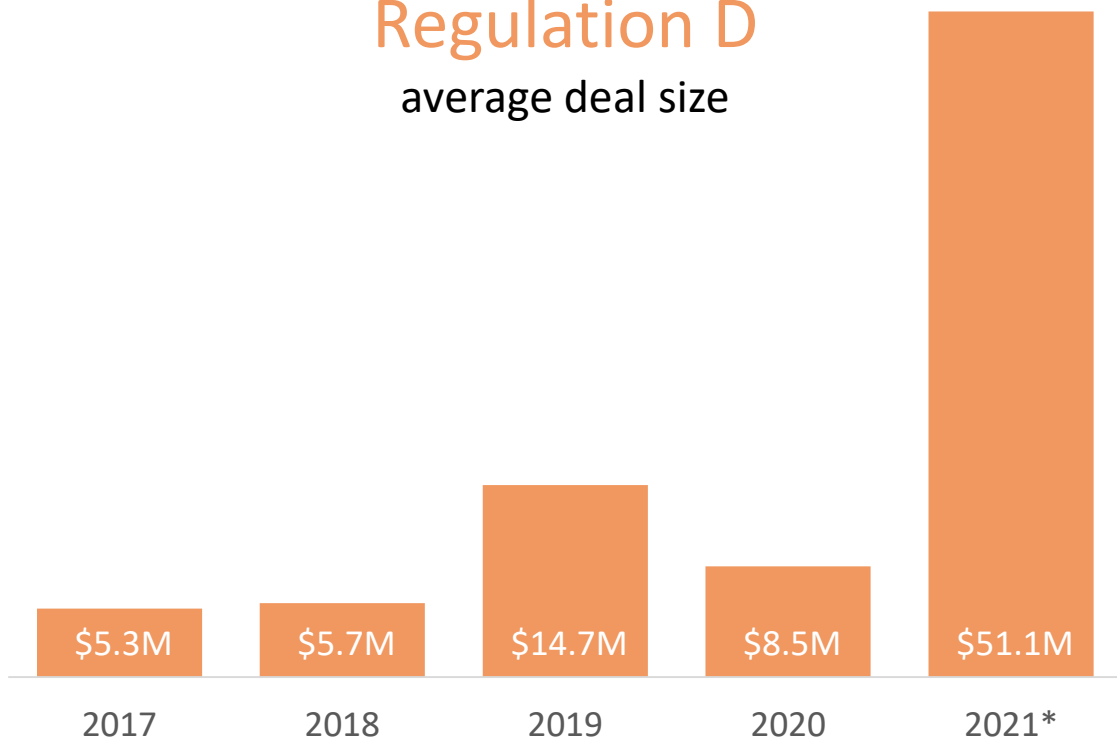
U.S. Securities and Exchange Commission OASB (2021) as cited in Pitchbook, Affinity, and Plug and Play Ventures (2021)

Early-stage Capital Remains Highly Localized, Underscoring the Need for Regional Capital

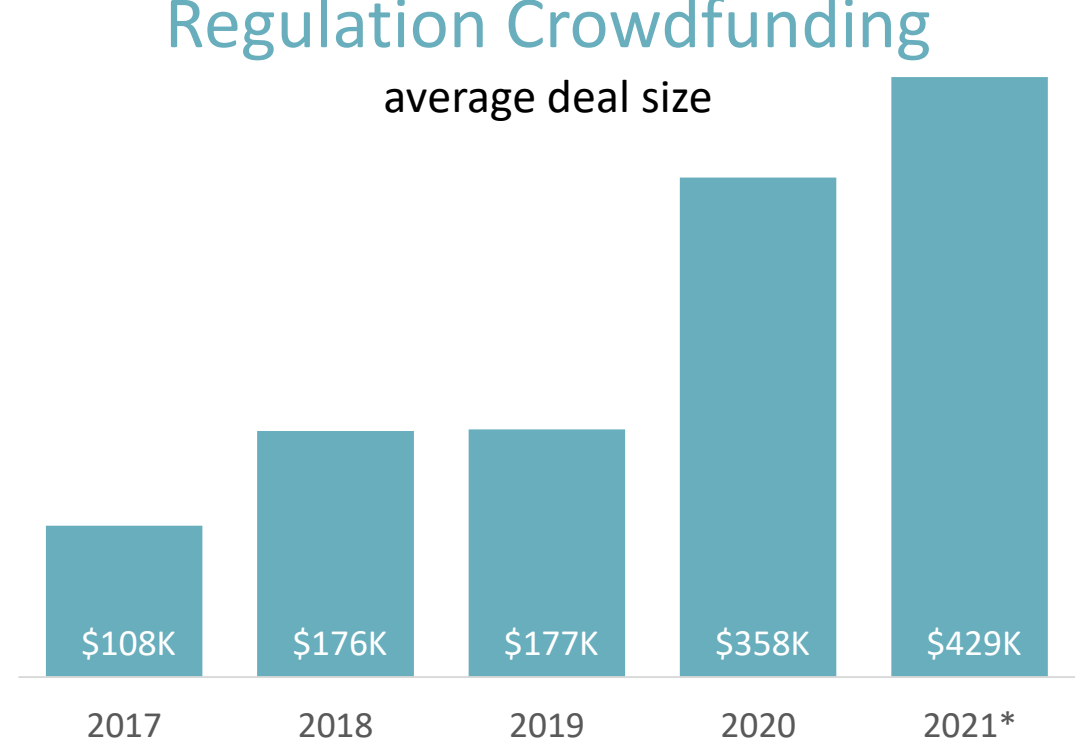
- Both individual angels and angel groups tend to focus on their local communities. The distance between lead investors and the target company averages only 37 miles (U.S. Securities and Exchange Commission OASB (2021) as cited in PitchBook & NVCA, 2021).
- The location of early-stage/angel investment activity is closely correlated with the areas with the highest later-stage VC activity (U.S. Securities and Exchange Commission OASB (2021) as cited in Stanford, 2020).
- However, more than one-third of angel and seed deals occurred in areas other than the top 10 funding hubs (U.S. Securities and Exchange Commission OASB (2021) as cited in PitchBook & NVCA, 2021).

While Rural Capital Raising Still Lags Metro Areas, Rural Businesses that Do Not Seek Funding Are Raising Larger Amounts Of Investment Capital

Regulation D
average deal size



Regulation Crowdfunding
average deal size



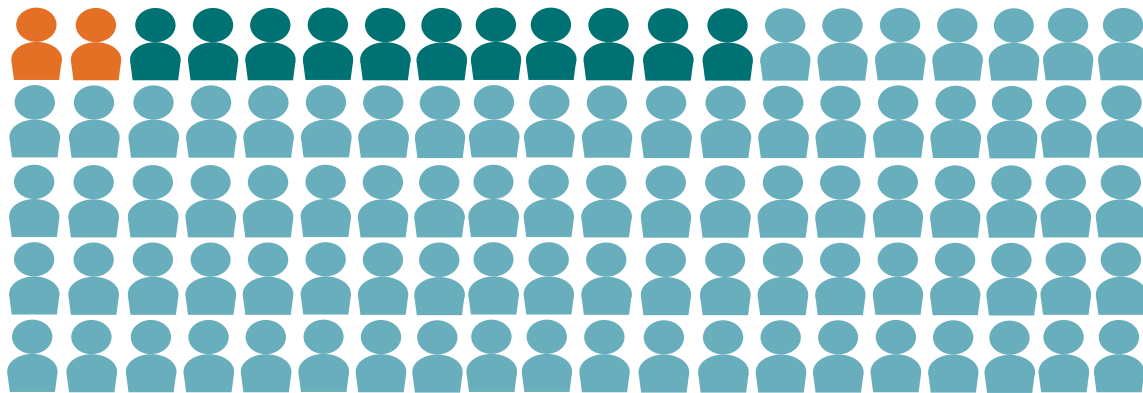
*As of June 30, 2021

*As of June 30, 2021

Source: U.S. Securities and Exchange Commission OASB (2021) as cited in Robb (2021)

While VC Soared to Record Heights in 2021, Underrepresented Founders Raised a Smaller Proportion of Venture Dollars

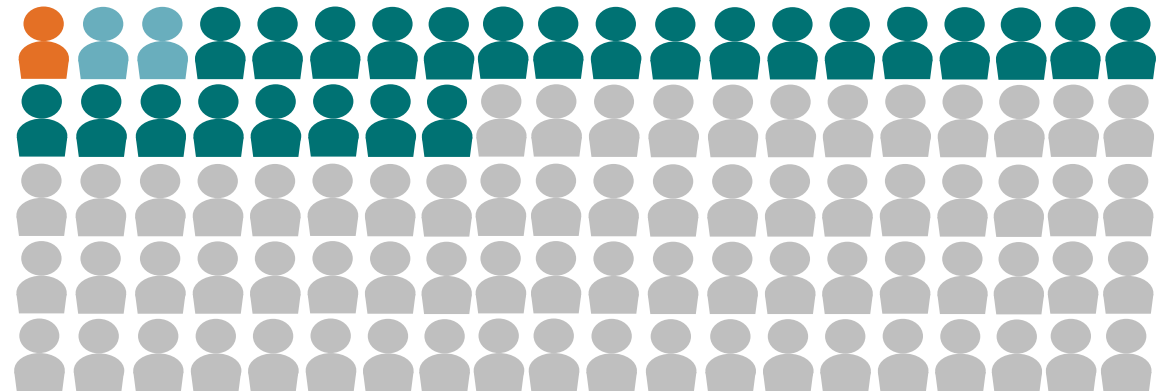
Women-Founded Companies



2.3%

of venture dollars went to women-only founding teams in 2020 (down from 3.3% in 2019), and **10.8%** went to women/men co-founding teams (down from 11.9% in 2019).

Minority-Founded Companies

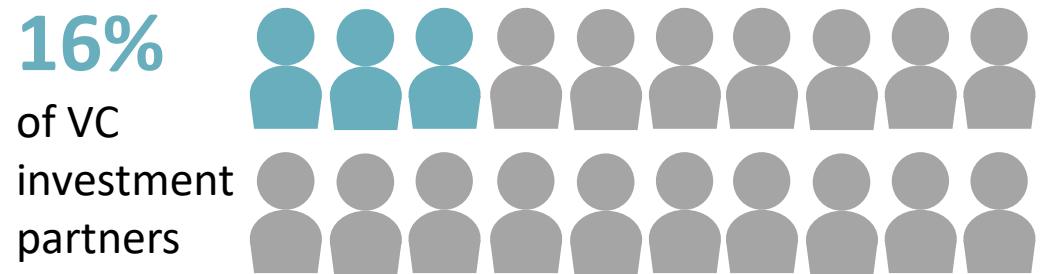


28%

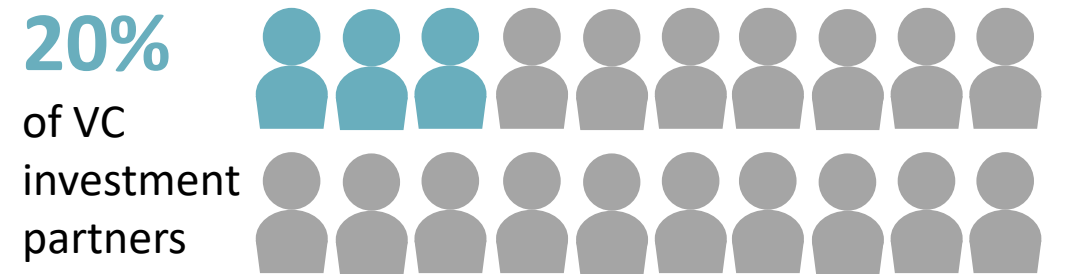
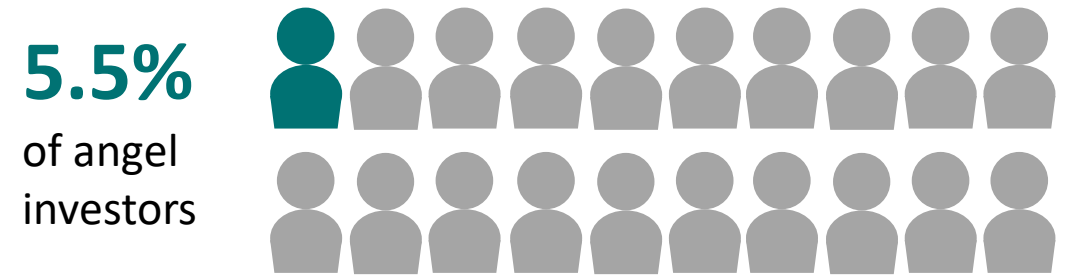
of VC-backed founders are **Hispanic/Latino (1.3%)**, **African American/Black (1.7%)** or **Asian American/Pacific Islander (25.2%)**, an aggregated increase from 23% in 2017.

...This Largely Reflects Composition of Investment Decision-makers, Of Whom Women And Minorities Remain Underrepresented

Women Investors



Minority Investors



Sources: U.S. Securities and Exchange Commission OASB (2021) as cited in Marcec (2021), NVCA & Deloitte (2021), and Sohl (2021)

Changing Trends in Who Receives Funding Requires Examining Trends in Who Allocates Funding, Including:

- Increasing diversity of investment decision-makers across existing players.
- Supporting creation of smaller regional funds with local investing strategies.
- Encouraging emerging fund managers, who bring new perspective to potential targets.



Martha Legg Miller

Director, U.S. Securities and Exchange Commission, Office of the Advocate for Small Business Capital Formation

Martha Legg Miller serves as the SEC's first director of the office, where she leads a team of passionate advocates working on solutions to address the capital raising challenges faced by small businesses and their investors from startup to small cap. Prior to joining the SEC in January 2019, Miller was a partner of a law firm practicing in corporate and securities.

In December 2021, the office delivered a report to Congress outlining the state of capital raising activity and policy recommendations.

EXPERT INSIGHT

2021 was a banner year for capital raising, whether looking at the venture capital dollars invested into growth companies, the exit activity of later stage companies into the public markets, or the reinvestment of investors' returns back into new funds that will support the companies of tomorrow. However, those headlines only tell part of the story: that of the companies who beat the odds.

To bridge the gaps that exist for entrepreneurs who still struggle to raise investor capital:

1. Entrepreneurs need support navigating complex securities laws. Entrepreneurial insight is not correlated with fluency in securities legalese, and the playbook must become more accessible.
2. Founders need bridges from their personal networks to savvy investors. The wealth and investment sophistication of your personal network should not dictate the success of your capital raise.
3. Diversifying capital allocators requires supporting emerging fund managers. Policy solutions are needed to address challenges in raising smaller, regional funds, as well as to address limitations on larger coastal funds feeding capital as a fund-of-funds to emerging players.

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Diversity and Performance in Entrepreneurial Teams

Notable Trends

- To date, there are few empirical studies on what drives diversity in entrepreneurship or its performance implications.
- Exploiting a unique dataset of MBA students who participated in a required course to propose and start a real micro-business, the researchers examined horizontal diversity (i.e., within the team) as well as vertical diversity (i.e., team to faculty advisor) and their effect on performance:
 - **Diversity hurts performance among randomly assigned teams.**
 - **Diversity does not degrade performance as much among organically formed teams.**
 - **Teams with more women performed better when advised by female faculty leader.**
- At a broad level, the results of this research speak to the goal of ensuring an equitable allocation of equity capital across all aspiring entrepreneurs coming from different backgrounds.

This trend is based on the following working paper: Calder-Wang, S., Gompers, P.A., & Huang, K. (2021). Diversity and Performance in Entrepreneurial Teams (NBER Working Paper 28684). National Bureau of Economic Research. <https://www.nber.org/papers/w28684>

Research Motivation

- Many initiatives targeted at diversity:
 - Workplace diversity initiatives
 - Gender quotas on corporate boards
 - Norwegian quota
 - California mandated board diversity in 2020 (Assembly Bill No. 979)
- Entrepreneurship is an important engine to growth:
 - Venture-backed entrepreneurs account for 60% of IPOs (Kaplan and Lerner 2010)
 - Equitable allocation of capital
- Few empirical studies on what drives diversity in entrepreneurship or its performance implications

Research Question

- A unique natural experiment for diversity and performance in entrepreneurship
 - A team-based business course to build start-up businesses
 - Participated by more than 3,500 MBA students for four years at HBS
- This paper asks:
 1. What are the relative strengths of homophily along multiple dimensions in team formation?
 - Race/Ethnicity > Gender > School > Industry Ties
 2. What is the performance impact of **horizontal diversity** (e.g., among founding team members)?
 - Exogenously assigned teams: Diversity hurts performance
 - Endogenously formed teams: Diversity does not degrade performance as much
 3. What is the performance impact of **vertical diversity** (e.g., between entrepreneurs and capital allocators)?
 - Faculty section leader and industry judge panel are randomly assigned
 - Teams with more women performed better when advised by women faculty leader

Empirical Setting 1: Team Formation

- Process:
 - Each cohort of students are randomly divided into 10 sections, with about 90 MBAs
 - Teams of five or six students from the same section
 - Teams design a real startup business throughout the second semester in their first year
- Strengths of the setting:
 - **Random assignment** of teammates conditional on student characteristics
 - Clearly defined choice set of potential teammates
 - Observe formation and performance both **with** and **without** randomization in different cohorts but in otherwise identical setting: most studies have one or another, not both.

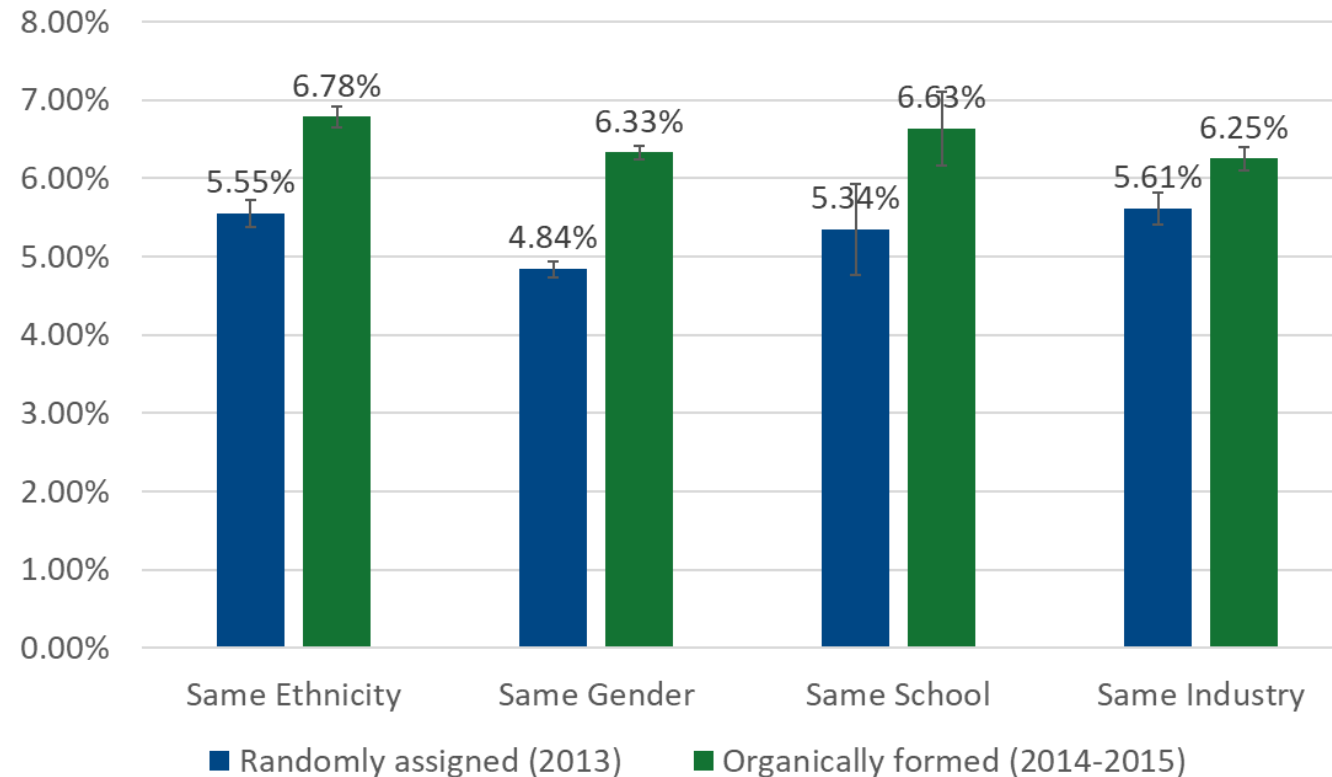
	Random Assignment Cohort	Organic Formation Cohort
Assignment Mechanism	Assigned by a computer algorithm	Formed organically by students
Property	Random conditional on student characteristics observed by the school admin	Endogenous
Cohorts affected	2013	2014, 2015, 2016
Number of teams	150	480

Results

1. Homophily in team formation
2. Performance implications of horizontal diversity
3. Performance implications of vertical diversity

Homophily in Team Formation

- Probabilities of matching conditional on shared characteristics:
 - Higher in organically formed teams than by chance (5/89 = 5.66%) or computer randomly assigned teams



Homophily in Team Formation

- Each observation is a student-student potential match
 - Real match = 1 if same team

Dependent variable: Matched in the Same Team

	(1) Randomly Assigned (2013)	(2) Organically Formed (2014-2016)
Race/ethnicity Tie	-0.00084 (0.002)	0.014*** (0.001)
Gender Tie	-0.017*** (0.001)	0.013*** (0.001)
School Tie	-0.0028 (0.006)	0.0085** (0.004)
Industry Tie	-0.00027 (0.002)	0.0062*** (0.001)
Team Mem Count	0.011*** (0.000)	0.011*** (0.000)
Observations	81,368	254,318
Year Fixed Effect	Y	Y

- Shared race/ethnicity results in a 25% increase in the matching probabilities (5.66% baseline)
- Homophily is stronger among endowed demographics (gender, race/ethnicity) than acquired backgrounds (school, industry)

Homophily in Team Formation: By Gender and Ethnicity

Dependent variable: Matched in the Same Team		
	(1)	(2)
	Organically Formed (2014-2016)	
Both Men	0.012*** (0.001)	
Both Women	0.017*** (0.002)	
Both White American		0.012*** (0.001)
Both Asian American		0.014*** (0.004)
Both Lantinx American		0.0031 (0.012)
Both African American		0.013 (0.009)
Both International		0.040*** (0.005)
Observations	254,318	254,318
Year Fixed Effect	Y	Y

Subsample	Men	Women
	(1)	(2)
	Organically Formed (2014-2016)	
Race/ethnicity Tie	0.015*** (0.002)	0.011*** (0.002)
School Tie	0.015*** (0.005)	0.00018 (0.005)
Industry Tie	0.0087*** (0.002)	0.0031* (0.002)
Team Mem Count	0.010*** (0.000)	0.011*** (0.000)
Observations	150,093	104,225
Year Fixed Effect	Y	Y

- Homophily stronger among whites, Asian Americans and international students
- Men exhibit stronger homophily for race/ethnicity, school and industry ties

Measurement of Team Diversity

- We compute the diversity score as the fraction of ties where team members do not share a given characteristic

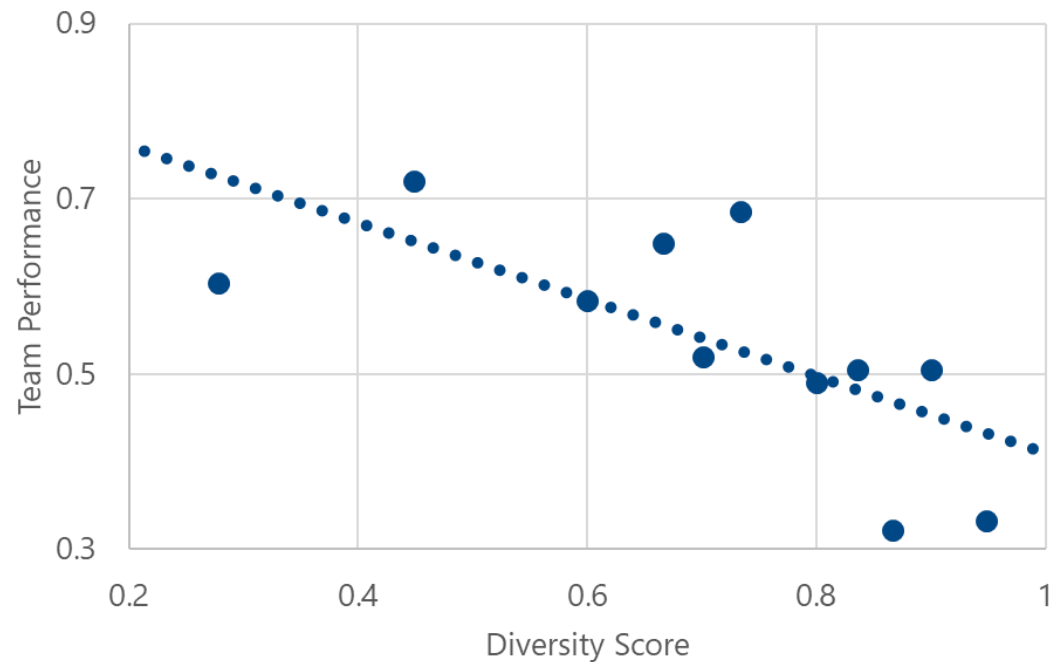
$$\text{Diversity Score}_i = 1 - \frac{\text{\# of ties between team members with shared characteristics}}{\text{Total \# of possible ties in the team}}$$

- An example:
 - Six-person team: 3 whites, 2 Asian Americans, 1 international
 - Number of shared ties = 4
 - 3 shared ties among whites, 1 shared tie among Asian Americans
 - Number of total ties = $C(6, 2) = 15$
 - Diversity score = $1 - 4/15 = 0.73$

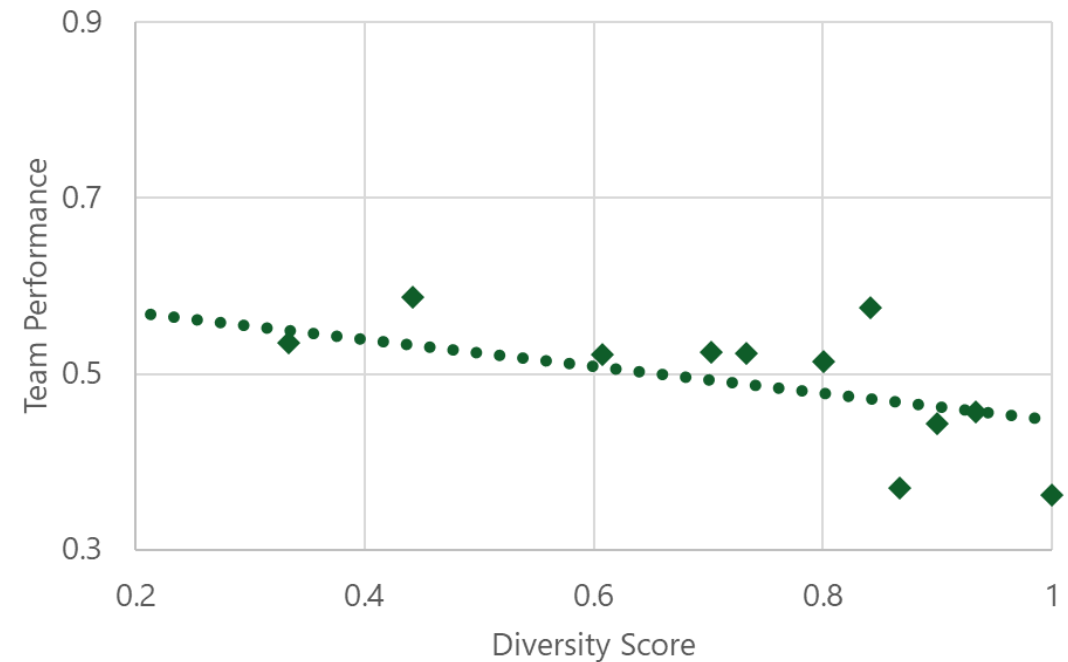
Diversity Scores	Randomly Assigned (2013)		Organically Formed (2014-2015)		Difference
	Mean	SD	Mean	SD	
Race/ethnicity Score	0.76	0.17	0.72	0.22	2.34**
Gender Score	0.56	0.04	0.43	0.21	10.12***

Performance Implication of Horizontal Diversity

- Exogenously assigned racial/ethnic diversity **hurts** performance (2013 cohort)

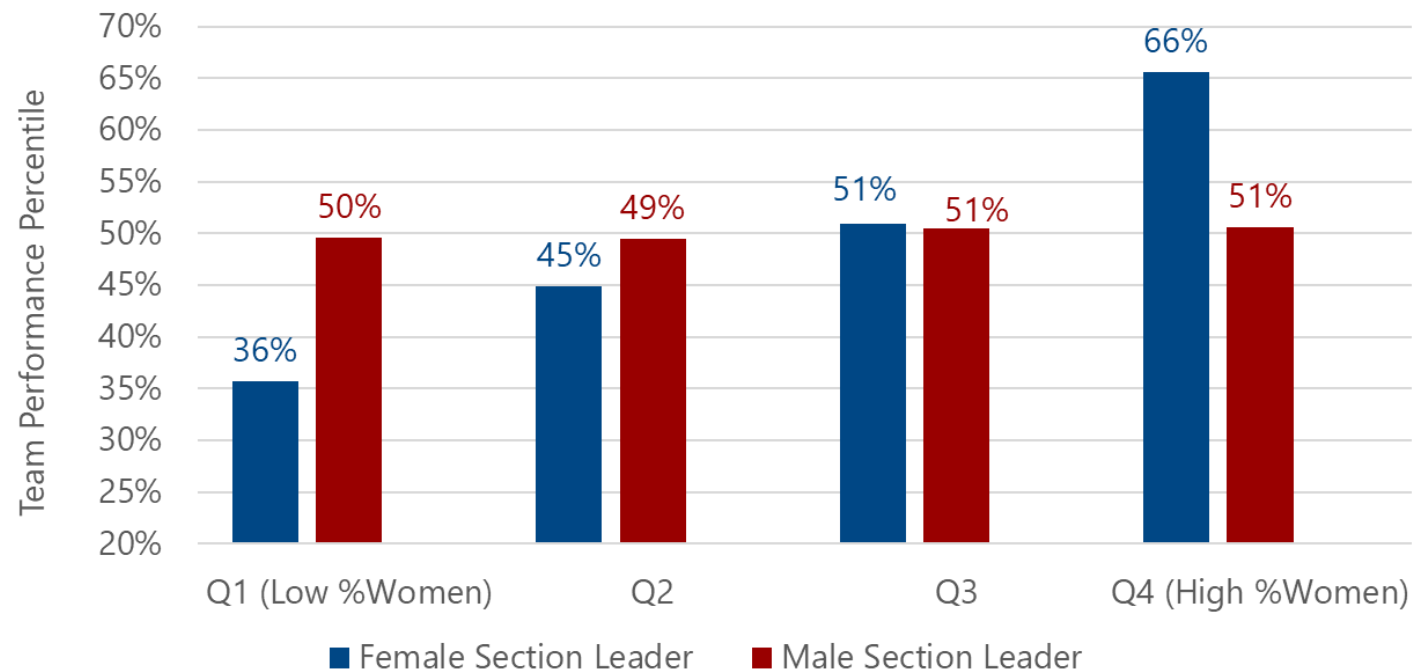


- Endogenously formed racial/ethnic diversity **restores** performance (2014-2016 cohorts)



Performance Implication of Vertical Diversity

- Vertical diversity measured by shared characteristics between students and evaluators
 - Assignment of the section leader is exogenous to students
- Vertical homophily improves team performance (unlike Marx, Pons, and Suri, 2021)
 - Female section leader: Performance increases with more women in the team
 - No relations found among male section leaders





Sophie Calder-Wang
Assistant Professor, The Wharton School, University of Pennsylvania

EXPERT INSIGHT

1. We quantify the impact of **homophily** on team formation:
Endowed demographics are stronger than acquired backgrounds.
2. The performance implications of **horizontal diversity**:
Diversity hurts performance among randomly assigned teams.
Diversity does not degrade performance as much among organically formed teams.
3. The performance implications of **vertical diversity**:
Teams with more women performed better when advised by female faculty leader.

Policy relevance:

Naïve attempts to improve team diversity may not generate positive performance.

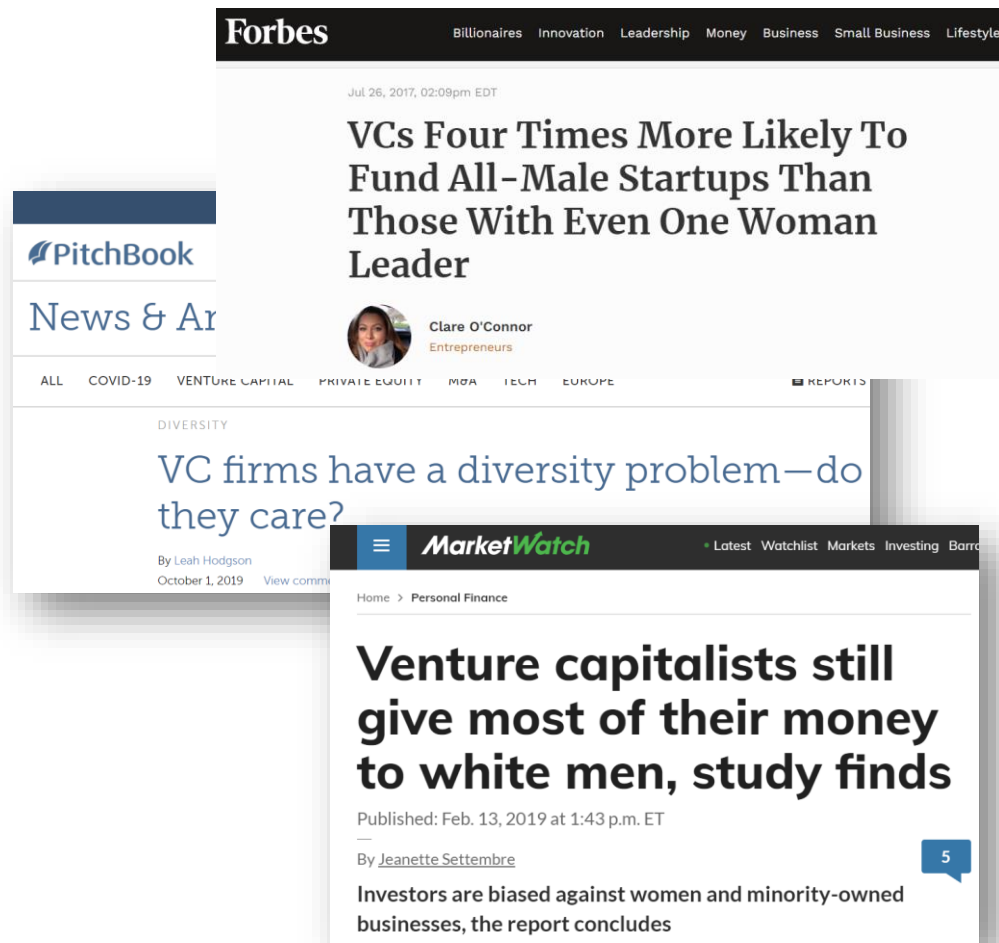
Vertical ties suggest the potential importance of mentorship for minorities.

Long-term implications for more equitable allocation of equity capital across all entrepreneurs.

Investing in Underrepresented Founders

- Investments are concentrated into startups with white male founders, but increasingly, investment organizations are targeting more diverse founders.
- However, extant efforts such as diversifying decision-makers have not yet proven effective, and training founders to modify what they present to investors may not foster lasting change.
- I theorize that by studying investment organizations' evaluation processes and practices, we can create more systemic change.
- Leveraging a field experiment in which I change evaluation prompts, I provide some evidence that investment organizations can reduce gender disparities in their portfolios.

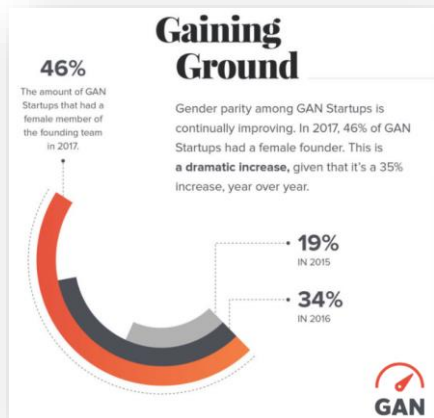
The Problem: Investments Are Concentrated in White Male-Founded Startups



- **Not** wholly driven by observable **venture quality** (Brooks et al. 2015, Roberts & Lall 2018, Guzman & Kacperczyk 2019, Ewens & Townsend 2020).
- **Competitive pressures do not** seem to create a **disincentive to discriminate** (Botelho & Abraham, 2017).
- Could result in **missing promising and diverse opportunities** for both entrepreneurs and investors (e.g., Jeppesen & Lakhani 2010, Koning et al. 2020).
- **Persistent reliance on homophilous networks or heuristics** in the face of uncertainty, high search costs and variable information (Gompers & Wang 2017, Kirsch et al. 2009, Bingham & Eisenhardt 2011, Huang & Pearce 2015, Botelho & Abraham 2017, Huang 2018).
- There is a stubborn **belief** that this is **only a pipeline problem**.

The Trend

More Investment Organizations are Targeting Diverse Founders with Varying Strategies



ALL RAISE

Harlem Capital

pipeline ANGELS

ABOUT TESTIMONIALS BOOTCAMP PITCH SUMMIT MEMBERS PORTFOLIO

YOU

WE'RE CHANGING THE FACE OF ANGEL INVESTING

JOIN US!

“Global investors added more than \$1 billion to a range of gender-smart strategies” (SSIR - Cortes, 2019: 1)

SoftBank & Andreessen Horowitz launched funds dedicated to startups founded by people of color and women. Crunchbase has begun to track founders' race & ethnicity data



Varying Strategies:

➤ Diversifying Decision-makers

- Improving Measurement & Transparency
- Diversifying Sourcing
- Connecting & Brokering
- Training Investors

➤ Training Founders

Less research conducted

Mixed Results



Diversifying Decision-makers: Changing the investor may not attenuate the pattern of predominantly investing in white male founders

Having a female investor results in better evaluations for female founders due to:

- **gender bias** (Ewens & Townsend 2020)
- **activist choice homophily** - driven by female investors' perceived common social identity with female founders (Greenberg & Mollick 2017)

BUT

Some (**more experienced**) female investors do **not** invest in more female founders (Bapna & Ganco 2021)

When female investors are brought onto panels, more **female founders are sourced, but not invested in** (Dutt & Kaplan 2018 working paper)

Mixed Results

Training Founders: Training founders to modify how and what they present to investors may not foster objective evaluation, nor create lasting systemic change

Changing the way founders respond to investors - female founders can focus their answers to investors' questions **on rewards rather than risk** (Kanze et al. 2018)

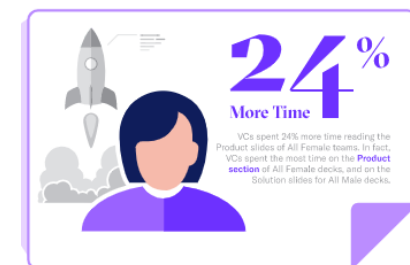
Changing founders' pitch framing - using a **social impact framing** for their business to promote a congruent founder identity (Lee & Huang 2018)

Changing information provided by intermediaries - **masking founder identity** and providing **legitimizing information** on funding platforms (Younkin & Kuppuswamy 2019)

BUT

Even **evaluators** with informational advantages tend to have **personal preferences** that impact their objectivity, and evaluators **pay attention** to different information (Hallen & Cox-Panke 2016, Li 2019)

Even when using common structured templates, **investors spend more time evaluating risks** for female founders than they do for male founders (Kanze et al. 2018, Frost 2020)



Overlooked: Organizational Context & Processes

Few investors make a decision alone. More often, the decision is made in a collective process within investment organizations – accelerators, formal angel groups, VCs – which is rarely examined.

How do investment organizations create or implement diversity strategies, and what are the effects?

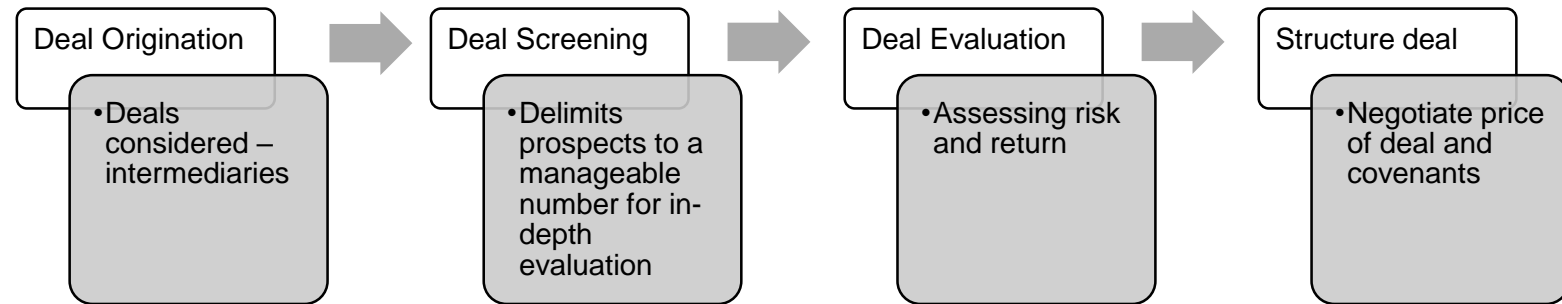
Some scholars have mapped investment organizations' evaluation process (Tyebee & Bruno 1984, Gompers et al. 2020):

New insight:

1) Fund Origination

Investors attract stakeholders to a specific investment thesis that creates underappreciated “lock-in” and rigidity

63 interviews with 32 investment organizations, and longitudinal in-depth observation of two organizations



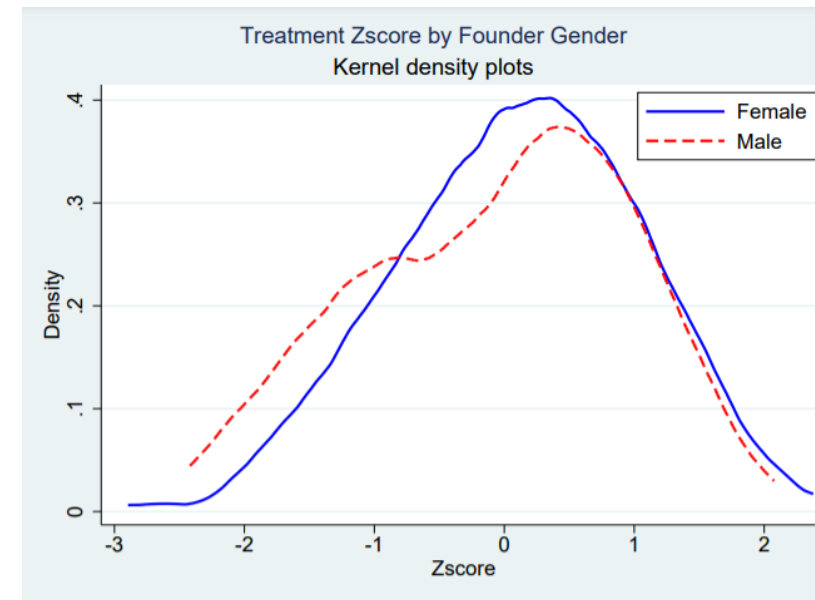
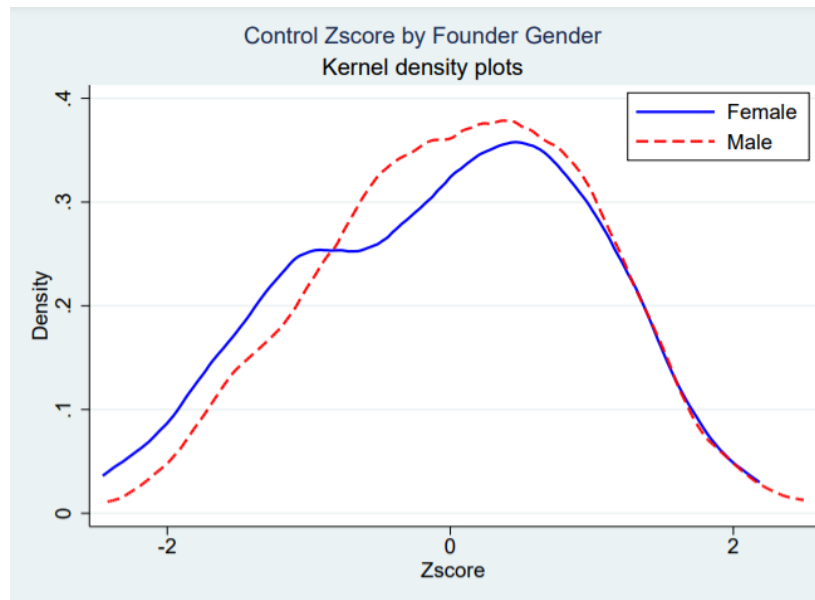
New insight:

2) Effects of evaluation prompts

(see experiments on next page)

Overlooked: Effects of Evaluation Prompts

- When investors are asked to seek consistent information from founders, define evaluation criteria in advance of evaluation and evaluate short term signs of firm progress, **they are more likely to invest in female-founded firms.**



Field experiments with 69 trainee investors making 510 decisions to invest \$20,000 in equity into startups in four regions (Africa, Middle East & North Africa, India, and Latin America)

Startup evaluation plotted on zscore per investor for 10 startup cohort – top 2 scoring firms receive investment



Amisha Miller

PhD Candidate, Questrom School of Business, Boston University

Amisha Miller is a Ph.D. candidate at Boston University working with Professor Siobhan O'Mahony. She examines how novel ideas are evaluated in practice. She examines the social process by which ideas led by diverse founders are categorized as fundable in the context of early-stage entrepreneurship. Miller's research has received recognition from the SRF, SGB Evidence Fund, and the IFC/World Bank. She has a master's in population and development from the London School of Economics and a first class history B.A. from the University of Warwick. During her previous career in entrepreneurship research, including at the Kauffman Foundation, Miller worked with and studied entrepreneurs seeking resources in three countries. She published working papers used by local, national and international policymakers.

EXPERT INSIGHT

- Currently we tend to consider an individual investor's network or cognition/bias to explain why novel ideas of seemingly equal quality are considered fundable or not.
- My research takes a social practice lens examining what evaluators actually do in investment organizations and what interventions can change their behavior, as well as how underrepresented entrepreneurs confront and navigate barriers to venture development.
- Rather than focus on changing entrepreneurs' behavior, which may not foster systemic change, my field experiments prompt evaluators to seek consistent information from founders, define evaluation criteria in advance and evaluate short-term signs of venture progress.
- I find that investors who engage in these practices are more likely to invest in female founders than a control group.
- My field experiment provides some evidence that we can identify novel mechanisms to explain how novel ideas from underrepresented founders can be evaluated more objectively.
- I am also conducting field research of a cohort of 51 BIPOC and/or female founders at an early-stage to contribute to our theorizing on diversity, equity and inclusion in entrepreneurship.



Siobhán O'Mahony

Feld Family Professor in Innovation and Entrepreneurship at Questrom School of Management, Boston University | Academic Director, Research & Curriculum at Innovate@BU

Siobhán O'Mahony's research explores the emergence of organizing in unstructured environments like communities, ventures and projects. She has examined how entrepreneurs, product development teams, high tech contractors, open source programmers, music producers, scientists and engineers, and activist hackers achieve innovation, creativity, or growth goals while avoiding bureaucratic rigidity. Her research has appeared in management and organization science journals and she serves as a senior editor for Organization Science. O'Mahony received her Ph.D. in management science and engineering from Stanford University, an M.P.A from the Cornell Institute of Public Affairs, and a B.S. in industrial labor relations from Cornell University.

EXPERT INSIGHT

- Many are shocked by the discrepancies in funding for women and BIPOC founders in venture funding. Investors claim this is a “pipeline problem” and our early field research questions this claim.
- Many rogue experiments are under way trying to combine seed capital with standard entrepreneurial curriculum.
- **What are the barriers that under represented founders face in scaling their ventures?** Recently, scholars have begun to examine how incubators, accelerators and innovation centers provide varied resources to entrepreneurs (Cohen, Bingham, Hallen, 2019; Cohen, Fehder, Hochberg, Murray, 2019), but little research has informed how BIPOC entrepreneurs make use of these resources. Neither policymakers nor scholars have been able to penetrate BIPOC communities sufficiently well to understand their true unmet needs.
- What do underrepresented entrepreneurs really need? Are targeted funding programs enough? Do they require distinct supports?
- My research shows how networked activists self organize by creating a participation architecture—a sociotechnical framework that empowered technical experts and unobtrusively channeled newcomers to designated forums. I show how networked activists enhanced their collective ability to coordinate complex, interdependent actions at scale. **What kinds of communities will under represented entrepreneurs build?**

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Timing of Government Support in Crises

Notable Trends

- At the onset of the pandemic, the U.S. federal government injected trillions of dollars into the economy using several fiscal policies.
- The Paycheck Protection Program (PPP) was enacted in 2020 to support small businesses.
 - Demand by firms for PPP forgivable loans quickly outpaced the initial funding available.
 - At start of program, there was rationing in credit that led to differences in timing when firms received these loans.
- Research indicates that small businesses that received PPP funding later experienced worse outcomes, such as higher rates of closure.

This trend is based on the following working paper: Denes, M., Lagaras, S., & and Tsoutsoura, M. (2021). *First Come, First Served: The Timing of Government Support and Its Impact on Firms* (SSRN Working Paper Series). SSRN. <https://ssrn.com/abstract=3845046>

A Brief Timeline for PPP in 2020

March 27:

CARES Act appropriates \$349B for PPP

April 16:

First round ends as initial appropriation is exhausted

April 27:

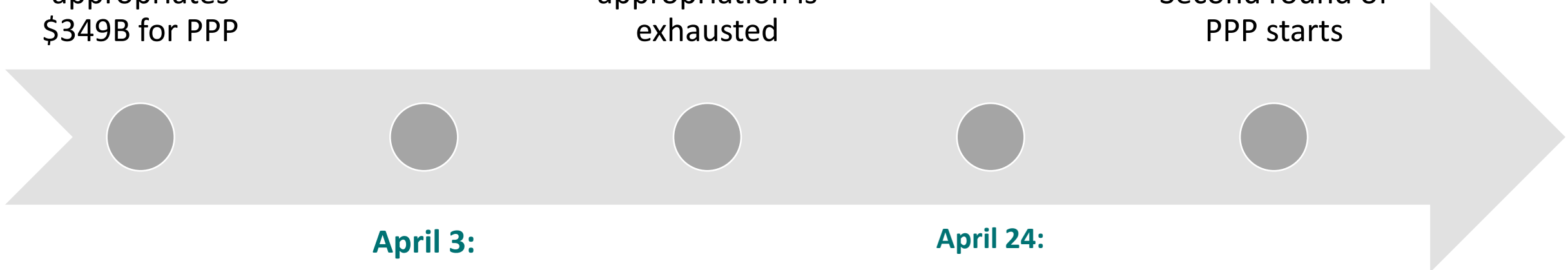
Second round of PPP starts

April 3:

First round of PPP launches

April 24:

PPP and Health Care Enhancement Act provides additional \$320B



Linking Loan-level PPP Data to Credit Data

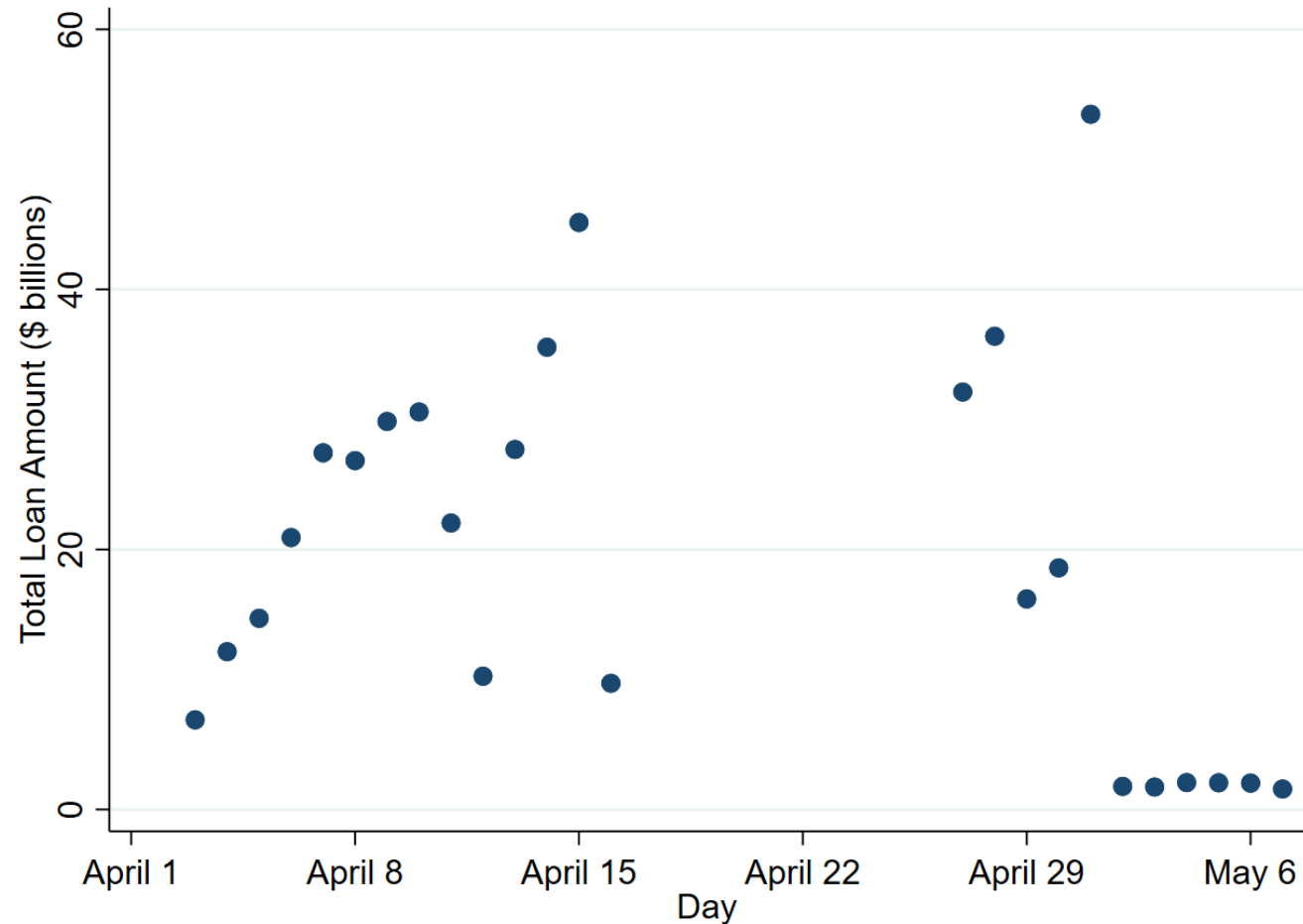
PPP Loan Data

- Universe of loans available through Freedom of Information Act (FOIA).
- The data include detailed information provided on borrower, lender, amount, timing, organizational form and location.
- In 2020, the PPP disbursed \$523 billion through 5.2 million loans.

Credit Data

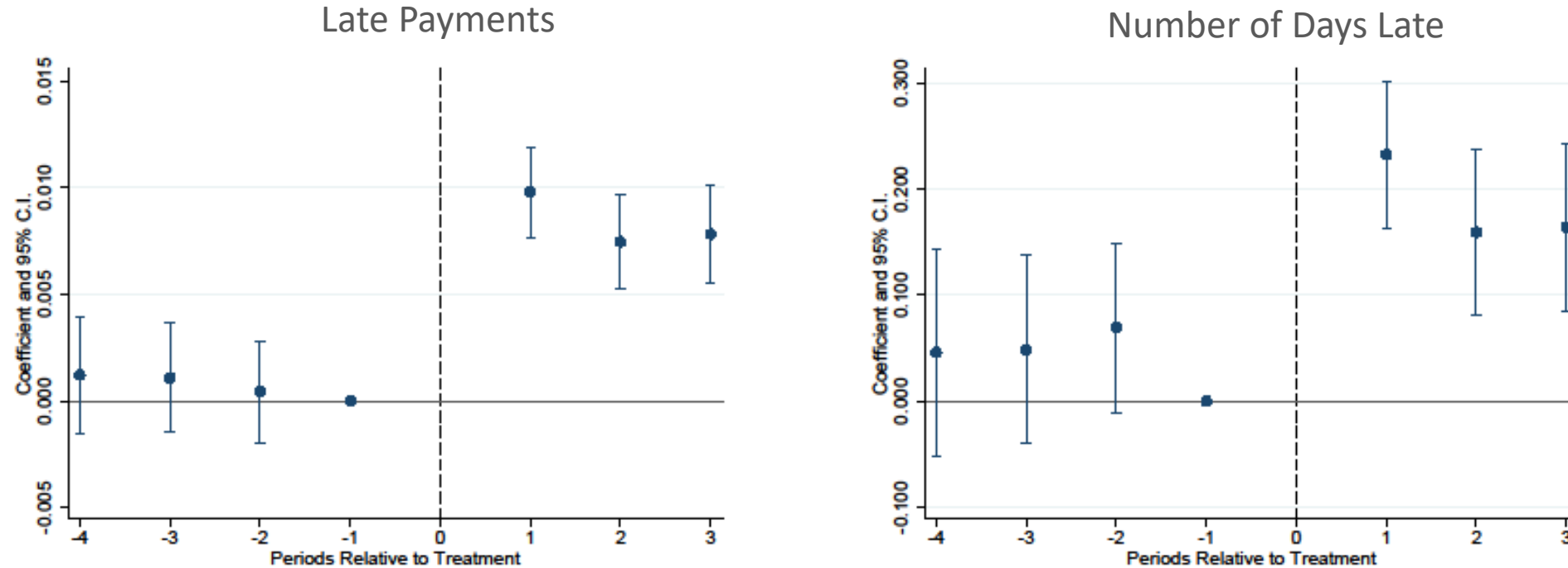
- Experian data from 2016 to 2020 on credit, payments and legal actions for many U.S. firms.
- Focus on all firms with at least one trade line, recent credit information and firm type (C corps, S corps, LLCs, and partnerships).
- 1.9 million Experian firms are matched to PPP loans.

PPP Loans at Start of Program in 2020



Focus on firms around funding delay from April 16 to April 27

The Timing of PPP Loans Played a Role in its Impact on Small Businesses



- Research exploits randomness in timing when firms receive PPP loan by comparing firms at beginning of second round to those at the end of the first round.
- Small businesses receiving PPP loans later were more likely to fall behind on paying back their creditors.

The Delay in PPP Loans Had Real Effects on Small Businesses

- Firms facing financial distress might be unable to meet financial obligations. Consequently, they might reduce firm activity or shut down.
- Using data from SafeGraph to measure monthly in-store activity, we find that store visits drop significantly for firms receiving delayed PPP loans.
- Using data from Google Maps, we show that firms obtaining loans later are more likely to close or shut down.
- These findings highlight the importance of timely disbursement of government capital during crises and the long-term effect of delays.

Why Does the Timing of Fiscal Support Matter?

- The findings of a rise in financial distress and decline in economic activity are consistent with two channels.
- **Business operations channel:** Delays in receiving government funds can directly disrupt businesses operations. These disruptions might include reductions in retaining employees, limited ability to pay suppliers and scaling back investment activity.
- **Financing channel:** Timely government support can aid firms through a financing channel. We provide direct evidence consistent with the financing channel by showing that firms receiving PPP loans at the beginning of the second round experienced increases in legal actions and deterioration in credit supply.

Matthew Denes
Assistant Professor of Finance, Carnegie Mellon University

Spyridon Lagaras
Assistant Professor of Finance, University of Pittsburgh

Margarita Tsoutsoura
Associate Professor of Finance, Cornell University

EXPERT INSIGHT

- At the onset of a crisis, governments often use fiscal policy to stabilize the economy. Government support can face delays due to a slow reaction by policymakers or depletion of available funds.
- Our work studies the timing of PPP loans due to funding shortages. Firms receiving capital at the beginning of the second round are more likely to be financially distressed compared to firms at the end of the first round. These effects are long-lasting: In-store activity declines and store closures are more likely for firms obtaining delayed government support.
- There are two policy implications of our findings. First, delays are costly. In the face of a crisis and with high uncertainty, our results suggest that delays negatively impact firms and, potentially more broadly, the economy. Second, staged support or funding rounds can produce unintended consequences. Though it may provide policymakers with flexibility, it might push fragile firms into financial distress.

Governmental Funding for Entrepreneurs

Notable Trends

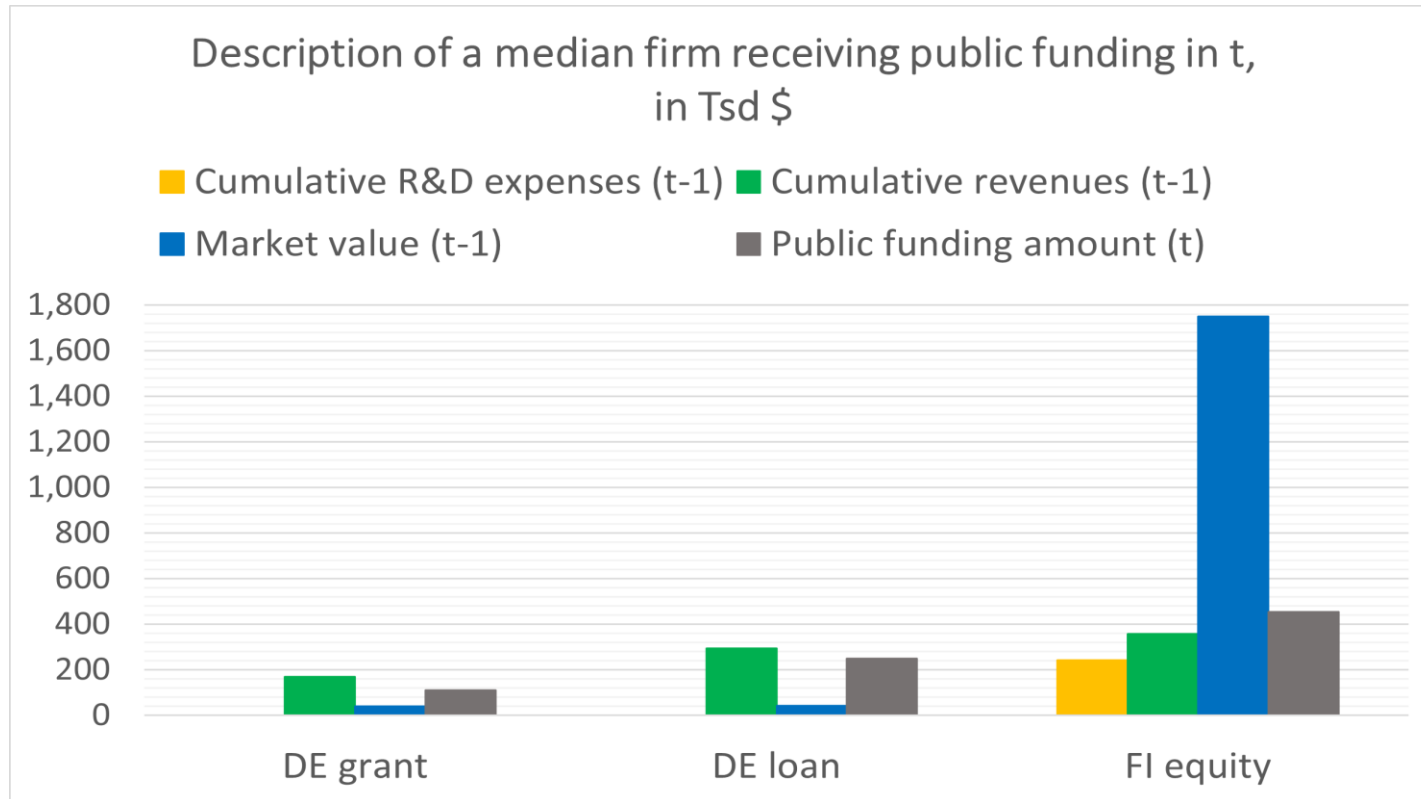
- Policymakers intervene in the entrepreneurial process with various public funding policies in order to correct the private investment distortion caused by information frictions and moral hazard.
- Global importance of establishing these policies: Bai et al. (2021) find 755 public funding programs in 66 countries.
- Multiple interrelated policy design choices:
 - Government allocates money either to entrepreneurs themselves or to financial intermediaries investing in these firms.
 - Government chooses between different financial instruments - grant, loan, equity.
 - Government decides on funding amounts to be provided.

This trend is based on the following working paper: Kisseleva, K. (2021). *Public Funding for Entrepreneurs: What Works Best?* (Frankfurt School of Finance & Management Working Paper).

Public Funding: What Works Best?

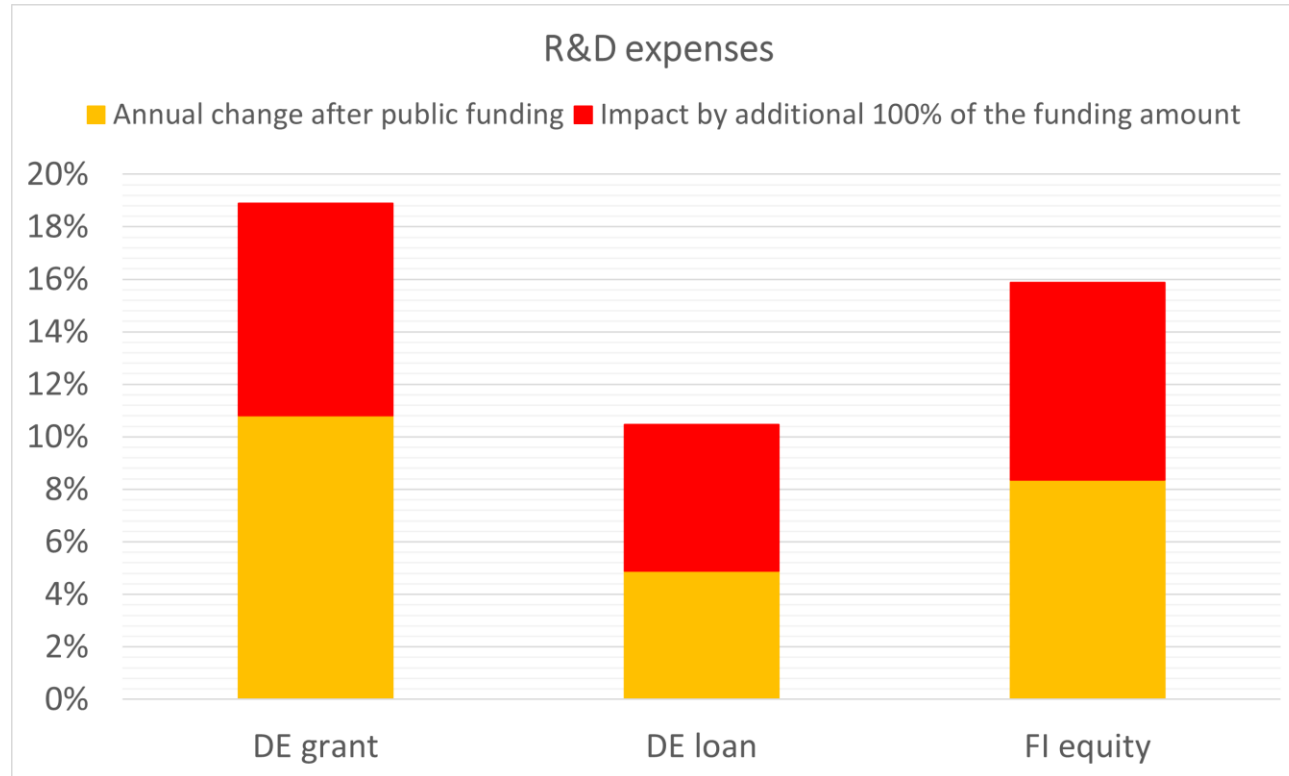
- The research compares the impact of different governmental funding programs – grant to an entrepreneur (“DE grant”), loan to an entrepreneur (“DE loan”) and equity through a government venture capitalist (“FI equity”) – on entrepreneurial firms in a single country.
- Issue: A subsequent firm performance can be a result either of the selection effect or of the (causal) impact of the funding program.
- To identify a causal effect of public funding on the subsequent performance of firms, the research exploits firm-level variation in exposure to governmental programs.
 - Each allocated public funding amount is instrumented with the respective program's remaining budget prior to the funding approval for a particular firm. With more budget still available, the probability is higher that a firm will be selected into the program and, if so, it can receive a larger funding amount.
- The evidence shows clear differences between impacts of different funding programs. Thus, it does not support the notion that all public money is equal and has a mere immediate liquidity effect on entrepreneurial firms.

Different Programs Target Different Types of Firms



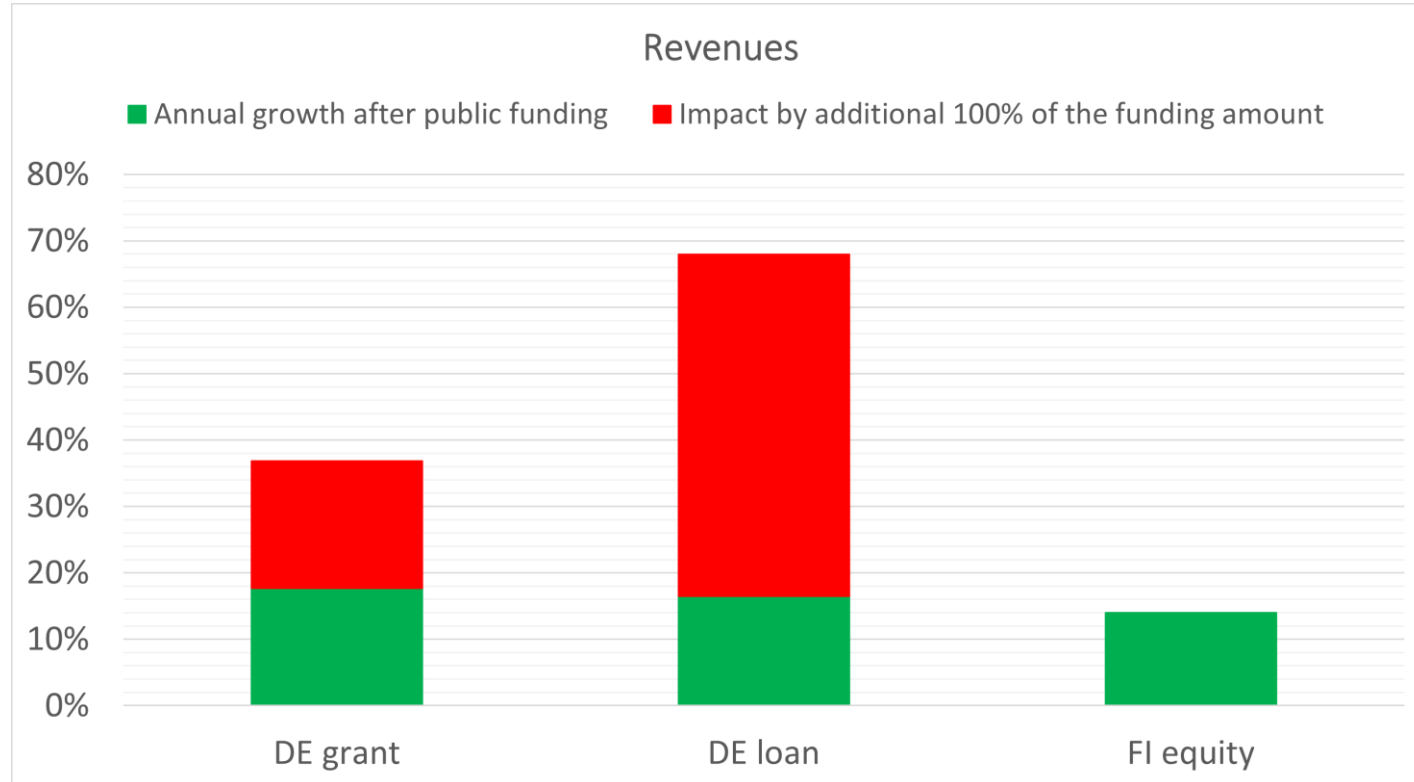
- Government VCs select firms that have already started the R&D process, while it is not the case for at least 50% of entrepreneurs who receive funding directly through a grant or loan (no R&D expenses reported).
- Financial incentives inherent to the type of financial instrument are reflected in the program's selection criteria:
 - A loan, which is repaid to the government, leads to the selection of larger/more established firms (in terms of revenues) than a grant, which is non-repayable "cheap" money.
 - FI earns an equity return from selling the shares (in an exit event), which is reflected in the selection of more (by private capital market) valuable firms.

Public Funding Impact on R&D expenses



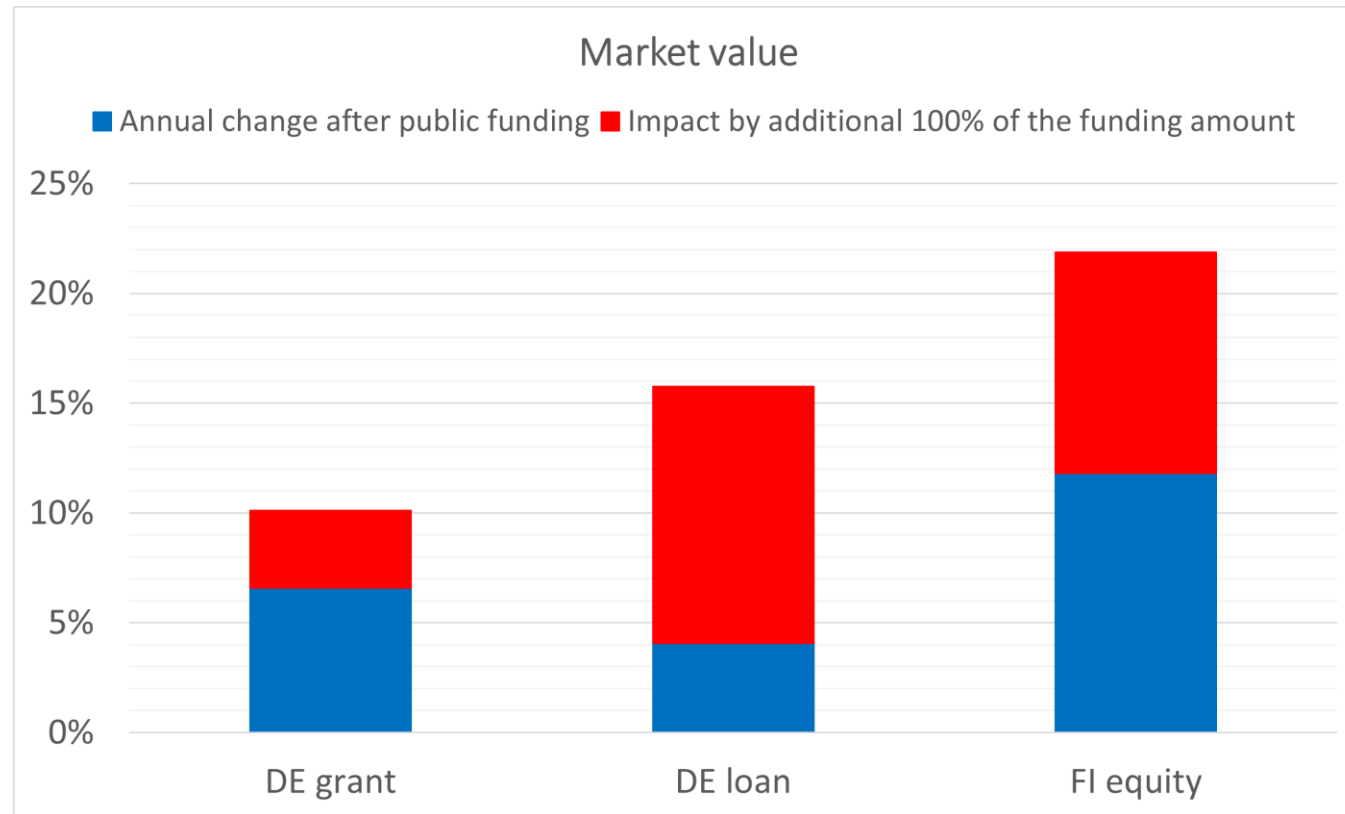
- All funding types increase investments in R&D activity. A 100% increase in the public funding amount leads to a 5.6-8.1 pp increase in R&D expenses growth.
- This speaks to the almost equally pronounced effect among different programs through the financing channel. This is consistent with Howell (2017), who provides evidence (for R&D grants) that this channel enables proof-of-concept work that the firm cannot finance otherwise.

Public Funding Impact on Revenues



- Doubling the grant amount increases the firm’s revenue growth significantly by 19.2 pp.; doubling the loan amount has a positive effect of 51.4 pp.
- Revenue is a measure of **productive** investment. The larger effect on revenues than on R&D expenses speaks to the additional commercialization channel: directly provided funds enable the product market placement that the firm could not finance otherwise.
- Entrepreneurs have to repay a loan while a grant is “free” money. Thus, they have a bigger incentive to commercialize projects in order to be able to pay back the loan.
- The positive financing effect of FI equity disappears when considering only productive investment. This aligns with evidence on higher degree of experimentation in these firms (Kerr et al. 2014).

Public Funding Impact on Firm Market Value



- The superior selection skills by financial intermediaries are reflected in the average annual market value growth of selected firms (12% p.a.).
- R&D activity and revenues reduce uncertainty about the business idea, which reduces risk for the investors. Thus, the positive effect on the market value results from a combination of financing, commercialization and potentially certification channels.
- The effect of directly provided funds on the market value is lower than on revenues. This speaks to the absence of the additional positive certification role.
- Increase in FI equity comes to a small extent through the certification channel as it has a 2.55 pp larger effect on firm's market value than on its investment.



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Professor Katja Kisseleva-Scherenberger's research and teaching interests lie at the intersection of entrepreneurship, finance and financial accounting. She is particularly interested in the role of financial information of early-stage innovative firms and its policy implications.

EXPERT INSIGHT

- Governments can increase firm-level R&D activity by providing more funding to entrepreneurs through any program.
- Governments can achieve more commercialization of products/technologies by allocating more funds directly to entrepreneurs through grants or, to a higher extent, through loans.
- Governments can increase/extend entrepreneurial experimentation – which is essential for innovation – and slightly boost market capitalization of promising firms by providing more funds through financial intermediaries.

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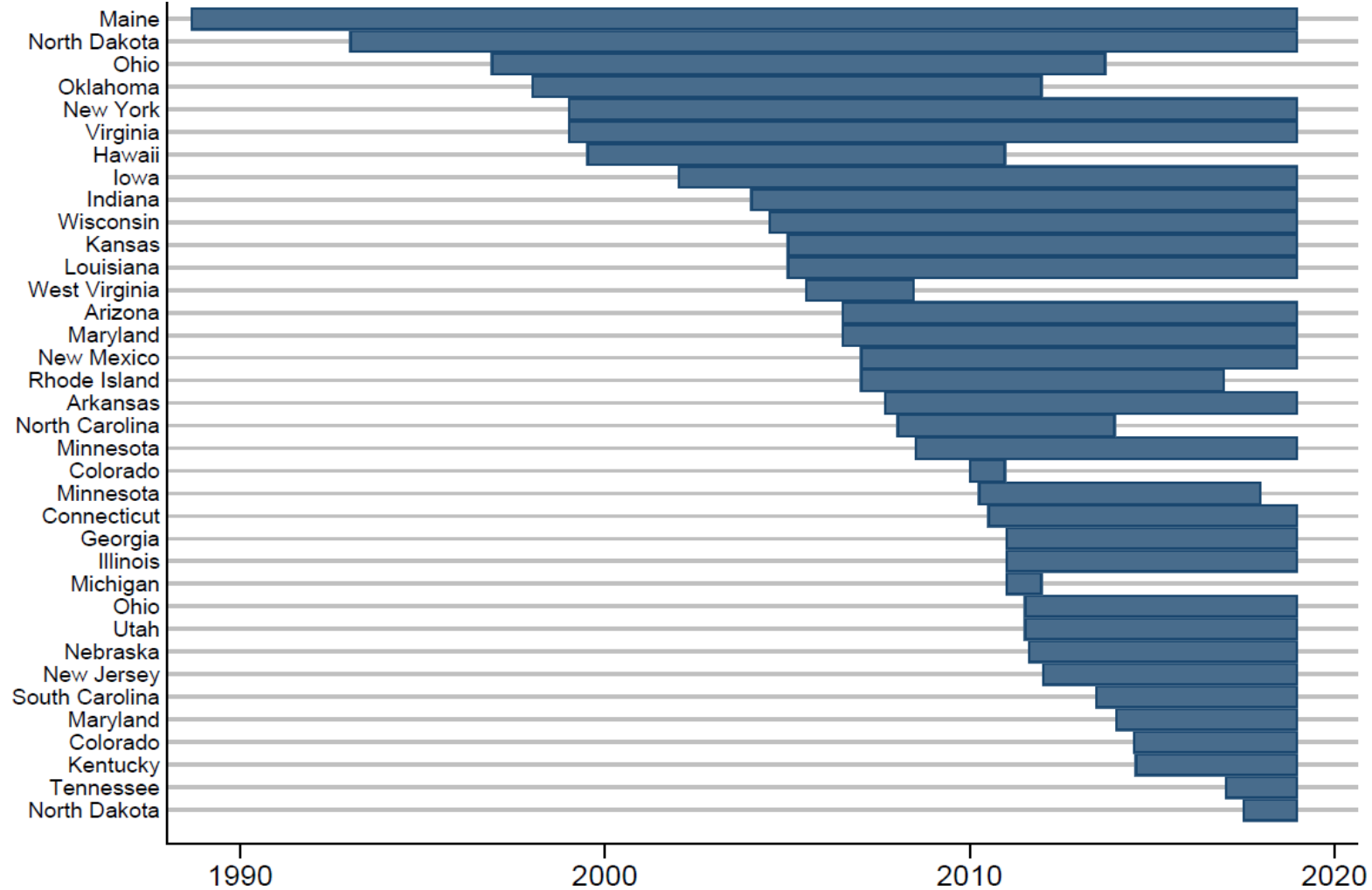
Investor Tax Credits and Entrepreneurship: Evidence from the United States

Notable Trends

- Fostering entrepreneurship is a central policy objective around the world with two common approaches:
 - Directly subsidize firms (e.g., direct funding, grants, accelerators)
 - Subsidize investors or intermediaries (e.g., loan guarantees, tax incentives)
- We study a popular policy that subsidizes investors: angel tax credits. We find that they increase angel investment yet have no significant impact on entrepreneurial activity.

This trend is based on the following working paper: Denes, M., Howell, S.T., Mezzanotti, F., Wang, X., & Ting, X. (2021). *Investor Tax Credits and Entrepreneurship: Evidence from U.S. States* (NYU Stern School of Business Working Paper Series). SSRN. <https://dx.doi.org/10.2139/ssrn.3596342>

Angel Tax Credits from 1988–2018



- Angel tax credits have been adopted in more than 13 countries and **31 U.S. states**.
- Figure on left shows staggered introduction and expiration of programs.
- Little is known about the credits' effectiveness in promoting entrepreneurship.

Policy Context for Angel Tax Credits

- Angel tax credits:
 - Target early-stage accredited investors (“angels”)
 - Reduce tax liability by X% of the investment
 - Do not depend on investment outcome
- New Jersey example:
 - New Jersey passed the Angel Investor Tax Credit Act in 2013, extended in 2019
 - Program details:
 - Tax credit of 20%
 - Targets high-tech startups with > 50% employees in NJ
 - Subsidized up to \$125 million in investment

Motivation Behind Angel Tax Credits

- Attractive features of angel tax credits:
 - No need for government to “pick winners”
 - Doesn’t require knowledge about technology
 - Retains market incentives
 - Low administrative burden
- Idea:
 - The tax credit increases returns on the investment
 - This should induce more investments in early-stage firms
- However, success is not guaranteed!
 - Are those investors with the **skills** and **experience** needed to allocate capital going to respond?

How Do Angel Tax Credits (ATCs) Affect Angel Activities and Entrepreneurial Outcomes?

- ATCs increase the number of angel deals by 19%.
 - Additional investment flows to relatively low-growth, mature firms.
- ATCs have no effect on state-level real outcomes.
 - Main outcomes: high-tech new firm entry and job creation.
 - Our estimates are well-powered: Fall below minimum detectable effects at 80% power.
 - Our estimates are also below prior means that we calculate based on the effect on new angel deals.
- Firm-level analysis using applicant data and other tests confirm that this does not reflect small program size.

How Can There Be Increased Angel Investment Yet No Real Effects? Two Channels Can Explain These Results

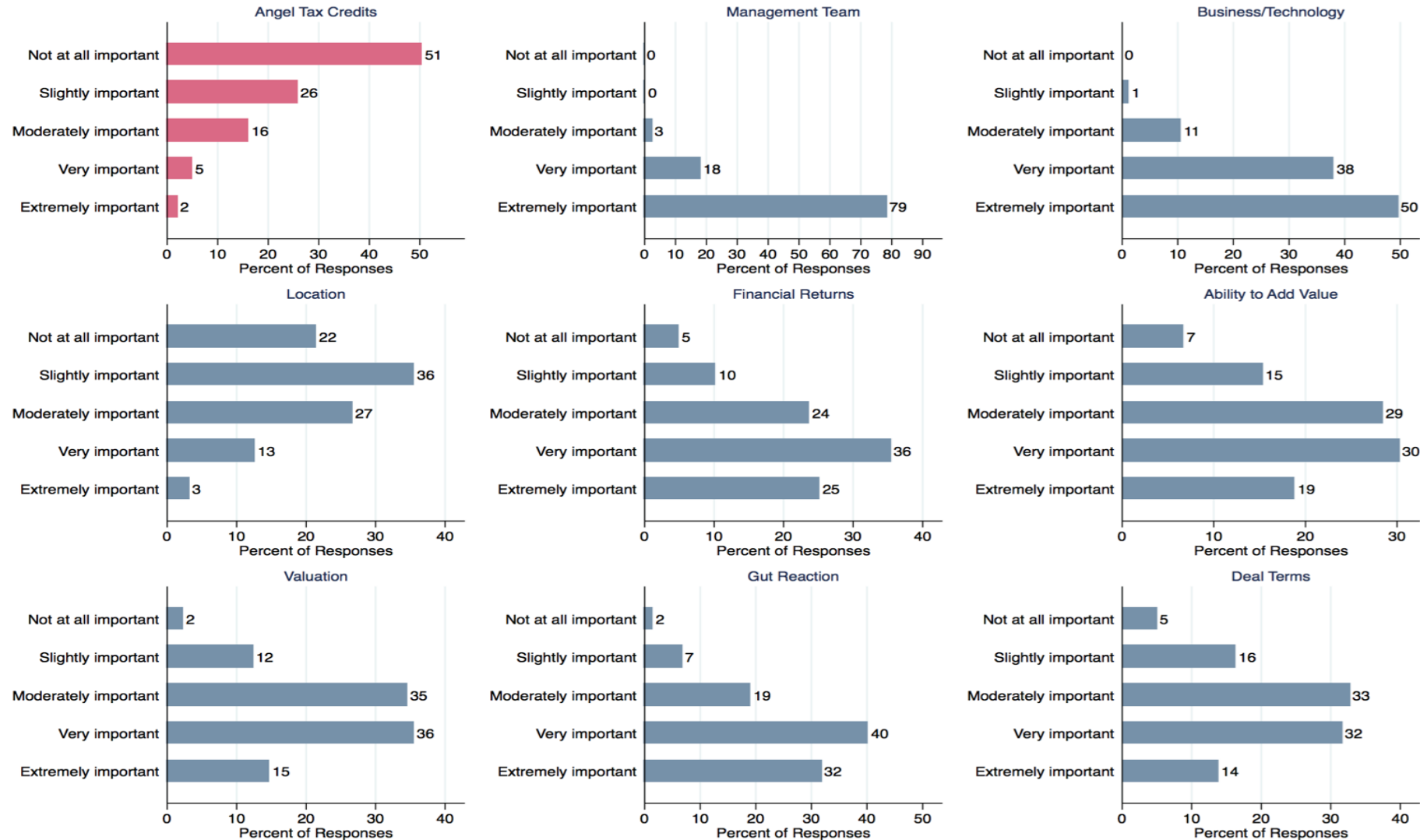
1) The increase in angel investment appears to in part reflect crowding out, where additional funding displaces funding from other sources that would have occurred in the absence of the ATC programs.

- No firm-level benefits
- Decline in non-angel early-stage investment after ATCs
- Evidence of relabeling (using SEC Form D filings)
- Large-scale insider investment (35% of tax credit recipients are company insiders)

2) To a degree ATCs do increase investment, yet they have little impact on the professional, sophisticated angels who are more likely to fund potentially high-growth startups that can generate large local economic benefits.

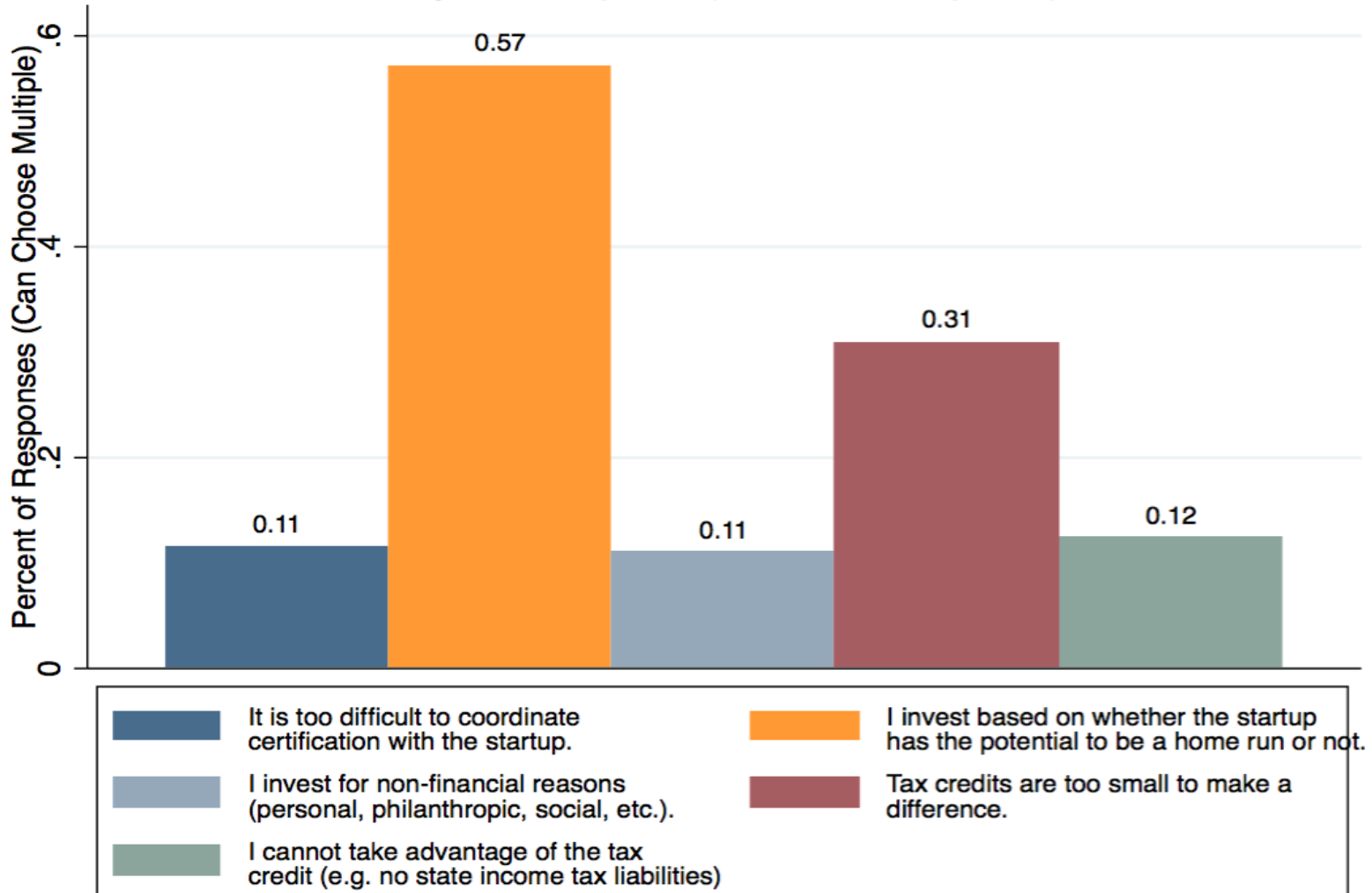
- Additional angel deals come from local, inexperienced investors without entrepreneurial backgrounds
- Why don't professional investor respond? Survey 1,400 angel investors found:
 - ATCs are not important factors in investment
 - ATCs decrease in importance with measures of professionalization
 - Investors report that a "home run" approach to investing is why ATCs are unimportant

Facts on the Ground: Importance of Various Investment Factors



Facts on the Ground: Why is ATC Unimportant?

Why ATC Unimportant (If Rated as Unimportant)



Some text responses:

- *“I’m more focused on the big win than offsetting a loss.”*
- *“If I believe in the business model/technology then a tax credit is largely irrelevant. If I don’t believe in the model then tax credit irrelevant also.”*
- *“I’m not a small potatoes angel investor.”*

The Theory Behind the Facts on the Ground

- Stylized model: How return distributions mediate the impact of investment tax incentives on an angel's decision about whether to invest in a company.
 - Motivated by fact that startup returns exhibit “fat tails” and extreme skewness, we use Pareto (power-law) distribution.
 - Assume more professional investors have access to projects with fatter tails.
- We show that while angel tax credits increase the probability of investment, this effect declines as the tails of the return distribution grow fatter.
- When the tails are very fat, the investor does not respond at all to the subsidy because she should invest in a binary manner in every project with the potential for very large returns.
- This model and the survey shed new light on how early-stage investors make decisions.

Understanding These Mechanisms

The channels represent two economic mechanisms that can help explain a minimal response to any investment subsidy:

(1) Low sensitivity of the overall cost of capital to the subsidy.

- Crowding out implies a decrease in the beneficiary firm's overall cost of capital.
- If professional investors are the marginal investors in early-stage startups while non-professionals are inframarginal, then the investor heterogeneity that we find mutes any decrease in the cost of capital.

(2) Low elasticity of real outcomes – such as firm entry and employment – to the cost of capital.

- Since non-professional investors rarely invest in firms with substantial growth opportunities, beneficiary firms likely have a low elasticity of aggregate real investment to the cost of capital.

How Do Financial Contracts Evolve for New Ventures?

Notable Trends

- Staged financing is typical in venture capital: capital is invested over multiple funding rounds as a way to alleviate risks by enabling investors to learn more about the potential of the venture and the entrepreneurs
- A standard set of contract terms are often adopted in private venture financing: these terms are to allocate cash flow, board, voting, liquidation, and other control rights between the entrepreneur and investor
- An Aumni survey¹, released by NVCA together with its updated version of its Series A Model Term Sheet, suggests that 80-90%+ of financing rounds include the same terms
- However, should entrepreneurs and investors just follow the trend? When do deviations happen over subsequent rounds? Do later investors get better, or worse, terms than early investors?

Note: 1. 'New Enhanced Model Term Sheet v2.0', National Venture Capital Association, <https://nvca.org/pressreleases/new-enhanced-model-term-sheet-v2-0/>

This trend is based on a working paper. All citations referenced can be found here:

Jenkinson, T., Rauch, C., & Fu, D. (2021). *How Do Financial Contracts Evolve for New Ventures* (SSRN Working Paper Series). SSRN. <https://dx.doi.org/10.2139/ssrn.3512304>

Background: What We Know & Don't Know

What We Know?

- Contracts are incomplete: since it is impossible to specify all relevant contingencies, incomplete contracts allow for future renegotiations (Hart and Moore, 1988).
- Contracts serve a 'real' purpose: one of the purposes of contracts is to align the interests of involved parties and to alleviate contracting problems such as moral hazard or hold up issues (Aghion and Bolton, 1992; Trester, 1998; Cornelli and Yosha, 2003; Schmidt, 2003; Hellmann, 2006; Cestone, 2014).
- Investors pay for certain contract terms: compared to common stock, preferred stock grants its investors senior rights and therefore should have higher value than the common stock issued by the same company (Gornall and Strebulaev, 2019 ;Gornall and Strebulaev, 2020).

What We Don't Know/Are Not So Sure?

- Whether there is a default contract (the 'norm') in new venture financing?
- How and when do contracts deviate from the norm?
- Whether there is a signalling effect of such deviations?
- How contract terms evolve over successive funding rounds?
- Are headline valuations inflated – are some Unicorns mythical?

Using a new deal-level dataset of new venture financing contract terms and a 'three-dimensional' analysis strategy, we aim to fill the knowledge gap.

Novel Data Explores Contractual Terms

- We build a novel dataset of contractual terms embedded in all classes of common and preferred shares issued by selected VC-backed companies from their first equity financing until exit or Jan 2022.
- We focus on eight key contractual terms in this study. These terms are derived from Certificates of Incorporation (Cols), which are legal documents that are filed by U.S. registered companies on formation and each time a new class of stock is issued.
- We extract deal-level information such as amount raised, the participating investors, board members, and executive officers from various legal filings such as Notice of Exempt Offering (Form D), Limited Offer Exemption Notices (LOEN), Annual Reports (AR) and Employee Plan Exemption Notice (EPEN), and from commercial databases including Pitchbook and Crunchbase.

Table1: Information Derived From Cols

Classes of Information	Information collected from Cols
	Classes of stock
Number and class of shares	Authorized number of each class of stock Original price per share
Dividends	1. Dividend is contractual or not ('CD')
Liquidation rights	2. Liquidation order ('LO') 3. Liquidation multiplier ('LM') 4. Liquidation Participation('LP')
Conversion rights	Conversion price ('CP') 5. Anti-dilution protection ('ADP')
Voting rights	6. Votes per share ('VT')
Redemption rights	7. Redemption ('RD')
Other rights	8. IPO Ratchet ('IPO')

Methodology

Sample Selection

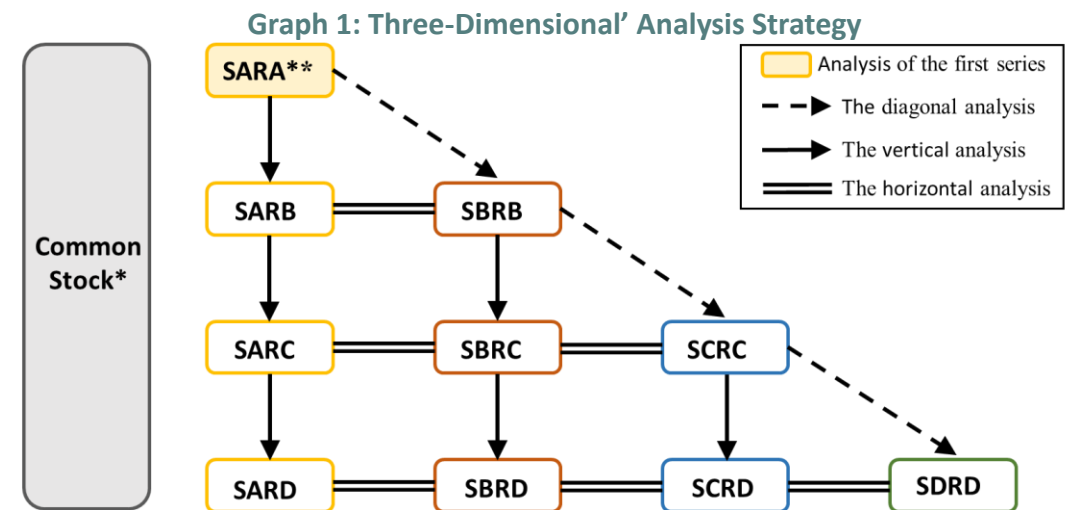
We apply four filters to obtain our sample

- Scanned copies of CoIs are available in Genesis- the commercial database of Lagniappe Labs (6,929 Co.)
- CoI number is equal to or greater than the number of equity funding rounds (3,111 Co.)
- The first equity round was launched between 1/1/2003 and 31/12/2018 (2,866 Co.)
- Randomly select **300** companies from these 2,866 companies
- Examine contract terms offered in **1,210** funding rounds of the selected 300 companies.

Three-Dimensional' Analysis Strategy

- To analyse the dynamics of how contracts evolve, we introduce a three-dimensional analytical framework
- Graph 1 provides a description of our framework
- The analysis is in two categories: the initial contract and the evolution of contracts over funding rounds

- *The Initial Contract*: we focus on the first formal 'Series A' funding round. We call this contract the 'Initial Contract'.
- *The Evolution of Contracts*: we then look at the dynamics of contractual terms given to investors of new class of shares (Diagonal), changes to the rights of existing investors when a new funding round is issued (Vertical) and the distribution of rights among investors of different rounds (Horizontal).



*Some companies issue more than one classes of common stock and we refer them collectively as the common stock.

**SiRj represents the terms applying to series i at funding round j.

Results: Initial Contract Analysis

Initial Contract Terms Are Highly Standardised

We observe the eight terms for the Series A rounds. Graph 2 shows the distribution of values of each term adopted. We label the modal value of each term its 'default' value. As can be seen, new ventures receive very similar terms in their Series A round.

The Default Contract

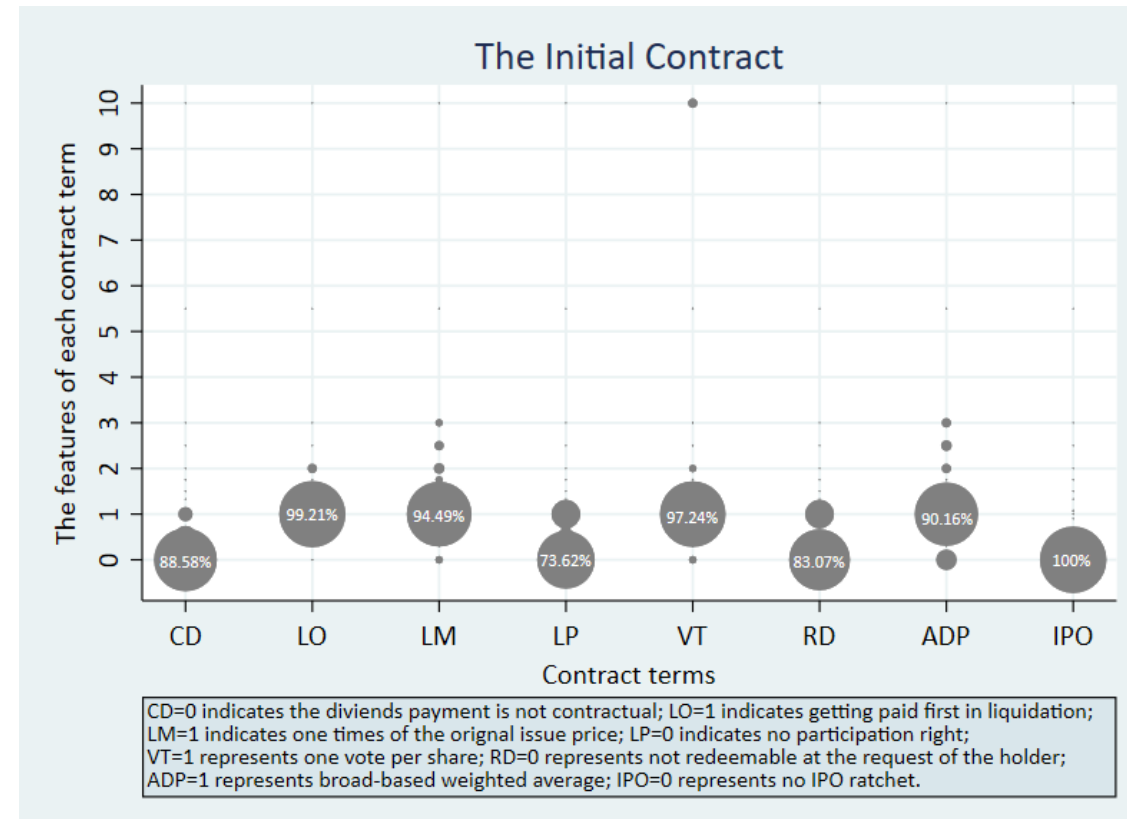
We define the 'default contract' as:

- CD: Dividends are not contractual
- LO: First priority in liquidation
- LM: Liquidation preference of 1x invested amount
- LP: Not 'participating preferred'
- VT: One vote per share
- RD: Not redeemable at the option of holders
- ADP: Price protection is broad-based weighted average
- IPO Ratchet: No IPO ratchet protection

A Majority Of Ventures Adopt The Default Contract

Nearly 55% of new ventures in our sample adopt all these default values for their Series A, even though there is limited overlap of investors across deals.

Graph 2: Terms Granted in the Initial Contract



Results: Initial Contract Analysis Continued

The Default Value Dispersion Of Each Term

- To assess the deviation of terms from their default value for a given funding round, we define the 'Default Value Dispersion' D_{ij}^k .

$$D_{ij}^k = \sqrt{\frac{(V_{ij}^k - F_{ij}^k)^2}{N_{ij}}}$$

k= CD, LO, LM, LP, VT, RD, ADP, or IPO; i= 1, 2, ..., N is the series number; j (>=i) = 1, 2, ..., N is the funding round number; V_{ij}^k is the value of right k of series i at funding round j; F_{ij}^k is the default value right k of series i at funding round j; N_{ij} is the number of observations of series i at funding round j.

- Graph 3 shows that there are some terms where almost all contracts are at the default level – but there is a high dispersion value. e.g. VT (votes per share). This is in line with Gompers, Gornall, Kaplan and Strebulaev (2020) who show that investors have stronger preferences over some rights than others.

Deviations: investor-friendly or founder-friendly?

- Among companies that deviate from this default contract, most adopt more 'investor friendly' terms – although slightly fewer of these raise another round.

Graph 3: The Default Value Dispersion Of Each Term

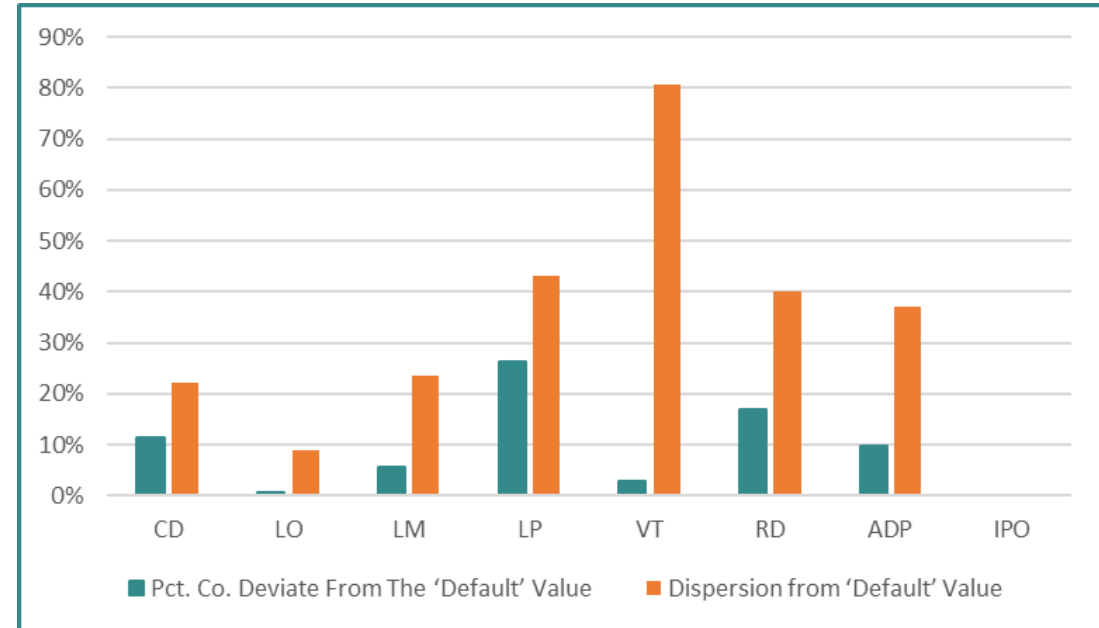


Table 2: The Type Of Contracts Adopted By Ventures²

	The Default Contract	The More Investor Friendly Contract	The Less Investor Friendly Contract	The Mixed Contract
Nr. Co. Adopt a Certain Type of Contract	138	95	14	7
Pct. Co. Adopt a Certain Type of Contract	54.33%	37.40%	5.51%	2.76%
Pct. Co. raise additional funding rounds	76.81%	70.53%	71.43%	86%

Note: 2. We divide contracts into four categories: (1)The default, (2) more investor friendly-contracts which at least one right is more investor friendly than its default value, and no right is less investor friendly than the default contract; (3) less investor friendly-contracts with at least one right which is less investor friendly than the default value, and no right which is more investor friendly than the default contract. (4) mixed-others.

Results: Diagonal Analysis (1)

The Ratchet Effect: To Stay The Same Or Become Better

- In the diagonal analysis, we compare the original contract of a series with the original contract of the series that was issued immediately prior to it.
- Terms Remain Sticky: Panel A shows that there is a strong tendency to leave rights unchanged across funding rounds. If the rights do change, they are more likely to become more senior than be more junior.
- The Mean Reversion Process: Panels B to D suggest contract given to new series has the tendency to reverse back to the default contract, for example, if the preceding series' contract is less investor friendly, it is much more likely that the new series' contract issued in following round will become more senior.

Table 3: The 'Diagonal' Evolution of Contracts³

Panel A. Comparing Share Rights of a New Series to Share Rights of the Preceding Series					
Diagonal Evolution	Pro. Of No New Series (or No Data Available)	Conditional on Succeed in Issuing a New Series & Data Available			
		Stay the Same	Become Senior	Become Junior	Mixed Direction
A → B	46.06%	71.52%	8.75%	14.59%	5.12%
B → C	34.01%	73.07%	13.08%	11.53%	2.30%
C → D	46.36%	69.15%	17.28%	8.65%	4.94%
D → E	50.00%	65.96%	17.02%	12.76%	4.26%
E → F	43.86%	59.37%	18.76%	9.37%	12.50%
Panel B. Evolution of the Initial Contract if the Preceding Series Adopts the Default Contract					
Diagonal Evolution	Pro. Of No New Series (or No Data Available)	Conditional on Succeed in Issuing a New Series & Data Available			
		Stay the Same	Become Senior	Become Junior	Mixed Direction
A → B	44.20%	93.49%	5.20%	1.29%	.
B → C	36.21%	86.49%	12.16%	1.35%	.
C → D	48.24%	88.64%	9.10%	.	2.28%
D → E	47.06%	70.36%	22.21%	3.70%	3.70%
E → F	47.83%	75.00%	16.68%	8.34%	.
Panel C. Evolution of the Initial Contract if the Preceding Series Adopts the More Investor Friendly Contract					
Diagonal Evolution	Pro. Of No New Series (or No Data Available)	Conditional on Succeed in Issuing a New Series & Data Available			
		Stay the Same	Become Senior	Become Junior	Mixed Direction
A → B	51.58%	45.66%	2.17%	39.14%	13.05%
B → C	34.29%	58.70%	8.69%	30.44%	2.18%
C → D	47.46%	45.17%	25.81%	22.57%	6.45%
D → E	53.85%	61.13%	11.12%	22.23%	5.55%
E → F	41.38%	58.82%	17.64%	11.77%	11.77%
Panel D. Evolution of the Initial Contract if the Preceding Series Adopts the Less Investor Friendly Contract					
Diagonal Evolution	Pro. Of No New Series (or No Data Available)	Conditional on Succeed in Issuing a New Series & Data Available			
		Stay the Same	Become Senior	Become Junior	Mixed Direction
A → B	35.71%	44.44%	55.55%	.	.
B → C	.	66.67%	33.33%	.	.
C → D	20.00%	75.00%	25.00%	.	.
D → E	66.67%	100.00%	.	.	.
E → F	66.67%	.	100.00%	.	.
Panel E. Evolution of the Initial Contract if the Preceding Series Adopts the Mixed Contract					
Diagonal Evolution	Pro. Of No New Series (or No Data Available)	Conditional on Succeed in Issuing a New Series & Data Available			
		Stay the Same	Become Senior	Become Junior	Mixed Direction
A → B	28.57%	20.01%	40.00%	20.01%	20.01%
B → C	20.00%	.	50.00%	.	50.00%
C → D	.	.	50.00%	.	50.00%
D → E	.	.	.	100.00%	.
E → F	.	.	.	.	100.00%

Note: 3. We classify the type of changes to the contractual rights into four categories (1) stay the same, (2) become 'senior'-if at least one contractual right becomes more investor friendly to the series holder, and no term is less investor friendly, (3) become 'junior'-if at least one contractual right becomes less investor friendly to the series holder, and no term is more investor friendly, and (4) mixed direction.

Results: Diagonal Analysis (2)

The Default Contract Persists over Rounds

The default contract is the most popular option prior to Series E round. However, in later rounds, more and more companies choose to adopt more investor friendly contracts while only ~ 5% offer less investor friendly terms. However, sample sizes shrink noticeably.

Table 4: The Original Contract of Each Series

Series	No. Obs.	The Default Contract	More Investor Friendly Contract	Less Investor Friendly Contract	Mixed
Series A	254	54.33%	37.40%	5.51%	2.76%
Series B	197	58.88%	35.53%	3.05%	2.54%
Series C	151	56.29%	39.07%	3.31%	1.32%
Series D	94	54.26%	41.49%	3.19%	1.06%
Series E	57	40.35%	50.88%	5.26%	3.51%
Series F	35	34.29%	54.29%	5.71%	5.71%

Results: Vertical Analysis

Revisions to the terms of past round terms do happen

- In the vertical analysis, we look at the revision of existing contractual rights when new funding rounds occur.
- Panel A of Table 5 shows that revisions of existing contractual terms happens in a minority of cases.
- Panels B and C show that when revisions happen, earlier series do not always get worse terms.
- Panel D shows that it is rare for some terms to be revised up while others are revised down within the same contract, which indicates that revisions to the cash flow and control rights are positively correlated. This is consistent with the finding of Kaplan and Strömberg (2002).

Table 5: The 'Vertical' Evolution of Contracts⁴

Panel A. Percentage of Companies do not Revise Share Rights Given to a Series ('stay the same')					
Round Name	Series A	Series B	Series C	Series D	Series E
Round A	100%**				
Round B	64.97%	100%			
Round C	63.89%	63.89%	100%		
Round D	55.43%	56.52%	57.45%	100%	
Round E	55.32%	56.25%	49.02%	48.00%	100%
Round F	53.33%	58.06%	56.25%	51.52%	55.88%
Panel B. Percentage of Companies Revise 'Up' Share Rights Given to a Series ('become senior')					
Round Name	Series A	Series B	Series C	Series D	Series E
Round A	.				
Round B	3.95%	.			
Round C	6.94%	4.17%	.		
Round D	7.61%	7.61%	6.38%	.	
Round E	4.26%	4.17%	5.88%	6.00%	.
Round F	3.33%	.	3.13%	6.06%	2.94%
Panel C. Percentage of Companies Revise 'Down' Share Rights Given to a Series ('become junior')					
Round Name	Series A	Series B	Series C	Series D	Series E
Round A	.				
Round B	25.42%	.			
Round C	25.00%	25.69%	.		
Round D	34.78%	31.52%	34.04%	.	
Round E	34.04%	33.33%	39.22%	38.00%	.
Round F	36.67%	32.26%	34.38%	36.36%	35.29%
Panel D. Percentage of Companies Revise Share Rights Given to a Series both 'Up' and 'Down' ('mixed direction')					
Round Name	Series A	Series B	Series C	Series D	Series E
Round A	.				
Round B	5.65%	.			
Round C	4.17%	6.25%	.		
Round D	2.17%	4.35%	2.13%	.	
Round E	6.38%	6.25%	5.88%	8.00%	.
Round F	6.67%	9.68%	6.25%	6.06%	5.88%

Note: 4. We classify the type of changes to the contractual rights into four categories (1) stay the same, (2) become 'senior'-if at least one contractual right becomes more investor friendly to the series holder, and no term is less investor friendly, (3) become 'junior'-if at least one contractual right becomes less investor friendly to the series holder, and no term is more investor friendly, and (4) mixed direction.

Results: Horizontal Analysis

The Latest Series Does Not Always Have The Best Terms; Sometimes, They Have The Worst

- In the horizontal analysis, we examine how the rights of the latest funding round compare to the rights given to all previous investors.
- Panel A demonstrates that in <36% of cases the latest series of each round is the most investor-friendly compared to all the other outstanding series, and the chances they have the worst terms increase over rounds.
- Panels B and C show that, in comparison to common stock, most of the latest series are more senior in their liquidation preference and anti-dilution protections. This is consistent with Gompers, Gornall, Kaplan and Strebulaev (2020): investors care most about these rights. Meanwhile, contractual dividends, participation rights and IPO ratchets are rare.
- The latest series typically have no claim on the remaining assets in liquidation unless they convert into common stock or give up the promised liquidation preference.

Table 6: The 'Horizontal' Analysis of Contracts

Panel A. How Investor-Friendly is the Latest Series Compared to Other Series?									
	No. Obs. 1	The Most Investor Friendly	The Least Investor Friendly	Same as all the Other Series	Mixed				
Round A	254	.	.	100%*	.	.	.	.	.
Round B	196	22.96%	4.59%	66.84%	5.61%	.	.	.	.
Round C	149	31.54%	4.70%	53.02%	10.74%	.	.	.	.
Round D	94	35.11%	6.38%	40.43%	18.09%	.	.	.	.
Round E	54	31.48%	9.26%	27.78%	31.48%	.	.	.	.
Round F	35	22.86%	14.29%	17.14%	45.71%	.	.	.	.

Panel B. Compared to the Common Stock, the Latest Series have Senior Rights in which Terms?									
	No. Obs. 2	CD**	LO***	LM****	LP	VT	RD	AD	IPO
Round A	254	11.42%	98.82%	99.60%	0.79%	2.36%	16.93%	92.91%	.
Round B	199	10.61%	99.50%	100.00%	0.50%	0.51%	15.08%	97.49%	0.50%
Round C	152	5.92%	100.00%	100.00%	.	1.32%	17.76%	96.71%	1.32%
Round D	96	3.19%	100.00%	100.00%	.	3.13%	17.71%	96.88%	4.17%
Round E	58	5.26%	100.00%	100.00%	.	3.45%	25.86%	94.83%	3.45%
Round F	35	5.71%	97.14%	97.06%	.	5.71%	31.43%	97.14%	5.71%

Panel C. Terms in which the Latest Series is Junior to Common Stock, or Does Not Have Unless it Converts to Common Stock									
	No. Obs. 2	CD	LO	LM	LP ^o	VT ^{oo}	RD	AD	IPO
Round A	254	.	0.39%	.	83.46%	0.39%	.	.	.
Round B	199	.	0.50%	.	87.94%	1.52%	.	.	.
Round C	152	.	.	.	92.11%	1.99%	.	.	.
Round D	96	.	.	.	89.58%	2.08%	.	.	.
Round E	58	.	.	.	89.47%	5.17%	.	.	.
Round F	35	.	.	.	73.53%	11.43%	.	.	.

. Indicates 0%;

Nr.Obs.1 of each round is the number of companies of which both data of the terms applying to the newly issued Series And that of the terms offered to previously issued series in this round are available is counted as an obs1;

Nr.Obs.2 of each round is the number of companies in our sample whose contract terms of the series issued in this round are available;

* At round A, there is only one series, which is the latest series of that round, i.e., Series A.

** A series is more senior than the common stock in contractual dividends (CD) if it's dividends payment is contractual or conditional contractual;

*** A series is more senior than the common stock in liquidation order (LO) if it gets paid prior to the common stock;

**** A series is more senior than the common stock in liquidation multiplier (LM) if it has promised liquidation amount per share, i.e., its liquidation multiplier is greater than zero.

^o LP represents the right to claim the remaining assets after paying liquidation preference, which is what the common stock entitled to. A series normally only be able to claim the remaining assets if it converts to common stock and/or it gives up the liquidation preference; The series that can enjoy both liquidation preference and the remaining assets is called 'liquidation participation'.

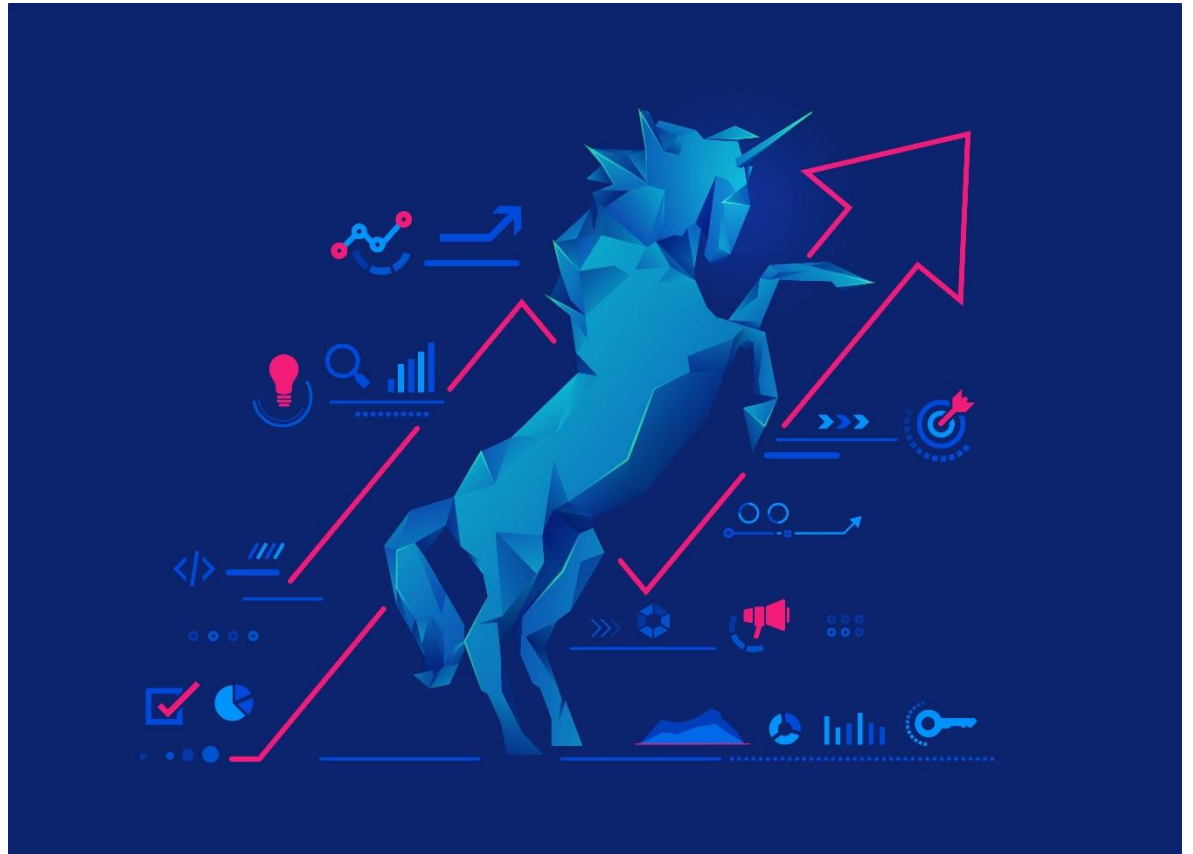
^{oo} A series is junior in voting right (VT) if the votes per share the series has is fewer than the number of votes a share of common stock has.

Results: Horizontal Analysis Continued

Unicorns May Actually Exist

The extra 'rights' the latest series may have in relation to common stock are downside protections, which is of most value to investors if the company is in the early stages when risks are high.

In the case of very successful ventures, the economic value derived from late funding rounds may be very close to their headline post-money valuation.





Tim Jenkinson

Professor of Finance, Saïd Business School, University of Oxford

Tim Jenkinson is one of the leading authorities on private equity, IPOs, and institutional asset management. Tim serves as the director of the Oxford Private Equity Institute and is one of the founders of the Private Equity Research Consortium. Tim is a renowned teacher and presenter, and teaches executive courses on private equity, entrepreneurial finance, and valuation.

EXPERT INSIGHT

- The similarity of Series A contract terms is striking, but can help to reduce transactions costs and make subsequent funding rounds easier.
- The initial contract terms often stick across rounds – investors are in a repeated game.
- As companies succeed, post-money values from funding rounds approximate real economic values, as the likelihood that preferred shares will convert to ordinaries increases .

Structural Innovation in Social Enterprise

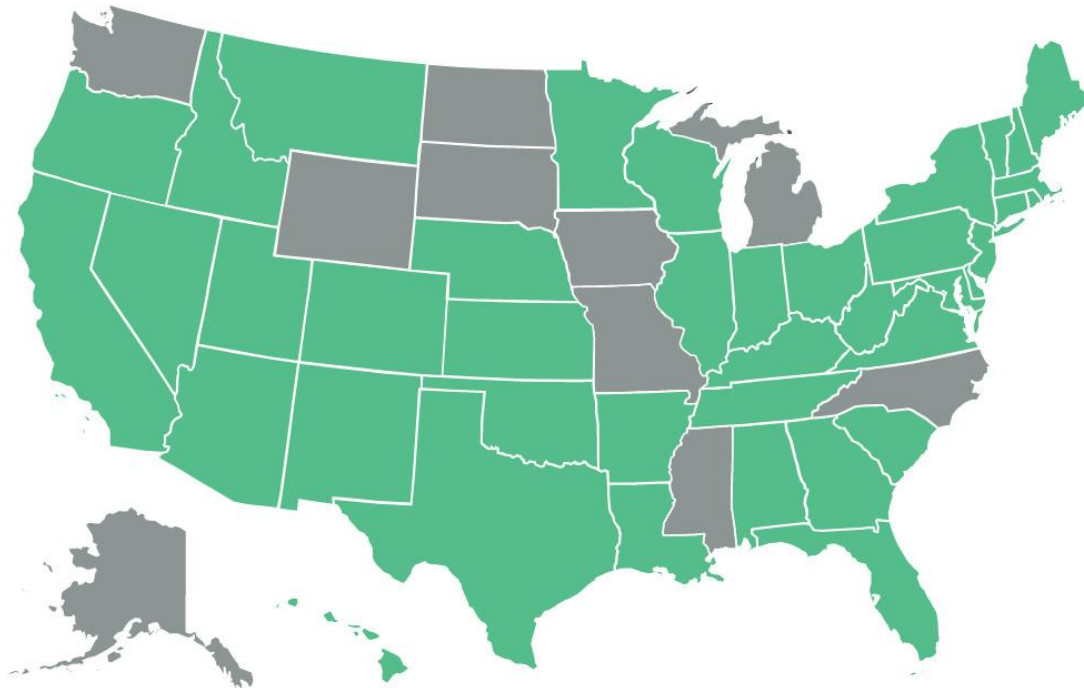
Notable Trends

- Benefit corporations emerged to accommodate the blossoming social enterprise sector, but their weak mandates disappoint many founders.
- Beyond these new legal forms, a growing, global movement called steward ownership has adopted inventive organizational structures intended to commit companies to social missions over the long term.
- Among the first structures in the U.S. is the golden share model, in which a benefit corporation grants all voting rights to managers, all economic rights to investors, and critical veto rights to an independent foundation.
- A new law review article explores this new structure, explains its achievements and limitations, and proposes substantial improvements – demonstrating a viable form of private ordering for social enterprises.

This trend is based on the following paper: Thomas, N. (in press). *Golden shares and social enterprise*. Harvard Business Law Review, 12.

Structural Innovation in Social Enterprise

U.S. States with Benefit Corporations



Source: Social Enterprise Law Tracker (2021)

- **Social enterprises** are for-profit businesses that pursue “defined social missions, whether or not that pursuit increases profits” (McDonnell, 2018, p. 79).
- Based on a widespread (but debatable) belief that traditional corporations must maximize shareholder value, many have concluded that these business structures do not adequately facilitate social enterprise (Strine, 2014).
- In response, over the past decade most states have created new legal forms, notably **benefit corporations**, that expressly require for-profit businesses to consider social missions.
- The leading version is the Delaware public benefit corporation (“PBC”) (Nows & Thomas, 2020, p. 874), which must state in its charter a specific public benefit that its directors must then balance against the interests of stockholders and other stakeholders.

Structural Innovation in Social Enterprise

- Though popular among states and businesses, these new entities are often considered insufficient, because benefit corporation directors must merely consider social missions but need not prioritize them (Brakman Reiser & Dean, 2017).
- Several legal scholars have proposed legislation to improve benefit corporations (Horton, 2019) or to create new types of entities (Eldar, 2020) to better accommodate social enterprises, but state lawmakers show no signs of adopting any of these proposals.
- Dissatisfied with the options offered by public law, some creative social entrepreneurs are resorting to private ordering, developing elaborate corporate structures to pursue their public-interest missions over the long term, in a growing, global movement called **steward ownership**.

Structural Innovation in Social Enterprise

Dual-class
stock

Veto rights

Perpetual
trusts

Foundations

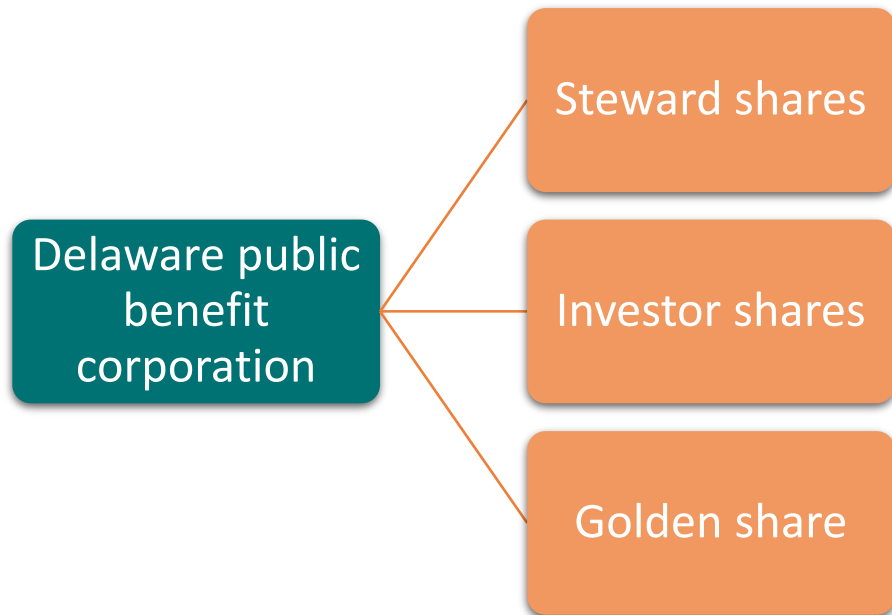
Employee
cooperatives

Hybrid
entities

- Steward ownership aims to commit companies to pursue unique purposes and to keep corporate control with managers and employees rather than outside investors (Canon et al., p. 11).
- To these ends, companies employ innovative business structures based on existing laws, drawing on various assortments of tools in different jurisdictions.

Structural Innovation in Social Enterprise

The Golden Share Model



- In the U.S., among the first forms of steward ownership is the **golden share model**. It borrows and combines features from different areas of corporate law, resulting in a novel structure intended to maintain both mission and management over the long term.
- Under this model, a **Delaware PBC** employs a dual-class stock structure, typically associated with publicly traded tech companies, but adapted here for privately held social enterprises (Canon et al., pp. 17–19).
 - **Stewards** (i.e., managers) receive common shares with all the voting rights but no economic rights and strict transfer restrictions.
 - **Investors** can receive preferred shares with no voting rights or transfer restrictions but all the economic rights, like capped dividends and share redemptions.
 - A single **golden share** has veto rights over any sale or liquidation of the company, any transformation from a PBC to a traditional corporation, and any change to its charter’s specific public benefit or other fundamental provisions. It is issued to an independent foundation that must veto any such proposal.

Structural Innovation in Social Enterprise

- The golden share model's esoteric combination of features is intended to accomplish several goals (Canon et al., pp. 16–17):
 - Unable to receive dividends or sell their shares, managers should have less of an incentive to steer the company toward profit at the expense of purpose.
 - Without voting rights, investors cannot replace directors or otherwise force the company to abandon its mission for monetary gain.
 - And if consistently exercised, the golden share's veto rights should prevent the company from changing its mission through charter amendments, mergers or other transformations.



Naveen Thomas

Director of the Business Transactions Clinic, New York University School of Law

At NYU Law, Professor Naveen Thomas directs a clinic in which law students provide transactional legal services to nonprofit organizations, social enterprises and small businesses. He also teaches simulation courses that train students to draft and negotiate business contracts. His research seeks to illuminate and develop innovations in contract and corporate law and to bridge the many gaps between theory and practice in this fields.

EXPERT INSIGHT

- The main obstacle to social enterprises' growth is a gap in trust between managers and investors, with each side lacking any legal assurance that the other will pursue both profits and purpose (Brakman Reiser & Dean, 2017, pp. 11–17). Too often, these misgivings limit businesses' access to capital.
- From one side, the golden share model begins to close this trust gap, by assuring managers that investors cannot divert a company from its mission. Moreover, a business's choice of such a restrictive structure, which denies managers several profitable exit options and other avenues toward enrichment, could promote alignment with its investors through both positive signaling to like-minded financiers and negative screening of adverse ones.
- But from the other side, the trust gap may widen even further, as impact investors worry that entrenched managers will ignore that mission and abuse their unchecked authority (Bebchuk & Kastiel, 2017). Though the golden share model may indelibly enshrine a mission in a corporate charter, it does nothing beyond the standard PBC form to make managers pursue that mission. Moreover, even if insiders cannot make money through dividends and stock sales, they can still extract private benefits through other means, like salary increases and pet projects (Choi, 2018).



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EXPERT INSIGHT

- To bridge the remaining trust gap between managers and investors, novel applications of established industry practices and familiar legal concepts could significantly improve the golden share model.
 - Because the existing model does not ensure that a certain mission stays a priority, a company could integrate carefully selected impact metrics into its organizational documents to assure investors of its commitment to its specified social objectives and to incentivize managers to achieve those objectives.
 - To avoid overreliance on a single nonprofit organization that could dissolve or transform without notice, the founders could instead confer the golden share's voting rights through a voting trust to any person or entity, which would be contractually obligated to exercise those rights according to the company's instructions.
- With practical improvements like these, social entrepreneurs could retain independence in pursuing their missions, while attracting the capital needed to achieve them at scale.
- For further details and analysis, please see my article *Golden Shares and Social Enterprise*, forthcoming in the Harvard Business Law Review in 2022.

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Entrepreneurship Penalty In Job Searches

Notable Trends

- Post-entrepreneurs are penalized during job searches: they are less likely to be picked as top hire after returning to wage labor market, though the degree of penalty depends on who is hiring.
- Recruiters who themselves have some entrepreneurial aspiration are less likely to penalize post-entrepreneurs in hiring.
- Recruiters of small-sized firms are less likely to penalize post-entrepreneurs in hiring.
- The least penalty comes from recruiters who: (a) harbor entrepreneurial aspiration *and* (b) work for a small firm.

This trend is based on the following working paper: Ding, W.W., Lee, H., & Shapiro, D.L.(2021). *Are Entrepreneurs Penalized during Job Searches? It Depends on Who is Hiring* (SSRN Working Paper Series). SSRN. <https://dx.doi.org/10.2139/ssrn.3512270>

Entrepreneurship Penalty in Job Searches

- Common questions face entrepreneurs and aspiring entrepreneurs: “What happens if my venture fails, and I need to look for a job? Will I be penalized for having been an entrepreneur?”
- Answers to these questions help reveal post-entrepreneurship trends in the labor market.
- Such answers also help to reveal biases in wage labor market against post-entrepreneurs.
- Trends shown in this research offer basis for policy intervention or firm anti-bias training to address the penalties against post-entrepreneurs.

Entrepreneurship Penalty in Job Searches

- Existing research on post-entrepreneurship outcomes focuses on earnings and income of post-entrepreneurs.
- Missing from this research is post-entrepreneurs' career histories – specifically, whether they can get jobs.
- Existing research suffers from an endogeneity problem due to not knowing if entrepreneurs selectively exited entrepreneurship.
- We use a combination design of survey and experiments to address these concerns.

Entrepreneurship Penalty in Job Searches

- 275 managers enrolled in our experiment and survey. All had U.S. citizenship, hiring experience, full-time jobs, at least two direct reports and at least seven years of full-time work experience.
- Each manager was given four objectively identical resumes (a total of 1,100 resumes were analyzed); in each resume, these two items were randomized: (i) the gender of first name (male vs. female) and (ii) entrepreneurship experience (listed as “founder” versus an executive in last-held job).
- Each manager was provided with a description of the position for hire and asked to pick one resume as top candidate for hire.
- After selecting their top choice candidate, managers answered questions in the survey about their entrepreneurial aspiration, employer size and demographic information.

Entrepreneurship Penalty in Job Searches

Table 1 Effect of Job Applicant's Entrepreneurship Experience on Probability of Being Hired

	(1) Logit	(2) Conditional Logit
Applicant has entrepreneurship experience	-0.340* (0.141)	-0.256* (0.122)
Female applicant	-0.167 (0.140)	-0.124 (0.121)
Recruiter characteristics controls	Yes	
Recruiter functional area fixed effect	Yes	
Recruiter employment industry fixed effect	Yes	
Résumé template fixed effect	Yes	Yes
Constant	-0.733 (0.618)	
Observations	1,100	1,100
Log-likelihood	-612.8	-376.9
Chi2	12.08	8.675

- Table reports logit model estimates (in model 1) and conditional logit model estimates (in model 2) of effect of past entrepreneurship experience on job applicant's probability of being hired.
- **Key Finding:** Job applicants' probability of being hired is lower by 23%-29% when they *have (rather than lack)* entrepreneurship history.

Entrepreneurship Penalty in Job Searches

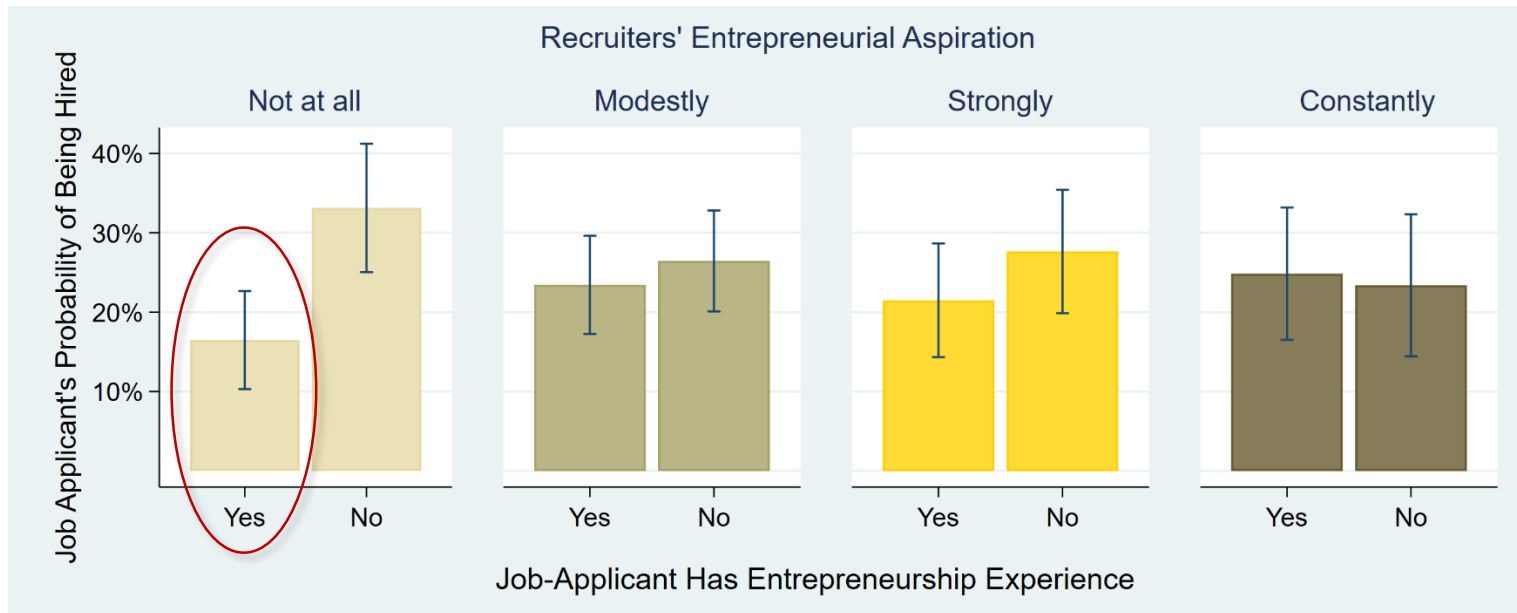


Figure 1: Job Applicants' Probability of Being Hired, Broken Down by Their Entrepreneurship Experience and Recruiter's Entrepreneurial Aspiration

Key Finding: Recruiters without any entrepreneurial aspiration (represented by the lightest bars at the far left of this figure) are significantly less likely than recruiters with some or more of this aspiration to hire the job applicants with entrepreneurship history.

Entrepreneurship Penalty in Job Searches

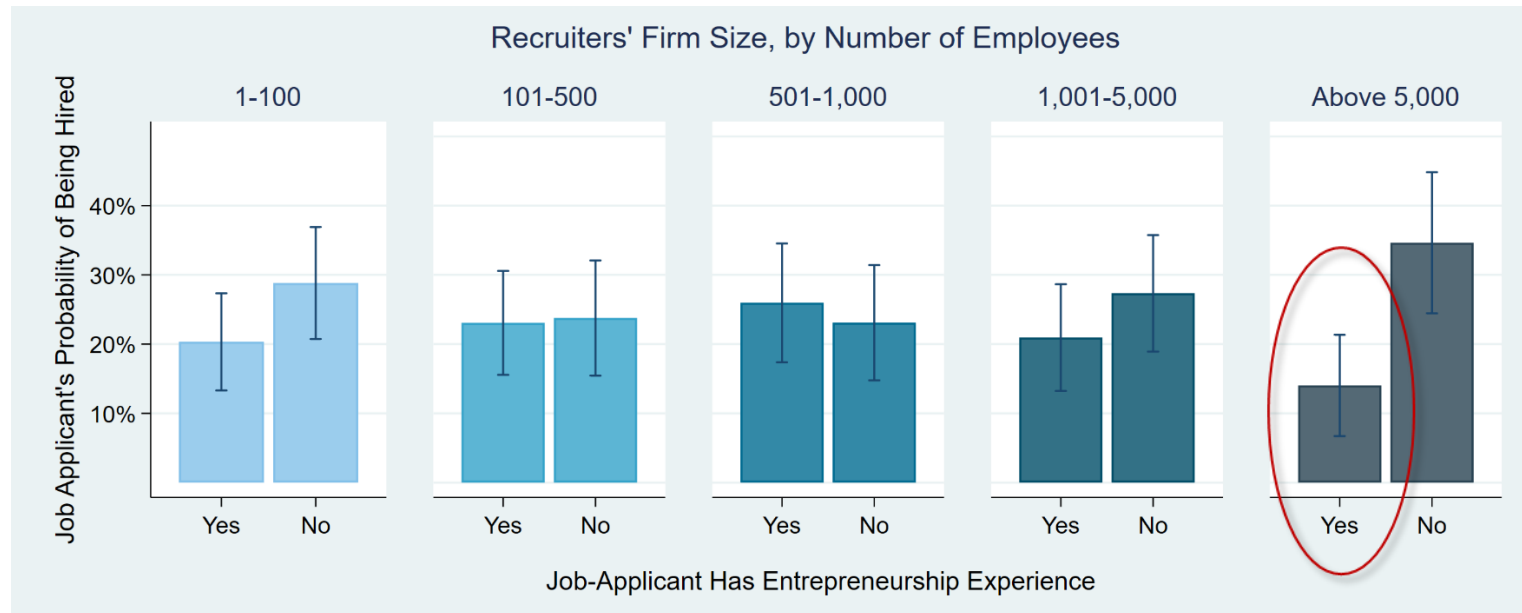
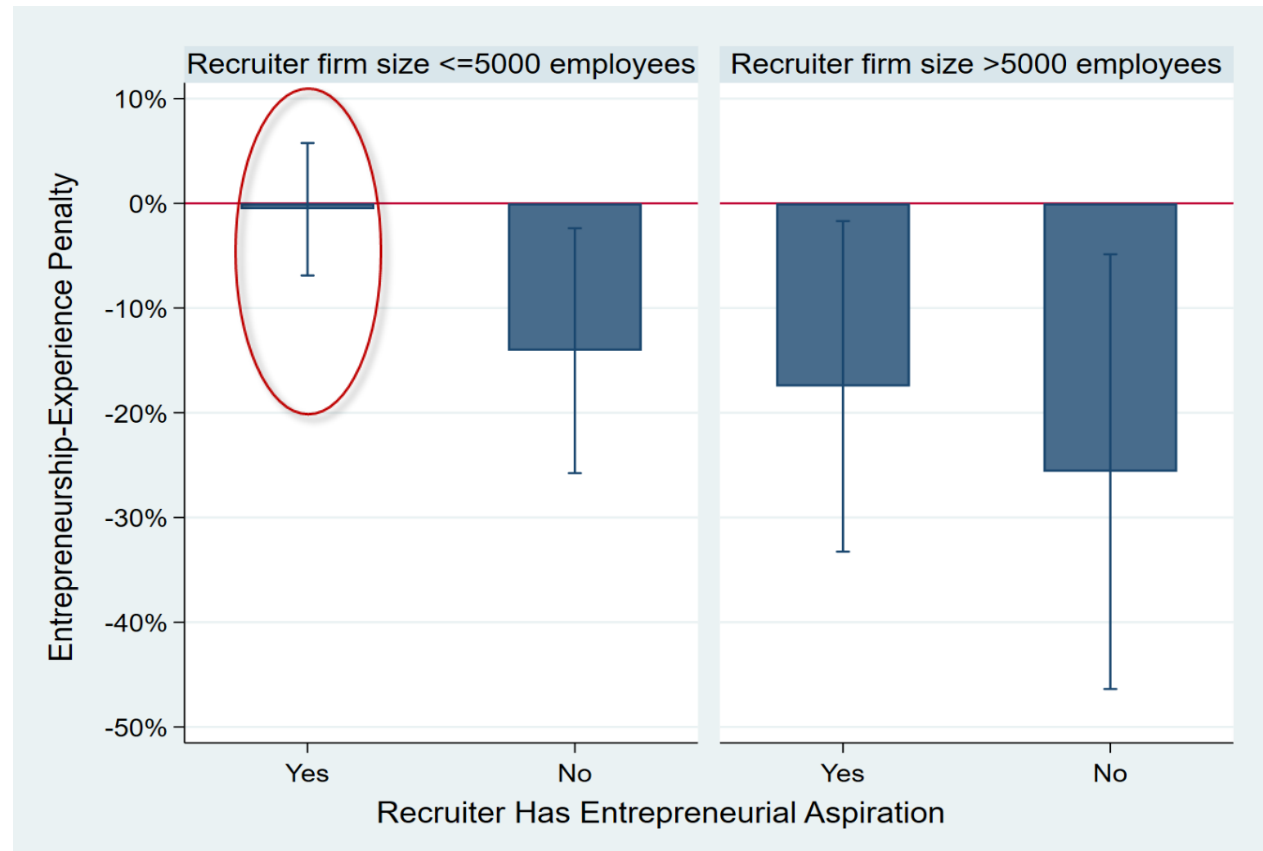


Figure 2: Job Applicants' Probability of Being Hired, Broken Down by Their Entrepreneurship Experience and Recruiter's Employer Firm Size

Key Finding: Recruiters in the largest firms (represented by the darkest bars at the far right of this figure) are significantly less likely than recruiters in the smaller firms to hire the job applicants with entrepreneurship history.

Entrepreneurship Penalty in Job Searches

Figure 3 Entrepreneurship Experience Penalty, Broken down by Recruiter's Entrepreneurial Aspiration and Firm Size

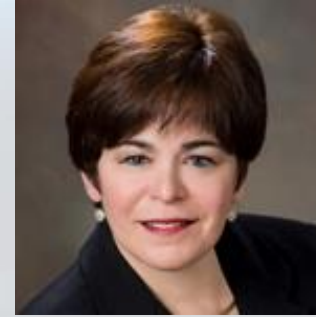


Key Finding: Recruiters of smaller-sized firms who have entrepreneurial aspiration inflict no penalty on post-entrepreneurs. In contrast, a 14% penalty is inflicted on post-entrepreneurs by small-firm recruiters with no entrepreneurial aspiration; a 17% penalty is inflicted on post-entrepreneurs by large-firm recruiters with entrepreneurial aspiration; and a 26% penalty, the strongest of all, is inflicted by large-firm recruiters with no entrepreneurship aspiration.



Waverly Ding
*Associate Professor,
University of Maryland*

Dr. Waverly Ding conducts research on high-tech entrepreneurship and strategy, university-industry knowledge transfer and STEM labor force.



Debra L. Shapiro
*Clarice Smith Professor,
University of Maryland*

Dr. Debra Shapiro conducts research on strategies for managing work-related challenges of various kinds (e.g., turnover, disputes, cross-cultural).

EXPERT INSIGHT

- We reveal post-entrepreneurs face a penalty when they return to the wage labor market.
- We find such a penalty can be mitigated by assigning the right-type of recruiters — namely, those who harbor entrepreneurial aspiration themselves.
- We also recommend large firms, where entrepreneurship experience-related penalty is more likely to exist among recruiters, develop anti-bias training programs to mitigate such penalty in the process of recruiting talents with past entrepreneurship experience.

For more details, see Ding, Lee, and Shapiro, 2021. [“Are Entrepreneurs Penalized during Job Searches? It Depends on Who is Hiring”](#) in SSRN Working Paper Series.

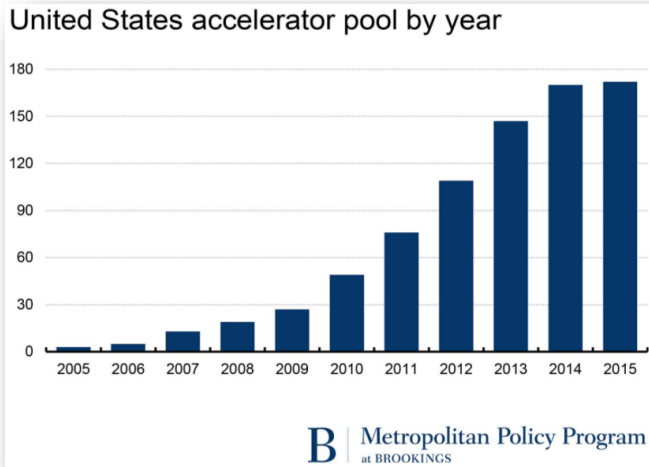
Implications for Designing & Leading Accelerators

Notable Trends

- Increasingly, scholars have turned their attention to venture accelerators and have found the accelerators do, in fact, accelerate.
- Scholars have begun to theorize a range of design choices for accelerators, but we know much less about the implication of those choices for ventures or accelerators.
- We suggest one opportunity for researchers: to examine acceleration *in process* through the micro-interactions taking place between entrepreneurs and stakeholders (advisors, investors, early customers, peers, staff). Without engagement in these interactions, little acceleration can occur.

Increasing Study of Venture Accelerators

Growing Numbers



Scholarship in the U.S.



Seed Accelerator Ranking Project
150 accelerators with data
 Source: Cohen, Fehder, Hochberg, Murray, 2019a

Scholarship Globally



Global Accelerator Learning Initiative
546 accelerators, 164 with startup data
 Source: Roberts & Lall, 2018

Using a Variety of Approaches

- We reviewed the latest scholarship on accelerators:
 - New accelerator literature overviews (Wright & Drori, 2018)
 - An overview article from 2019 (Cohen et al. 2019a)
 - New articles in A-level journals since then, including working papers / unpublished work

Method	#
Diff in Diff	2
Exploratory empirics	3
Field Experiment	6
Field study	4
Field survey	3
Multiple case study	1
Program evaluation	6
RDD	2
Survey	1
Typology	1
Variance analysis	1
Literature review	8
Total	38

Accelerators Do Accelerate!

- Training and networks provided by accelerators can **improve venture performance** (Amezcuca et al., 2013; Gonzalez-Uribe & Leatherbee, 2018).
- Entrepreneurs gain feedback from accelerators, causing them to better understand their **likelihood of success** (Yu, 2020).
- Accelerators can force entrepreneurs to revisit their assumptions and **broaden their consideration** of strategic options (Cohen et al., 2019b).
- Entrepreneurs learn through **broad, intensive and paced consultation** in accelerators (Hallen et al., 2020).
- But benefits to entrepreneurial cohorts, even within the same programs, are uneven (Lyons & Zhang 2017, 2018; Lall et al. 2019; Miller et al., 2021).
- And the microprocesses by which accelerators influence entrepreneurs are still not well understood.

How to Accelerate: Design Choices



- 1) **Ecosystem-builder** (corporate networks)
- 2) **Deal-flow makers** (angels, VC, CVC pipelines)
- 3) **Welfare stimulators** (government & economic growth)

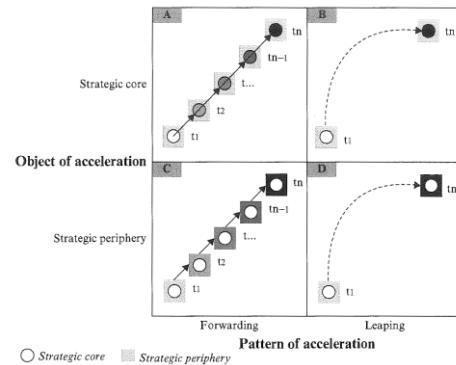
Pauwels et al., 2016

- Select startups you can help, or ones that will perform the best? (Leatherbee & Gonzalez-Uribe, 2018b)
- Human capital characteristics
- Industry diversity
- Stage of development
- Diversity, equity and inclusion (DEI)

Cohen et al. 2019a

- **Strategic core** (product-market concept and value proposition)
- **Periphery** (framing, selling to investors)

- **Forwarding** – helping startups learn how to incrementally change themselves
- **Leaping** – providing direct access to immediate resources



Wenzel & Koch, 2018

Figure 2.1 What and how accelerators accelerate

Key Processes

Choosing program KPIs

Selecting a competitive cohort

Developing program curriculum

Managing networks & mentors

Tracking & communicating outcomes

How to Accelerate: Implications and Questions

Who to Accelerate

- **Judges** are not always great at evaluating startups, (Gonzalez & Uribe, 2018b), and peers may be better investors (Burns et al., 2020).
- Some entrepreneurs may benefit more or differently due to their demographics (Lyons & Zhang, 2017, 2018) or environment (Amezcuca et al., 2013; Hochberg & Fehder, 2015).
- **Do all early-stage entrepreneurs benefit from the same type of training, or do they have different needs?**

What to Accelerate

- **Learning experimentation** can help entrepreneurial firms to survive and grow (Camuffo et al., 2019; Leatherbee & Katila, 2020).
- BUT experimentation is **not always performed well** (Grimes, 2018; Camuffo et al., 2019; Leatherbee & Katila, 2020) and it is **not free** - strategy changes have a cost for these firms (McDonald & Gao, 2019; Kirtley & O'Mahony, 2020).
- **When and to what should entrepreneurs adapt?**

How to Accelerate

- **Pitching and communication vs. venture development** (per Camuffo et al., 2019; Leatherbee & Katila, 2020)
- Teaching skills in a **structured program** (per Cohen et al., 2019b) vs. providing templates and giving entrepreneurs autonomy (Rindova et al., 2009; Seidel et al., 2016)
- **How much structured support do entrepreneurs need?**

One Opportunity: Examining Micro-Interactions

Entrepreneurs interact with:

External advisors

Entrepreneurs that coproduced advice (i.e., seeking specific advice and elaborating on their business context) were better able to make sense of advice that did not initially seem relevant to pursue more varied strategy testing in their firms. These firms were more likely to test their strategies in new markets than startups that did not.

(Miller et al., 2021)

Customers

In a study of 28 health tech startups, symbolic actions helped achieve legitimacy with customers early in the sales cycle but did little to prove that novel innovations could integrate with customer operating environments. Startups that engaged in substantive practices – adapting their innovations and creating new artifacts – were more likely to acquire customer commitment.

(Karp & O'Mahony, 2018)

Peers

Entrepreneurs can learn from diverse peers' experience if they interact with them, but entrepreneurs often don't choose to interact with better peers. However, entrepreneurs that were trained in communication skills were more likely to form relationships with entrepreneurial peers and have better performing businesses.

(Chatterji et al., 2019; Koning & Hasan, 2019; Dimitriadis & Koning, 2021)

Investors

In a study of slow food ventures, early-stage firms benefited from relational language to signal opportunities for investor influence, whereas later-stage firms benefited from financial language reflecting their progress and maturation. Relational language was more likely to attract a broader range of investors, while financial language was more likely to attract higher amounts of money from investors.

(Leibel & Falchetti, 2021)

Why Interactions Matter

Accelerator investment in focused mission



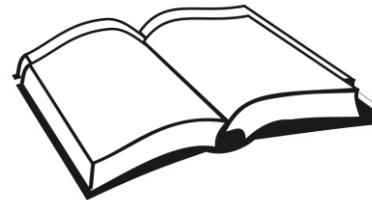
Accelerator ecosystem development



Competitive selection



Accelerator curriculum



Capital



Acceleration



without entrepreneurs' engagement!!!



Siobhán O'Mahony

Feld Family Professor in Innovation and Entrepreneurship at Questrom School of Management, Boston University | Academic Director, Research & Curriculum at Innovate@BU

Siobhán O'Mahony's research explores the emergence of organizing in unstructured environments like communities, ventures and projects. She has examined how entrepreneurs, product development teams, high tech contractors, open source programmers, music producers, scientists and engineers, and activist hackers achieve innovation, creativity or growth goals while avoiding bureaucratic rigidity. Her research has appeared in management and organization science journals and she serves as a Senior Editor for Organization Science. O'Mahony received her Ph.D. in management science and engineering from Stanford University, an M.P.A from the Cornell Institute of Public Affairs, and a B.S. in industrial labor relations from Cornell University.

EXPERT INSIGHT

- My research examines how early-stage entrepreneurs decide when and how to change their strategies. Few entrepreneurs achieve a pivot or strategic orientation with one decision. Rather, pivots are the product of an accumulation of strategy additions and exits that unfold over time, long past the duration of any accelerator. **How should that influence the guidance accelerators provide?**
- Pitching strategies are important, but investor expectations change by stage. My research shows that early-stage firms leverage relational language to signal opportunities for investor influence, whereas late-stage firms benefit from financial language since it reflects their progress and maturation. Relational language is more likely to attract a broader range of investors, while financial language is more likely to attract higher amounts of money from investors. **Are we training people to pitch according to the stage they are at?**
- I have also examined how new ventures acquire customers. We find that while ventures used symbolic actions early in the sales cycle to establish legitimacy, these actions did little to convince customers to purchase their innovations. Only ventures that supplemented symbolic actions with substantive practices, adapting their innovations and creating new artifacts, acquired financial commitments from customers. **Are we teaching entrepreneurs to overly rely on symbolic action?**



Amisha Miller

PhD Candidate, Questrom School of Business, Boston University

Amisha Miller is a Ph.D. Candidate at Boston University working with Professor Siobhan O'Mahony. She examines how novel ideas are evaluated in practice. She examines the social process by which ideas led by diverse founders are categorized as fundable in the context of early-stage entrepreneurship. Miller's research has received recognition from the SRF, SGB Evidence Fund and the IFC/World Bank. She has a Masters in Population and Development from the London School of Economics and a first class history B.A. from the University of Warwick. During her previous career in entrepreneurship research, including at the Kauffman Foundation, Miller worked with and studied entrepreneurs seeking resources in three countries. She published working papers used by local, national and international policymakers.

EXPERT INSIGHT

- Scholars have provided insight into how accelerators accelerate venture performance across cohorts of ventures
- However, less work has been conducted on the micro-interactions and practices that take place within accelerators, which can provide more insight on how entrepreneurs access, interact with and use external resources when forming and scaling their ventures
- My research shows that even when provided with the same access to common relevant advisors – more than 50 carefully curated advisors including potential strategic customers and investors in a common sector – only some entrepreneurs were able to use advice to inform their firm strategies, which relied on their engagement in coproducing advice interactions
- Other micro-interactions in accelerator programs may also be worthy of study. Accelerators also provide a setting to observe early-stage ventures as they are building their businesses, which has historically been difficult (Cohen et al. 2019b). Scholars can use specific, targeted programs to consider questions such as: **How do under-represented founders – who often have not had access to elite networks - build out their founding teams? And how might this shape venture performance?**
- At the accelerator level, selection processes in accelerators and other organizations that select early-stage ventures, could affect which ventures are considered as fundable or not. **How do accelerator selection processes shape which types of ventures survive and grow?**

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