2021 Trends in Entrepreneurship Report

KENAN INSTITUTE
of Private Enterprise

UNC KENAN-FLAGLER BUSINESS SCHOOL
Entrepreneurship Center

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Welcome to the 2021 Trends in Entrepreneurship Report

The Trends in Entrepreneurship Report brings together expertise and data from academia, industry and policymakers to highlight relevant topics facing entrepreneurs and investors today. Our aim is for this information to guide leaders in their decision-making, as well as to highlight gaps in research and policy for leaders in academia and government.

The 2021 report explores the following:

- Initially, we explore the state of startups, small businesses and investments after a year – and global pandemic – have passed.
- Then we dive into one of the hottest areas today: health innovation. We highlight trends related to COVID-19, as well as other relevant topics, such as how AI and machine learning are impacting innovations in health.
- After that deep dive, we zoom out to explore broader trends related to investment structures, the impact of economic recovery funds distributed by the government, and other capital formation specific to entrepreneurs and small businesses. One of the major highlights is the disparity in funding as it relates to support for underrepresented groups in entrepreneurship.
- We then take on the theme of diversity, equity and inclusion in entrepreneurship, highlighting some of the massive experimentation of the past several years to create more inclusive ecosystems through case studies and models, with a hope to inspire action and research related to these topics.
- We conclude by examining factors inside organizations related to teams and talent, and how those elements play into the ongoing success of organizations.

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#KIFE2021

2021 TRENDS IN ENTREPRENEURSHIP

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Trends in Entrepreneurial Funding

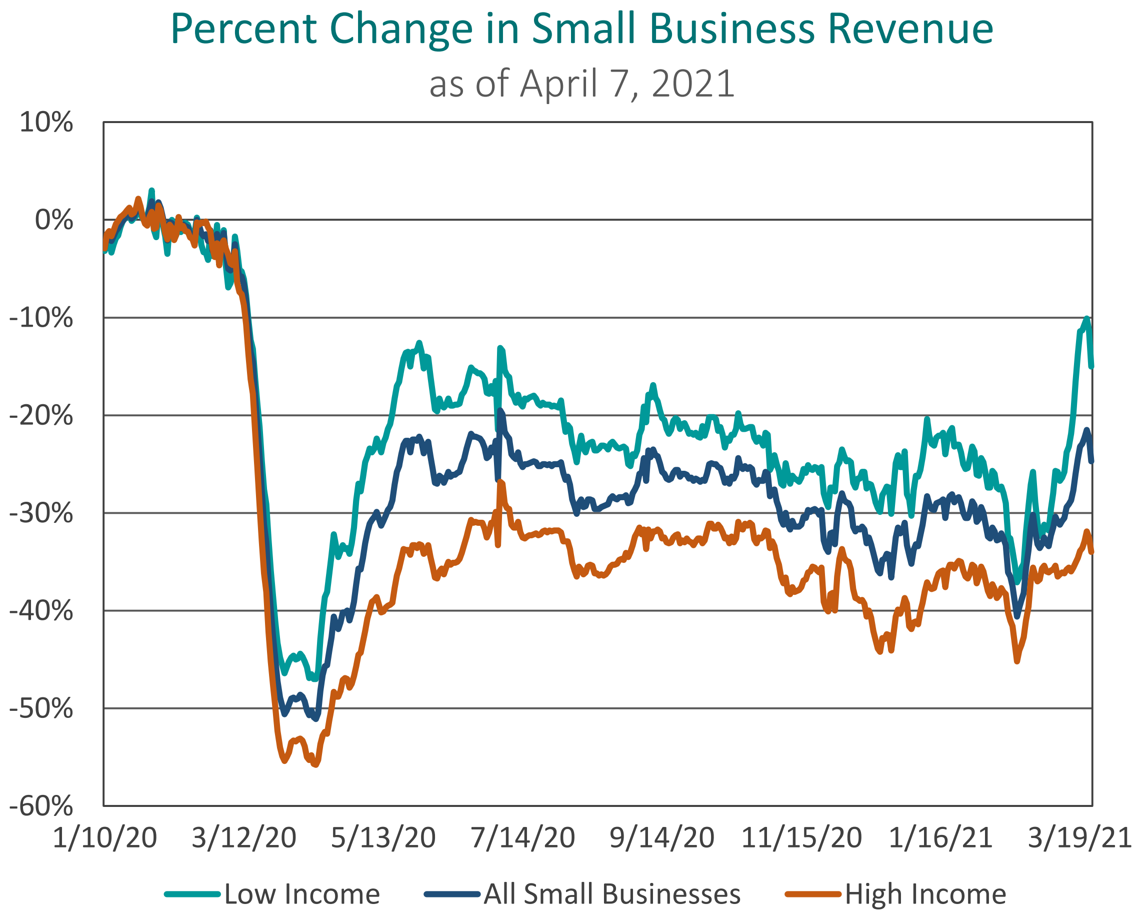
ENTREPRENEURIAL FUNDING

Small Business: Boom *and* Bust

Notable Trends

- Much has been discussed about how households are experiencing a "K-shaped" recovery. The same is true of small businesses: some are thriving while others are dying. The variance is enormous.
- Overall small business activity remains well below the February 2020 peak. Industries such as hospitality and leisure have been decimated.
- Tech, retailing and businesses with remote work have soared, but so have some traditional businesses like construction.
- New business formation has spiked, as dislocated workers shift to launch new companies or find opportunities to start a side business.

Bust: Pandemic Hits Small Businesses Especially Hard



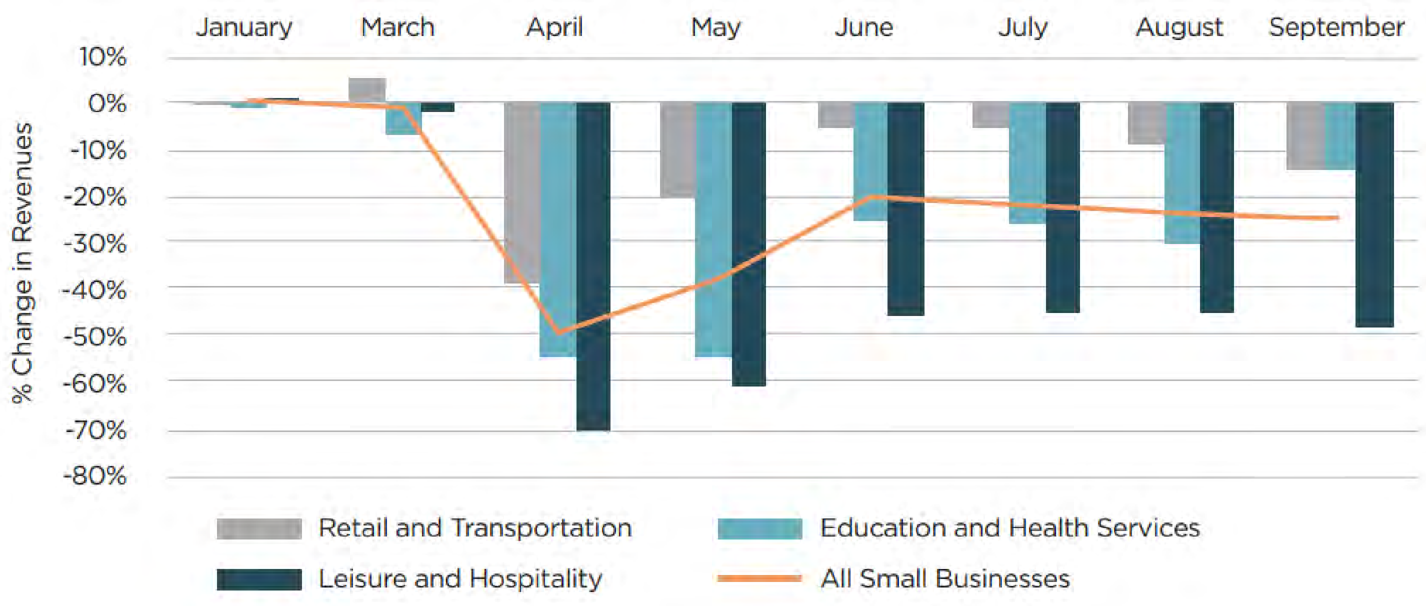
- As of March 2021, small business revenue in the U.S. remains more than 20% below January 2020 levels.
- In contrast to broad economic trends, revenue trended down from summer 2020-February 2021.
- Small businesses in high-income zip codes have been hit harder because they skew toward providers of non-essential services away from home.

Source: Womply data accessed through Opportunity Insights

Bust: Early Pandemic Recovery Stalls

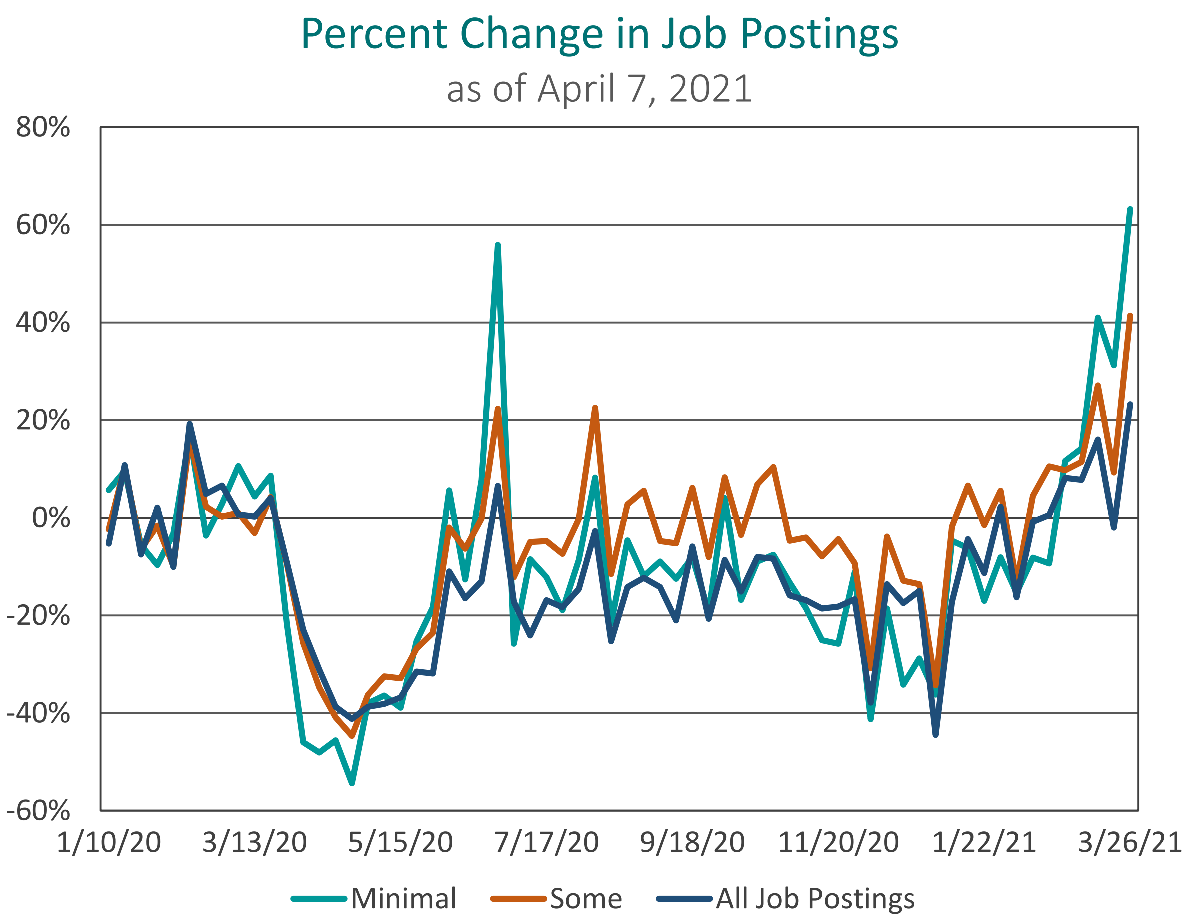
After the initial shutdown, small businesses started to bounce back in late spring, some more than others. However, improvements across many industries stalled in the summer.

Of the businesses still open, how have their revenues changed during COVID-19 when compared to January 2020?



Source: Office of the Advocate for Small Business Capital Formation Annual Report for Fiscal Year 2020

Boom/Bust: As Employment Rebounds, Small Businesses See a Competitive Talent Market



- 2021 is witnessing rapidly rebounding job opportunities, especially for low-skill workers who were hardest hit in 2020.
  - Postings for jobs requiring minimal or some education are up 63% and 41%, respectively.
- However, small businesses will be in an increasingly competitive labor market in 2021 and 2022.

Source: Burning Glass Technologies

Bust: Job Seekers Less Likely to Join Early Ventures in Economic Downturns

- Research shows that during economic downturns, job seekers (Bernstein et al, 2020):
  - shift their searches toward larger firms and away from early-stage ventures.
  - broaden search parameters, considering lower salaries and a wider variety of job types, roles, markets and locations
- Early-stage ventures experienced a decline in the number of applications per job posting during the pandemic, including higher-quality and more experienced applicants (Bernstein et al, 2020) .
  - This led to a deterioration in the quality of the human capital pool available to early-stage ventures during the downturn.

Sandra M. Moore

Managing Director and Chief Impact Officer, Advantage Capital

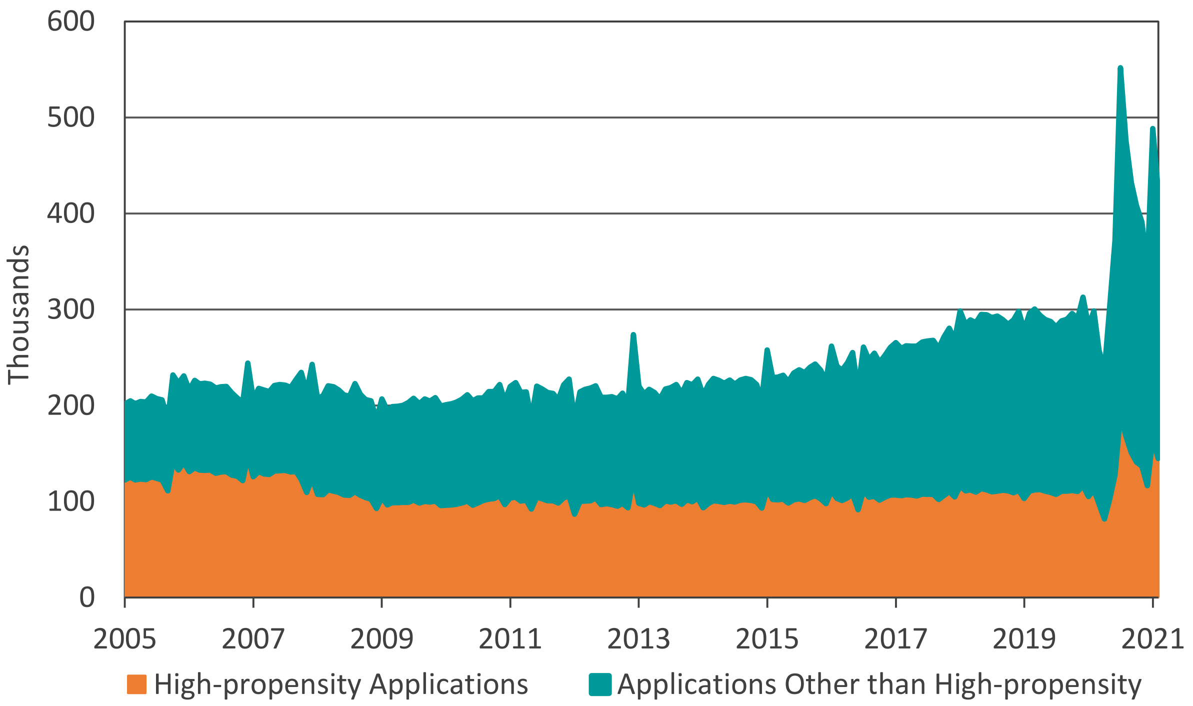
Sandra Moore is the Managing Director and Chief Impact Officer of Advantage Capital, a growth equity firm with more than $3 billion AUM. The firm focuses on high-growth and high-wage business investing in communities where access to investment capital has historically been hard to find. Prior to joining Advantage Capital, Moore was the president of Urban Strategies, a national nonprofit corporation that works exclusively with for-profit housing developers to rebuild distressed urban-core communities using mix-finance, multi-family housing as the revitalization platform.

EXPERT INSIGHT

- The pandemic was a shock to both business activity and employment opportunities, and disrupted the wage progression of millions of workers. This is important because wage progression positively affects both the business and the worker alike, rendering it an essential aspect of sustaining long-run healthy business growth and individual prosperity.
- Wage progression occurs when workers have the opportunity to grow their wages in a company, and the company considers the matter equally as important; that is, it ensures its employees are able to increase their wages as their skills — and thus their contributions to the company — develop.
- Studies have shown that the average replacement cost of a salaried employee ranges from six to nine months of the lost employee's salary. Even for hourly workers, hiring costs are significant. From recruitment to onboarding to training to lost productivity, the price of bringing on a new employee can strike a blow to a business's profit margin.
- Policies like the Paycheck Protection Program (PPP) that enabled many workers to stay connected to their employer during the pandemic mitigated some risk associated with employee turnover and wage progression. However, as the economy and labor markets recover, businesses will need to be mindful of maintaining wages consistent with their workers' career trajectories in what is expected to be an increasingly competitive labor market.

Boom: Increased New Business Applications

Monthly Total Business Applications
(as of February 2021, seasonally adjusted)



Business Applications (BA) - All Employer Identification Number (EIN) applications for business purposes
High-propensity Business Applications (HBA) - Business Applications that have a high propensity of turning into businesses with payroll

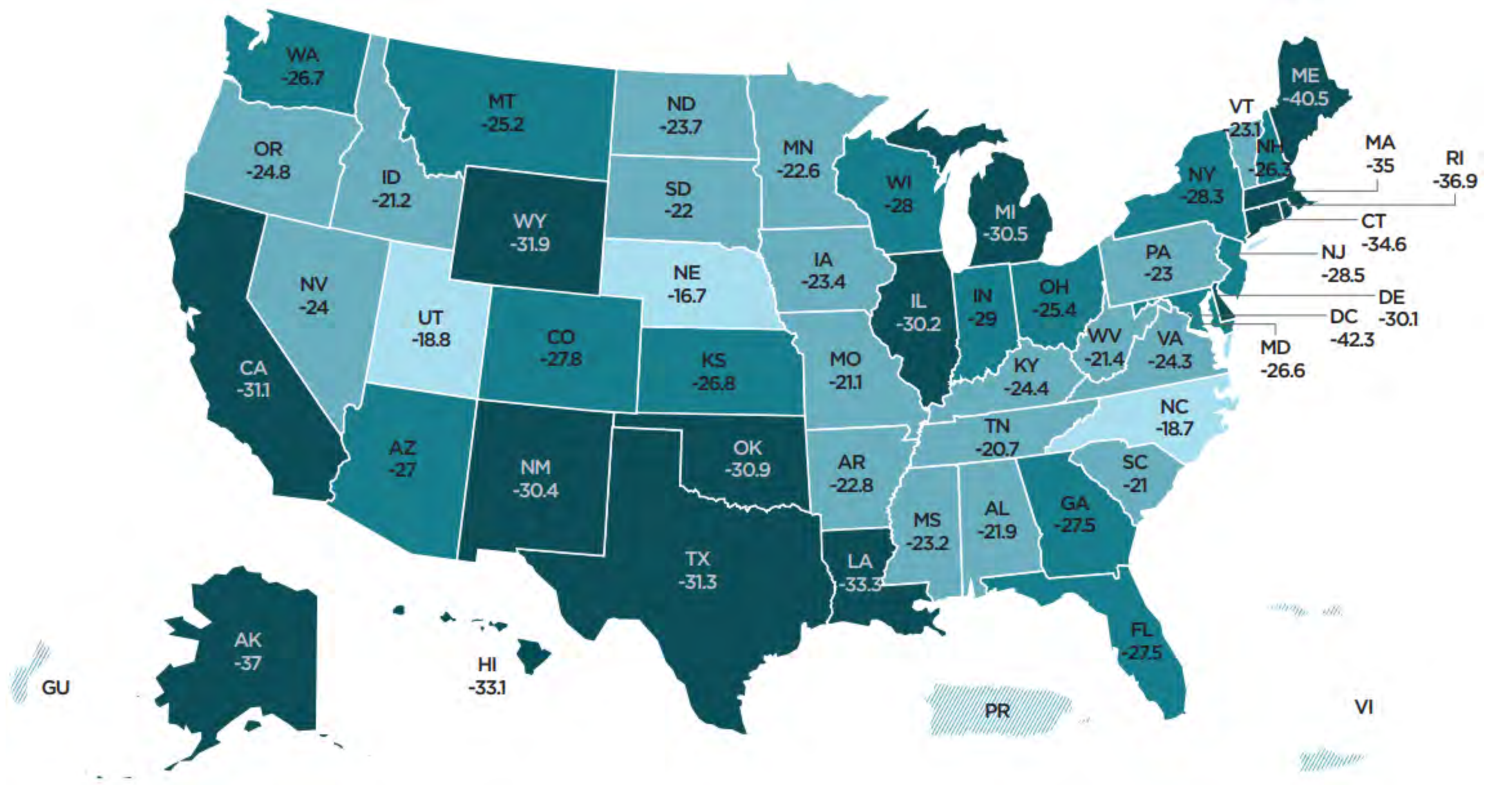
- In the midst of the despair, new business formation is the highest in more than 15 years.
- True for both high-propensity businesses and other new businesses.
- True throughout the U.S.
  - >35% YoY growth in all regions.
- True for all industries. YoY growth is:
  - Highest (57.3%) for services
  - Lowest (19.3%) for wholesale trade

Source: U.S. Census, Business Formation Statistics

Bust: Major Declines in Small Business Activity

How has the number of open small businesses changed across the U.S.?

From January-September 2020, the number of small businesses decreased by 27%. The map illustrates the percentage of change across the country.



- Overall, there has been a decline in small business activity throughout the U.S.
- Small businesses are shuttering at rates faster than new formations.
- Every state and region has experienced a major decline.

Source & Image credit : Office of the Advocate for Small Business Capital Formation Annual Report for Fiscal Year 2020 , page 18

John Dearie

Founder & President, Center for American Entrepreneurship

The Center for American Entrepreneurship (CAE) is a nonpartisan, Washington, D.C.-based 501(c)(3) research, policy, and advocacy organization established in July 2017. CAE's mission is to engage policymakers in Washington and across the nation regarding the critical importance of entrepreneurs and startups to innovation, economic growth, job creation and broader opportunity, and to pursue a comprehensive policy agenda intended to significantly enhance policy circumstances for new business formation, survival and growth.

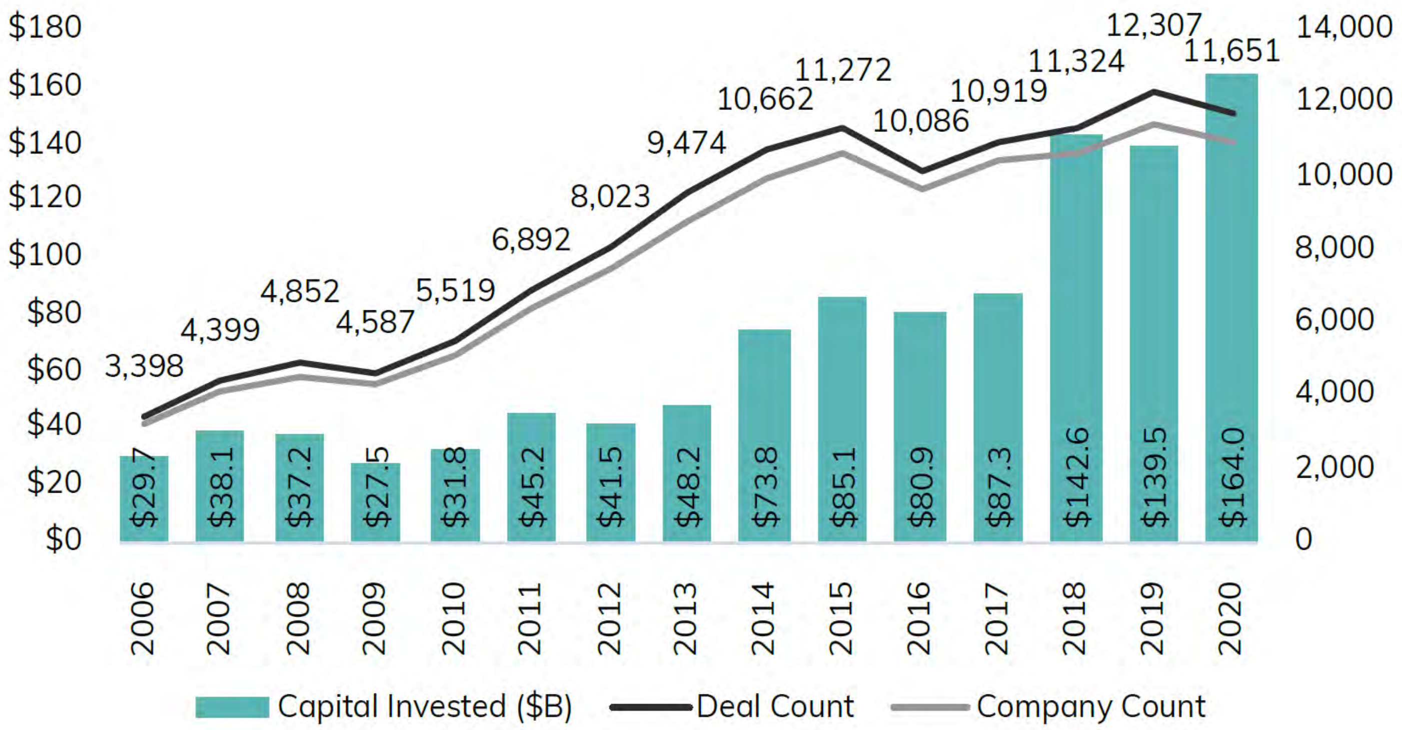
EXPERT INSIGHT

- The COVID-19 recession was manufactured — we shut the economy to suppress the spread of the virus. Prior to the close, the economy was strong and the financial resources available to would-be entrepreneurs — e.g., home equity, financial asset values — had recovered from the Great Recession. Consequently, people who lost their jobs had both the occasion and the financial means to launch new businesses.
- We still should be cautious in interpreting the new business application statistics as good news for entrepreneurship in the United States:
    - The spike in new business applications is due more to economic necessity on the part of individuals who lost their jobs, rather than a sudden surge in entrepreneurial fervor.
    - The largest portion of new busines activity is "non-store retail," i.e., people selling products online. So many of these new businesses are sole proprietorships unlikely to grow quickly or create many jobs.
- The Economic Innovation Group has done some of the best analysis of the new application spike.

Boom: VC Deal Activity Remains Very Strong

- The number of VC deals remained near an all-time high in 2020.
- Deal value exceeded $160 billion for the first time in history.
- Activity was strong at all levels: seed/angel, early-stage and late-stage.

U.S. VC Deal Flow



Source: NVCA 2021 Yearbook, Data provided by PitchBook

Source & Image Credit: NVCA 2021 Yearbook

The Bottom Line: 2020 Mostly a Bust

- Question: With new business formation and VC booming *and* Main Street small business activity still depressed, what was the overall impact of the pandemic on small business?
- Answer: Taken as a whole, 2020 was a very bad year.
  - While VC-backed companies are essential for long-run productivity, income and employment growth, they represent a small share of current employment.
  - As of February 2021, the U.S. economy had lost 8.5 million jobs over the previous year, and a large fraction of these were at small businesses or sole proprietorships.*

* How do we know this since official statistics by firm size are currently available only through Q2 2020? The BLS employment situation provides a measure of total job losses in the U.S., and Automatic Data Processing, Inc. (ADP) provides a good up-to-date measure of employment changes for companies of various sizes that it services. The ADP data suggests that employment at small and mid-sized companies (<500 employees) for the 12 months ending in February 2021 accounted for 43.3% of job losses, and of this, 18.9% of losses were at small businesses (<50 employees).

ENTREPRENEURIAL FUNDING

Access to Capital: What’s Next?

Notable Trends

- Main Street businesses benefited from emergency government support, especially the Paycheck Protection Program (PPP), part of the CARES Act. As these programs sunset, new private-sector funding will need to step in.
- Venture capital was on fire in 2020, but can the blistering pace of VC continue in 2021-2022?
- Traditional capital markets have returned to full function and will continue to support profitable growing businesses with cheap capital. However, smaller businesses benefit less from public markets.

PPP and Small Business Funding

- Despite the catastrophic impact of COVID-19 on many small businesses, the Paycheck Protection Plan (PPP), part of the CARES Act, provided substantial near-term support that allowed many to survive in 2020.
    - Similar types of programs in other countries also enabled affected small businesses to survive.
- What will small businesses do once PPP winds down?
- *Access to capital remains a major concern for small business.*

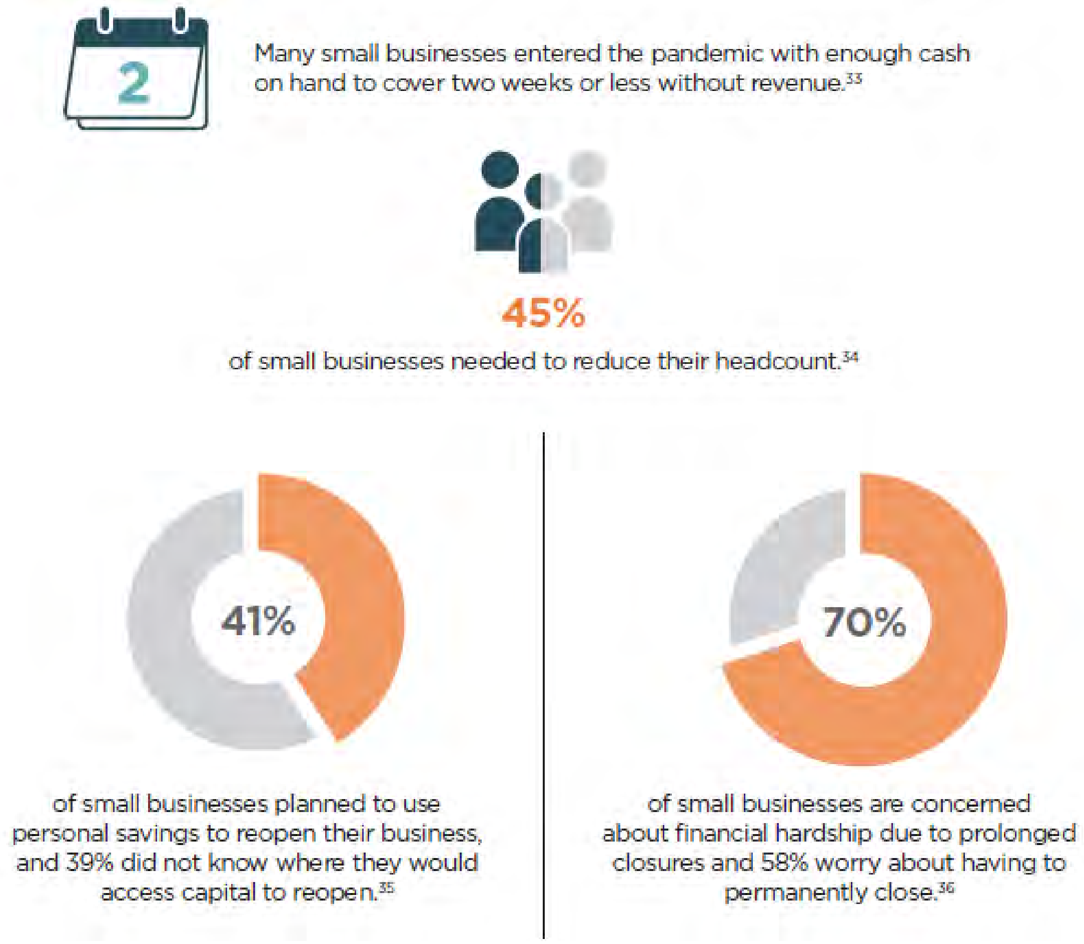


Image credit: Office of the Advocate for Small Business Capital Formation Annual Report for Fiscal Year 2020, page 19

Source: Office of the Advocate for Small Business Capital Formation Annual Report for Fiscal Year 2020

Who Received PPP Loans? Mostly Small Businesses

- The intent of the PPP was to help small businesses keep their workers on payroll during the pandemic. However, some larger and public companies were initially eligible for PPP.
- The financial support from PPP had a large impact on the market for business lending.
- 98% of loans and 65% of total PPP loan value went to small businesses that needed smaller loan amounts (<$1 million in size).
- In the first half of 2020, the value of outstanding large business loans (>$1 million) increased by 10% while the value of small business loans increased by 39% (Williams & Haynes, 2020).

Distribution of PPP Loans by Loan Size

Loan Size	Value ($ billion)	%	Number (thousands)	%
Less than $100,000	105	20	3,853	80
$100,000 to $350,000	120	23	664	14
$350,000 to $1 million	113	22	199	4
>$1 million	181	35	83	2
Total	519	100	4,798	100

Sources: SBA PPP Report on June 27, 2020

Who Lent to Small Businesses Through PPP?

- The largest share of PPP funds was distributed through larger lenders. Yet lending activity relative to pre-pandemic levels varied by the size of the lender (Williams & Haynes, 2020).
    - The largest depository lenders (>$50 billion in total assets) distributed proportionally 31% less funding than expected.
    - Lenders with less than $50 billion in total assets distributed proportionally more funding. For example, lenders with between $1 billion and $10 billion in total assets distributed 62% more funding than expected and increased their market share for small business loans by 16%.
- For most small business borrowers, these loans have been crucial for survival, and will likely be converted into grants and removed from the balance sheets of depository lenders.

PPP Share of Total Business Loans and PPP Loans Outstanding

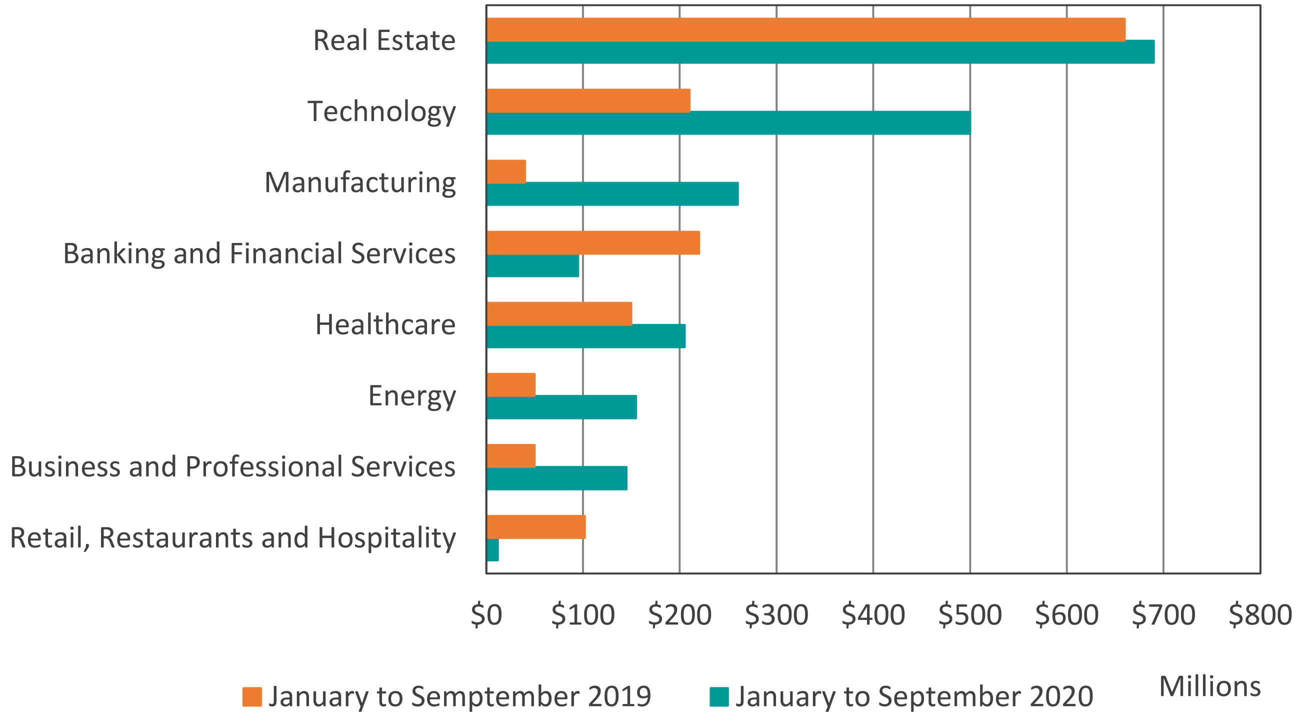
(as of June 2020)

Lender Size	Total Business Loans ($ billion)	%	PPP Loans ($ billion)	%	Diff. %
<$100 million	10	0.3	2	0.3	10.1
$100m to $500m	154	4.5	30	6.2	37.4
$500m to $1b	145	4.2	31	6.5	53.1
$1b to $10b	553	16.1	126	26.2	62.4
$10b to $50b	643	18.7	106	22.0	17.6
>$50b	1,929	56.2	187	38.9	-30.8
Total Business Loans	3,434		482		

Sources: FDIC June 2020 Call Report

Reg A Borrowing in 2020

What types of businesses are using Regulation A?

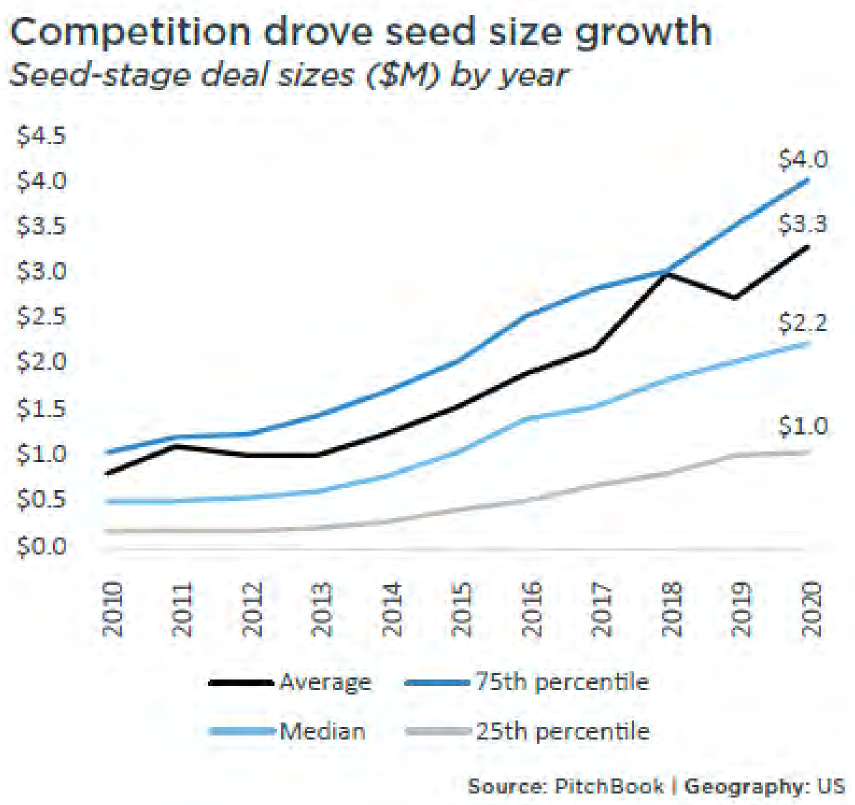


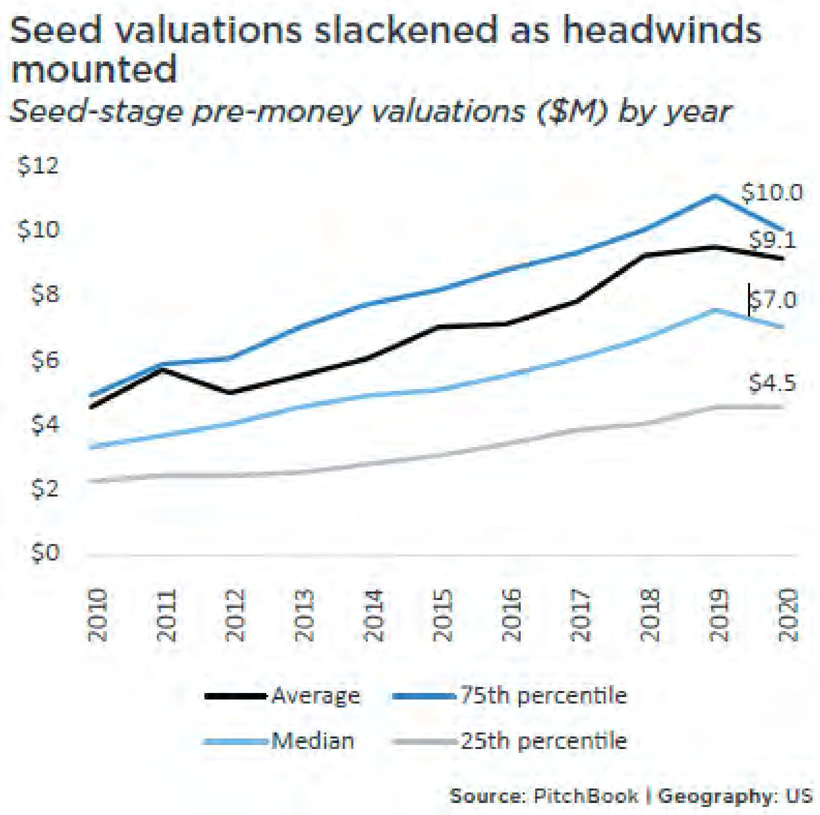
- The composition of Reg A* borrowing changed in 2020.
- Mirroring the economic impact of the pandemic, companies in the tech, manufacturing, healthcare, energy and business services sectors saw large growth in borrowing.
- Borrowing by companies in the finance, retail, restaurant and hospitality industries plummeted.

*What is Regulation A (Reg A) issuance? Reg A is an exemption from SEC registration requirements that applies to public offerings of securities that do not exceed $50 million in a one-year period. Reg A issuance is most common among small- and medium-sized businesses. More details are available here..

Source: Office of the Advocate for Small Business Capital Formation Annual Report for Fiscal Year 2020

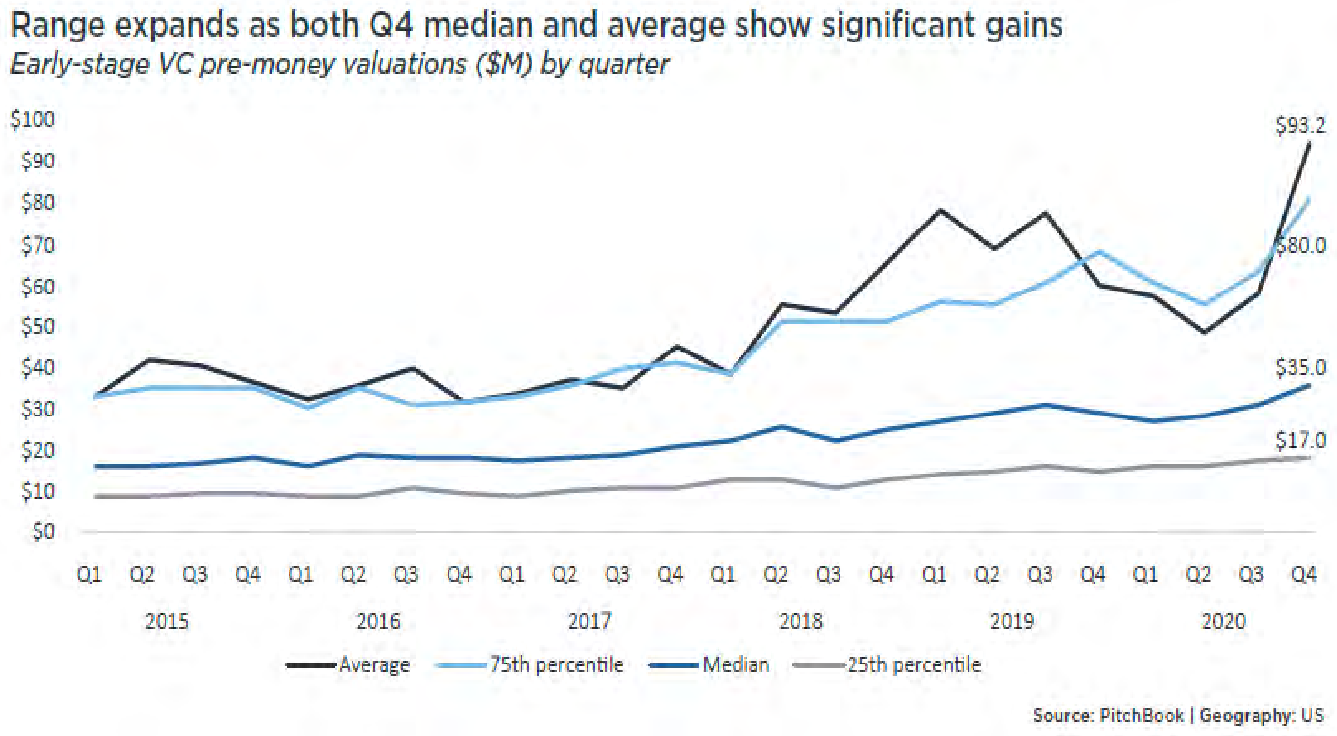
Seed and Angel: Size Up, But Valuations Down





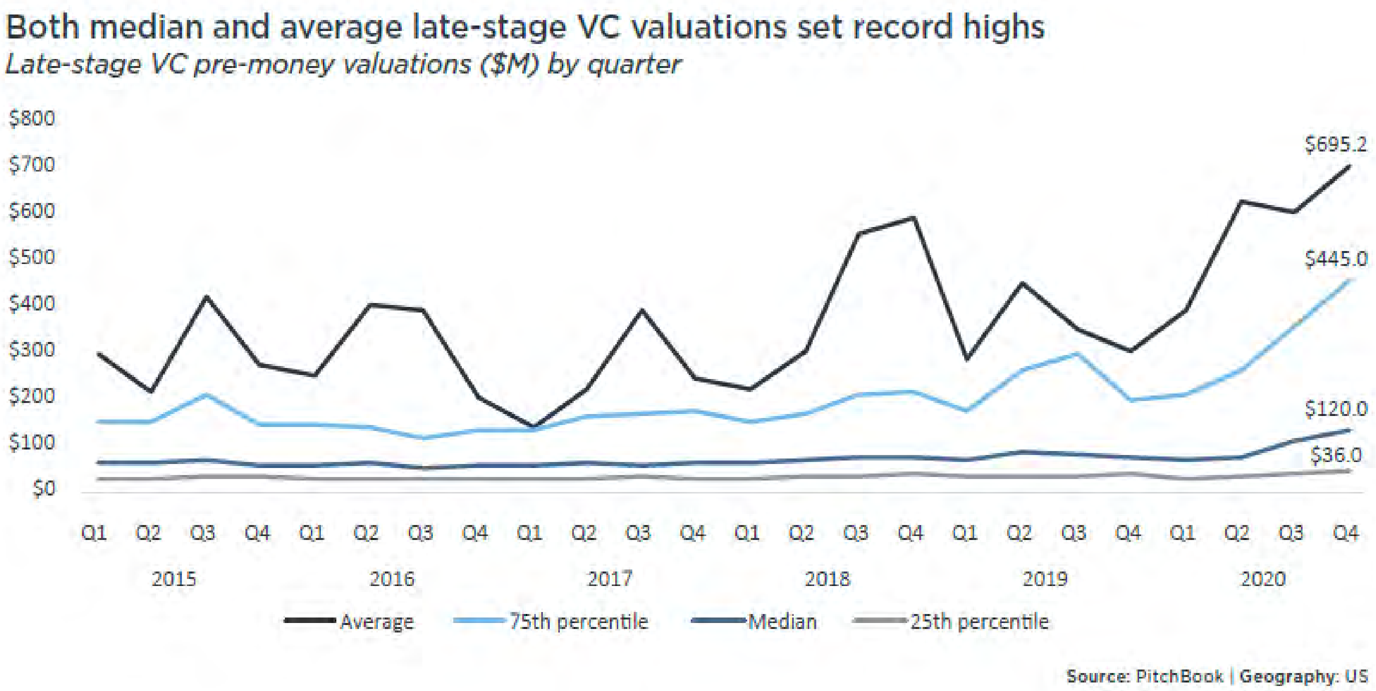
- The average seed-stage deal size grew to a record $3.3 million in 2020, a four-fold increase from 2010.
- However, average seed-stage valuations dipped slightly.
- In sum, angel and seed financing opportunities remained strong in 2020.

Early-stage Venture Capital Spikes



- Early-stage VC valuations took off in Q4 2020 after dipping in late 2019 and early 2020.
- The hot exit market and substantial dry powder among VCs resulted in a sharp rebound as the economy stabilized and started to grow.

Late-stage VC Barely Paused for the Pandemic



- Late-stage VC pre-money valuations set records in 2020.
- An increasingly bright outlook for both the tech and healthcare sectors, combined with wide-open exit opportunities, resulted in VCs stepping up deal activity throughout 2020.

VC Returns Strong in Q2 and Q3 2020

Burgiss Fund Composites	Q3 2020 Global	Q3 2020 U.S.	Q3 2020 Europe	Q3 2020 Asia	Q2 2020 Global	Q2 2020 U.S.	Q2 2020 Europe	Q2 2020 Asia
All Private Capital	**8.7%**	**9.8%**	**3.8%**	**5.4%**	**7.9%**	**7.8%**	**2.5%**	**11.1%**
Equity	**11.2%**	**12.8%**	**5.3%**	**5.8%**	**10.3%**	**10.4%**	**6.5%**	**12.0%**
Venture Capital	11.7%	15.2%	5.2%	4.3%	12.0%	11.2%	5.6%	17.1%
Expansion Capital	9.9%	16.1%	NM	7.4%	11.0%	14.9%	NM	9.1%
Buyout	10.7%	11.2%	5.2%	7.9%	9.4%	9.4%	6.9%	4.0%

- Among private equity fund strategies, VC funds had the best global returns in Q2 and Q3 2020.
- Performance varied by region, though, with European and Asian VC funds showing somewhat weaker performance in Q3 (especially as compared to U.S. funds).

Source: Burgiss (Data are through 2020:Q3 which is most recent quarter available, Q3 values are preliminary)

Investing in New and Small Businesses Continues to Pay Off

Burgiss Fund Composites	Pooled Trailing Period Returns 1-Yr	3-Yr	5-Yr	10-Yr	15-Yr
Global Private Capital	**10.4%**	**11.2%**	**11.3%**	**12.0%**	**10.3%**
Equity	**17.3%**	**15.8%**	**14.6%**	**14.3%**	**12.5%**
Venture Capital	27.0%	21.7%	15.3%	16.8%	12.9%
Expansion Capital	16.2%	13.3%	12.9%	12.4%	11.5%
Buyout	12.6%	13.2%	14.2%	13.6%	12.3%
Debt	**2.4%**	**5.0%**	**6.2%**	**8.4%**	**7.8%**
Senior	1.4%	4.7%	6.2%	8.6%	8.7%
Mezzanine	3.6%	6.5%	7.4%	8.9%	7.7%
Distressed	0.8%	3.2%	5.1%	7.9%	8.2%
Real Assets	**-3.2%**	**2.6%**	**5.4%**	**7.4%**	**5.2%**
Real Estate	-0.2%	5.2%	7.4%	10.1%	5.2%
Natural Resources	-17.9%	-8.6%	-3.0%	-0.7%	1.3%
Infrastructure	2.5%	6.8%	8.4%	8.2%	7.0%

- VC fund returns have been the best among all private fund types for all horizons over last 15 years.
- Mezzanine debt funds, which include many Small Business Investment Companies (SBICs), have been the top-performing debt strategy for the one-, three-, five- and 10-year trailing periods.

Source: Burgiss (Data are through 2020:Q3 which is most recent quarter available)

Steve Kaplan

Neubauer Family Distinguished Service Professor of Entrepreneurship and Finance and Kessenich E.P. Faculty Director at the Polsky Center for Entrepreneurship and Innovation, University of Chicago Booth School of Business

Steven Neil Kaplan conducts research on issues in private equity, venture capital, entrepreneurial finance, corporate governance and corporate finance. He is a research associate at the National Bureau of Economic Research and an associate editor of the Journal of Financial Economics. Kaplan co-founded the entrepreneurship program at Booth. With his students, he helped start Booth's business plan competition, the New Venture Challenge (NVC), which has included more than 800 companies, including GrubHub, Braintree/Venmo and Simple Mills, that have raised almost $1 billion and created more than $8 billion in value.

EXPERT INSIGHT

- There was tremendous concern at the beginning of the pandemic that the VC industry would lock up and choke off the flow of capital to young, innovative companies. To understand how the COVID-19 pandemic has actually affected decisions and investment, I (along with my co-authors*) surveyed more than 1,000 institutional and corporate VCs in the summer of 2020.
- While VCs initially reported delaying investment due to the difficulty of evaluating deals (and the expectation that investment terms would become more investor-friendly), the terms they expect are actually more founder-friendly than the terms reported in similar surveys conducted prior to the pandemic.
- VCs also remain optimistic about their own performance, with 91% believing they will outperform public markets and overall VC performance, and with 75% believing the VC industry as a whole will outperform.
- Despite the historical importance of in-person meetings, VCs did not report difficulty finding quality entrepreneurs. We also find little change in how VCs allocated their time in the pandemic compared to before the pandemic.

* For more details see: Gompers, Gornall, Kaplan, and Strebulaev, 2020. Venture Capitalists and COVID-19. SSRN working paper #3669345

ENTREPRENEURIAL FUNDING

Attack of the SPACs

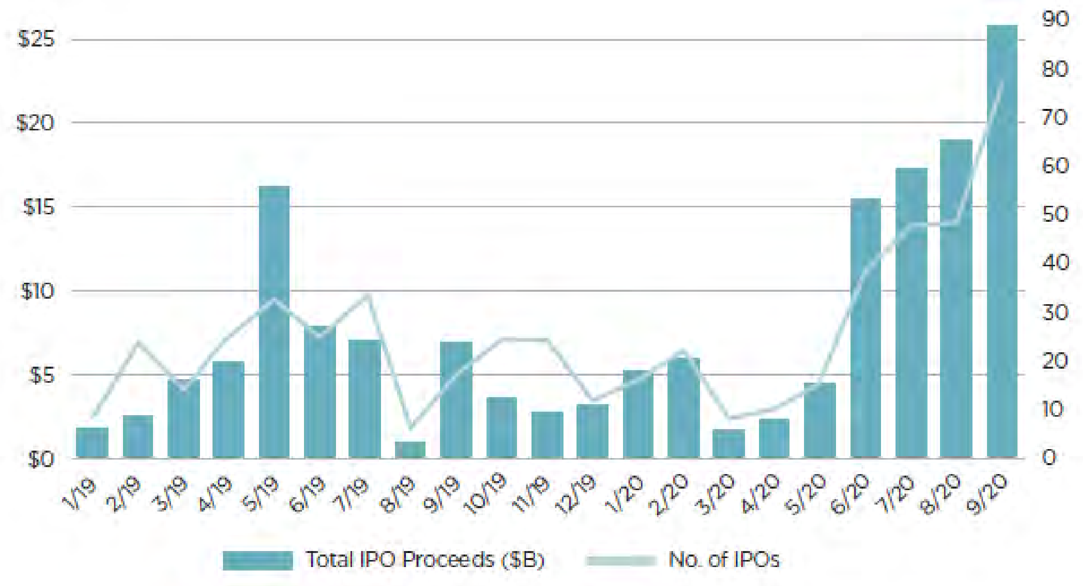
Notable Trends

- SPACs exploded onto the scene in 2020. What are SPACs and why are they suddenly so popular?
- The SPAC market is unlikely to continue at its current pace. We are already starting to see some signs of strain with poor-performing de-SPACings.
- How do SPACs change the VC landscape? With high uncertainty in the public markets, timeliness is more important than ever. However, SPACs are increasingly competing with late-stage VC and growth equity funds for attractive deals.

Small Business Activity

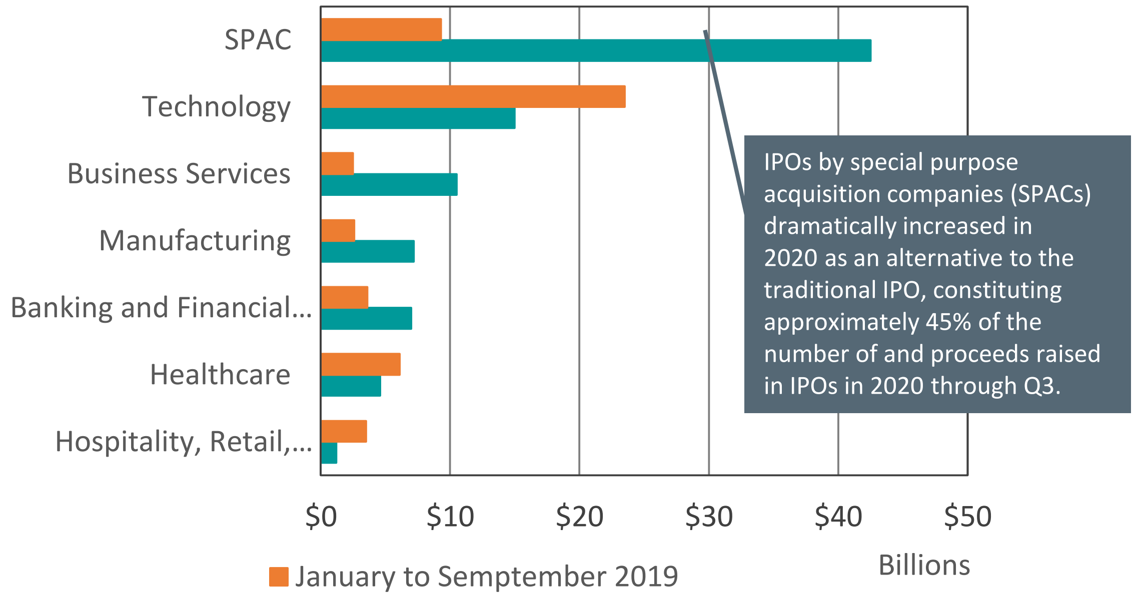
IPO activity spiked in the second half of 2020 and was dominated by SPACs and tech companies.

What is happening with IPO activity?[69]



What are the top industries raising capital in an IPO?

Businesses that successfully completed an IPO in 2020 were those that tend to operate in fast-growing industries, quickly pivoted to a virtual environment and serve a wide array of clients.



Source: Office of the Advocate for Small Business Capital Formation Annual Report for Fiscal Year 2020

What Is a SPAC?

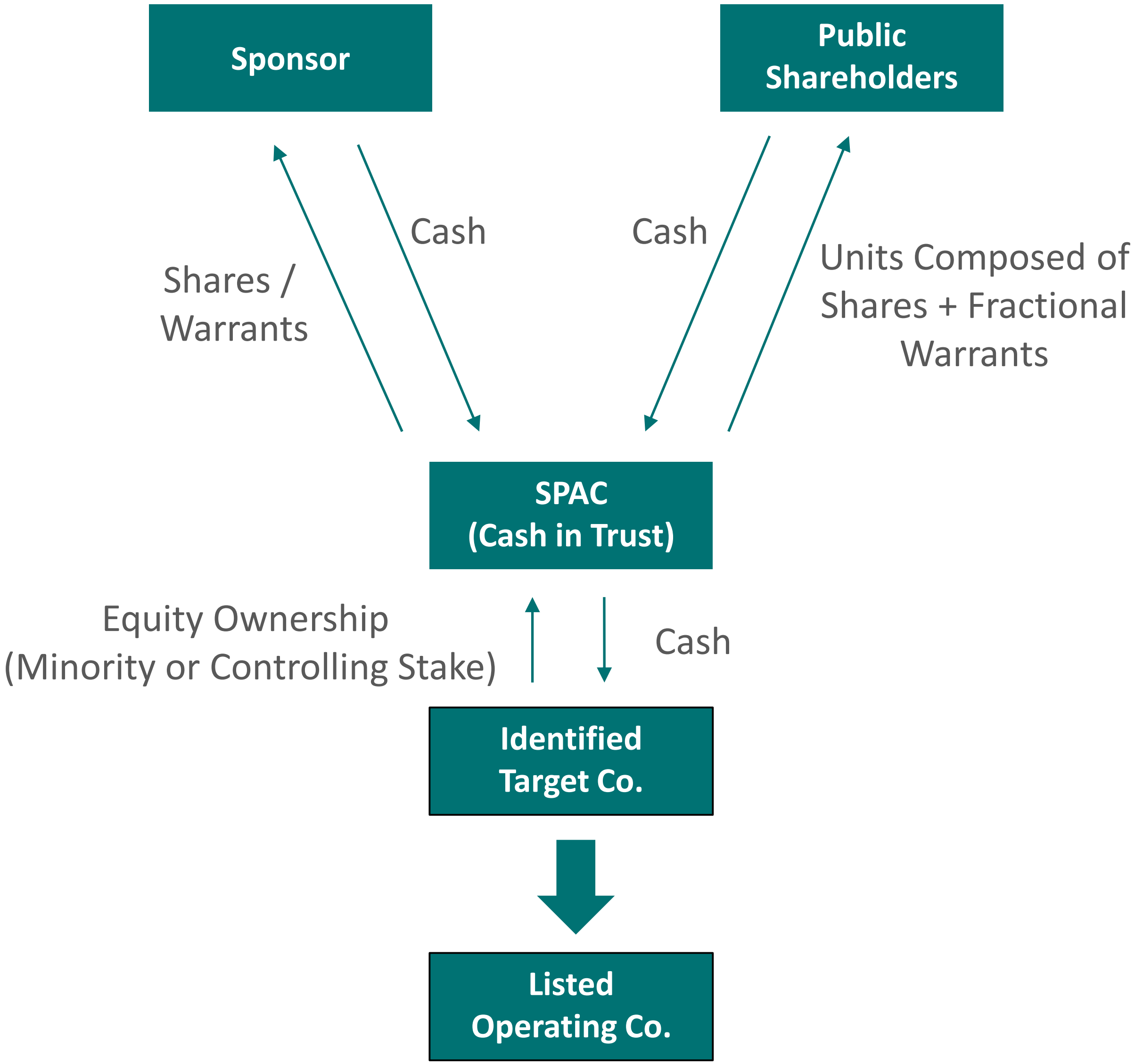
- SPAC stands for **special purpose acquisition company** (also known as a blank check company).
- A SPAC is an acquisition vehicle that raises money to subsequently merge with a private operating company, or identified target, e.g., a reverse-merger IPO.
- Typically, the SPAC takes a minority stake in the target; existing owners of the target either roll equity and/or monetize a portion of their equity.
- Post-acquisition, the SPAC combines with the identified target to form a listed operating company.
- The SPAC typically has 24 months to announce the business combination, failing which it liquidates and the money is returned to public investors.

Key Parties in a SPAC

SPAC Sponsor: founder(s) of the SPAC responsible for its success

Public Shareholders: Institutional and retail investors who invest in the SPAC IPO

Identified Target & Its Shareholders: The private company identified by the sponsor to be acquired post-IPO. Shareholders of the identified target become shareholders of the pro forma listed operating company.



SPAC Exit (“De-SPAC”) vs. IPO

Provision	SPAC	IPO
Rationale	Speed to market is priority Third-party validation is helpful	Primary/secondary proceeds establish fundamental valuation
“Over the Wall” Process/ Filed Multi-year Forecasts	Yes	No
Research Analysts	No	Yes
Execution Speed	Yes	No
Marketing Period	10–12 weeks	1-2 weeks
Visible Reference Price	Exchange-listed trading price vs. cash in trust	None
Public Sale of Securities	No	Yes
Dual Class Stock	Can	Can
Lock–up	Negotiable	180 Days
Controlled Private Placement	Yes Incremental/replacement PIPE capital	Yes Infrequent concurrent private placement

Key SPAC Target Characteristics

Provision	Details
Financial Profile	• At least 3x equity value to SPAC size (generally $1 billion of equity value) • >20% revenue growth with attractive unit economics – If less than 20% growth but already profitable, rule of thumb for 30% earnings growth as benchmark • Articulation of de-leveraging path for highly levered businesses important
Telling the Story	• Public company CEO and CFO • Company overview and strategy presentation, analyst presentation, investor presentation • KPIs and benchmarks vs. peers • Managing sell-side and buy-side expectations
Internal Controls/ SEC Compliance	• Creation/enhancement of independent functions – Accounting and reporting, compliance, legal, tax, HR, IT, IR • SOX and Section 404 compliance
Financials/ Auditing/ Legal	• Decision on accounting policies and reporting segmentation • Financial reporting requirements – Two-year GAAP audited financials and monthly management reporting systems • Setup data room for business, legal and financial diligence • Establishing forecasting procedures and financial models
Appropriate Corporate Governance	• Corporate governance considerations – Independent board members and key committees (audit, nominating, remuneration) – Key by-laws and potential shareholder agreements

What Do SPACs Mean for VC and Growth Equity?

- Competition for deals
  - The desire by many VC-backed companies to stay private longer has resulted in significant expansion of later-stage VC and growth equity and strong returns for the funds providing this type of capital in recent years.
  - SPACs are increasingly competing with late-stage VC for some of the most attractive deals, which could put downward pressure on VC/growth equity returns. With hundreds of SPACs needing to do deals in the next two years, this could have a serious effect on late-round terms and valuations.
- New exit option
  - However, SPACs also provide a potentially more attractive exit option than a traditional IPO. LPs like the liquidity and speed of deals.
- If you can’t beat ‘em, join ‘em
  - An increasing number of VCs are creating their own SPACs, often inside of funds with the possibility of de-SPACing their own portfolio companies. This has the potential for a triple win for funds which can have strong exit valuations, profits for SPAC management (promote) and continued gains as a shareholder in the public company.

ENTREPRENEURIAL FUNDING

Discrepancies in Financing and Funding

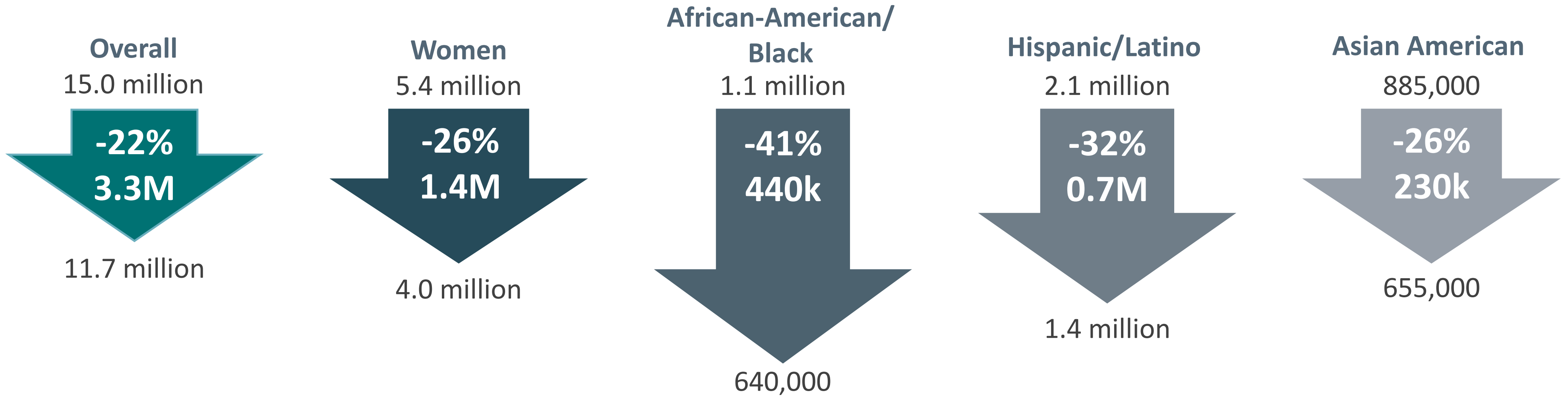
Notable Trends

- The pandemic disproportionately affected women and minority business owners.
    - Racial bias negatively affected Black-led VC firms.
- The Payroll Protection Program (PPP) did not initially protect all businesses equally.
    - Fintech played a critical role in PPP distribution.
    - Black-owned businesses sought lenders beyond brick-and-mortar banks.

Pandemic Disproportionally Affected Women and Minority Business Owners

- Women and minority founders already faced preexisting inequities when accessing resources for their businesses prior to the pandemic.
- Data reveals that in the early months of the pandemic, women and minority small business owners had to shut their doors at greater rates than their male and white counterparts.

The first months of the pandemic saw widespread closures of small businesses, with underrepresented businesses disproportionately forced to shutter in response to COVID-19 (February 2020 to April 2020):



Source: Office of the Advocate for Small Business Capital Formation Annual Report for Fiscal Year 2020

PPP Did Not Initially Protect All Businesses Equally

- In the early days of the PPP program, funding did not necessarily go to the firms most in need (Granja et al, 2020):
  - Banks played an important role in mediating program targeting, which helps explain why some funds initially flowed to regions that were less adversely affected by the pandemic.
  - Short- and medium-term employment effects of the program were small compared to the program's size.
  - Many firms used the loans to make non-payroll fixed payments and build up savings buffers.
- Black-owned businesses received loans that were approximately 50% lower than observationally similar white-owned businesses (Atkins et al., 2021).
  - The effect is marginally smaller in areas with more bank competition and disappeared over time as changes to the PPP program were implemented.
- These results speak to the disconnection that can occur between those who develop policy and the agents in charge of overseeing implementation.

Black-owned Businesses Sought Lenders Outside Brick-and-mortar Banks

- Black-owned businesses tended to receive less capital than they applied for from banks.
- A higher percentage of Black- and Hispanic-owned businesses utilized online lenders for financing than did white-owned firms.
- Black-owned firms also sought out credit unions and community development financial institutions relatively frequently.

	Online Lender	Credit Union	CDFI
White	32%	9%	5%
Black	41%	19%	17%
Hispanic	43%	9%	3%

Source: Federal Reserve Bank of Atlanta

Fintech Played a Critical Role In PPP Distribution

- Fintech lenders played an important role in extending PPP loans to Black- and Hispanic-owned businesses (Howell et al., 2020).
- Fintech lenders were disproportionately used in ZIP codes with fewer bank branches, lower incomes and a larger minority share of the population, as well as in industries with little ex ante small-business lending (Erel & Liebersohn, 2020).
  - Fintech's role in PPP provision was also greater in counties where the economic effects of the COVID-19 pandemic were more severe.
  - More PPP provision by traditional banks caused statistically significant but economically small substitution away from fintech lenders – implying that fintech mostly expands the overall supply of financial services, rather than redistributes it.

Isil Erel

David A. Rismiller Chair in Finance & Academic Director, Risk Institute, The Ohio State Fisher College of Business

Professor Isil Erel is the David A. Rismiller Chair in Finance and the academic director of the Risk Institute at the Fisher College of Business of the Ohio State University. Her research spans a variety of areas within corporate finance, with particular emphasis on mergers and acquisitions, corporate governance and banking. Erel is a research associate at the National Bureau of Economic Research (NBER)'s Corporate Finance program and a research member at the European Corporate Governance Institute (ECGI). She also serves on the boards of the Foundation for the Advancement of Research in Financial Economics and the Risk Institute.

EXPERT INSIGHT

- Studying the allocation of PPP loans allows us to investigate the impact of fintech lenders. In phase one, we find that fintech lenders provided more loans than traditional banks to areas with more profound economic shocks, even though fintech's participation in the PPP was approved with a significant delay.
- Fintech seems to "grow the pie" of financial services to small businesses poorly served by banks. We find that traditional banks base their PPP originations on past relationships and are geographically constrained by their physical branch location. However, fintech expanded access to the PPP program, especially to underserved areas with lower incomes and a larger share of the minority population.
- Our work has important policy implications, which speak to allowing (more) fintech lenders to participate in any type of fully or partially guaranteed government loan program (e.g., SBA 7a loans) to increase the efficiency of small-business lending, not only during crises but also in non-crisis periods.

ENTREPRENEURIAL FUNDING

The Funding Impact of Innovation

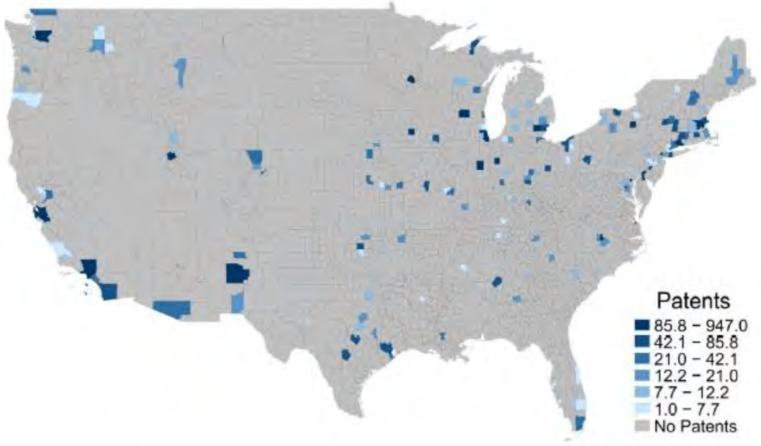
Notable Trends

- Understanding how innovative new technologies enter the marketplace is fundamental to understanding how innovation increases productivity.
- Recent research suggest a symbiotic relationship between finance and innovation — not only does financing generate innovation, but innovation generates financing.
- A new NVCA survey identifies what happens with venture capital investment once companies receive capital.
  - Four out of five respondents spent at least 70% of their budgets on two activities: wages and compensation, and research and development.

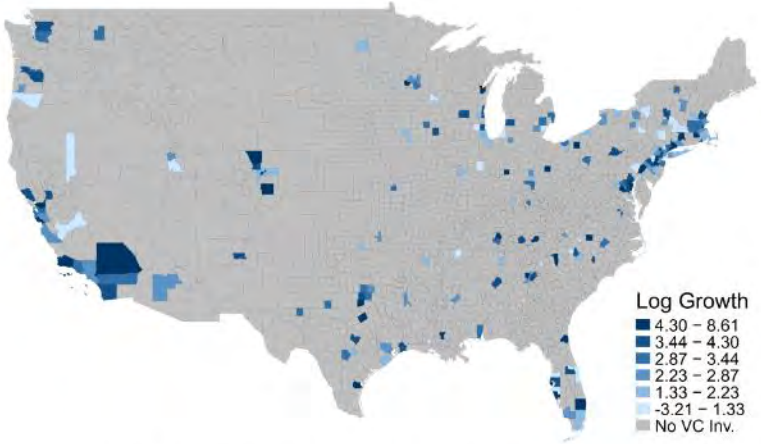
Funding and Innovation

- It has been known for decades that funding leads to more innovative activity (Kortum and Lerner, 2000). In addition, financing does not only generate innovation, but also innovation generates financing (Hausman et al, 2020).
- The research utilizes a regime change in the commercialization of university innovation in 1980 that strongly increased university incentives to patent and license discoveries.
- Because universities have different technological strengths, each local area surrounding a university experienced an increase in innovation relevant to particular sets of industries after 1980 — industries which differ widely across university counties.
- Comparing industries within a county that were more, rather than less, related to the local university's innovative strengths shows that venture capital dollars after 1980 flowed systematically toward geographic areas and industries with the greatest sudden influx of innovation out of universities.
- The results support the notion of a "virtuous cycle" wherein innovation serves to draw capital investment, which then funds future innovation.

Funding and Innovation



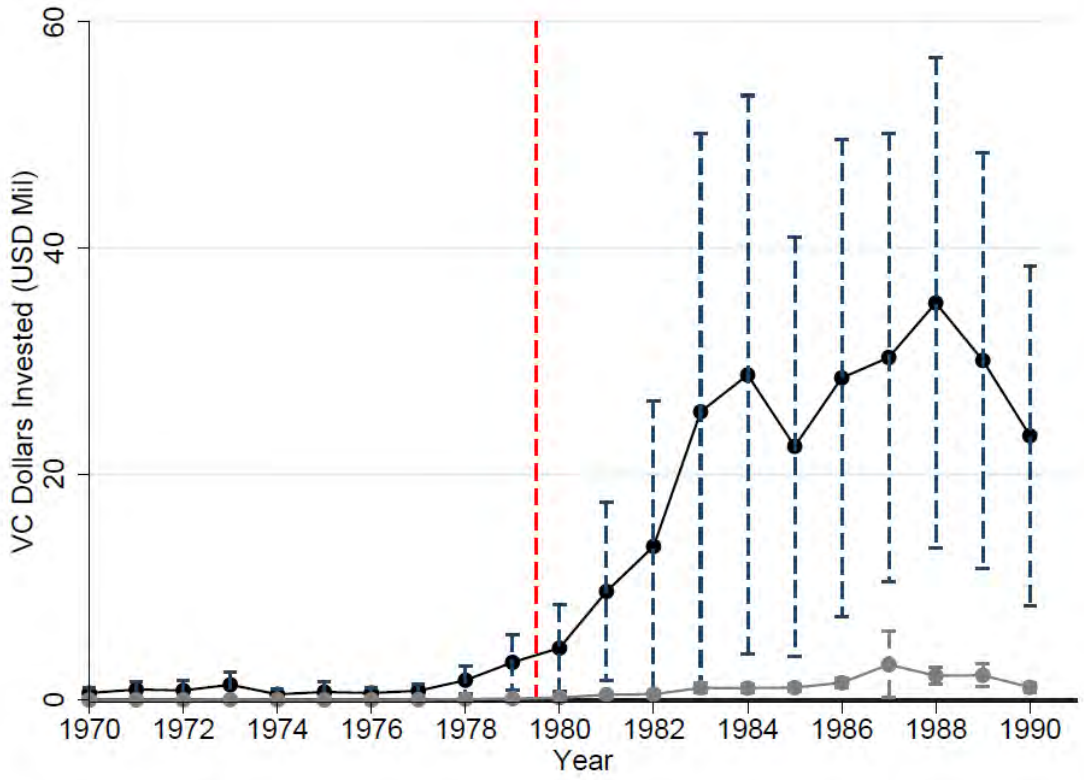
(b) University Innovation, 1976-1980



(d) VC Growth, 1980-1990

- The Bayh-Dole Act of 1980 and the subsequent Trademark Clarification Act gave universities property rights to innovations developed at their institutions using federal research funding. This provided strong incentives for universities to engage in patenting and licensing activity (Hausman et al., 2020).
- The locations with the greatest VC growth from 1980-1990 (bottom graph) closely resemble the locations of pre-1980 university innovation (top graph) (Hausman et al., 2020).
- Formal statistical tests show the Bayh-Dole-induced shock to innovative activity in the vicinity of top research universities has led to the increased flow of VC funds to university regions over non-university regions, and specifically to the industries in each university region that are most closely related to the local university's ex-ante technological strengths (Hausman et al., 2020).

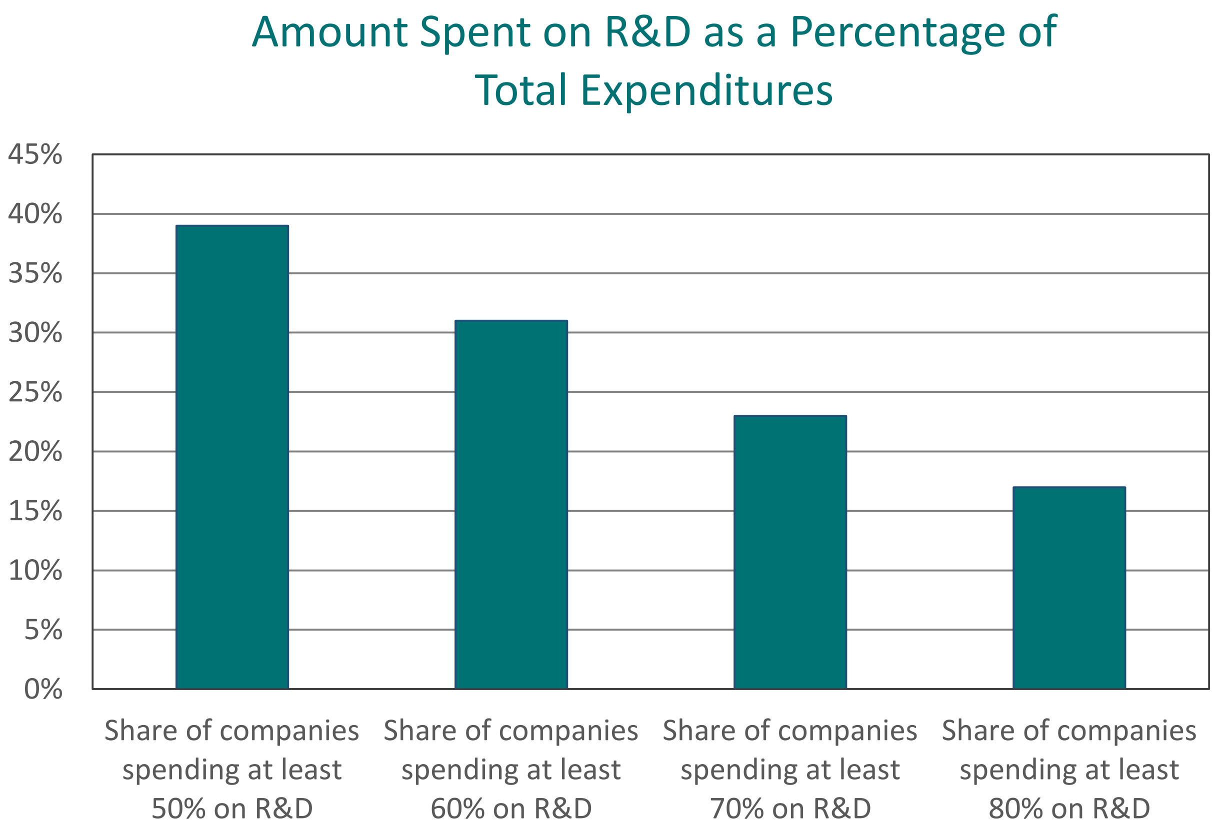
Funding and Innovation



(a) VC Dollars Invested (mil.)

- This figure shows raw means of VC outcomes by year in university (dark curve) and non-university (gray curve) counties. University counties are defined as those containing a top 100 university or research hospital, in terms of patenting during the research period. Seventy-five counties contain the top 100 universities (Hausman et al., 2020).
- We find an increase of $117,000 in VC funds after Bayh-Dole per county-industry, per standard deviation increase in our university “innovation index” measure, or $54,000 per county-industry per citation to a university patent. This effect amounts to approximately $23.2 million additional VC investment per county after Bayh-Dole, which represents the vast majority of the increase in VC funding to these locations (Hausman et al., 2020).

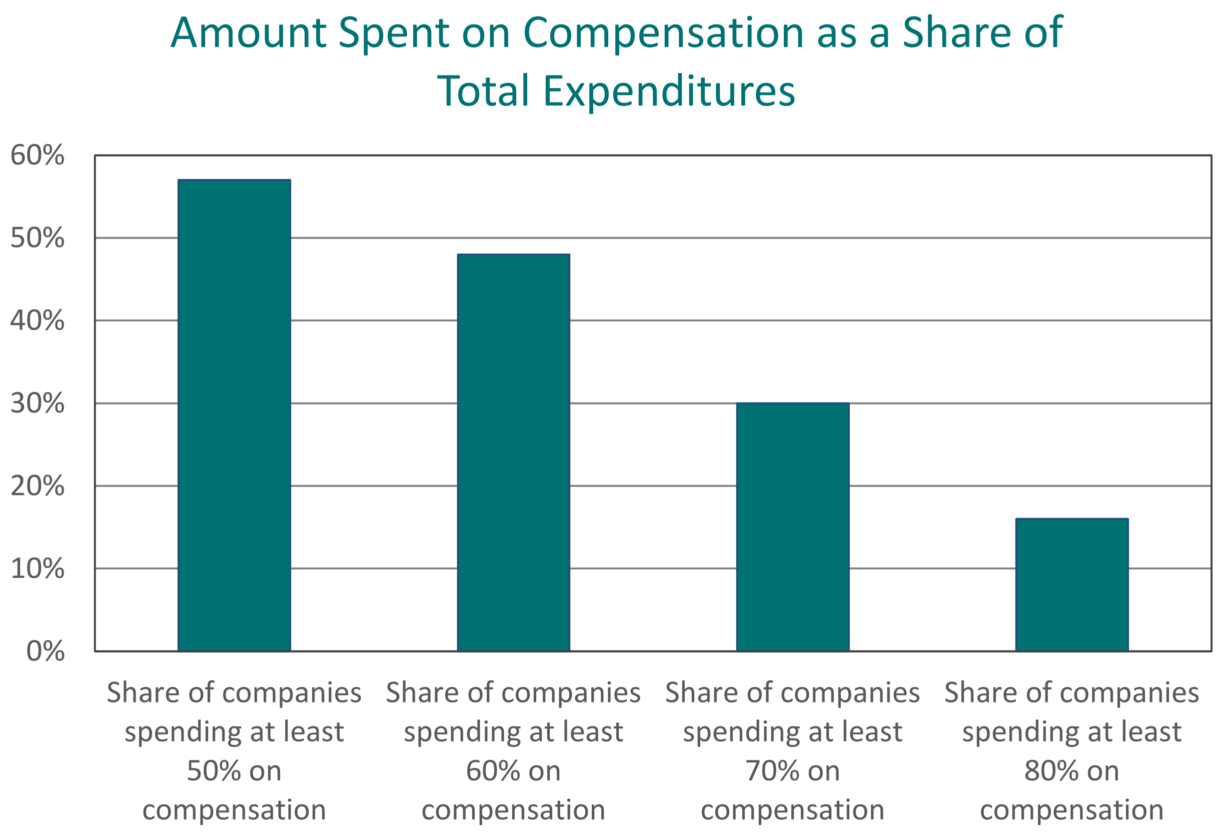
Funding and Innovation



- Innovation is closely linked to productivity growth, a key source of economic growth and essential to progress in living standards.
- For this reason, the percentages of capital deployed to finance research and development among respondent companies are particularly notable.
- A remarkable 40% of companies reported spending 50% of their annual total expenses on research and development (R&D).

Source: NVCA (2021)

Funding and Innovation



- Data suggests that recent increases in venture capital investment will lead to greater job creation and innovation.
- With many VC-backed companies exploring solutions to issues such as the COVID-19 crisis, access to education, and climate change and agricultural sustainability, increased funding will also help address some of the greatest challenges facing society today.

Source: NVCA (2021)

Yael Hochberg

Ralph S. O'Connor Professor in Entrepreneurship & Finance; Head, Rice University Entrepreneurship Initiative

Professor Hochberg's research and teaching interests are focused on entrepreneurship, innovation and the financing of entrepreneurial activity. Her research focuses on the venture capital industry, accelerators, networks, and corporate governance and compensation policies. Hochberg serves as the head of the Entrepreneurship Initiative at Rice University and as academic director of the Rice Alliance for Technology and Entrepreneurship. She is also managing director of the Seed Accelerator Rankings Project, which publishes the annual ranking of accelerator programs in the U.S.

EXPERT INSIGHT

- Economists since Adam Smith have emphasized the importance of entrepreneurs and new business formation to the economy. Understanding the forces underlying the formation of entrepreneurial clusters — particularly of a high-growth, innovation-driven nature — is of critical interest to economists and policymakers alike.
- Our findings have several policy implications. First, intellectual property policy that provides incentives for the commercialization of university innovation appears to have positive effects for the local economies nearby.
- Our results are relevant to policymakers seeking to cultivate innovation-driven entrepreneurial (IDE) ecosystems. The importance of strong local innovation may be one reason policy efforts to provide seed capital or attract venture capital to a region — such as tax breaks for early-stage investment and the formation of local government-backed funds — have met with mixed success.
- The evidence suggests that spending money on programs to encourage local innovation may be more productive in developing local ecosystems than spending on programs to create venture funds directly. Specifically, by encouraging formal technology transfer, informal knowledge sharing and an increased density of skilled workers, policymakers can harness the substantial power universities have to stimulate local high-growth entrepreneurial clusters.

ENTREPRENEURIAL FUNDING

Geographic Trends in Funding

Notable Trends

- The pandemic was a catalyst to accelerate the trend of startup growth outside the traditional areas of California, Massachusetts and New York.
  - Almost half (46.7%) of VC deals were in states other than these in 2020.
- The adjustment toward a work-from-home and shop-from-home world will have long-lasting consequences for patterns of land use in cities and for the geographic distribution of entrepreneurial opportunities.
- In comparing the median valuation cap on notes across regions, median valuation has risen considerably in recent years across all regions.
  - While valuations outside of California are still lower than those within California, the difference is shrinking.

Was the Pandemic a Catalyst or Disruptor?

- The Rise of the Rest: Increasing costs in entrepreneurship hubs drive a new wave of startup activity.
- Telecommuting will be the norm for work: The changing demand for real estate amenities such as home offices and home gyms equates to a need for more space.
- COVID-19 is not a disruptor, it's a catalyst:
  - The big winners were already winning.
  - Current trends were already forming prior to the pandemic.

Top Ten Best Places for Starting a New Business

Overall Rank (1=Best)	City	Total Score	Business Environment Rank	Access to Resources Rank	Business Costs Rank
1	Orlando, FL	60.9	6	50	17
2	Oklahoma City, OK	60.7	12	40	10
3	Miami, FL	60.5	2	45	30
4	Austin, TX	60.1	1	5	83
5	Tampa, FL	59.3	20	39	16
6	Charlotte, NC	59.0	18	28	29
7	Durham, NC	58.9	39	11	18
8	Raleigh, NC	58.6	40	3	23
9	Atlanta, GA	58.1	26	19	27
10	Denver, CO	58.0	14	18	59

Source: McCann (2019)

What are Founders and Investors Looking For in a Geography, and Where are People Moving?

Strong in recreational amenities

Attractive cost of living

Educated workforce

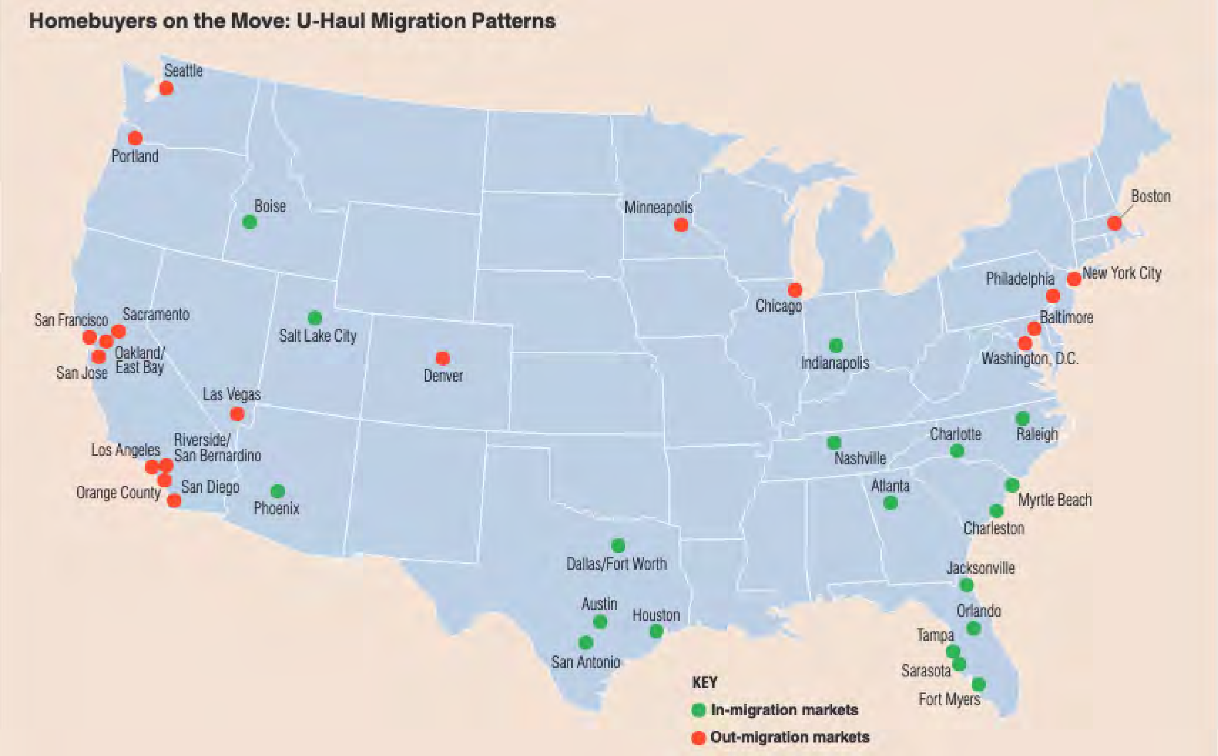
Wide suburban net

Strong tech infrastructure

Strong airport infrastructure

The top 10 real estate markets for 2021

1. Raleigh/Durham, N.C.
2. Austin, Texas
3. Nashville, Tenn.
4. Dallas/Fort Worth, Texas
5. Charlotte, N.C.
6. Tampa/St. Petersburg, Fla.
7. Salt Lake City, Utah
8. Washington D.C./North Va.
9. Boston, Mass.
10. Long Island, N.Y.



Source & Image Credit: Urban Land Institute

What Does This Mean for VC Deal Count and Capital Invested?

- Although California, New York and Massachusetts are still the top three states for VC deals, almost half (46.7%) of deals were in other states in 2020.
- However, deals in other states tend to be smaller and so accounted for only 27% of capital invested in 2020.

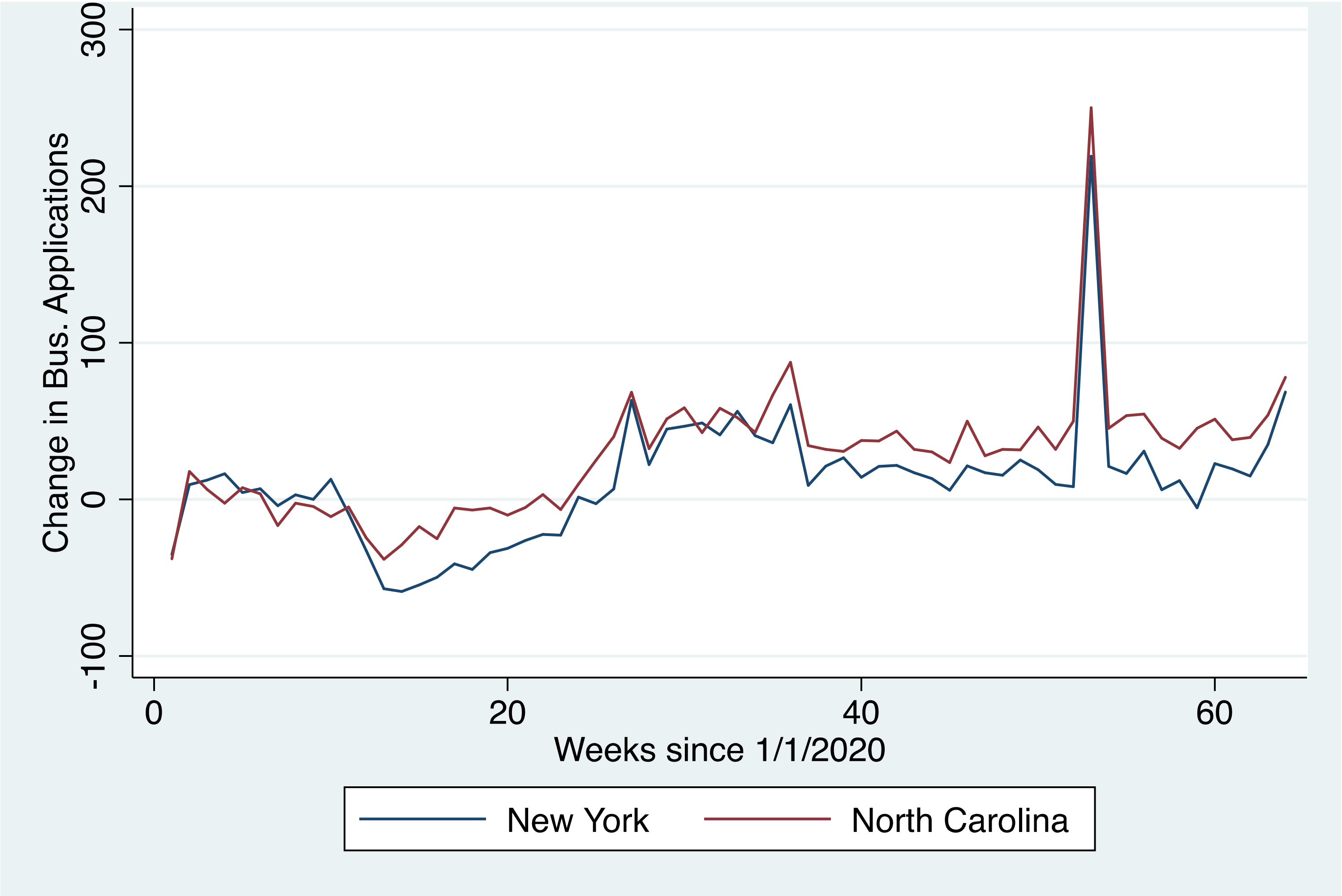
2020 VC Deals and Company Counts by State

	Company Count	% of Total	Capital Invested ($M)	% of Total
California	3,672	33.8%	$84,189	51.3%
New York	1,333	12.3%	$18,151	11.1%
Massachusetts	784	7.2%	$17,367	10.6%
Washington	386	3.6%	$4,851	3.0%
Texas	545	5.0%	$4,818	2.9%
North Carolina	221	2.0%	$3,636	2.2%
Michigan	133	1.2%	$3,332	2.0%
Colorado	341	3.1%	$2,624	1.6%
Illinois	303	2.8%	$2,588	1.6%
Pennsylvania	281	2.6%	$2,137	1.3%
All others	2,863	26.4%	$20,316	12.4%
Total	**10,862**		**$164,012**	

Source: NVCA, 2021

Year-on-Year Percentage Change in High-growth Business Applications

- New business formation has increased throughout the U.S. since the summer of 2020, and followed surprisingly similar patterns across states.
- For example, patterns in year-on-year changes in North Carolina and New York since the pandemic have been almost identical.



David Robinson

James and Gail Vander Weide Professor of Finance, Duke University Fuqua School of Business

David T. Robinson is the James and Gail Vander Weide Professor of Finance at Duke University's Fuqua School of Business, and the director of the Entrepreneurship Working Group at the National Bureau of Economic Research. He is an internationally recognized expert in the fields of private equity, venture capital and entrepreneurial finance. His work has appeared in leading academic journals in finance and economics and has been featured in the New York Times, The Wall Street Journal, The Financial Times and The Economist. He is the former vice chair of the World Economic Forum's Global Agenda Council on Private Capital.

EXPERT INSIGHT

- Increased demand for housing amenities combined with the already high cost of living in traditional entrepreneurship hubs has accelerated the continued geographic diffusion of entrepreneurial activity.
- Many of the regional winners are areas which have been punching above their weight in terms of job creation and economic growth for the last twenty years. They have strong and diverse local economies and low costs of living.
- The pandemic spurred innovation in many consumer-facing services; this is likely to have long-lasting effects on the way businesses reach customers and suppliers.
- Even partial adjustment toward a work-from-home and shop-from-home world could have long-lasting consequences for patterns of land use in cities and for the geographic distribution of entrepreneurial opportunities.
- A challenge for regional economies is to seize the opportunity by catalyzing financing opportunities and other pro-startup infrastructure in their areas.

What Does This Mean for Funding and Valuations?

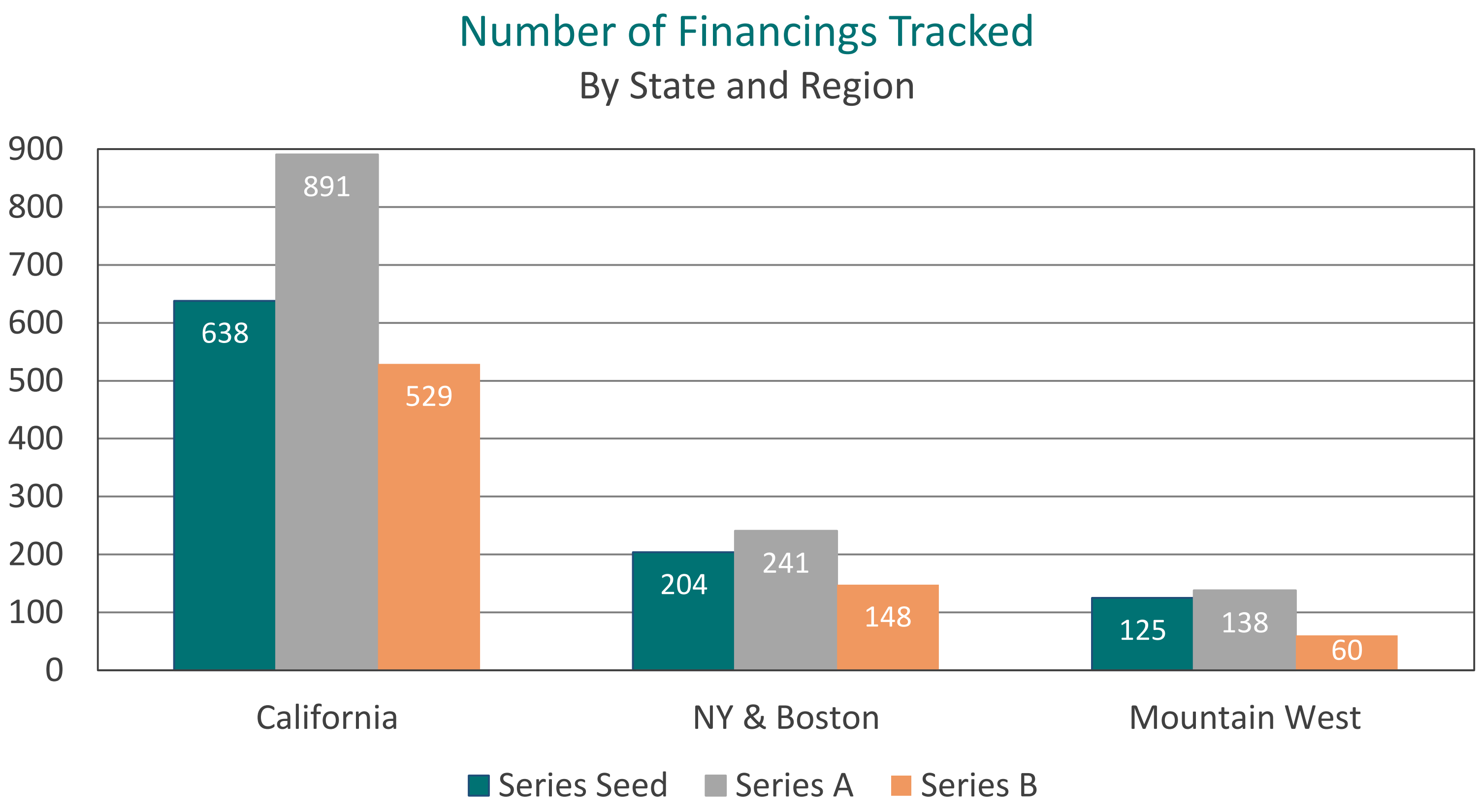
- Granular deal data from Aumni allows us to look at differences across geographies.
- Aumni has access to full legal documents for transactions and can analyze deal terms with high precision.
- On the next page, we compare Seed, Series A and Series B rounds in the large, established coastal markets of California and New York/Boston with the so-called Mountain West (Utah, Colorado, Montana, Wyoming, Idaho, Nevada, Oregon and Washington).
  - Conclusions from looking at other regions are similar.

Source: Aumni

Database Overview

Data from Aumni:

- **14 years** of transaction history
- **2,900** equity financings occurring at the seed, Series A and Series B stages
- **1,100** Pre-seed financing notes (i.e. SAFEs)

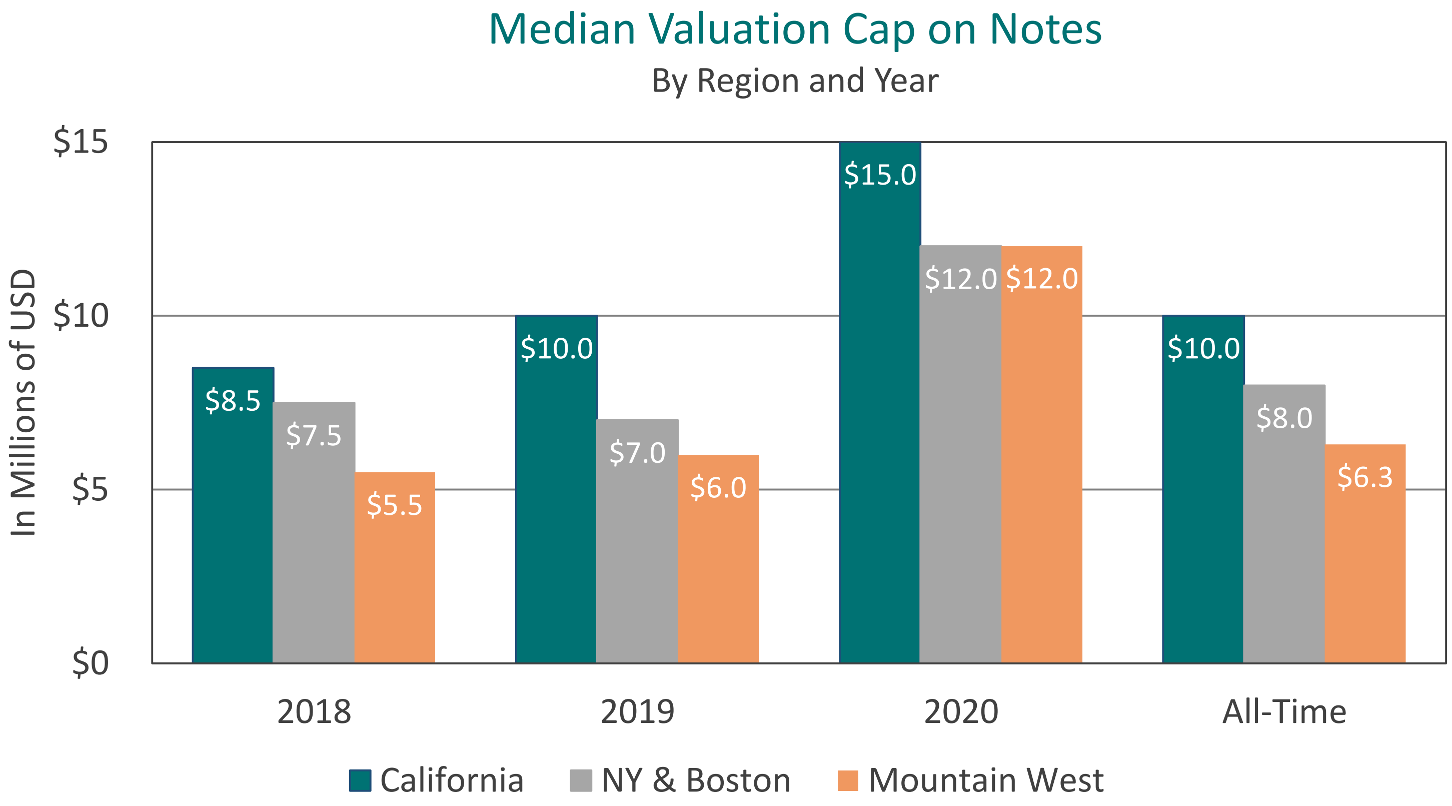


Source: Aumni

Convertible Security Insights

In comparing **median valuation cap on notes** across regions…

- Median valuation cap on notes has risen considerably in recent years across all regions.
- Between 2019 and 2020, the Mountain West saw an increase of 100% year over year.

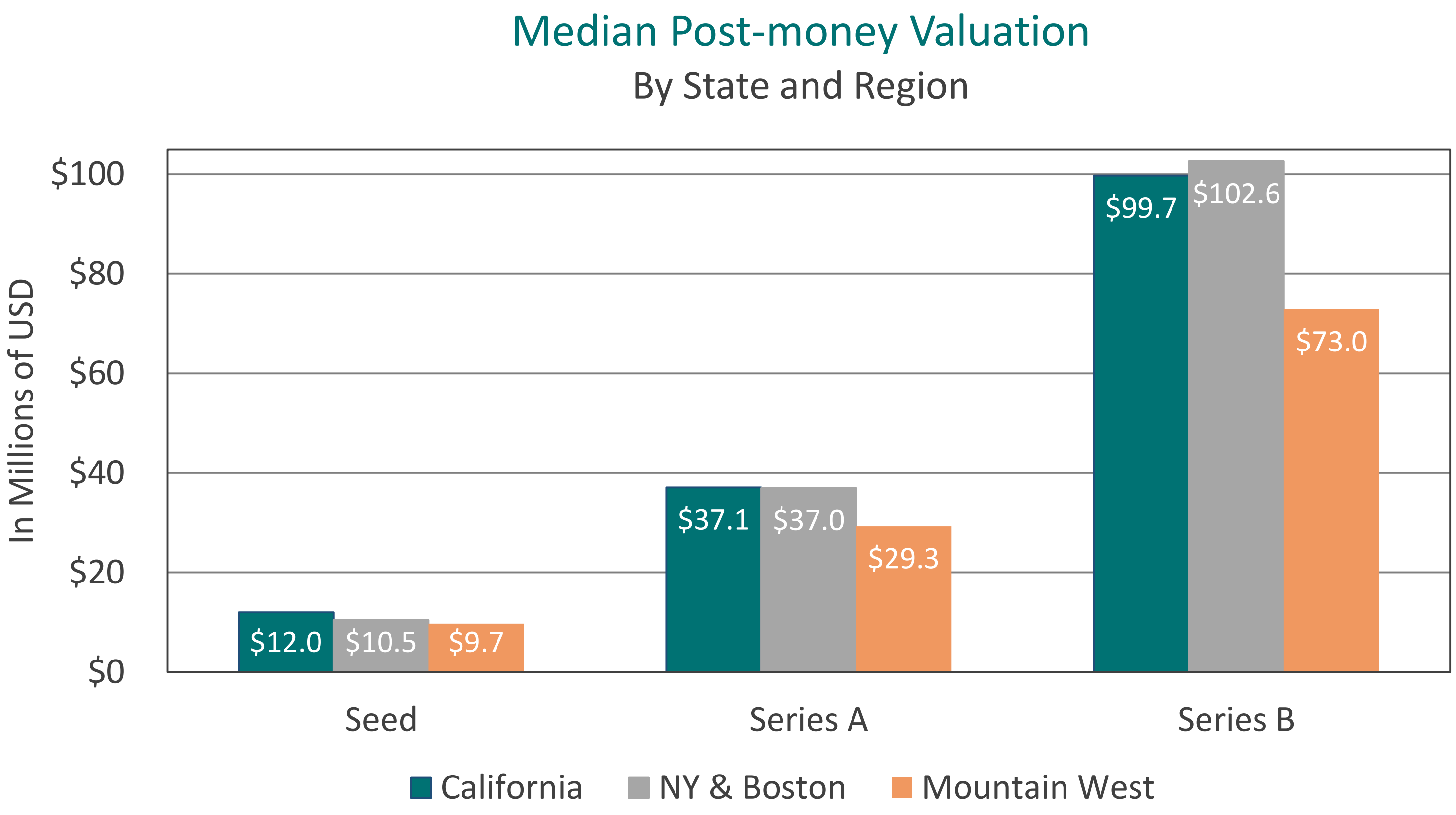


Source: Aumni

Early-stage Valuation Insights

In comparing **median post-money valuation** across regions…

- Companies raising in traditional venture regions (California, New York and Boston) maintain consistently higher valuations relative to the Mountain West region.
- The disparity in valuation between coastal regions and others becomes more pronounced in later rounds.

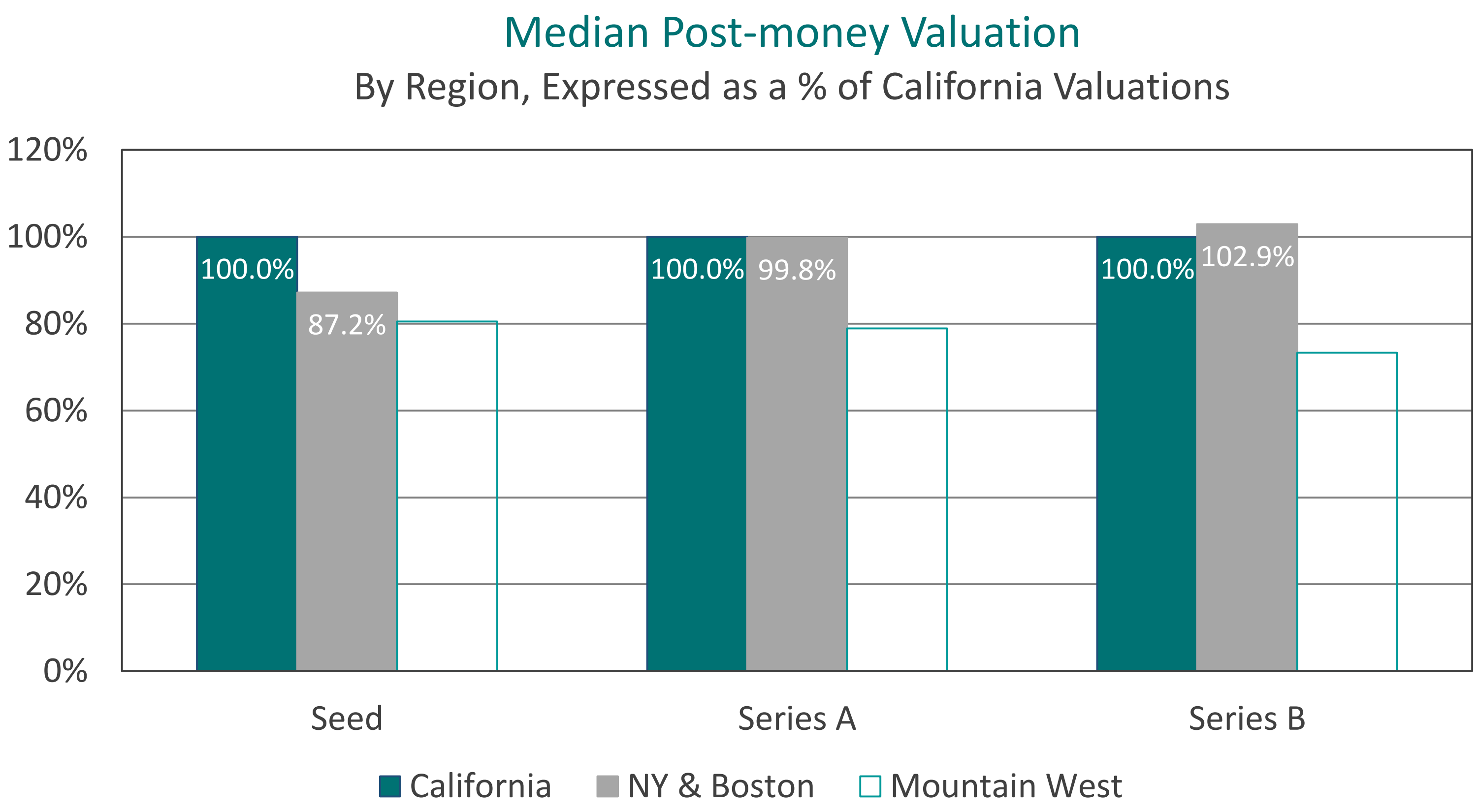


Source: Aumni

Valuation Insights

When displayed as a percentage of California median valuations by stage…

- The consistency in valuation discrepancy by region and across stages becomes clearer.
- Mountain West companies at the seed and Series A stage are receiving valuations ~20% lower than California companies.

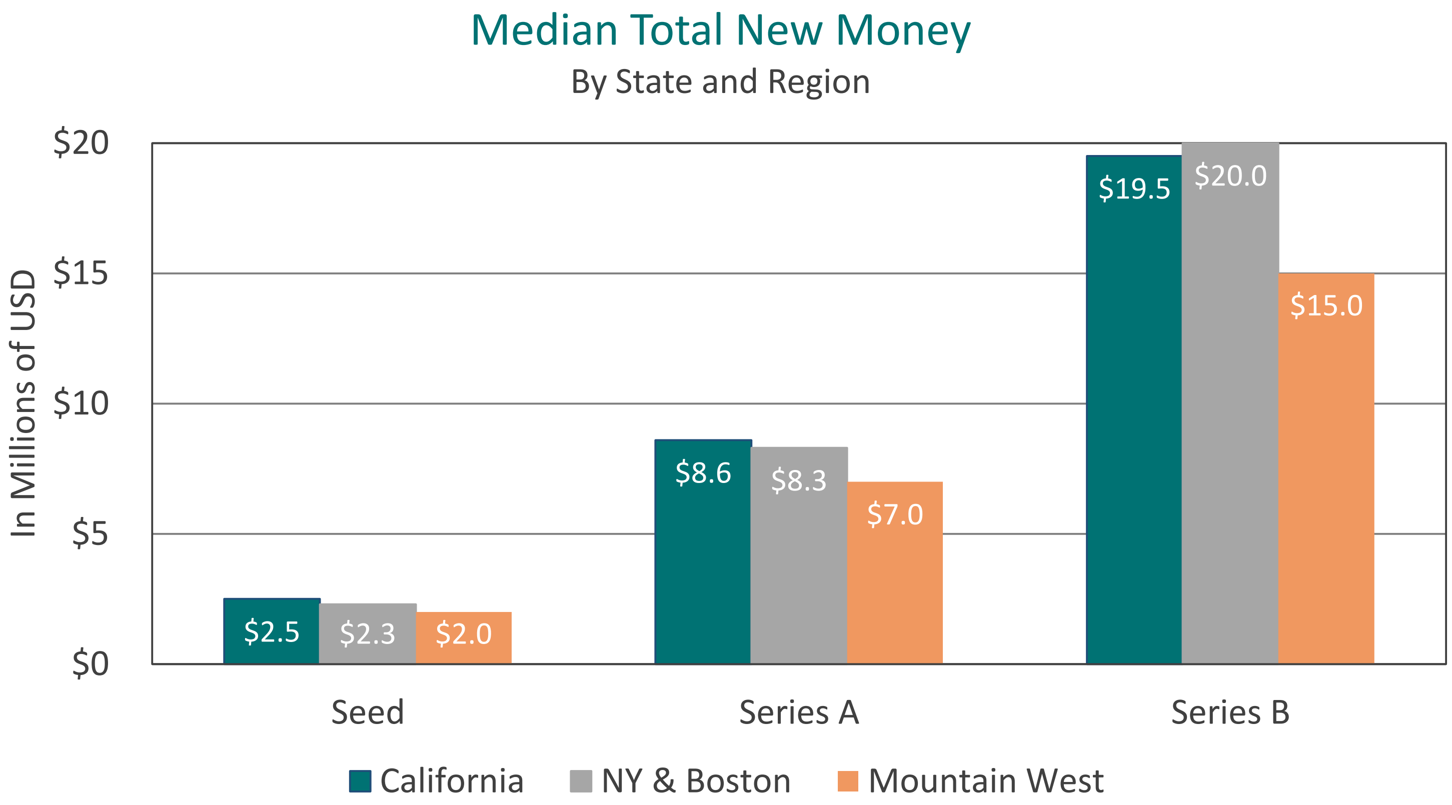


Source: Aumni

Capital Insights

In comparing total new money raised across regions…

- Mountain West founders are giving up more equity at the seed round relative to their peers in California, New York and Boston.
- The disparity in total new money raised between coastal regions and others becomes more pronounced in later rounds.

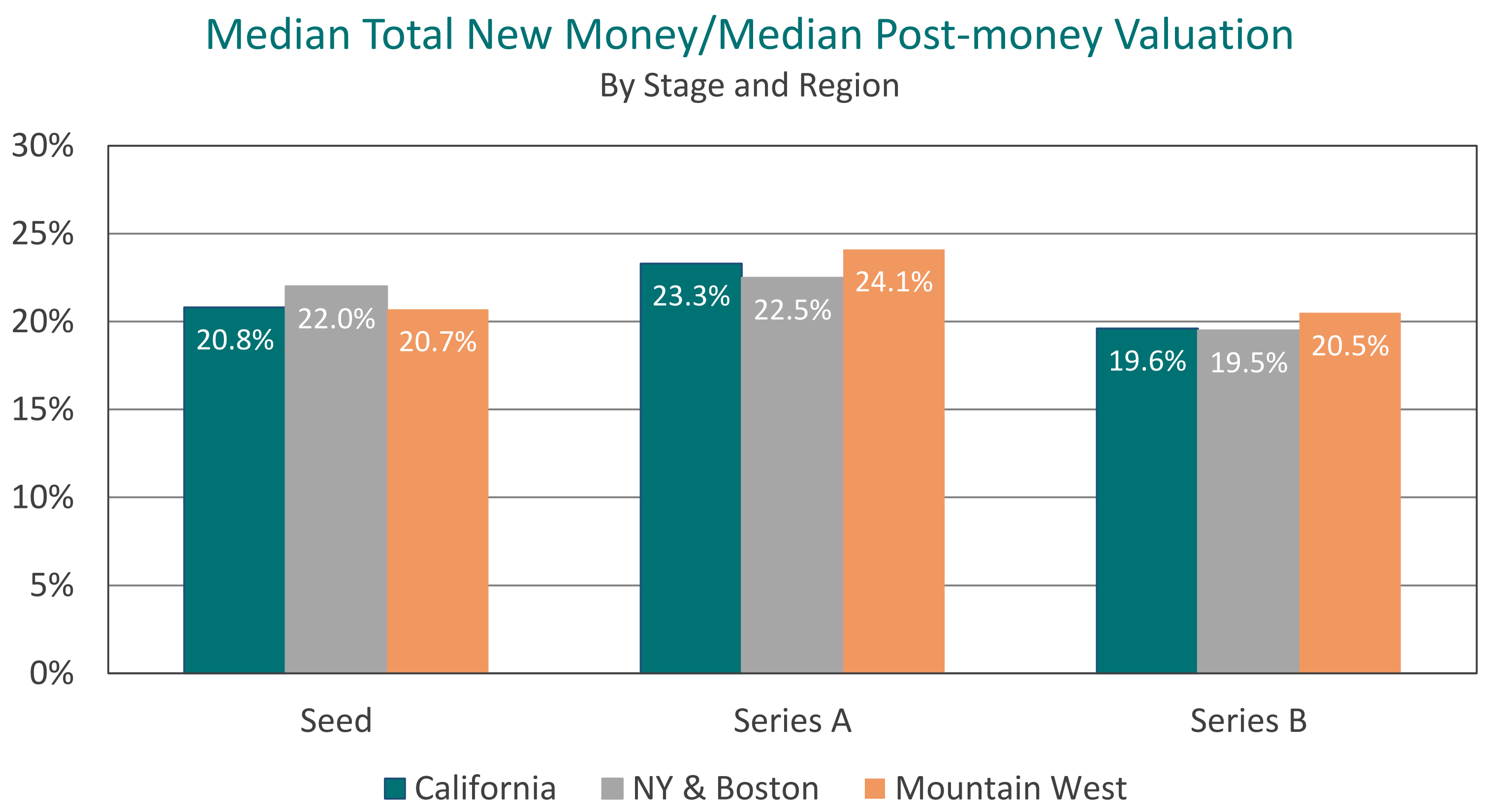


Source: Aumni

Capital Insights

In comparing total new money raised vs. post-money valuations by stage across regions…

- Coastal-based companies tend to raise more capital, but at higher valuations the variation in dilution is relatively minimal.



Source: Aumni

Bobby Franklin

President & CEO, National Venture Capital Association (NVCA)

Bobby Franklin is the president & CEO of the National Venture Capital Association (NVCA), the venture community's preeminent trade association focused on empowering the next generation of transformative American companies. Based in Washington, D.C., with offices in Palo Alto and San Francisco, NVCA acts as the voice of the U.S. venture capital and startup community by advocating for public policy that supports the American entrepreneurial ecosystem. Prior to joining NVCA in 2013, Franklin spent ten years at CTIA, a large Washington, D.C.-based trade association representing the entire wireless industry, and in the office of Senator David Pryor (D-Ark.), working with various Senate committees, including Agriculture, Finance and Governmental Affairs.

EXPERT INSIGHT

- Despite headwinds from the COVID-19 pandemic and the worst recession since the Great Depression, the VC industry posted records for fundraising, investments and exits in 2020. At the end of the year, 1,965 VC firms managed 3,680 venture funds and had approximately $548 billion in U.S. venture capital assets under management (AUM), as well as a record $151 billion in dry powder heading into 2021.
- California, Massachusetts and New York continue to dominate the VC investment scene, but Washington, Texas, North Carolina, Michigan, Colorado, Illinois and Pennsylvania all saw robust activity in 2020.
- 2020 saw some highly skilled workers and investors departing dense urban regions with high costs of living, such as the Bay Area, in search of more space and a lifestyle better suited to a world grappling with COVID-19. This diffusion of talent will affect investment and startup patterns as the industry continues to evolve outside traditional geographies.
- Investors demonstrated remarkable agility in transitioning to a distributed workforce model, and some adapted well to remotely conducting meetings, due diligence and deal closings with founders. However, newcomers to the industry, specifically entrepreneurs raising their first institutional round and first-time fund managers, faced a more challenging environment for acquiring capital.

Trends in Emerging Technology in the Healthcare Industry
(Special Topic)

EMERGING TECHNOLOGY IN THE HEALTHCARE INDUSTRY

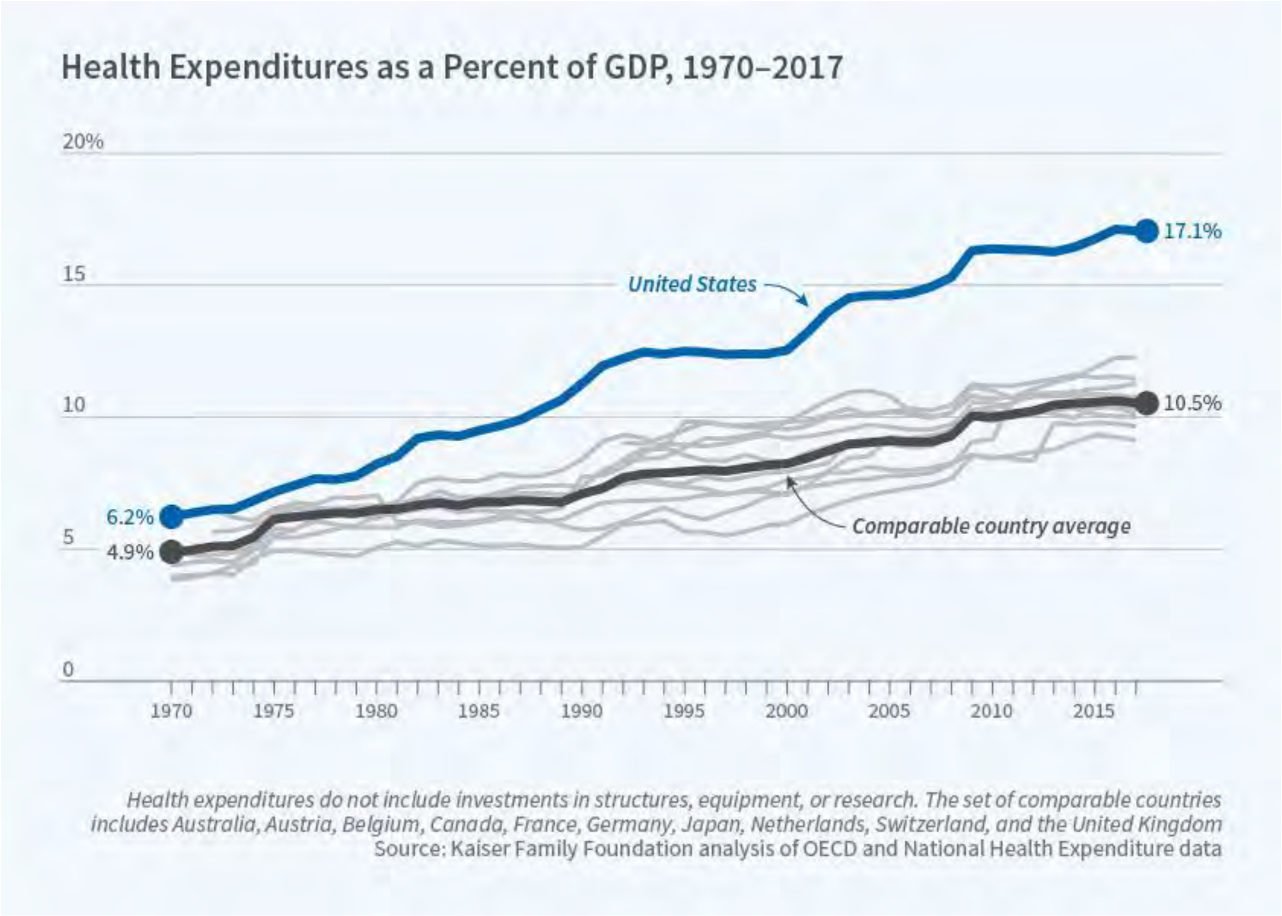
Healthcare Industry at a Glance

Notable Trends

- The healthcare industry has been experiencing unprecedented growth in the past four decades.
- Pharma and medical devices in particular are driving innovation and industry growth.

The Continuous Growth of Healthcare

- The U.S. healthcare, pharmaceutical and medical device sectors have seen astounding growth in the last four decades.
- As shown here, healthcare vastly outcompetes other sectors, accounting for greater than 17% of the U.S. GDP in 2017.



Source: NBER Program Report 2019

Pharma Industry at a Glance

U.S. pharmaceutical firms account for

10%

of overall R&D spending in the economy, up from roughly 3% in the 1970s

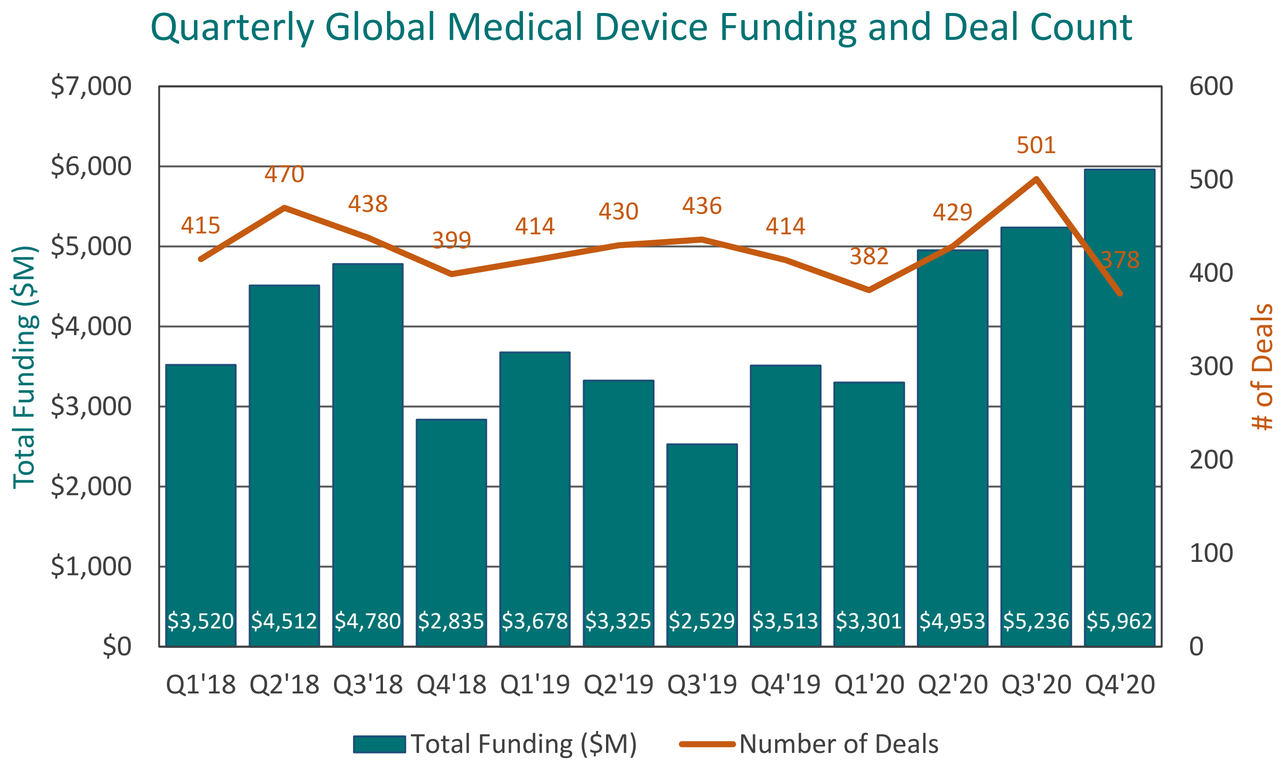
The U.S. brand-name pharmaceutical industry generated

$205 billion

by late 2020, and is expected to reach $226 billion in 2025, with an estimated annualized growth rate of 2%

Source: Benmelech et al. 2021; IBISWorld Report, 2021

Medical Devices Industry at a Glance



- The U.S. medical device industry generated $47.1 billion by mid 2020, and is expected to reach $54.5 billion in 2025, with an estimated annualized growth rate of 3%.
- Medical device startups raised almost $19.5 billion in private funding, a nearly 50% increase relative to 2019.

Source: IBISWorld Report, 2020; CB Insights, 2020

EMERGING TECHNOLOGY IN THE HEALTHCARE INDUSTRY

Private Capital Eyes Health-tech Companies as Market Gets Hotter

Notable Trends

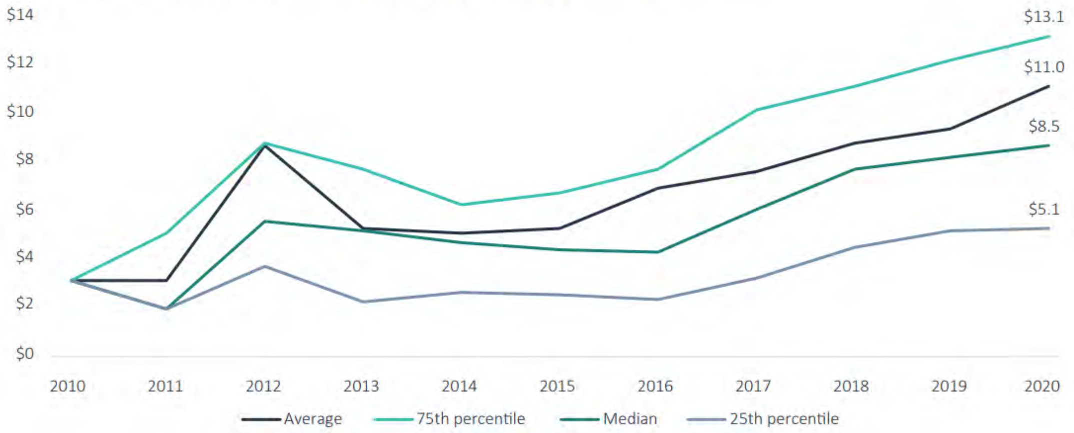
- In 2020, health-tech startups raised nearly double the VC funding compared to the previous year.
- SPACs offer new opportunities for heath-tech companies to go public.

Private Funding Pours In…

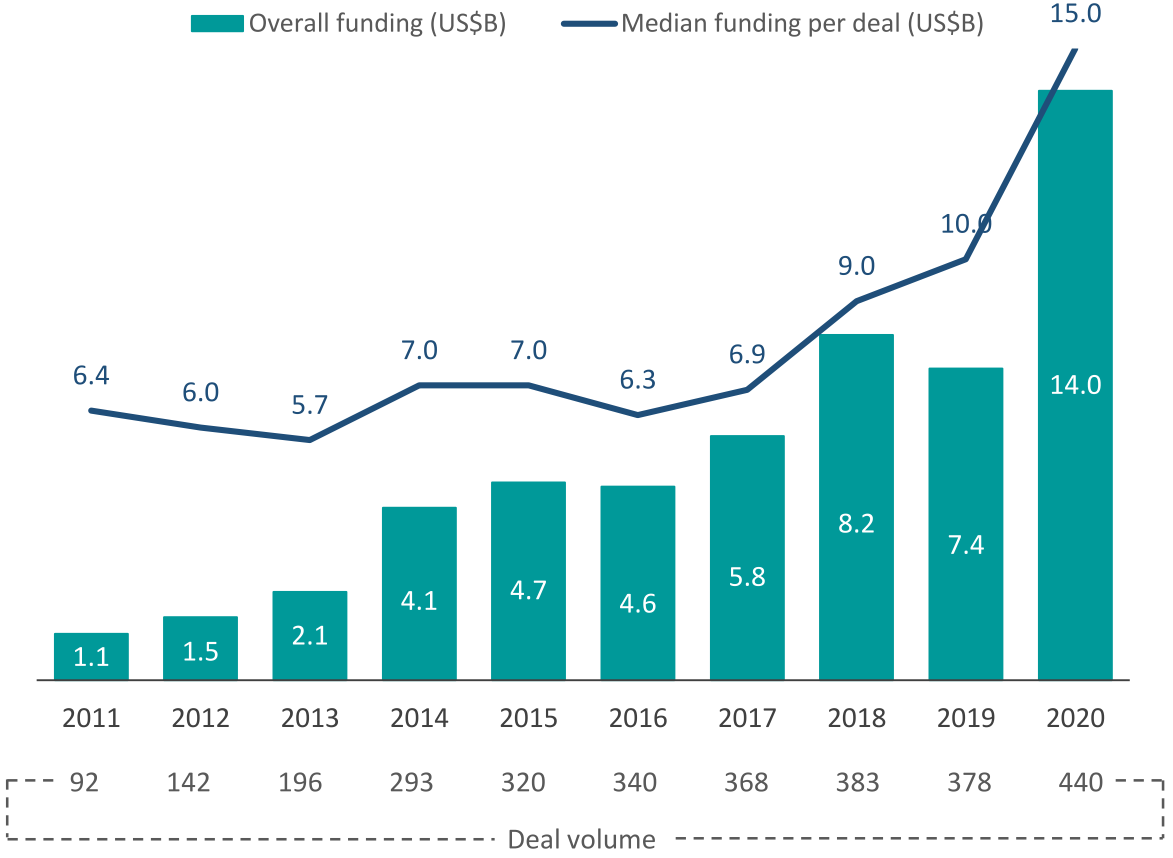
- Venture funding for health-tech startups reached approximately $14 billion in 2020, almost doubling 2019's figure.
- CB Insights estimates there are 51 active healthcare unicorns, each valued at $1 billion or more.

Focus on biotech sends valuations rising at seed stage

Seed-stage VC pre-money valuations ($M) for biotech & pharma companies



Health-tech venture funding reached record levels in 2020



Source: PitchBook US VC Valuations Report, 2020 Annual; Deloitte analysis of Rock Health's Digital Health Funding Database

…But More Health-tech Unicorns Seek Exit

In 2020, seven healthcare technology firms went public, an increase from four in 2019.

An increasing prevalence of special purpose acquisition companies (SPACs) taking private firms public provides a rich opportunity for private healthcare firms.

In February 2021, consumer genetics testing company 23andMe announced its intention to go public via a SPAC.

EMERGING TECHNOLOGY IN THE HEALTHCARE INDUSTRY

Innovation Critical to Healthcare Success

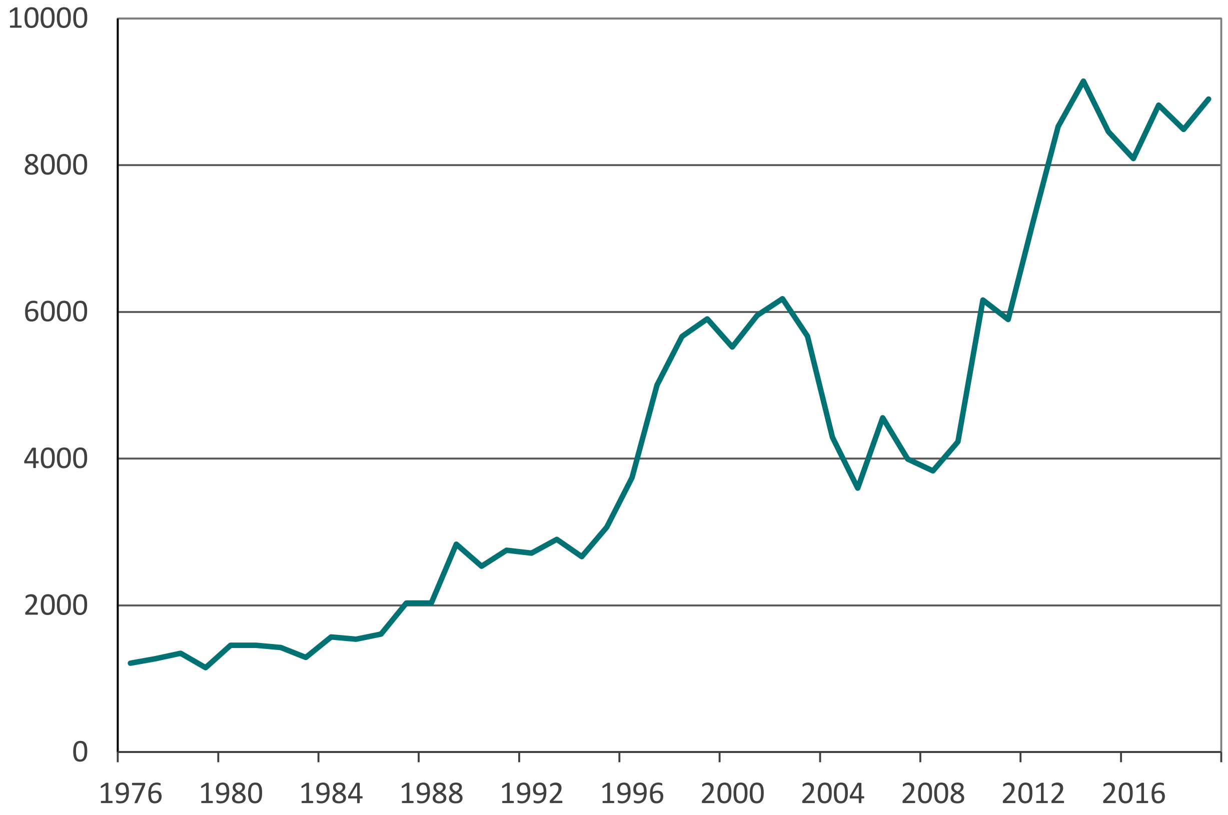
Notable Trends

- The number of U.S. patents granted for pharmaceuticals and medical devices has been rising sharply in recent years.
- In recent years, research collaborations have had a comeback in both biopharmaceuticals and medical devices.
- Technology such as AI-driven drug discovery, CRISPR gene editing and mRNA vaccines are driving newer and faster drug development tools.

Innovation Continues to Play a Big Role

The U.S. Patent and Trademark Office granted 60,431 pharmaceutical patents between 2013 and 2019.

Number of Granted Pharmaceutical USPTO Patents



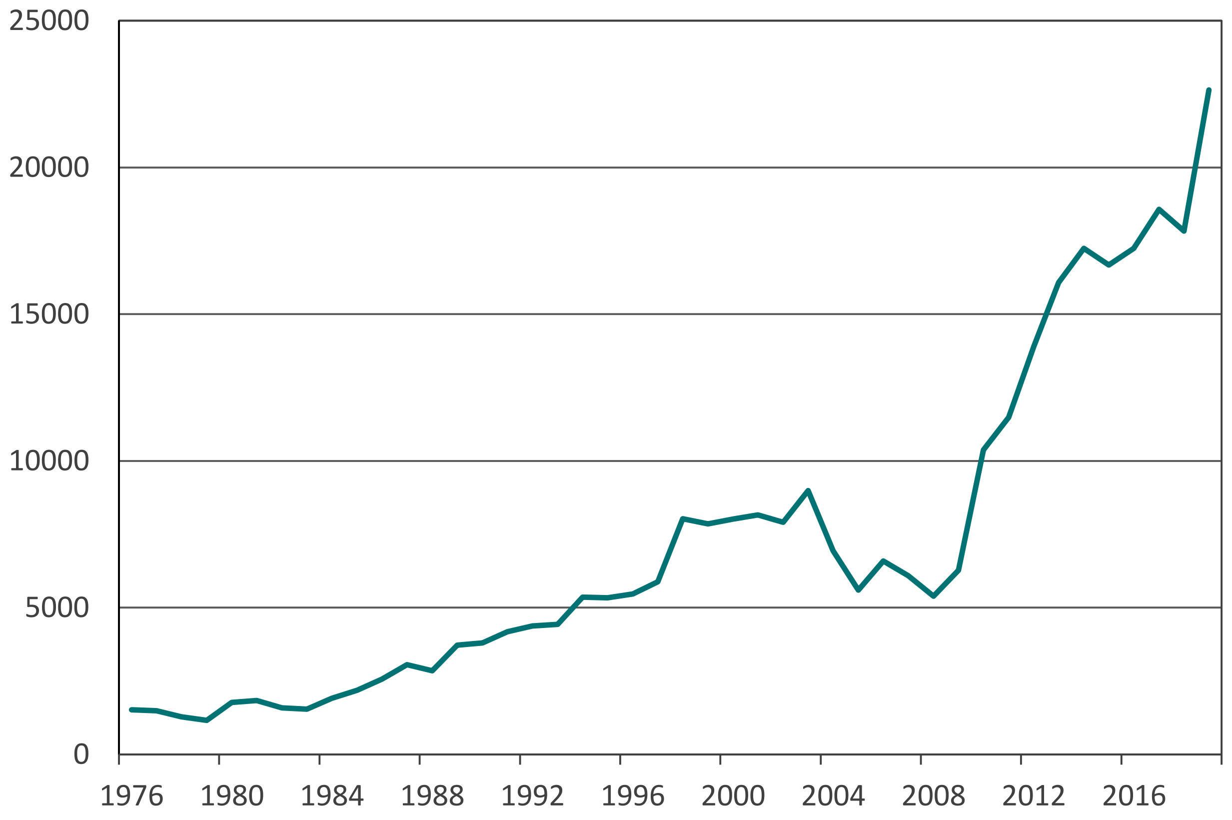
IPC class A61K & A61P for pharmaceutical drugs

Source: PatentsView

Innovation Continues to Play a Big Role

The U.S. Patent and Trademark Office granted 126,310 medical device patents between 2013 and 2019.

Number of Granted Medical Device USPTO Patents



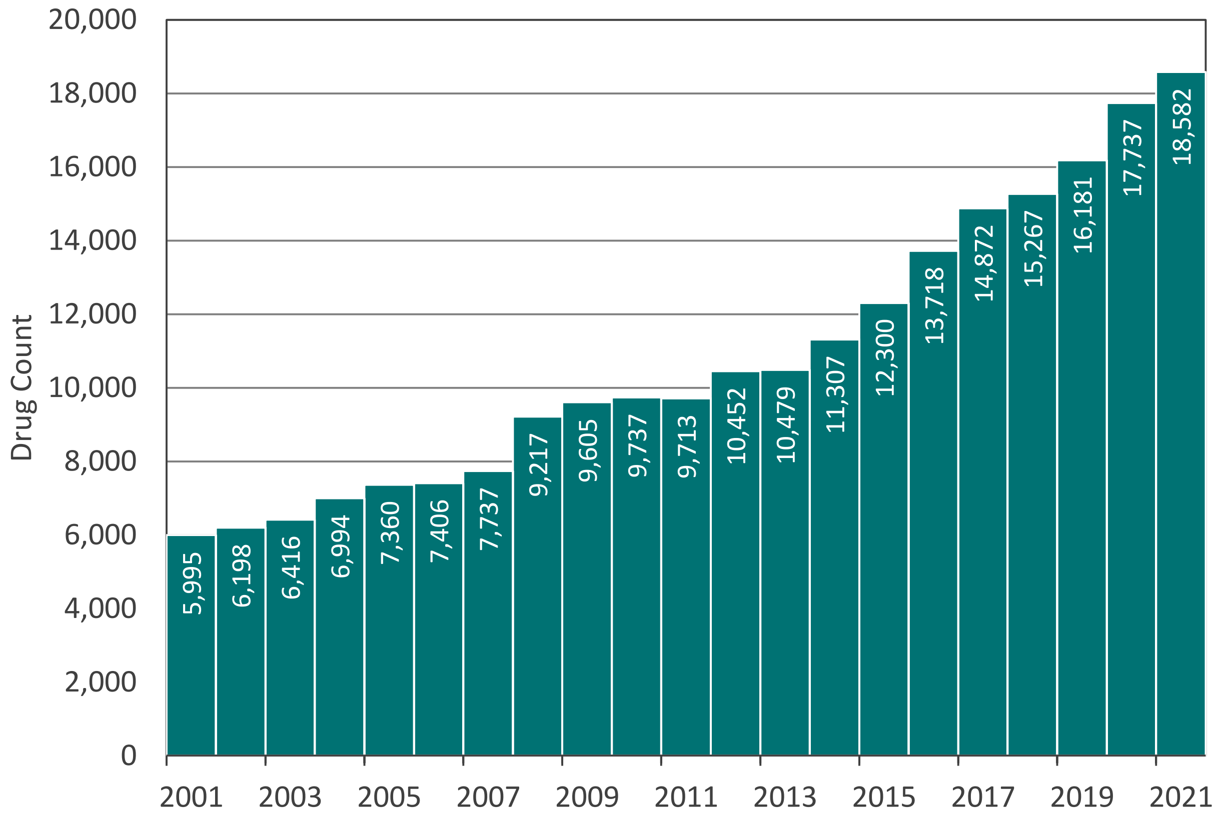
IPC class A61 (except A61K & A61P) captures medical devices

Source: PatentsView

Growth of the Drug Pipeline Remains Steady

Currently, there are 18,582 drugs in development by pharmaceutical companies at various stages of the drug development process.

Total R&D pipeline size, by year, 2001-21

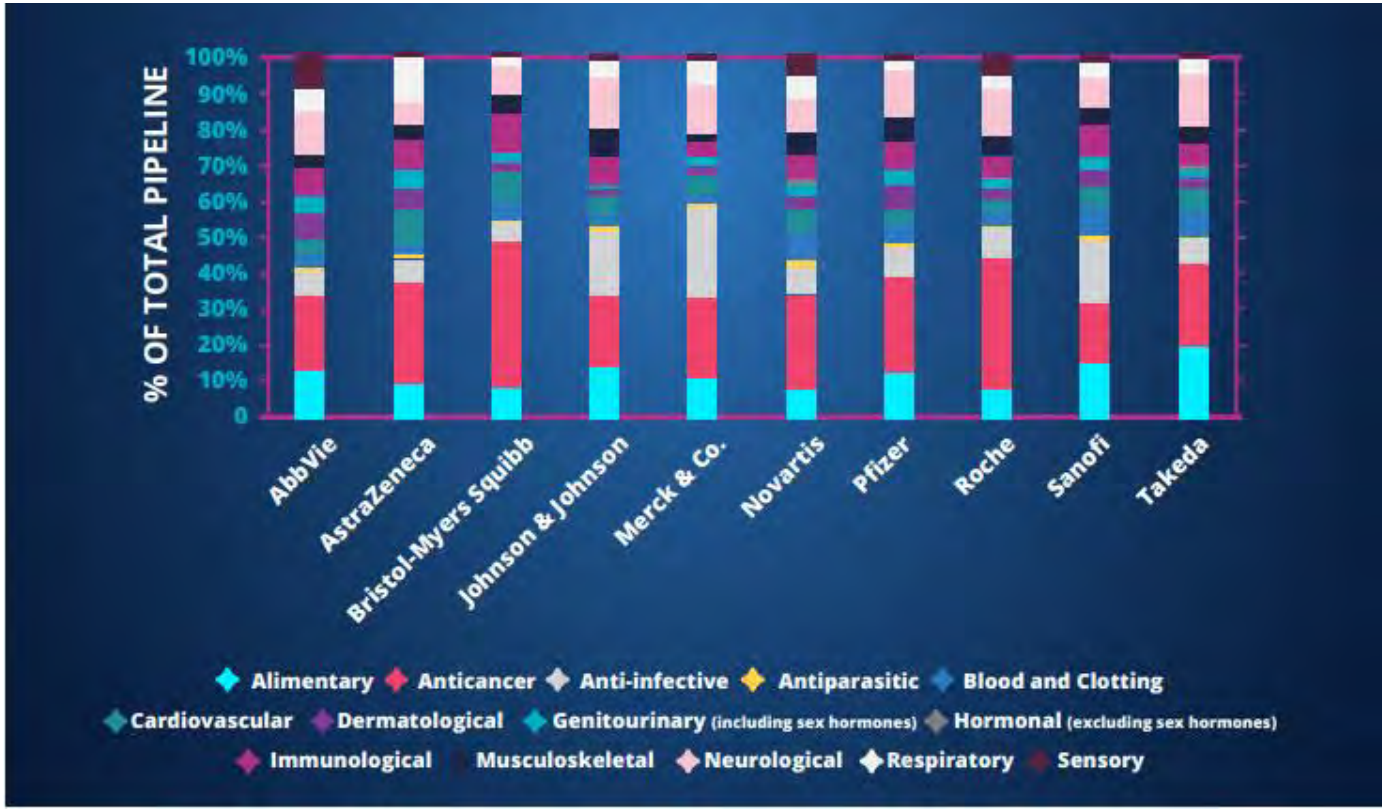


Source: Pharma R&D Annual Review 2021

Therapeutic Focus Across Major Pharmaceutical Firms Remains Broadly Consistent

The largest pharmaceutical firms continue to maintain R&D in a wide variety of therapeutics with sizable investments in anti-cancer drugs.

Disease focus areas of the top 10 pharma companies

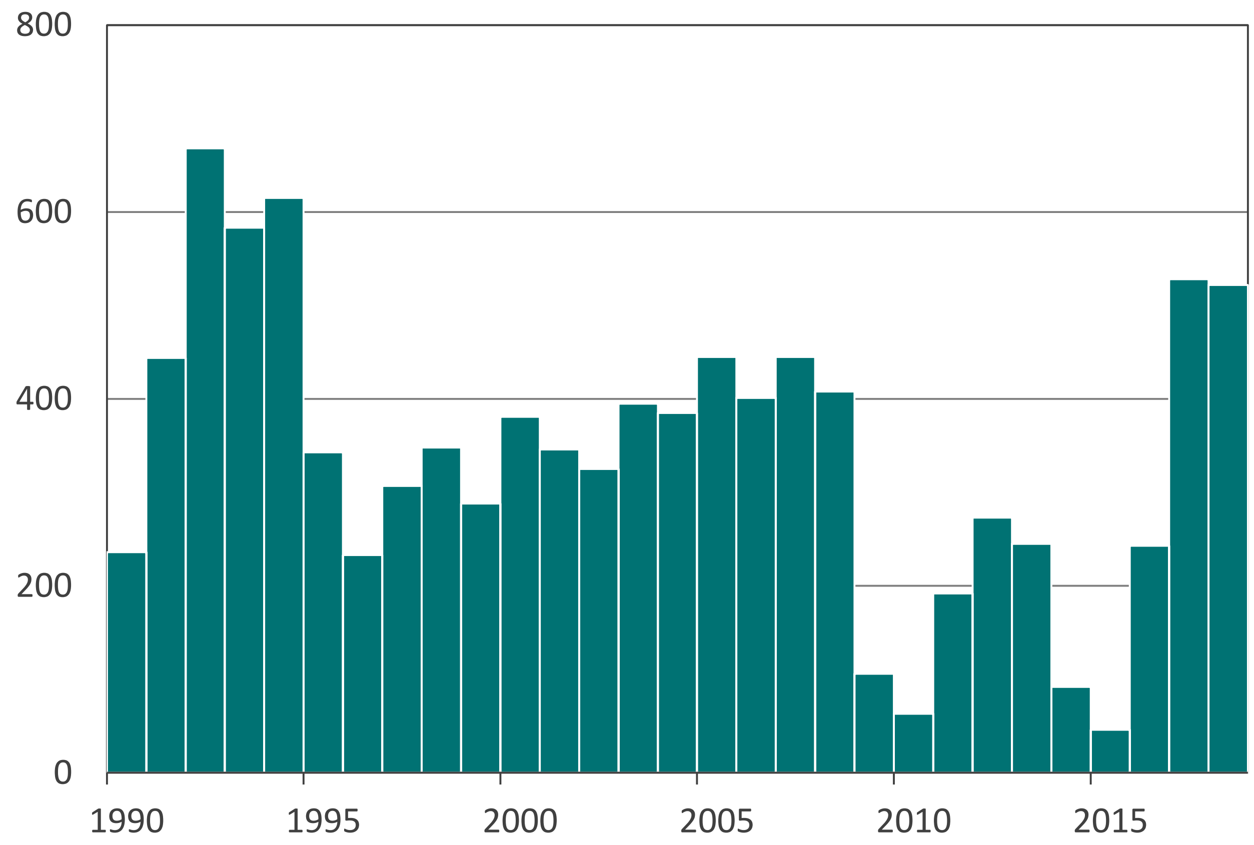


Source & Image Credit: Pharma R&D Annual Review, 2021

Research Collaborations in Biopharmaceuticals Have a Comeback

After a few years of decline, collaborations in biopharmaceuticals are steadily increasing.

Number of biopharmaceutical alliances



Source: SDC Platinum

Mahka Moeen

Associate Professor of Strategy and Entrepreneurship & Sarah Graham Kenan Scholar, UNC Kenan-Flagler Business School

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EXPERT INSIGHT

Why are collaborations so common in the biopharmaceutical sector? In general, collaborative alliances allow firms to gain access to resources that they lack. By joining forces with a collaborator, each firm can complete a task that it would otherwise not be able to conduct. In the biopharmaceutical sector, task complexity and knowledge specialization mean that very few firms have internal access to the complete knowledge for discovery, development and commercial distribution of pharmaceutical drugs. Thus, they increasingly rely on alliance partners who can provide such resources.

What are different types of biopharmaceutical collaboration? It depends on the type of resources that firms lack. At times, firms form drug discovery collaborations so that their scientists in laboratories can work together and share their upstream scientific knowledge. These collaborations often lead to the identification of a novel drug molecule or therapeutic mechanism of action. At other times, firms form drug development collaborations. In these collaborations, one partner often contributes scientific knowledge and shares its novel drugs, and the other partner assumes the responsibility of taking the drug through different stages of clinical trials.

How about startups? In the biopharmaceutical sector, many startups are founded by former academic scientists, and as a result have superior scientific knowledge. These startups rarely have skills necessary for undertaking complex, expensive and time-consuming clinical trials. Drug development collaborations are a lifesaver for them, because an established, larger pharmaceutical firm can help them bring their novel drugs to market.

Denisa Mindruta
Associate Professor of Strategy and Business Policy, HEC Paris

Dr Mindruta examines how organizations and individuals create and appropriate value through strategic collaborations. Her projects have examined the matching process driving partnership formation, both theoretically and empirically. She has extensively studied collaborations between biotechnology startups and established pharmaceutical firms in contexts involving contractual relationships between employees, teams, firms, universities and nonprofit organizations. Mindruta's research has been published in the Strategic Management Journal and the American Journal of Political Science. Her work has been recognized with several awards and fellowships. She was a finalist for the INFORMS/Organization Science Dissertation Competition and for the Wiley Blackwell Dissertation Award. She was awarded the AOM Technology and Innovation Management Division Best Conference Paper Award in 2008. She is also a Kauffman Foundation dissertation fellow.

EXPERT INSIGHT

Biotechnology startups can greatly benefit from collaborations with pharmaceutical firms, but they need to be aware of challenges.

- When biotechnology startups collaborate with established pharmaceutical firms, they may be swimming with sharks. In these collaborations, startups often share IP rights or other tacit scientific knowledge that is not protected by patents. Occasionally, an opportunistic established pharmaceutical firm may take the startup's knowledge and use it in domains outside of the agreed-upon boundaries of the alliance. Before alliance formation, biotechnology startups need to both adopt adequate patent defense mechanisms and conduct complete due diligence on their partner.

To improve their alliance formation opportunities, biotechnology startups need to invest in becoming more attractive partners.

- Many biotechnology startups may find it difficult to locate an appropriate partner. This is because established pharmaceutical firms who seek partnership with biotechnology startups cannot easily distinguish which startups might be promising partners. So how can biotechnology startups increase their attractiveness? Biotechnology startups that have more employees, have applied for patents and are located in biotechnology hubs have a better chance of finding partners.

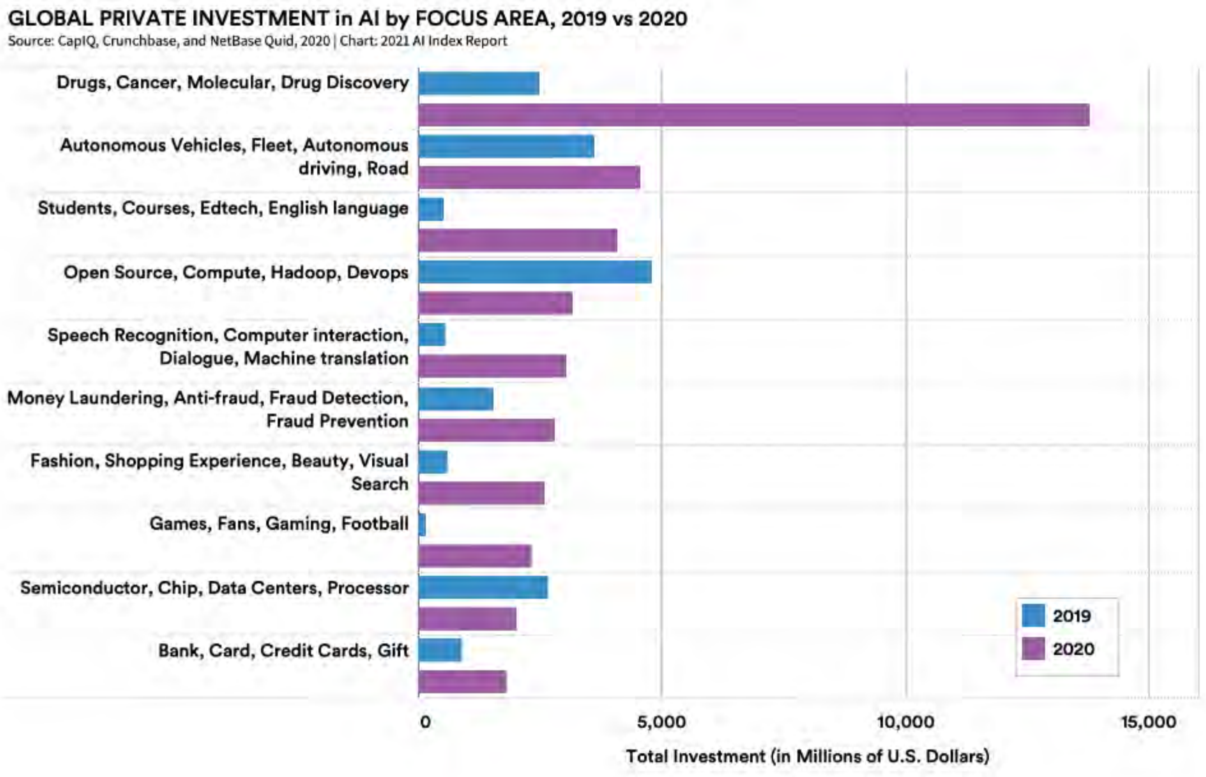
Beneath the Surface, New and Improved Tools for Drug Discovery and Development are In the Works

AI-driven drug discovery	CRISPR gene editing	mRNA vaccines

AI-driven Drug Discovery

Advances in tools have made R&D and drug delivery more precise, as more knowledge is gained about human genes and their connection with diseases.

For example: AI and machine learning can support faster, cheaper and highly effective drug discovery.



- The opportunity for AI in pharmaceuticals is tremendous, and has attracted significant private investment.
- In 2020, drug discovery received the greatest amount of private AI investment, with more than $13.8 billion invested, 4.5 times higher than 2019's total.

Source and Image Credit: AI Index Report, 2021

AI-driven Drug Discovery

A major breakthrough in biology was made in late 2020 using neural networks.

In November 2020, Google DeepMind announced that its deep learning system, **AlphaFold,** made a giant step toward solving a grand challenge in biology: predicting a protein's 3D shape from its amino acid sequence with stunning accuracy.

> AlphaFold is a once in a generation advance, predicting protein structures with incredible speed and precision. This leap forward demonstrates how computational methods are poised to transform research in biology and hold much promise for accelerating the drug discovery process.
>
> ARTHUR D. LEVINSON
> PHD, FOUNDER & CEO CALICO, FORMER CHAIRMAN & CEO, GENENTECH

> We have been stuck on this one problem – how do proteins fold up – for nearly 50 years. To see DeepMind produce a solution for this, having worked personally on this problem for so long and after so many stops and starts, wondering if we'd ever get there, is a very special moment.
>
> PROFESSOR JOHN MOULT
> CO-FOUNDER AND CHAIR OF CASP, UNIVERSITY OF MARYLAND

Accurately predicting proteins' structures can vastly aid more advanced drug discovery, and also enable quicker responses to dangerous viruses such as SARS-CoV-2.

Source: Service, 2020; Callaway, 2020; Crawford, 2020

CRISPR Gene Editing

CRISPR gene editing can be used for more innovative and accurate therapeutic strategies.

In 2020, scientists **Emmanuelle Charpentier** and **Jennifer Doudna** were awarded the 2020 Nobel Prize in Chemistry for discovering one of gene technology's sharpest tools: the CRISPR/Cas9 genetic scissors, which modify or screen DNA in almost any organism (Source: Nobel Prize website).

Image credit: Nature

Between Q3 2012 and Q4 2019, at least:

11,552
Academic articles on CRISPR

4,041
CRISPR Patent Families

As of Q2 2020, at least:

724
CRISPR Companies active

49
Clinical trials globally

Source: Samantha Zyontz & Pomeroy-Carter, 2021; Ledford & Callaway, 2020

mRNA Vaccines

mRNA vaccines open the door to fighting more diseases

In 2021, mRNA vaccines proved effective at fighting the COVID-19 virus and moved through the development process at record speed.

But the potential of mRNA does not stop there; its broad-ranging future potential includes fighting malaria, cancer, multiple sclerosis and the seasonal flu.

As of February 2021, CB Insights reports that there are more than 520 ongoing clinical trials testing mRNA across more than 20 disease classes. Major giants — including Johnson & Johnson, AstraZeneca, GlaxoSmithKline, and Merck & Co. — have partnered with emerging mRNA vaccine and therapeutics companies to pursue mRNA.

Image credit: Statnews.com

Dr. Katalin Karikó first began working on the mRNA vaccines in Hungary in 1978, before moving to the University of Pennsylvania and later BioNTech.

Source: CB Insights; Garde & Saltzman, 2020

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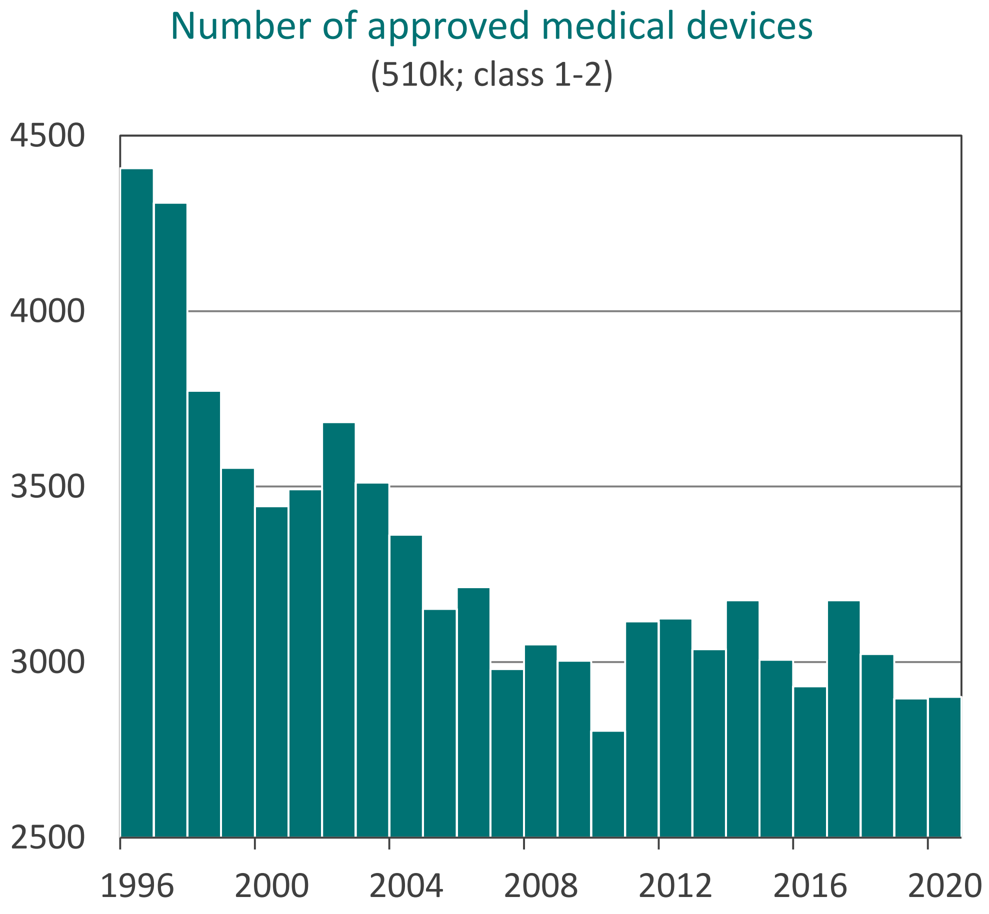
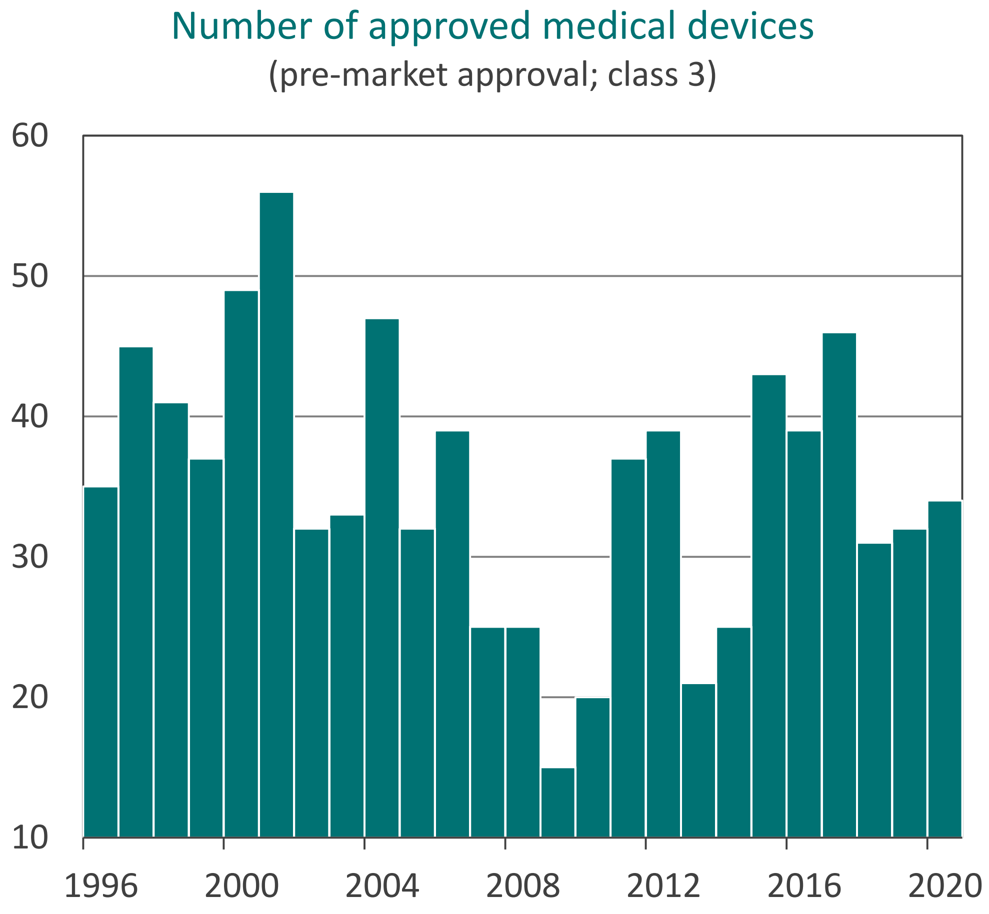
EXPERT INSIGHT

Enabling technologies such as AI-driven drug discovery, CRISPR gene editing, and mRNA methods can accelerate innovation in a wide range of areas.

- The increasing numbers of patent applications, clinical trials and collaborations are leading indicators of a vibrant and growing biopharmaceutical ecosystem. However, what is outstanding is the proliferation of innovation tools, rather than just innovative products. These enabling technologies and innovation tools allow the next generation of pharmaceutical drugs to be discovered more quickly and more efficiently, to provide more effective treatments, and to target diseases that have so far evaded our collective invention efforts.
- Historically, chemistry-based methods of drug discovery entailed examining numerous chemical drug candidates for appropriate disease treatment properties. After the introduction of recombinant DNA techniques in 1972, drug discovery experienced a revolution as this new method of innovation permeated many areas. We are now at the next historical juncture, with AI-driven drug discovery and CRISPR gene editing promising to be even more powerful tools.

Novel Medical Device Approvals Have Stalled, with the Rate of Product Refinements Declining



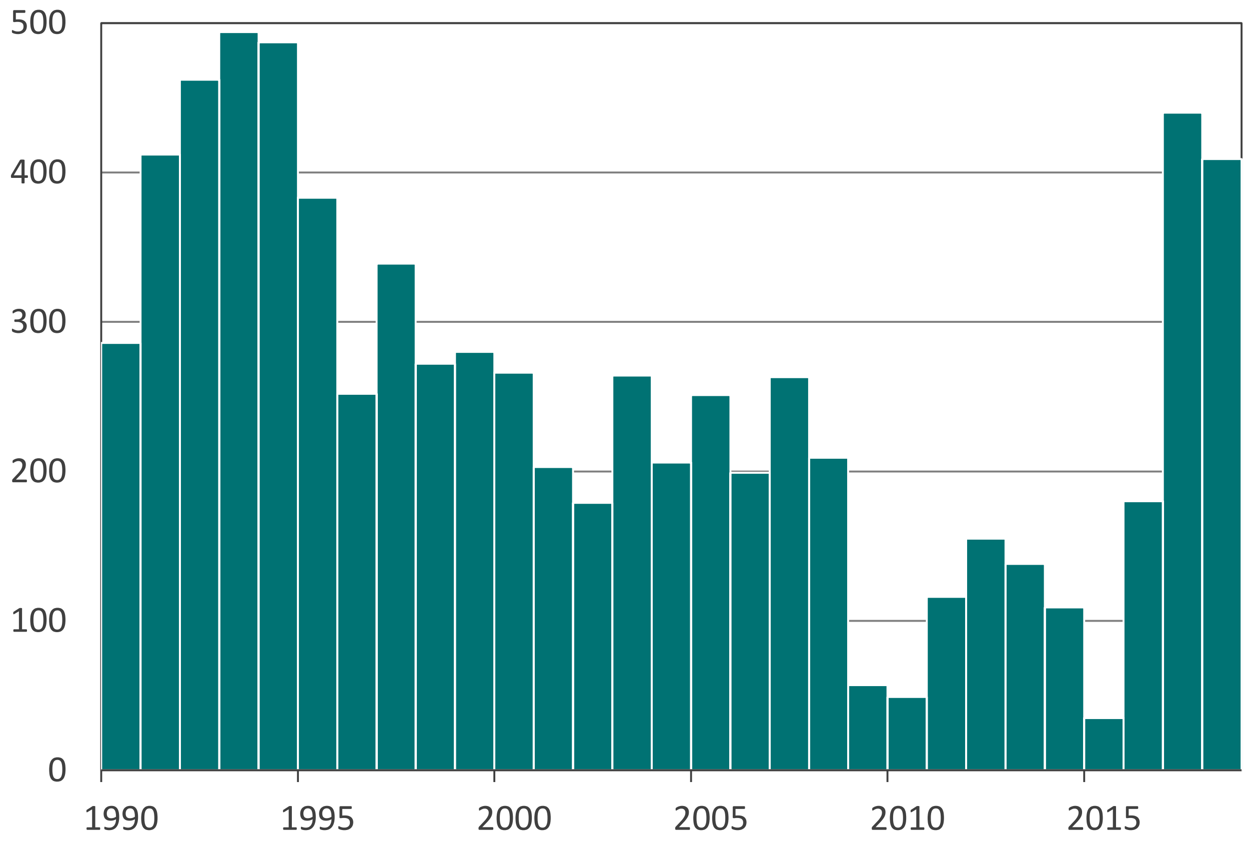


Source: FDA website; 510k database; PMA database

Increased Collaboration Also Seen in Medical Device Development

Medical device development is becoming more collaborative again.

Number of medical device alliances



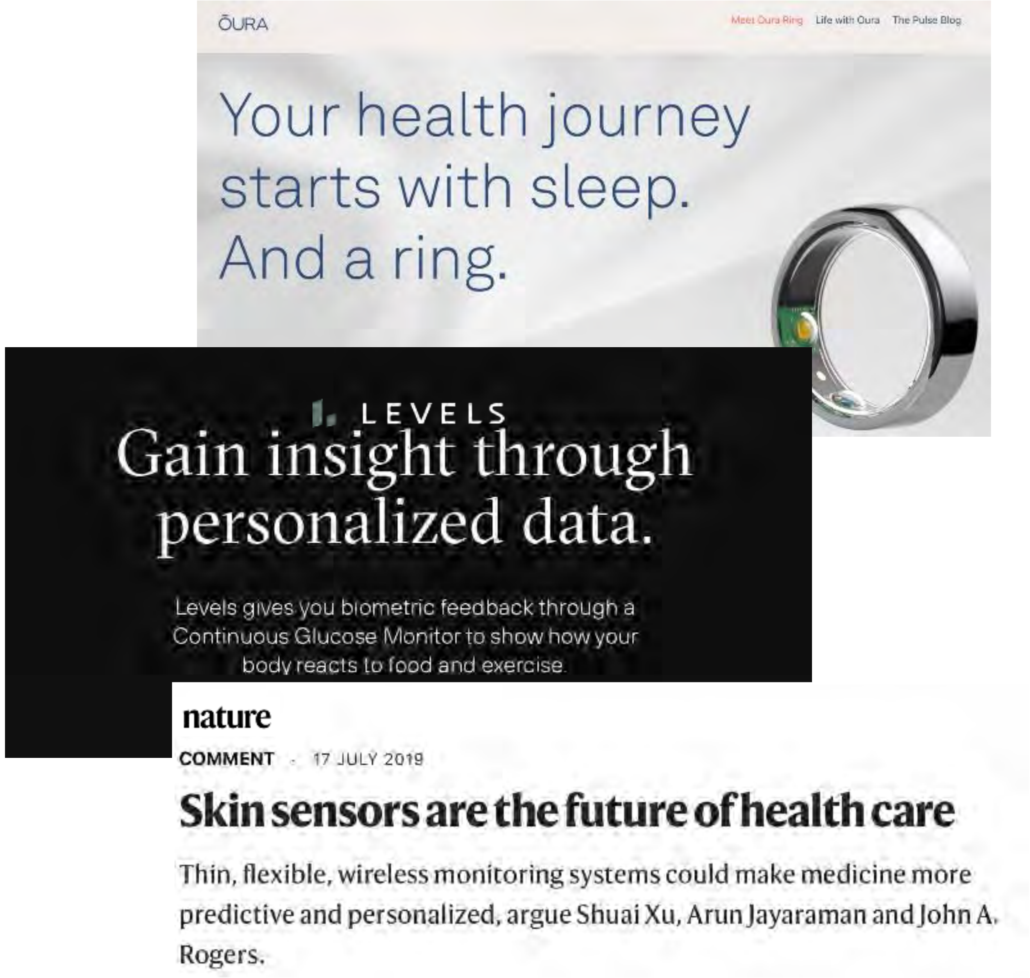
Source: SDC Platinum

Concurrently, Innovation in the Medical Devices Sector is Propelled by the Proliferation of Digitization and Connectivity

Researchers Firroughi & Stern (2021) note that software and networking capabilities have become integrated into a growing number and share of new healthcare products.

There has been a surge of investment into the development of wearable devices that provide real-time tracking of health metrics and provide customers with personalized and instant analytical insights.

Grand View Research estimates the global wearable medical devices market size at $16.6 billion in 2020, with an expected CAGR of 26.8% between 2021 and 2028.



Source: Oura, 2021; Levels, 2021; Xu et al., 2019; Grand View Research, 2021

EMERGING TECHNOLOGY IN THE HEALTHCARE INDUSTRY

The Call for Greater Representation

Notable Trends

- Women, people of color and patients older than 65 have typically been underrepresented in clinical trials of devices for adults.
- Within the medical devices sector, innovation has recently increased its focus on racial, ethnic and gender diversity, as understanding demographic differences is important to achieving better health outcomes.
- Research indicates that more diverse research teams can lead to more innovations that address the healthcare issues of underrepresented groups.

Medical Device Development Has Often Paid Limited Attention to Particular Demographic Groups

Clinical trials of devices for adults have typically underrepresented women, people of color and patients older than 65 (Fox-Rawlings et al. 2018).

Such an absence of representation can have clinical repercussions. A letter published in the New England Journal of Medicine in December, 2020 highlighted that pulse oximeters, often calibrated using light-skinned individuals, led to inaccurate readings for people with darker skin; pulse oximetry overestimated oxygen levels 3.6% of the time in white patients, but were inaccurate almost 12% of the time in Black patients.

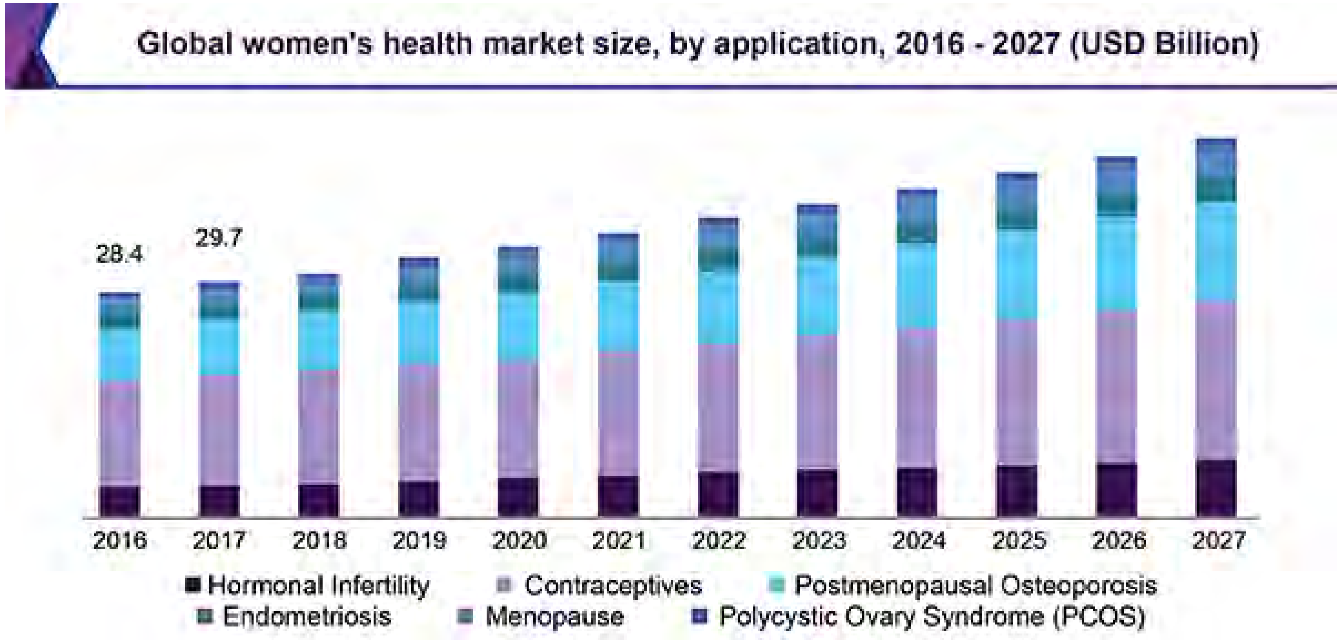
During the COVID-19 pandemic, oximeters became ubiquitous devices used at home and in hospitals given that as a respiratory illness, COVID-19 can lead to a drop in oxygen levels.

Innovation in the Medical Devices Sector is Driven by the Need to Reach These Underrepresented Groups

Innovation in the sector has recently placed an increased focus on racial, ethnic and gender diversity, as understanding demographic differences is important to achieving better health outcomes.

The "femtech" (i.e., women's health) market:

The global femtech market is expected to reach $48 billion by 2027, according to a new report by Grand View Research.



Source and Image Credit: Grand View Research

Innovation in the Medical Devices Sector is Driven by the Need to Reach These Underrepresented Groups

Innovation in this sector has recently increased its focus on racial, ethnic and gender diversity, as demographic differences are important in achieving better health outcomes.

Femtech (i.e., women's health) market

CB Insights reports that private funding to women's health startups reached USD $1.6 billion in 2020, an almost 25% increase since 2019.

More diverse research teams can lead to diverse innovations: Patents with women inventors are more likely to focus on female diseases and conditions, which have typically been ignored. Research teams with women are 19% more likely to produce patents that focus on women (Koning, Samila, & Ferguson, 2019).

Dezbee McDaniel

Co-founder/ Head of Business Development, CliniSpan Health

Dezbee McDaniel is the co-founder and head of business development for CliniSpan Health, a software platform that is diversifying clinical trial recruitment. Dezbee has been a career entrepreneur, and founded or has been an early part of numerous technology startups. He is an alumnus of Venture for America and was recently recognized by Charlotte's Inno Under 25 as one of "the city's most promising and notable entrepreneurs" for his work with Charlotte-based CliniSpan Health.

EXPERT INSIGHT

Challenges: I believe the main challenge for recruiting diverse groups for clinical trials is overcoming past mistreatment by the healthcare system of some demographic groups. It is sometimes hard to make people feel comfortable about getting involved in medical research because of experiences not within CliniSpan Health's own control. From our perspective, it requires us to do more due diligence on studies for which we recruit, in order to make sure they are actually safe for our patients.

Something this work also requires is addressing the broad challenge of bringing back trust in healthcare for these diverse groups. We have to find proponents of healthcare within these diverse communities and leverage them to help spread awareness locally. Too often, people outside of such communities want to come in and try to convince people to get involved in medical research. This doesn’t work, because people within diverse communities have higher trust with those inside their own community. A local community leader is more likely to get someone to enroll in a clinical trial than a physician outside of that community.

Benefits: Getting more diverse groups involved in clinical trials is hugely effectual in the long term. By 2060, people of color will be the majority in the U.S. As we approach this milestone, we can begin to understand how medicines affect different groups of people if we can get more representation of such groups in clinical trials. Identifying the dosage and side effects specific to these groups will improve the overall state of health for diverse communities. The disparity of efficacy in drugs will only continue to grow wider as the population continues to diversify if clinical trials do not begin to diversify at a much faster rate.

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EXPERT INSIGHT

User innovation and entrepreneurship at play?

The trend of women inventors focusing on female diseases and conditions is truly amazing, but also unsurprising.

A general finding in entrepreneurship is that lead users can uniquely understand market trends and unaddressed customer needs. Because of their immersion in everyday use of a product or their own personal needs, users can find opportunities in places where established firms often miss them. For example, medical doctors are often user-innovators who find improvement opportunities in medical devices. Grandparents become user-entrepreneurs of juvenile products that they initially developed for their grandchildren's personal use. Farmers who identify the potential of drones to scan and spray their fields are the user-entrepreneurs who develop agriculture-specific drones.

Women inventors recognize the untapped opportunity. Similar to other user-inventors and -entrepreneurs, women inventors are in a unique position to recognize the opportunity and need for better diagnosis and treatment of female diseases and conditions, and that's where they devote their inventive efforts.

EMERGING TECHNOLOGY IN THE HEALTHCARE INDUSTRY

COVID-19 Spurred Greater Technology Solutions and Integration in Healthcare Settings

Notable Trends

- COVID-19 accelerated the use of telemedicine, especially as healthcare providers accelerated their capabilities to support video conferencing, telecommuting and remote interactivity, helping to foster contactless and remote healthcare.
- However, with increased use of technology also comes increased risk. In particular, cybersecurity concerns abound with healthcare digitization.
- Within clinical and surgical settings, the impact of automation technology is still unclear.

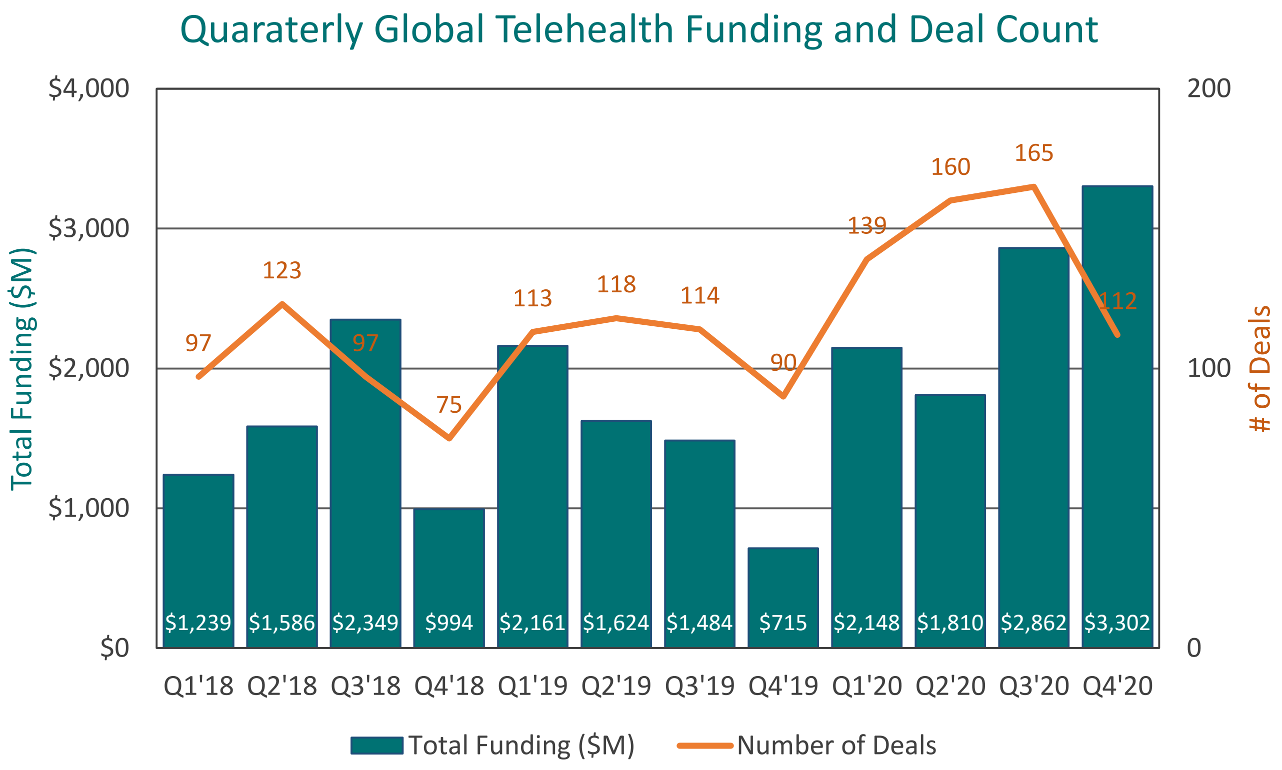
COVID-19 Led to More Digital and Automation Technology Being Integrated into Healthcare Delivery

Digital:

COVID-19 accelerated the use of telemedicine. For example, the Cleveland Clinic went from 37,000 virtual visits in 2019 to 1.2 million in 2020. Although it is now fully open for in-person care, it anticipates 20% of its visits will be virtual in 2021 (WSJ, 2021).

Researchers Bloom, Davis, and Zhestkova (2021) find innovation during COVID-19 greatly pivoted toward supporting video conferencing, telecommuting, remote interactivity and working from home. These technologies have, and will continue to, foster contactless and remote healthcare as well.

COVID-19 Led to More Digital and Automation Technology Being Integrated into Healthcare Delivery…



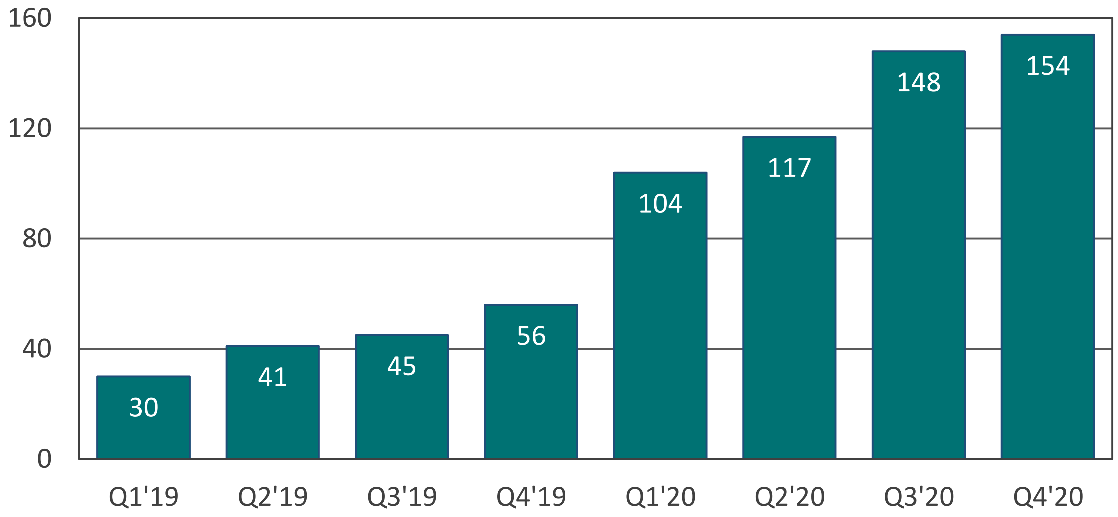
- Telehealth startups drew record private funding in 2020.

Source: CB Insights

…But Cybersecurity Concerns Abound With Healthcare Digitization

- Since the Obama Administration passed the Health Information Technology for Economic and Clinical Health (HITECH) Act in 2009, electronic health records in U.S. physician offices went from just over 40% in 2008 to 86% in 2017, and from 10% to 96% in U.S. hospitals (Source: U.S. Department of Health).
- A key vision of the HITECH Act was to enable **medical data interoperability** — through which patients are able to access and share their medical information.

Number of Data Breaches Affecting 500 or More Individuals



A key concern with digitization and medical data interoperability is cybersecurity and leakage of private data, such as electronic health records.

Source: CB Insights; The Office of the National Coordinator for Health Information Technology

Novel Solutions Emerge

One potential solution to cybersecurity issues being pursued is blockchain technology, which can be used to create an interoperable infrastructure to manage health records while maintaining patient data ownership and without compromising privacy (Vazirani, O'Donoghue, Brindley, and Meinert, 2020).

ksi blockchain

Estonia is leading the way globally in KSI blockchain; per e-Estonia, it is used to protect the national electronic health record system.

Singapore is currently using blockchain technology to facilitate cross-border verification of cryptographically trustworthy COVID-19 health documents. The hope is to facilitate international travel more freely.

A number of nations across Europe, the Middle East and Asia are evaluating the integration of blockchain into healthcare.

Automation Technology in Healthcare was Already Increasing, But COVID-19 Further Sped It Up

Automation: Autonomous ground and aerial vehicles present great opportunities to expand and quicken distribution of drugs, vaccines and medical supplies.

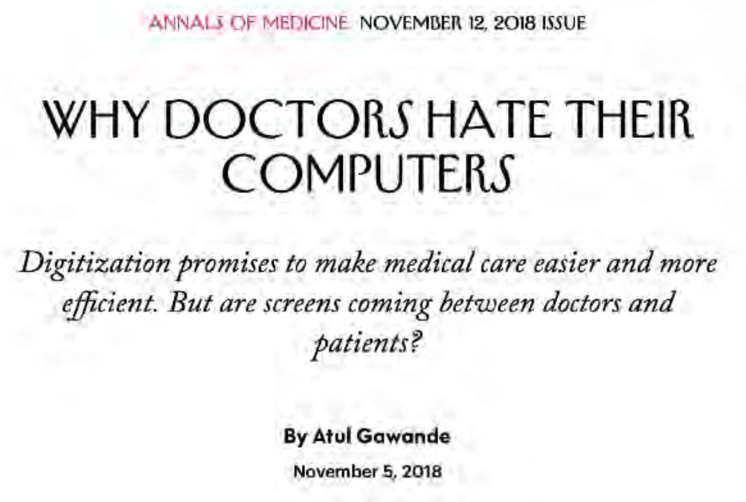
Robots assist in contact-free transportation and delivery in California during the 2021 COVID-19 pandemic.

Drone startup Zipline estimates that it will deliver 2.5 million COVID-19 vaccines to more than a third of Ghana’s population in 2021.

Source: CB Insights; Hawkins, 2020; Vincent, 2021

However, The Impact of Automation Technology in Clinical and Surgical Settings is Still Unclear

The impact of automation and robotics on clinical outcomes, doctor training and hospital financial performance is still uncertain.



ANNALS OF MEDICINE NOVEMBER 12, 2018 ISSUE

WHY DOCTORS HATE THEIR COMPUTERS

Digitization promises to make medical care easier and more efficient. But are screens coming between doctors and patients?

By Atul Gawande

November 5, 2018

In 2018, surgeon Atul Gawande noted in an article in The New Yorker that despite more than 90% of hospitals being computerized since the early 2000s, digitization in hospital settings has met with mixed satisfaction and success.

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Robotically Assisted Surgery: 'The Wild West of Surgical Training'

After almost 20 years, there is still no standardized training curriculum or unified credentialing policy for robotically assisted surgery.

By Katja Ridderbusch, Contributor Dec. 13, 2019, at 10:06 a.m.

Matt Beane (2019) found that the incorporation of radically different robotic surgery greatly limited medical residents' learning on the job.

Source: Olive, 2021; Ridderbusch, 2019

But Optimism About Automation in Healthcare Remains High

Despite the slow adoption of automation in healthcare settings, a 2021 report by Sage Growth Partners found that executives are increasingly prioritizing automation technologies in their hospitals, with at least 90% of hospital executives having an automation strategy in place.

Source: Olive, 2021

Creating Inclusive Entrepreneurial Ecosystems

CREATING INCLUSIVE ENTREPRENEURIAL ECOSYSTEMS

Through Policymaking

Notable Trends

- The U.S. federal government was quick to support small businesses during the pandemic through PPP, disaster recovery loans and other mechanisms.
  - The evolution of PPP and the American Rescue Plan
  - Distribution of aid was uneven
  - High growth startups, startup support programs and ecosystem builders not considered
- In recent years, there has been growing bipartisan consensus among policymakers in Washington, D.C. regarding the importance of entrepreneurship.
- The SEC “modernized” some of their rules related to fundraising, affecting startups and investors.

Early Federal Response to Support Small Business Amid Pandemic Shutdown

- The federal government prioritized supporting small businesses during COVID-19 through new programs like the Payroll Protection Program (PPP) and Economic Injury Disaster Loans (EIDL).
- The first round of Payroll Protection Program (PPP) funding ran out by April 16, 2020, 13 days after the program began.
- In response to the quick use of the first round of PPP funds, a second round of PPP funding was initiated on April 27, 2020.
- The program is currently set to run through May 31, 2021.
- As research in previous sections shows, many Black entrepreneurs did not access PPP loans, as they did not have existing relationships with bankers prior to pandemic. Additionally, there is also documented bias in lending and systemic reasons why black entrepreneurs do not trust and/or use traditional banks (Fairlie, Robb, Robinson, 2020).

Source: Small Business Administration

Highlights of the 2021 American Rescue Plan

- The American Rescue Plan is a **$1.9 trillion** economic stimulus plan passed by Congress and signed by President Biden on March 11, 2021. The bill is part of the U.S federal government's ongoing pandemic response, including support for small businesses.
- Specific grants to small businesses include:
  - **$28.6 billion** of industry-focused grants through the Restaurant Revitalization Fund $15 billion for Emergency Injury Disaster Loans, including $5 billion for Supplemental Targeted EIDL Advance payments.
  - An additional **$7.25 billion** for the Paycheck Protection Program, including expanding eligibility to additional nonprofits and digital news services. The SBA is currently offering PPP loans through May 31, 2021.
  - **$3 billion** for a payroll support program for aviation manufacturers.
- Additional funds are allocated for the Shuttered Venue Operators Grant (SVOG) program, and businesses are allowed to apply for both a PPP loan after Dec. 27, 2020, and the SVOG.
  - Applicants that received a PPP loan on or after December 27, 2020, will have the SVOG reduced by the PPP loan amount.

Source: American Rescue Plan Act, 2021

Help On the Way for Shuttered Businesses

- The U.S. Small Business Administration has launched the Shuttered Venue Operators Grant (SVOG) application portal.
- The SVOG program was established through the Economic Aid to Hard-hit Small Businesses, Nonprofits and Venues Act and amended by the American Rescue Plan Act to provide more than $16 billion in economic relief to targeted industries, including live venue operators, performing arts, museums and movie theaters.
- The SBA has built the SVOG program to assist and address the diverse eligibility requirements of various types of applicants.
    - SBA Administrator Isabella Casillas Guzman noted, “The SBA knows these venues are critical to America's economy and understands how hard they've been impacted, as they were among the first to shutter. [SVOG] will provide a much-needed lifeline for live venues, museums, movie theatres and many more.”

SBA U.S. Small Business Administration

Isabella Casillas Guzman
SBA Administrator

Does Washington Care About Entrepreneurship?

- Beyond the pandemic response, entrepreneurship is emerging as an issue garnering bipartisan support among policymakers in Washington, D.C.
- The best evidence of policymaker interest is the establishment of the Senate Entrepreneurship Caucus on March 6, 2019 and the House Entrepreneurship Caucus on October 2, 2019.
- Other important developments include the establishment of the nonpartisan Center for American Entrepreneurship in 2017 and the formation in 2019 of the Office of the Advocate for Small Business Capital Formation at the SEC.
- In just the last two years, more than a dozen bills have been introduced in Congress to promote entrepreneurship, innovation and the growth of new businesses.

IMPORTANT RECENT LEGISLATIVE ACTIONS

- **March 18, 2020**: Sens. Amy Klobuchar (D-Minn.), Chris Coons (D-Del.), Tim Kaine (D-Va.) and Angus King (I-Maine) introduce the New Business Preservation Act to address the extreme concentration of venture capital in the United States.
- **May 27, 2020**: Sens. Chuck Schumer (D-N.Y.) and Todd Young (R-Ind.), along with Reps. Ro Khanna (D-Calif.) and Mike Gallagher (R-Wis.), introduce the Endless Frontier Act, to enhance the nation's leadership position in science and technology.
- **August 5, 2020:** Reps. Dean Phillips (D-Minn.) and Jackie Walorski (R-Ind.) introduce the IGNITE American Innovation Act to amend the tax code to allow startups to "monetize" their net operating losses and R&D tax credits.
- **October 20, 2020**: Sens. Maggie Hassan (D-N.H.) and Todd Young (R-Ind.) introduce the American Innovation and Jobs Act to ensure startups' ability to deduct their R&D expenses.
- **February 17, 2021**: Sens. Amy Klobuchar (D-Minn.) and Tim Scott (R-S.C.) introduce the Enhancing Entrepreneurship for the 21st Century Act, which would direct the Secretary of Commerce to conduct a two-year analysis of the multi-decade decline in new business formation rates, including likely contributing factors and economic implications.
- **February 23, 2021**: Sens. Chris Coons (D-Del.) and Tim Scott (R-S.C.), along with Reps. Jason Crow (D-Colo.) and Troy Balderson (R-Ohio), introduce the Next Generation Entrepreneurship Corps Act to encourage entrepreneurship and job creation in underserved communities through a new competitive entrepreneurship fellowship program.
- **February 25, 2021**: Sens. Chris Murphy (D-Conn.), Todd Young (R-Ind.), Kevin Cramer (R-N.D.) and Tim Kaine (D-Va.), introduce the Workforce Mobility Act, which would promote labor mobility by banning the enforcement of noncompete agreements.

Brett Palmer

President, Small Business Investors Alliance

Brett T. Palmer is president of the Small Business Investor Alliance. In this role, Palmer works to foster a healthy environment for small business investing and a strong and profitable lower middle market. In addition to managing the SBIA organization, he serves as its principal liaison with Congress, the executive branch, and industry organizations. Palmer brings years of valuable public policy and advocacy experience to SBIA. He served in the executive branch as a presidential appointee in the Commerce Department as assistant secretary for legislative affairs and as deputy assistant secretary for trade legislation. He served in a number of roles in Congress, including as a policy aide for the speaker of the House.

EXPERT INSIGHT

Demand for Small Business Investment Companies (SBICs) by limited partners in private investment funds has never been stronger. However, there are many opportunities for more economic and social impact from SBICs with fairly modest policy measures:

- Create a new “MicroSBIC” license class by expanding the suite of SBIC licenses with this entry-level class to attract participation from a more inclusive pool of talented entrepreneurs. MicroSBICs could remove unintentional barriers faced by minorities and women, increase investment in underserved communities and, at the same time, increase access to patient capital for smaller businesses, particularly in underserved rural and metropolitan communities.
- Encourage existing SBICs to seek smaller enterprises in underserved communities/geographies by offering additional leverage for investments in LMI (low- or moderate-income) areas and Opportunity Zones (maintaining the SBA-approved ratio of private capital to SBIC debentures). Zero subsidy, and no appropriation needed.
- Waive the existing geographic limits in current SBIC regulations to benefit underserved areas in all geographies.
- Establish a permanent revolving fund from a one-time federal appropriation to provide equity financing to support domestic job creation and the growth of domestic small businesses in targeted industries and underserved areas.

SEC Rule Changes Affect Startups & Crowdfunding

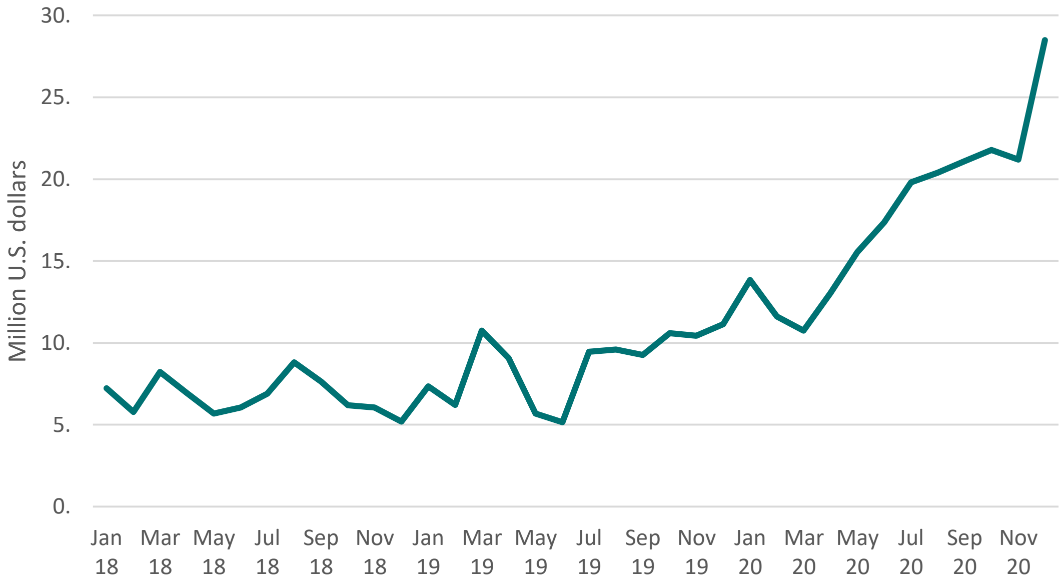
Regulation Crowdfunding (“Reg CF”)

- Regulation Crowdfunding enables eligible companies to offer and sell securities through crowdfunding.
- On March 15, 2021, new SEC rules went into effect regarding Reg CF.
- Of particular note, the limit on the amount startups can raise over a 12-month period via online marketplaces and other crowdfunding sources, while still exempt from SEC registration requirements, was increased from $1.07 million to $5 million.

Potential Impact:

- Equity crowdfunding is increasingly becoming a tool for companies to raise capital. In the midst of the pandemic, the SEC reports that companies raised the same amount of capital in equity crowdfunding in July and August 2020 as they did the whole first year of online fundraising (2016-17).
- Reg CF gives non-accredited investors an opportunity to invest in new businesses, while also retaining some investor protections.

Capital Raised Monthly via Regulation Crowdfunding in the U.S.



Source: Statista Research Department, 2021

Source: Office of the Advocate for Small Business Capital Formation Annual Report for Fiscal Year 2020; U.S. Securities and Exchange Commission. (2021, March). Regulation Crowdfunding

SEC Modernizes Accredited Investor Definition

- In August 2020, the SEC announced that it was "modernizing" the definition of accredited investors.
  - The SEC regulates who qualifies as an accredited investor and is eligible to participate in private capital markets.
  - According to the SEC press release on the new definition:
    - "Historically, individual investors who do not meet specific income or net worth tests, regardless of their financial sophistication, have been denied the opportunity to invest in our multifaceted and vast private markets. The amendments update and improve the definition to more effectively identify institutional and individual investors that have the knowledge and expertise to participate in those markets…."
  - SEC accredited investor wealth-based requirements have long been critiqued for stifling investment opportunities for companies that do not have access to wealthy investors, in particular minority- and women-owned businesses and rural businesses.

Source: U.S. Securities and Exchange Commission, 2020

Who Now Qualifies as an Accredited Investor?

Accredited Investor Criteria

- UNCHANGED: The financial threshold for an individual to be an accredited investor must have $200k annual income or net worth of $1M (excluding primary residence)
- NEW: Outside financial thresholds, certain individuals with professional knowledge, experience, or certifications can now qualify, including those holding Series 7, Series 65 and Series 82 licenses.
- NEW: The amendments add “spousal equivalents” so that they can pool their finances in order to meet the net worth and annual income thresholds to qualify as an accredited investor like spouses have been able to do.
- NEW: Broaden types of entities who can now qualify as accredited to include tribal governments, rural business investment companies and investment advisors, and other entities with $5M in investments.

In essence, updates to this definition add alternative means for individual investors to demonstrate financial sophistication and broaden which entities can participate in private offerings.

Source: U.S. Securities and Exchange Commission, 2020

Critiques to Accredited Investor Definition Change

Common Critiques
Qualifications: Securities exams and certifications are not sufficient; they should require five years of experience, the ability to sustain losses and the same income/net worth requirements.
Low Thresholds: The $5 million threshold is too low; it should be $10 million.
Inflation: Income and net worth requirements aren't adjusted for inflation. Only 1.6% of Americans fit the criteria in 1982, while 13% qualify today.
Conflicts of Interest: Private-market advisors are more likely to have conflicts of interest than those in public markets, which creates greater risk of injury to individuals.
Lack of Research: There is a lack of evidence that retail investors want to invest in private markets or that private companies are eager to sell securities to retail investors.
Financial Risk: Loosening the criteria increases the risk for hardworking people to lose their life savings in private markets, which don't have the same protection laws and regulatory oversight.
It is Not Enough: Some contend that the rule changes to the "accredited investor" definition are not enough to support companies underrepresented in VC/PE funding, namely minority- and women-owned businesses.

Source: North American Securities Administrators Association, see: Gerold, 2020; Office of the Attorney General, State of California Department of Justice, 2020

Martha Legg Miller

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

Martha serves as the SEC's first director of the Office of the Advocate for Small Business Capital Formation, where she leads a team of passionate advocates working on solutions to address the capital raising challenges faced by small businesses and their investors. "Small businesses" for the Office range from early-stage start-ups raising seed capital to later-stage private companies whose founders and investors are seeking liquidity, all the way to smaller public companies. The Office proactively works to identify and address unique challenges faced by minority-owned, women-owned, rural and natural disaster area small businesses and their investors.

EXPERT INSIGHT

Facilitating capital formation is a pillar of the SEC's tripartite mission. While the rules governing capital raising—from crowdfunding to private offerings to IPOs—are silent as to founders' and investors' race, ethnicity, gender, sexuality, and other demographic characteristics, the data demonstrates that access to capital varies widely according to the profile of the individual seeking funding. Our recent report to Congress includes three solutions that I hope can make entrepreneurs' access to equity more equitable:

1. Craft targeted educational content to ease the challenges of offering complexity and friction that create barriers to entry for under-resourced founders and investors (*see, e.g.*, the recently launched "Cutting Through the Jargon" glossary).

2. Provide clarity on how founders can build bridges outside of their networks to potential sophisticated investors, which is of particular benefit for those with networks that are statistically lower net worth (*see*, *e.g*., the Finders Proposal).

3. Increase diversity among investment decision-makers to help shift the pattern matching that historically has negatively impacted women and minority entrepreneurs, and explore pathways to promote the formation of smaller funds investing in regional ecosystems (*see, e.g.*, the Office's Emerging Fund Managers Series in FY21 Q2+).

SEC Small Business Advocate Makes Recommendations to Encourage More Diverse VC Ecosystems

In its 2020 annual report, the SEC Office of the Advocate for Small Business Capital Formation identified some of the barriers connecting small businesses with potential investors, especially minority-owned, women-owned and rural businesses. The report also provided several recommendations on how the SEC may address these issues. Some of these solutions include:

- **Issue 1**: The concentration of capital into larger private funds has resulted in unmet needs among entrepreneurs looking for seed- and early-stage capital, especially women and minority entrepreneurs outside of traditional venture capital hotspot locations.
    - SEC Small Business Advocate's Recommendation: Encourage the formation of smaller regional funds to facilitate the growth of sustainable regional ecosystems through "loca-vesting."
- **Issue 2**: Many investors are "pattern matching" their investment decisions to replicate profiles of previous successful investments, which creates a cycle that concentrates capital in companies in certain geographies and with founders of specific ethnicities, genders and educational backgrounds.
    - SEC Small Business Advocate's Recommendation: Explore government initiatives to increase diversity among fund managers and location and size of funds to improve access to capital for entrepreneurs from nontraditional backgrounds.

Source: Office of the Advocate for Small Business Capital Formation Annual Report for Fiscal Year 2020

CREATING INCLUSIVE ENTREPRENEURIAL ECOSYSTEMS

Through Community Development

Notable Trends

- In this section, we shed light on a few specific examples of how community builders have created holistic approaches that include spaces and resources to meet the needs of underrepresented entrepreneurs and small business owners.

Local Governments Ramp Up Support to Small Business During COVID-19 Pandemic

- Local governments played a critical role in supporting small businesses in their communities during the pandemic, including:
  - Providing emergency funding. Some SBA loans, including disaster loans, can take 60–90 days to process, leaving small businesses unable to stay afloat while waiting for approval. Local governments can offer quicker aid through local relief funds offering loans or grants.
  - Deferring financial burdens placed on small businesses by government. Many cities have the authority to defer payments for utilities, taxes and licensing fees.
  - Assessing the needs of small businesses to find solutions to support them. Local governments got creative supporting small businesses, including shutting down streets to allow restaurants more outdoor seating, creating new “shop local” campaigns and helping businesses pivot to online sales platforms.
  - Better connecting businesses to resources. Local governments worked closely with community partners to help educate local business owners about the resources available to them, including developing online repositories of resources.

Sources: Mulligan, 2020; Berkaw, 2020; Muntean, 2021

One City's Road to Small Business Recovery

Case Study: Fayetteville, N.C.

The city of Fayetteville is located in central North Carolina, adjacent to the Fort Bragg military base. Fayetteville's economy is generally stable due to the military's presence; however, the unique nature of the COVID-19 pandemic put local businesses in danger of closing despite this economic anchor. The city quickly addressed this concern, building on an existing small business grant program to create an emergency grant program for area businesses funded by the city's general fund.

In developing the program, the city was particularly concerned about minority- and women-owned businesses and ensuring they received funding to stay afloat. The Center for Economic Empowerment and Development (CEED) advocated for this targeting. CEED works with individuals to prepare them for the job market, and with businesses to prepare them for customers in the area. The city, the Greater Fayetteville Chamber of Commerce and CEED conducted targeted outreach to minority- and women-owned businesses to discuss the funding opportunities available.

Fayetteville, N.C. (Cumberland County)

Points of Interest	County Data
Population (2019)	211,657
Municipal budget (2019)	$215,369,370
Per capita income (2019)	$23,853
Median household income (2018)	$46,679
Poverty rate (2017)	19%
Minority population (2019)	52%

Source: Homegrown tools, see NCGrowth

Fayetteville, N.C.: Outreach Helped Funding Reach Minority- and Women-owned Businesses

Strategy:

- The city provided **$250,000** for local microloans. Additionally, an existing local small business retention grant was expanded and the match funding requirement was removed. These changes made the funding more accessible for grants up to $10,000.
- Many organizations came together to share information about the new funding resources with local businesses, and gathered input from businesses on how to make the program more accessible.
  - Due to the dense network of partners involved and existing relationships, these programs have been particularly successful in targeting minority- and women-owned businesses. Among the recipients, **96%** are minority-owned businesses, and **60%** are women-owned as well.
- Administrators were responsive to business needs. For example, organizers quickly realized that the credit score requirement was too stringent, so CEED advocated for a change and the credit score requirement was lowered.

Source: Homegrown tools, see NCGrowth

Lessons Learned: Fayetteville, N.C.

- Prepare elected officials for changes and update them on implementation. Many residents had questions for the Fayetteville City Council about the program; the economic development department briefed the council on the program so they were prepared to answer.
- Funding is not enough; a successful program also needs ample staffing capacity to market and administer. Fayetteville had the staff capacity to implement its projects, without which it would have been very difficult to launch the programs. Grant and loan programs can be complex to administer; beyond the presence of funding there must also be sufficient capacity to market the program, guide applicants through the process and follow up with them after funds are received.
- Leverage existing networks to market the program and assist potential applicants through the process. Local resources and community partners like the Chamber of Commerce made it possible to push the programs out quickly, as these organizations already had relationships with target businesses. Additionally, they were able to help business owners with the application process, ensuring a higher rate of success for applicants.

Read the full case study here: https://homegrowntools.unc.edu/index.php/studies/fayetteville/

This case study is part of a database of economic development case studies called Homegrown Tools. Homegrown Tools tells the story of communities that have successfully stimulated private investment and job creation. The tool connects public officials, practitioners and researchers to successful economic development strategies and inspires communities to leverage their unique assets. Learn more at https://homegrowntools.unc.edu/

Carolyn Fryberger
Assistant Director of Economic Development, NCGrowth

Carolyn Fryberger leads NCGrowth's economic development research and client projects across North Carolina. She works with local government and community clients to develop and pursue strategies addressing downtown revitalization, business retention and expansion, and economic development planning. Prior to graduate school, Fryberger worked for two and a half years in local government for a small North Carolina town. She holds a master's degree in city and regional planning from the University of North Carolina at Chapel Hill, with a specialization in economic development.

EXPERT INSIGHT

- Fayetteville is one of many communities that developed an emergency loan program for its local businesses during the pandemic. The most successful programs were those that leveraged community partnerships, as Fayetteville did, to ensure outreach to the hardest hit groups, and those that paired loan funds with additional programming and events to encourage residents to support local businesses.
- The businesses that were hit hardest during the pandemic were those that were not well-networked to begin with. This underscores the need for communities to build robust networks and align resources for businesses, and to conduct targeted outreach to business owners from underserved communities *before* disaster hits.
- Similarly, these programs emphasize the need for cross-departmental collaboration within local governments. Zoning changes to allow outdoor dining, adaptations to improve indoor air flow, marketing campaigns to promote local businesses and loan funds to address emergency needs all require significant participation from a range of local government staff. Coordinating these efforts reduces response time and enables synergies between departments.

OHUB Equity Districts Build Diverse and Equitable Entrepreneurial Tech Ecosystems

OHUB

OHUB is the parent holding company of a suite of businesses committed to increasing racial equity in the fourth industrial revolution; including a not-for-profit foundation and an ecosystem building investment fund.

Equity District Formation

In June 2020, OHUB formed Equity District as a wholly owned subsidiary to form joint ventures with real estate developers, corporations, community foundations, colleges and cities via public-private partnerships to build "Innovation and Equity districts." Innovation & Equity Districts are mixed-use residential, commercial, and retail community concepts that house OHUB's early exposure, immersive learning, startup support, and investing programs in socially disadvantaged communities and/or Opportunity Zones.

Definition of Equity District

An equity district is an institutional ecosystem development framework for operating a diverse, equitable and inclusive technology, startup and venture community that intentionally ensures socially disadvantaged communities in a city (particularly Black, Latino and Indigenous) are equitably included at all levels in the future of work in the fourth industrial revolution and beyond — as a path to shared prosperity and multi- generational wealth creation with no reliance on pre-existing multi-generational wealth.

Learn more about OHUB and Equity Districts: https://opportunityhub.co/

Source: Rodney Sampson, OHUB (https://opportunityhub.co/)

Equity Districts Seek to Turn Challenges…

- Equity districts were born out of finding solutions to meet the following challenges faced by Black Americans, identified by OHUB:
  - **4.5 million** jobs in Black America will be lost due to job automation.
  - **<1%** of tech engineers and executives are black.
  - Because of past and current discrimination, America is missing out on **1.1 million** minority small businesses and 9 million new jobs.
  - <1% of all venture capital goes to Black founders who are fueling edge technologies that are enabling the fourth industrial revolution.
  - By 2053, the median wealth of a Black family is projected to be **zero**.

Sources: OHUB, (https://opportunityhub.co/); Austin, 2016; Berkes, E. & Gaetani, R. (2019); U.S. Equal Employment Opportunity Commission; Ewing & Marion Kauffman Foundation; Prosperity Now

…Into Solutions for Black Americans at the Intersection of Technology and Entrepreneurship

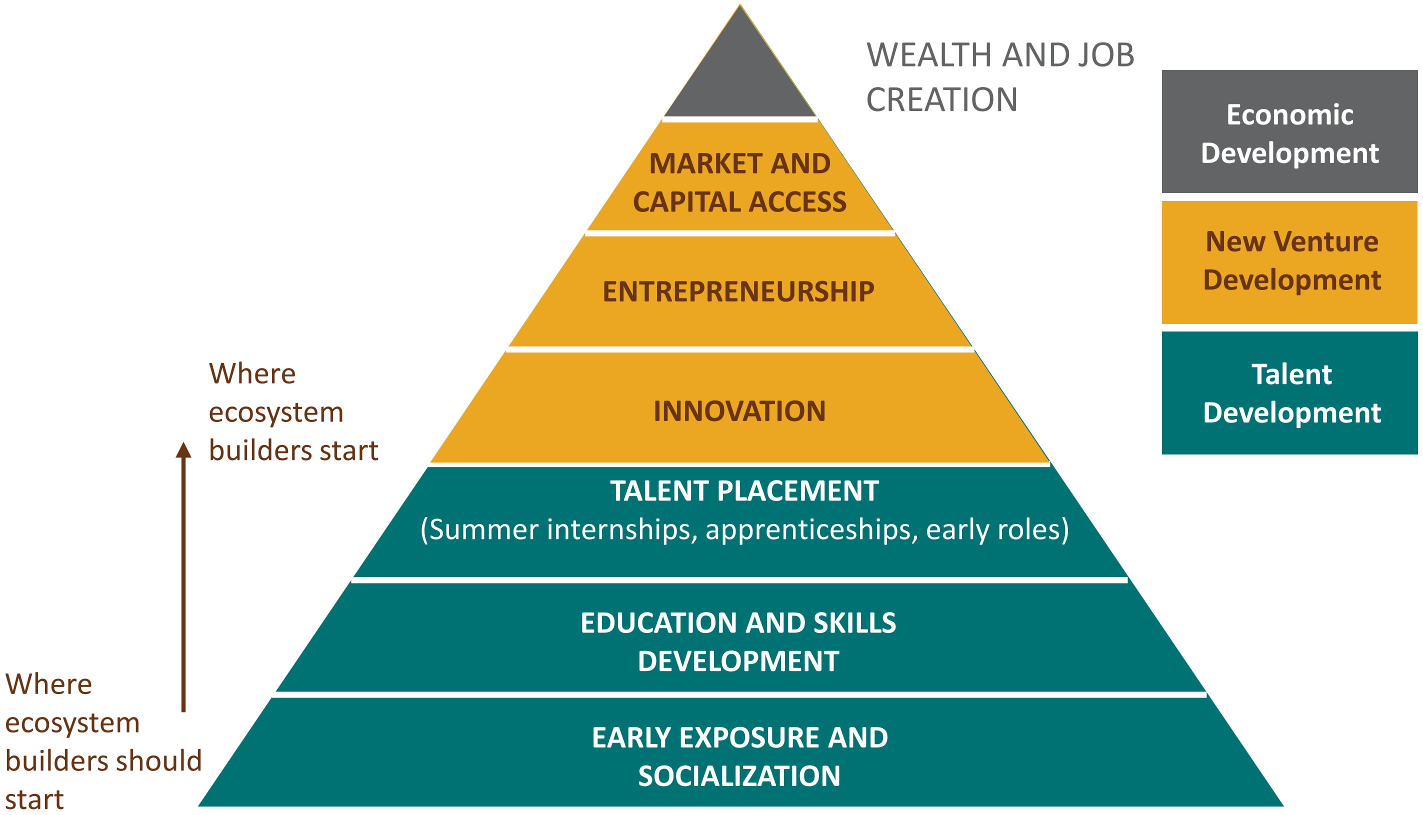
Equity districts offer:

- Technology hub + coworking club
- Annual technology and startup conferences
- Monthly entrepreneurship event series
- Technical sales training
- Software engineering training
- Talent placement
- Founder support programming and accelerators
- Venture funding

Locations:

- Atlanta, Ga.
- Austin, Texas
- Kansas City, Mo.

Economic Development Pyramid



Learn more about the Economic Development Pyramid: a model for building racial equity in tech ecosystems, developed by Rodney Sampson (OHUB) and Dr. Dell Gines (Federal Reserve Bank of Kansas City - Omaha Branch): https://www.youtube.com/watch?v=DuAbpSxiv-A

Source: Rodney Sampson, OHUB

Rodney Sampson

Chairman & CEO, Opportunity Hub*; General Partner,* 100 Black Angels & Allies Fund*; and Venture Partner,* Draper Goren Holm

Rodney Sampson is heralded as the leading pioneer in building diverse, equitable and inclusive ecosystems from the ground up. He is respected as a pioneer and innovator of streaming technologies at the start of the 21st century; and was the first Black cofounder of a technology startup to raise millions in venture capital throughout the Southeastern United States. Today, he serves as Chairman & CEO, Opportunity Hub; General Partner, 100 Black Angels & Allies Fund; and Venture Partner, Draper Goren Holm. Sampson is also a Nonresident Senior Fellow in the Metropolitan Policy Program at the Brookings Institution in Washington, DC; a Venture Partner at Draper Goren Holm; and Keohane Distinguished Visiting Professorship at the University of North Carolina at Chapel Hill and Duke University. A strong believer in philanthropy and its role in social impact and advocacy, Sampson supports and serves on the boards of Black In AI, Artificial Intelligence for All (AI4All), Multicultural Media, Telecom and Internet Council (MMTC), International Bishops Conference, and GA Technology for All Policy Summit. Sampson was educated at Tulane University, Pennsylvania State University College of Medicine and Keller Graduate School of Management; and is a member of Omega Psi Phi Fraternity, Inc.

EXPERT INSIGHT

- Creating racial equity in the fourth industrial revolution is the best path to close the racial wealth gap for all Americans, especially Black, Latinx and Indigenous Americans.
- To achieve racial equity at scale, the technology, startup and venture ecosystem must be intentional about funding the early exposure, rapid up-skilling and re-skilling, talent acquisition, innovation, entrepreneurship support programming, accelerators, funds and ecosystem building organizations that focus on Black, Latinx and Indigenous communities.
- The ecosystem must aim for over 50% participation from Americans from socially disadvantaged communities at all levels of American’s technology companies, high growth startups and venture funds to reach scale. Everything else is performative.
- To start, organizations must operationalizing diversity, equity & inclusion solutions across their board & governance, human sources, procurement, product development, go to market, investment and impact. This requires funding. All else is performative.

CREATING INCLUSIVE ENTREPRENEURIAL ECOSYSTEMS

By Resources-building Through Investors

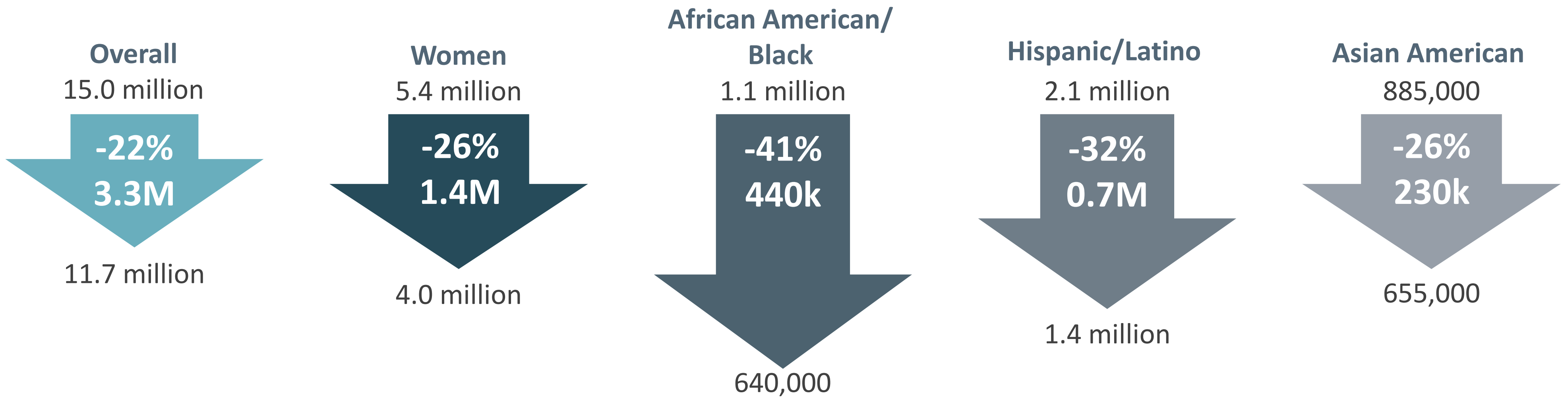
Notable Trends

- There is a long history of lack of funding for founders from under-represented groups, and data that point to the fact that more diverse teams perform better and are more innovative.
- In order to address these issues:
  - The National Venture Capital Association (NVCA) and others are doing work around diversity, equity and inclusion that highlights the lack of diversity in the investment and startup ecosystems and encourages firms to address diversity-related issues.
  - A growing number of investment firms and new funds are focused on supporting minority entrepreneurs and investors.
  - UNC Chapel Hill, Duke & Stanford have joined forced with 100 Black Angels & Allies Fund to create a Black Technology Investment Certificate

The Pandemic Disproportionally Affected Women and Minority Business Owners

- Women and minority founders already faced preexisting inequities when accessing resources for their businesses prior to the pandemic.
- Data reveals that in the early months of the pandemic, women and minority small business owners had to shut their doors at higher rates than their male and white counterparts.

The first months of the pandemic saw widespread closures of small businesses, with underrepresented businesses disproportionately forced to shutter their doors in response to COVID-19 (February 2020 to April 2020):



Source: Office of the Advocate for Small Business Capital Formation Annual Report for Fiscal Year 2020, page 58

Women Founders Faced Disproportionate Funding Declines After a Period of Historic Gains

- Over the last decade, the number of deals and their overall amount have increased for women-founded companies in the U.S., from $2.5 billion across 576 deals to roughly $20 billion across 2,669 deals.
- However, this progress stalled as U.S. women entrepreneurs were more adversely affected by the pandemic, as seen through declines in funding.

During the first three quarters of 2020:

Female-founded deal value decreased by **31.3%**

Total deal value for all startups decreased by only **17.9%**

Source: Pitchbook, 2020

As VC Funding Roared Back at End of 2020, Women Founders Were Largely Left Out

- Globally, through mid-December 2020, women-founded startups saw a 27% decrease in venture funding over the same period the previous year.
- In 2020, solo-founded U.S. women startups received only a small percentage of all VC dollars:

Seed	Early-Stage	Late-Stage
7%	4%	1%

- In the late stage, the average deal size for female-founded startups was $47 million, while the average deal size for male-founded startups was $90 million.

Source: Crunchbase, See Teare, 2020 & Teare, 2021

Racial Bias Affects Black-led VC Firms

- Only about 1% of VC funding went to Black-owned startups in the U.S. in 2020.
- Research indicates that VC funds led by accomplished Black individuals are viewed less favorably by investors than similarly accomplished white-led firms (Lyons-Padilla, Markus, Monk, Radhakrishna, Shah, Dodson, & Eberhardt,2019):
  - White male fund managers are advantaged by these biases.
  - This perpetuates their disproportionate representation in the industry.
  - Additionally, people of color are likely to encounter more bias as they achieve stronger credentials.
  - As Black-led funds are underestimated, broader growth opportunities are limited for companies investing in funds.

Sources: Lyons-Padilla, Markus, Monk, Radhakrishna, Shah, Dodson, & Eberhardt (2019); Crunchbase News, see Teare, 2021

Why Diversity Matters: Better Performance

Research indicates that more diverse teams outperform their peers on a wide variety of measures, including better financial performance.

- A McKinsey report found companies that are in the top quartile for racial and ethnic diversity and gender diversity are 36% and 25%, respectively, more likely to have financial returns above industry medians than firms in the bottom quartile (Dixon-Fyle et al., 2019).

Companies with above-average diversity in their leadership teams see
+9% EBIT (earnings before interest and taxes)
Compared to companies with below-average diversity

Lorenzo, Voigt, Tsusaka, Krentz, & Abouzahr, 2018

- Firms with diverse leadership are 45% more likely to report growth in market share and 70% more likely to experience growth in a new market (Hewlett, Marshall and Sherbin, 2013).

Why Diversity Matters: Increased Innovation

Multicultural teams can spur more significant innovation.

Companies with above-average diversity in their leadership teams see

+19% innovation

Compared to companies with below-average diversity

Lorenzo, Voigt, Tsusaka, Krentz, & Abouzahr, 2018

- A Harvard study that surveyed millions of scientific papers by U.S.-based authors found papers by ethnically diverse co-authors were cited more frequently and published in higher-impact publications (Freeman and Huang, 2014).
- Collaboration between native and immigrant workers can be more productive. Research shows that 30.4% of total U.S. innovative output (i.e., patents, patent citations and the economic value of patents) since 1976 can be attributed to immigrants. Of that 30.4%, direct innovative productivity accounts for 8.7% and indirect positive spillover effects of immigrants on U.S. native inventors accounts for 21.7%. Therefore, two-thirds of immigrant contributions to American innovation are due to the way in which immigrants make natives more productive (Bernstein et al., 2018)

Charles Eesley

Associate Professor and W.M. Keck Foundation Faculty Scholar, Department of Management Science and Engineering, Stanford University

As part of the Stanford Technology Ventures Program, Professor Eesley's research explores the role of the institutional and university environment in high-growth technology entrepreneurship. His research focuses on rethinking how the educational and policy environments shape the economic and entrepreneurial impact of university alumni. Professor Eesley's field research spans China, Japan, Chile, Bangladesh, Thailand and Silicon Valley, and has garnered awards from the Schulze Foundation, the Technical University of Munich and the Kauffman Foundation. He is a faculty affiliate at the Stanford Center for International Development, the Woods Institute for the Environment and the Stanford King Center on Global Development. Professor Eesley previously was an entrepreneur, early employee, board member/advisor and investor in the areas of life sciences, online education and machine learning.

EXPERT INSIGHT

- We know that the pandemic has disproportionately affected women and minority business owners
- We also now know that not only existing business owners were affected, but also women and minority founders have been left out of the VC funding rebound since the outset of the pandemic
- Research shows, even for well-qualified Black VCs, racial bias still makes them less likely to raise funding from institutional asset allocators
- At the same time, evidence is accumulating of the outperformance of more diverse top management teams.
- These findings highlight the need for universities to make more progress to incorporate content into the curriculum to teach the next generation how to create more inclusive entrepreneurial ecosystems. We need to further diversify graduate programs and faculty to ensure that future scholars are equipped to add to our body of knowledge about what interventions are most likely to succeed in diversifying the startup founders and venture capitalists of the future

NVCA Advocates For More Inclusive and Equitable Firms within VC

- The VC Human Capital Survey, powered by NVCA, Venture Forward and Deloitte, was designed to capture important data on the workforce at venture capital (VC) firms and develop an understanding of demographics within the VC industry. The survey is intended to be an educational resource for venture capital firms to help understand how they may expand the diversity of their teams and portfolio. For the 2020 study, data was collected from more than 375 U.S. firms representing nearly 5,000 employees.

Dashboard information:

- Who works in the VC industry, based on the firms surveyed.
- Whether gender, ethnic or age groups have reported differing experiences.
- What firms may be doing to enhance diversity, equity and inclusion.
- Comparisons with survey results from 2016 and 2018.

- *Note that the 2020 survey was the first survey to ask about demographic information for each employee (e.g., gender and race). Firms were also asked to provide information regarding their talent management practices and DEI programs.*

Source: VC Human Capital Report. (2021). NVCA, Venture Forward, and Deloitte

Entrepreneurship Initiatives That Support Minority Entrepreneurs

Type	Sources
Venture Capital	Select Firms: Base10, Illumen Capital, Plexo Capital, Harlem Capital Partners, Vertical404, VC Include (fellowship for BIPOC fund managers), 100 Black Angels & Allies Fund, MaC Ventures, Fearless Fund, Lightship Capital, Zeal Capital Partners, M25 Fund Blog: Top 25 VC Firms Bridging the Gender and Ethnic Gap in Startups
Accelerators and Incubators	NewME: Entrepreneurship education program; mentorship, specialized curricula and capital investment Black Girl Ventures: Provides Black and other woman-identifying founders of color with access to community, capital and capacity building Black upStart: Training Black entrepreneurs to start and scale successful businesses Digital Undivided: Fostering more inclusivity in entrepreneurship by empowering woman-identifying Black and Latina entrepreneurs Opportunity Hub (OHUB): programs startup bootcamp, pre-accelerator, accelerator and pitch competitions for Black founders
Research	Harlem Capital Diverse Founder Report: Tracks the pipeline of Black and Latino founders raising VC funding over $1m+ CrunchBase Diversity Spotlight: Comprehensive funding data for Black and Latino founders TechStars: Investors rush to support Black founders after BLM protests Brookings: To expand the economy, invest in Black businesses Brookings: Building racial equity in tech ecosystems to spur local recovery Stanford: Stanford psychologist Jennifer L. Eberhardt studies bias of VC firms led by people of color
Impact Organizations	Diversity VC: Building a diverse VC network and helping VC firms hire diverse employees Black Founders: Mission is to increase the number of successful Black entrepreneurs in technology Tech for Black Founders: Consortium of tech companies that are committed to provide their software and services free to Black founders Techstars Foundation: Increases representation of minority tech founders by providing opportunities through grants, scholarships and sponsorships Code Fever: Focuses on shifting the way Black communities engage and create value within the innovation sector BLCK VC: Empowers and supports Black investors Black & Brown Founders: Provides community, education and access to Black and Latino entrepreneurs OHUB: Committed to increasing racial equity in the fourth industrial revolution; including a not-for-profit foundation and an ecosystem-building investment fund

Momentum for Underresourced Founders and Fund Managers

- For the past three years, Harlem Capital has been tracking Black and Latino U.S.-based founders who have raised $1m+ in venture funding.
- Their Diverse Founders List has grown from **117** founders in 2018 to **305** founders in 2020. Read the report here: https://harlem.capital/wp-content/uploads/2021/02/2020-Harlem-Capital-Diverse-Founder-Report-1.pdf
- This growth speaks to those in the ecosystem working to connect under-resourced entrepreneurs with capital, networks, mentorship and other resources.
- However, while these numbers show some traction, Black and Brown founders are still greatly underrepresented in venture capital backing.

Source: Harlem Capital, 2021

A Growing Number of Investment Firms Are Focused on Supporting Black and Brown Founders and Investors

Goal 1: Increase the Investments In Black and Brown-founded Startups

- Investing resources leads to better traction and success of those firms and founders.
- Firms started by Black and Brown founders address challenges/issues within their respective communities (long-term positive social impact).
- Successful exits and investment returns for Black and Brown founders creates generational wealth, new mentors and additional investment dollars.

Goal 2: Close the Wealth Gap By Supporting Black and Brown Investors

- New SEC rules enable a greater volume of high net worth individuals to participate as investors.
- Education and support brings high net worth minority individuals to participate in the startup investment ecosystem, so they can receive high returns from those investment vehicles.
- Creates generational wealth and additional future investment dollars.

Case Study Investment Fund: Backstage Capital focuses on underrepresented founders

Backstage Capital

Founder: Arlan Hamilton

- Founded 2015
- Portfolio 150+
- Focus: "We invest in companies led by under-represented founders. We define 'under-represented' as women, people of color and LGBTQ+ founders. These founders need to be part of the executive leadership team and meaningfully represented on the cap table of the companies we invest in."
- Just raised $5 million on Reg CF on Republic (closed April 1, 2021)

Source: Backstage Capital (https://backstagecapital.com/)

Case Study Investment Fund: 100 Black Angels & Allies focuses on engaging new investors

100 Black Angels & Allies

Founder: Rodney Sampson

- Founded 2019
- Focus: “The mission of the 100 Black Angels & Allies fund is to align smart, affluent, innovative and skilled Black and ally capital to build a scalable and sustainable Black technology, startup entrepreneurship and venture ecosystem that powers a global Diasporic engine and platform to ensure that Black people everywhere are equitably represented at all levels in the future of work, startup ecosystem and forthcoming fourth industrial revolution as a definitive path to decreasing income inequality and the racial wealth gap. This is the path to shared prosperity and multigenerational wealth creation with no reliance on pre-existing multigenerational wealth.”
- Investments include Kanarys, Rheaply and JTEC Energy

Info from: https://blackangels.co/

Tope Mitchell

CEO, Reflek Me

Tope Mitchell holds a Ph.D., M.A. (Indiana University), and B.A. (University of Washington) in sociology with an emphasis on social psychology and identity along with an MBA Certificate in general business from UNC – Fayetteville, an HBCU. Her career includes social research on identity, marketing insights, and innovation. She has worked as a lifestyle and leisure analyst, Associate head of multicultural insights and as a business strategist at award-winning companies (Mintel, Kantar Futures, and Three Group). She has taught business courses in entrepreneurial marketing, new venture creation, and business and society at the undergraduate and graduate level. Dr. Mitchell co-founded Fashola Mitchell Education Solutions, Inc. in 2010 with her spouse to provide educational resources to at-risk youth in San Bernardino County, California. She is currently the Chief Executive Officer and Co-Founder of Reflekt Me. Reflekt Me hyper-personalizes eCommerce sites to create an inclusive and engaging online shopping experience. It is the future of online shopping where eCommerce, social media, and influencer content are interwoven to make online shopping feel like a custom fashion consultation for every size and shape; because everyone deserves a reflection. The platform increases sales conversion and new customer acquisition while decreasing cart abandonment and returns for online retailers, by integrating a customer facing DE&I focused social fit and sizing system that creates an inclusive shopping experience.

EXPERT INSIGHT

- Tope and Reflek Me Joined the Backstage Capital portfolio in 2020 after meeting Arlan Hamilton in her virtual bookclub.
- After pitching to Arlan, then the full Backstage team of Christie, Chacho, and Brittany we received 25k in pre-seed funding.
- We believe that the success that we have achieved in our accelerators and with being able to start with our first client has been heavily influenced by having Backstage Capital's support because they invest in great companies and Backstage looks beyond the bias and is able to see the idea, share the vision, and look at the founder as a human being.
- I was in the McNair and McNair presidential program as an undergraduate and this feels like joining the McNair program! I mean she only invests in 2% of the companies who pitch to her. We are all at different stages but there is this thread between us that we share a common view of an inclusive future. That gets us extremely excited every time we meet.
- This has been transformative for us because within our Headliner Hangs (portfolio meetings) we connect with other ventures for collaborations. Arlan knows all of us and remembers our names, we don't feel like a number - she actively thinks about how we can collaborate.
- Arlan is very active with re-tweeting us and amplifying our voice on social media. She promotes our achievements and will bring on founders to podcasts and to teach as experts in her academy.
- Christie, Chacho, and Brittany (the other Backstage Partners and Principals) set up hour long meetings with us to discuss strategy on a regular basis, give us good feedback over email as situations arise, and nominate and support us for awards and programs (e.g., Christie nominated us for a Google for Startups scholarship to the Founder Gym accelerator which was phenomenally helpful for us to prepare to raise. We won Best in Cohort within that accelerator which gave us great visibility).
- All of their work with our team at Reflek Me gave us the confidence to raise a family and friends round because having Backstage Invest is us was proof that we have created something amazing because they are extremely smart investors.

CREATING INCLUSIVE ENTREPRENEURIAL ECOSYSTEMS

By Resources-building Through Corporations

Notable Trends

- Corporate support of minority- and women-founded companies
  - Corporate support in wake of Black Lives Matter protests
  - Corporate integration of DEI to diversify vendors, supply chain, investment partners, etc.
  - Growth in Venture Studio model

Corporations Make Pledges to Black-owned Business Amid Black Lives Matter and the COVID-19 Shutdown

- Preliminary research from researchers at UNC Kenan-Flagler Business School explores corporate America's reaction to the Black Lives Matter protests in the wake of George Floyd's killing at the hands of Minneapolis police. They found (Hawn & Mahin, 2021):
  - Less than half of Fortune 500 companies released a statement regarding Black Lives Matter.
  - Of those, 99 made specific monetary pledges ranging from $100,000 (e.g., Weyerhaeuser) to $1.75 billion (JPMorgan Chase), with an average amount of $65.7 million.
  - 19 firms pledged to back initiatives that support Black-owned businesses in multiple ways, including through new venture funds for such businesses, diversifying their supply chains, etc. Companies include Walmart, Apple, Microsoft, Procter & Gamble, PepsiCo, Live Nation Entertainment and Fiserv, among others.
- Additionally, some corporations have made pledges to support Black-owned businesses, citing the unequal impacts to Black businesses during the COVID-19 pandemic.

Corporations Back Black Business

Foot Locker to Funnel $200 Million into Black-Owned Businesses, Communities

Lowe's funds $25 million in grants to help minority businesses reopen; CEO challenges other executives to 'do our part'

Netflix Moves $100 Million in Deposits to Bolster Black Banks

The streaming giant will permanently shift a share of its cash to financial institutions that serve Black communities, allowing them to lend more.

Constellation Brands @cbrands · Aug 6, 2020

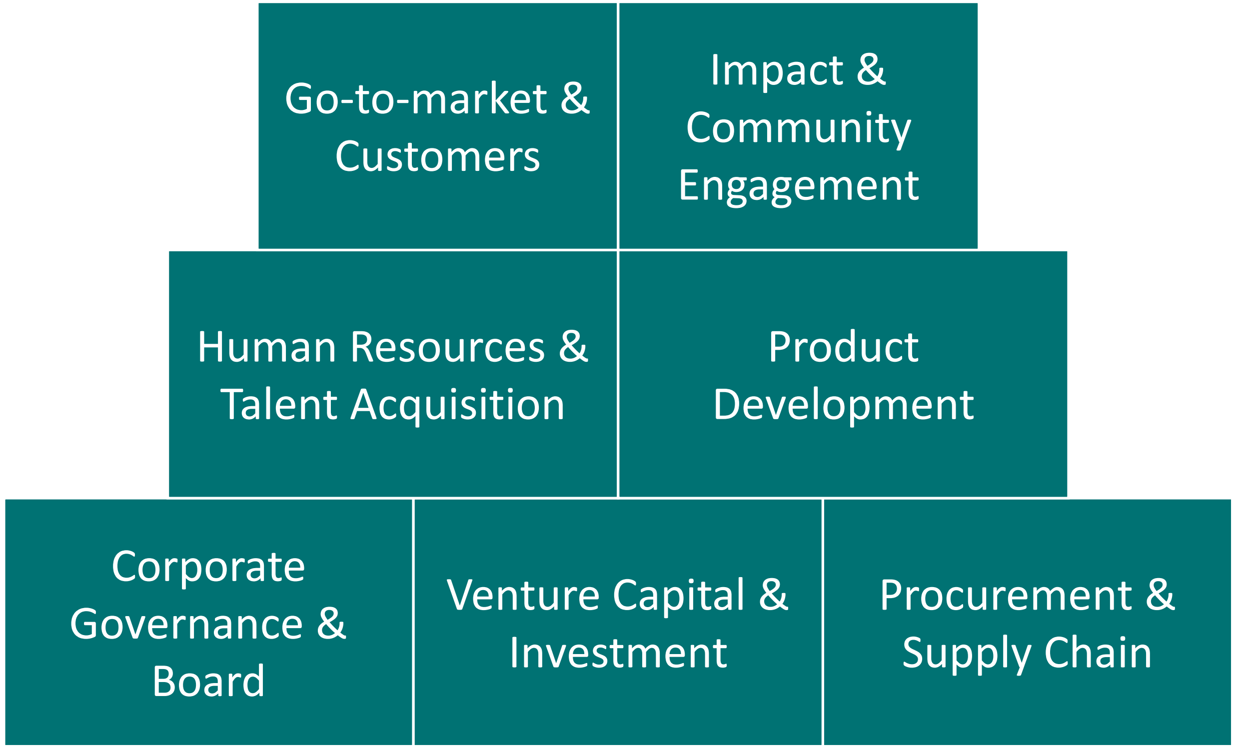
We launched our Focus on Minority Founders program to create chance and collaborate with entrepreneurs who are driving disruptive innovation. Learn more about our commitment to invest $100M in Black and minority-owned business and apply today: bit.ly/2BGvAg8

PayPal Announces Additional $5 Million Grant Program for Black-Owned Businesses as COVID-19 Crisis Continues

Grants extend PayPal's $530 million commitment made to support and empower Black-owned businesses, strengthen minority communities and fight economic inequality

How Can Corporate America Move from Performative Statements to Action and Impact?

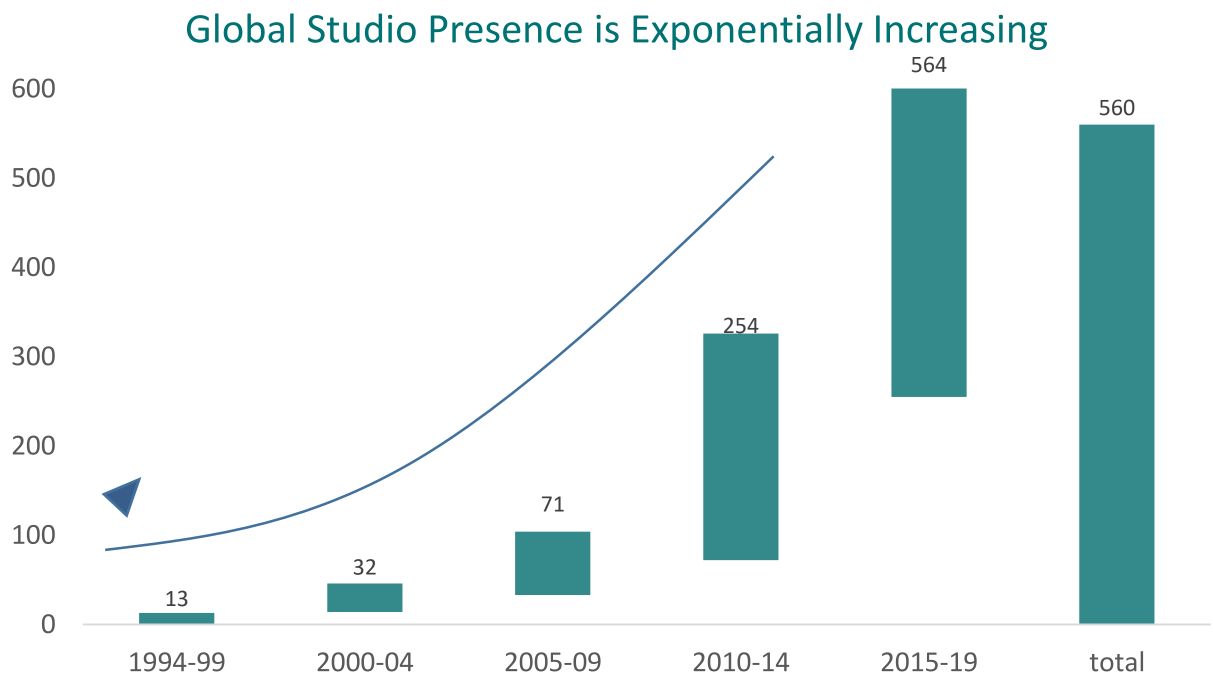
- Diversity, Equity and Inclusion Solutions (DEIS) must go beyond performative statements and assumptions that DEI is merely a recruiting and retention problem. In order to address systemic issues, organizations must think about DEI as a holistic strategy at every level of their organization.
- The chart shows the areas within an organization that should be part of an integrated DEI strategy.



Source: UNC Entrepreneurship Center (https://eship.unc.edu/course/diversity-equity-and-inclusion-solutions-deis-certificate-program/)

Growth of Startup Studios

- Venture Studio Model
  - Hands on operational guidance for founders
  - Repeatable processes
  - Focus on specific domain of expertise
  - Institutional co-founder
  - Provides critical financial and human capital resources for scaling purposes



"It's not getting advice or mentorship from eFounders; they're actually working hands-on with you to grow."

-Alexandre Louisy, Co-Founder & CEO of UpFlow (start up working with eFounders venture studio)

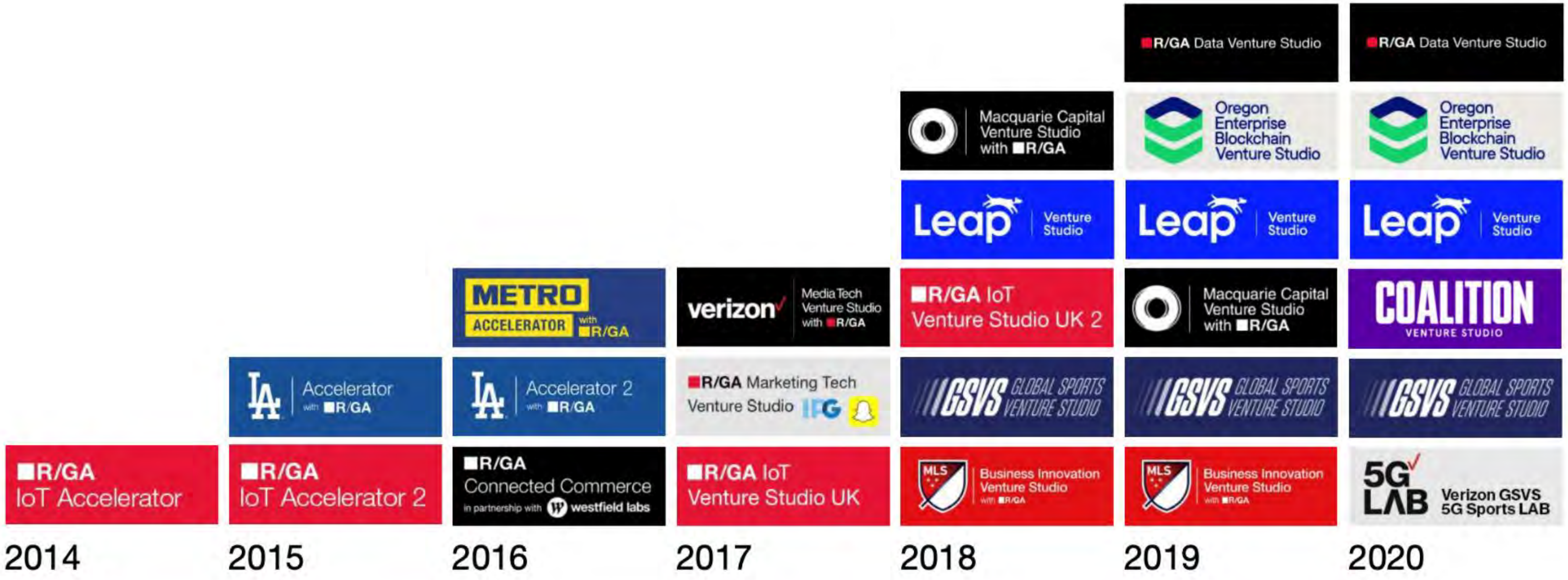
Source: GSSN. Disrupting the Venture Landscape (2020)

Case Study: R/GA Venture Studios Stimulate Startup and Large Corporate Client Engagements

Google Signality	verizon IMPOSIUM	Cigna reply.ai
ML/CV-based Sports Scoring	First Responder Campaign	COVID-19 Navigator Chatbot
J.P.Morgan Popwallet	MATTEL Camera IQ	Darkstore
Mobile Wallet Payment Integration	International Women's Day Launch	Brand Jordan Same-Day Delivery
Uber LISNR	GOLDEN GLOBE AWARDS DIGISEQ	Dodgers Relative INSIGHT
Rider Safety Innovation	Award Redesign and NFC Integration	Fan Sentiment Measurement

Source: Davyeon Ross, R/GA Venture Studios and Coalition Studio (https://www.coalitionventurestudio.com/)

Case Study: R/GA Ventures Added Coalition Studio in 2020



Source: Davyeon Ross, R/GA Venture Studios and Coalition Studio (https://www.coalitionventurestudio.com/)

COALITION
VENTURE STUDIO

an ongoing initiative designed to support Black founders (Coalition Companies) with expertise, resources, funding, connections, and education from R/GA and Coalition Partners

THE OPPORTUNITY FOR COALITION PARTNERS:

BUSINESS VALUE + SOCIAL EQUITY

STUDIO OBJECTIVES FOR COALITION COMPANIES:

ACTION	Activate and apply R/GA's strategy, technology, and design resources to support Black entrepreneurs
COLLABORATION	Partner with industry leaders and investors who will provide business development opportunities, financial capital, and mentorship
CONNECTION	Leverage R/GA's global client network to connect founders to potential customers, investors, advisors, and partners
IMPACT	Develop tangible outputs and deliverables that drive business outcomes and enable sustained success

Source: Davyeon Ross, R/GA Venture Studios and Coalition Studio (https://www.coalitionventurestudio.com/)

Case Study: Coalition Studio Drives better Startup Outcomes

Source: Davyeon Ross, R/GA Venture Studios and Coalition Studio (https://www.coalitionventurestudio.com/)

R/GA Commitment

ALL qualified Coalition-registered Companies receive:

RECOGNITION	**DIRECTORY OF COALITION COMPANIES** We will build and maintain a directory of Black-founded or -led startups based on proprietary research, referrals from ecosystem partners and inbound interest, which will be shared with Coalition Partners.
CONSIDERATION	**BI-WEEKLY REVIEWS OF COALITION COMPANIES** We will review all registered companies to identify potential matches for pitches and paid opportunities with R/GA clients and partners, such as digital projects, technology services, marketing campaigns, pilots and procurement services.
ACCESS	**COALITION CONTENT AND EVENTS** We will create content and events open to all Coalition Companies as well as Coalition Partners and their extended networks, and we will promote content and events created by Coalition Partners.

SELECTED Coalition Studio Companies will receive:

RELATIONSHIP CAPITAL

Identify potential matches for pitches and **paid** opportunities with R/GA clients and partners, such as digital, technology services, marketing campaigns, pilots and procurement services.

CREATIVE CAPITAL

We will offer access to customized R/GA teams providing consulting, strategy, technology, design, copywriting and business development in support of each startup's growth objectives, free of charge.

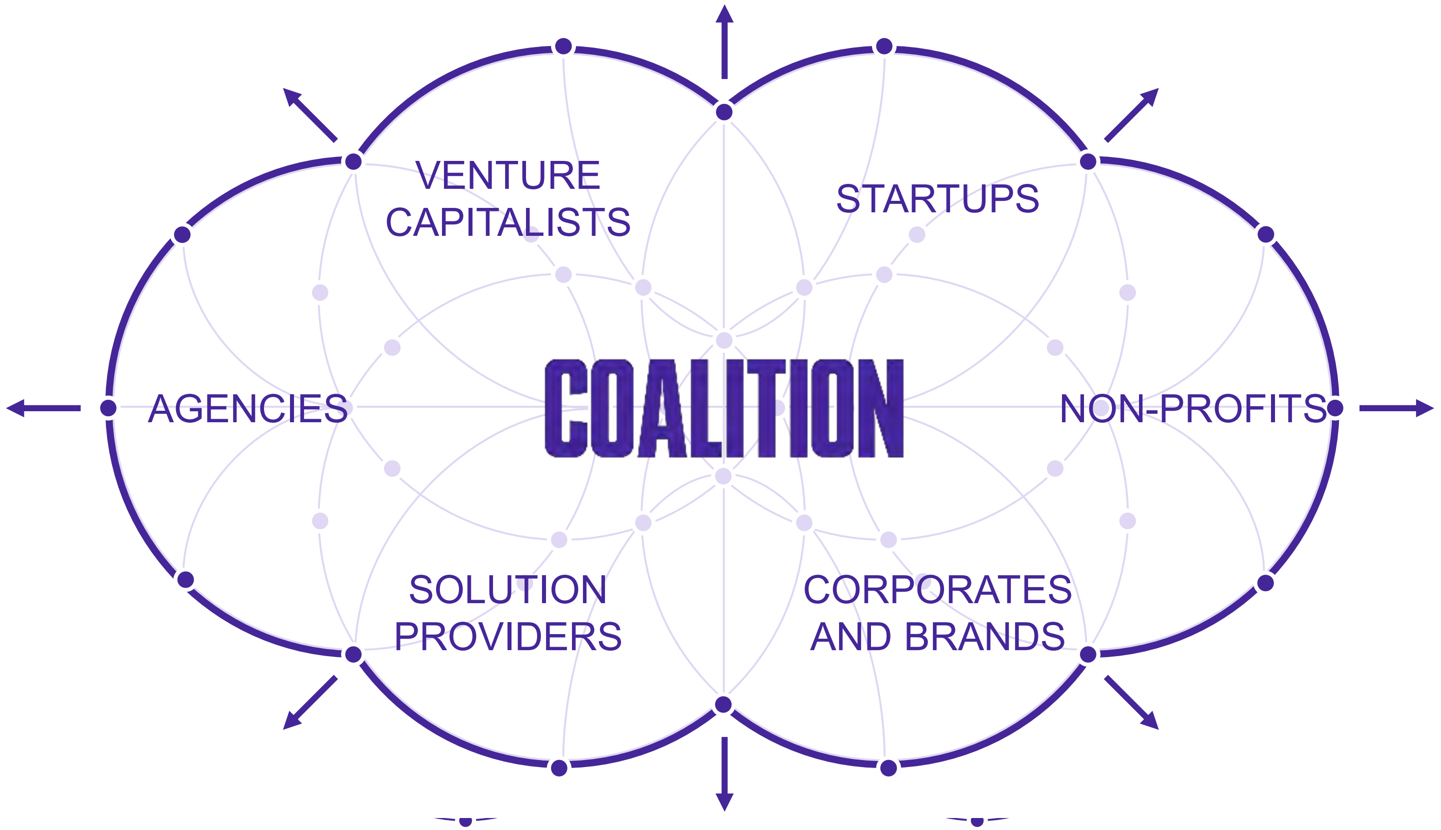
FINANCIAL CAPITAL

We may offer financial capital from an investment vehicle seeded and managed by R/GA Ventures.

Source: Davyeon Ross, R/GA Venture Studios and Coalition Studio (https://www.coalitionventurestudio.com/)

Network Effects

The Coalition Venture Studio is designed for cross-partner introductions and collaboration, creating opportunities for partners to grow their networks and multiply their impact.

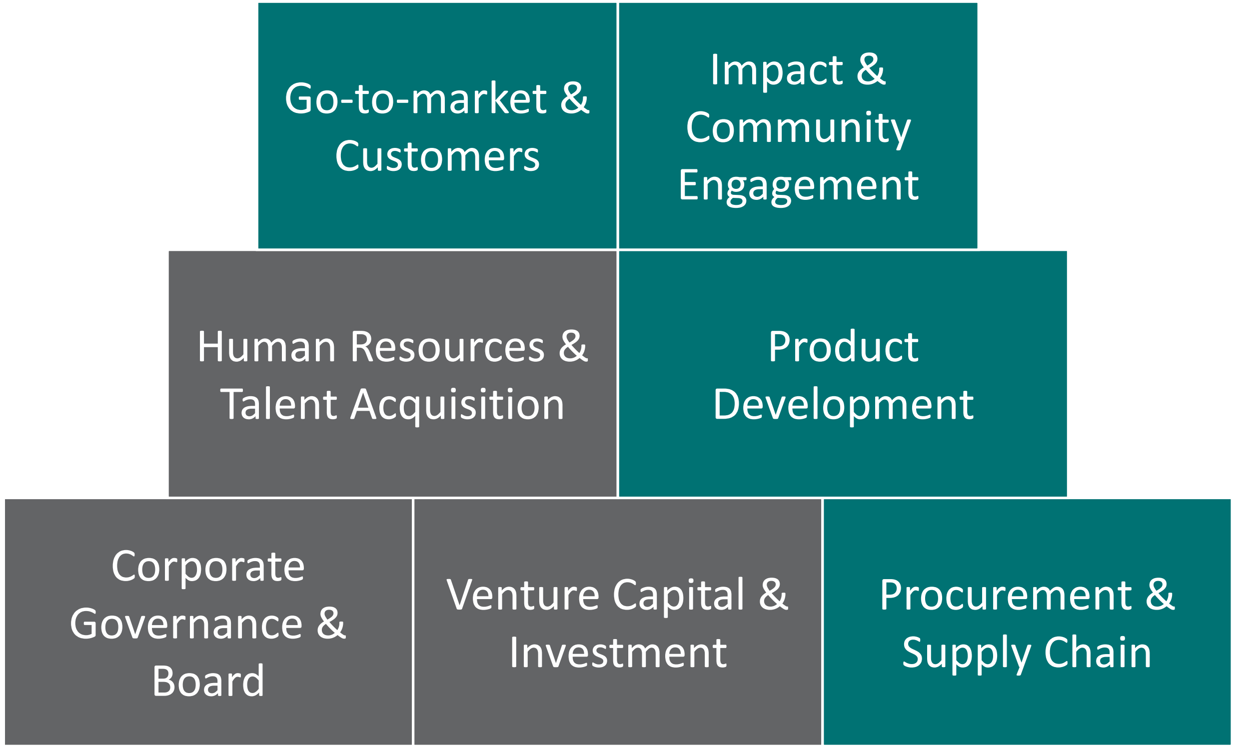


Source: Davyeon Ross, R/GA Venture Studios and Coalition Studio (https://www.coalitionventurestudio.com/)

Case Study: Coalition Studio Enables Partners to Integrate DEI Into Their Organizations

- Corporate partners, solution providers and agencies benefit from relationships with Coalition Studio startups by diversifying their GTM, product development and customer strategies, and integrating a more diverse set of suppliers.
- Philanthropic funds are directed toward nonprofits led by people within the communities they are benefiting.

Diversity, Equity and Inclusion Integrated Strategy Framework*



Source: UNC Entrepreneurship Center (https://eship.unc.edu/course/diversity-equity-and-inclusion-solutions-deis-certificate-program/)

Davyeon Ross

Co-founder/President, ShotTracker *and* EIR R/GA Ventures - Coalition

An innovative technology leader and widely recognized entrepreneur, Davyeon Ross has more than 20 years of experience in the technology sector. Ross is co-founder and pesident of DDSports Inc., of which ShotTracker is the first product. ShotTracker is a sensor-based technology providing comprehensive, real-time stats and analytics to players, coaches and fans in practice and live games.

A native of Trinidad and Tobago, West Indies, Ross left Trinidad in 1996 on a full basketball scholarship, and was a four-year starter, captain and letterman for Benedictine College's basketball team and led the nation in field goal percentage his senior year. Ross also earned a Bachelor of Science in computer science and later earned his MBA from Mid-America Nazarene University. Ross is also an active angel investor with investments in several startup companies, including eyeVerify (acquired by Alipay), Opendorse, Metactive, Flow Forward and others.

EXPERT INSIGHT

Our Coalition Studio builds on the model of regular venture studios by providing greater access to resources for Black and Brown founders and providing ways for corporations and our partners to activate their own DEI strategies through diversification of their supplier and vendor networks. Below are some tangible ways that these values come to life.

To support global Black and underrepresented founders, our Coalition Studio:

- Democratizes access to R/GA blue-chip client and customer network
- Provides access to R/GA resources for creative capital
- Provides additional capital to Black and underrepresented founders

Siobhan O'Mahony

Feld Family Professor in Innovation and Entrepreneurship, Boston University, Questrom School of Business

Siobhan O'Mahony's research explores how technical and creative projects organize for innovation. She has examined how high technology contractors, open source programmers, artists, music producers, internet startups and product development teams coordinate their efforts in projects, teams and communities. She is interested in how people create organizing structures that promote innovation, creativity and growth without replicating the bureaucratic structures they strive to avoid. Dr. O'Mahony's research has appeared in Administrative Science Quarterly, Organization Science, the Academy of Management Journal, Research in Organizational Behavior, Research Policy, Research in the Sociology of Organizations, Industry and Innovation, and the Journal of Management and Governance.

EXPERT INSIGHT

- Accelerator managers face ongoing tensions and make strategic choices regarding cohort selection, program curriculum, managing mentor networks and choosing appropriate KPIs.
- New ventures take varied approaches to conducting market search in efforts to learn how to introduce an innovation. The learning approach shapes the nature of insights ventures get from their market research and progress to market traction for their innovations.
- When venture founders coproduce the strategic advice they receive from external sources, they are more prone to expand their view of the market, leading to more engaged learning behaviors (e.g., experimentation) and changes to venture strategy.

Trends in Human Capital: Teams and Talent

HUMAN CAPITAL: TEAMS & TALENT

Unicorn Founders: Makeup of billion-dollar startups

Notable Trends

- “Unicorns” are privately owned startup companies in the tech sector that have achieved a valuation of more than $1 billion. Unicorns are important because founders and investors aim to build billion-dollar companies.
- Over the past decade, the number of unicorns has increased.
- Between 2003-2013, about 90% of unicorns had more than one founder — with three co-founders on average. Today, twice as many unicorns are solo-founded and the number of co-founders has dipped.
- Serial entrepreneurs are more likely to solo-found and solo-founded unicorns take more time, have fewer investors, are more regionally dispersed and are more likely to exit via an acquisition than co-founded unicorns.
- The number of women-founded unicorns is growing…but not fast enough.

Source: Hendricks, Howell and Bingham 2021

Most Unicorns Have More Than One Founder

2.6	20%
Average number of founders for unicorns headquartered in the U.S.	of U.S. unicorns have only a single founder

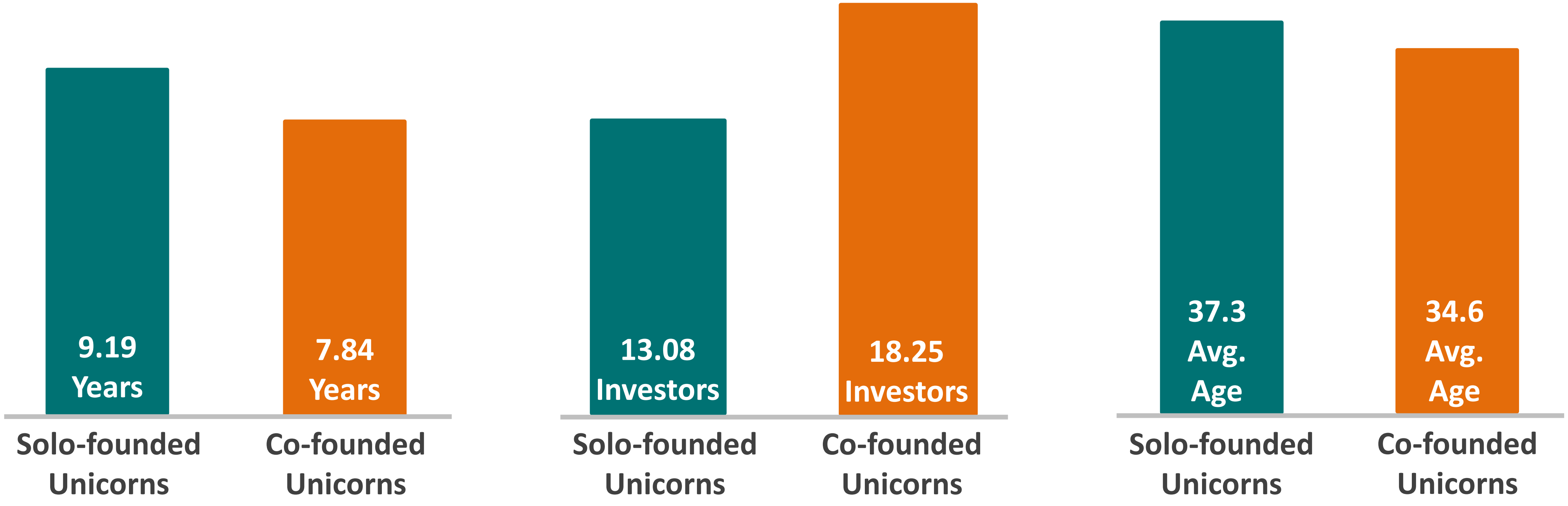
Source: Hendricks, Howell and Bingham 2021

Solo-founded Firms Take More Time, But Fewer Investors, to Become Unicorns

Solo-founded unicorns take more time to earn unicorn status than co-founded unicorns.

Solo-founded unicorns have fewer investors than co-founded unicorns.

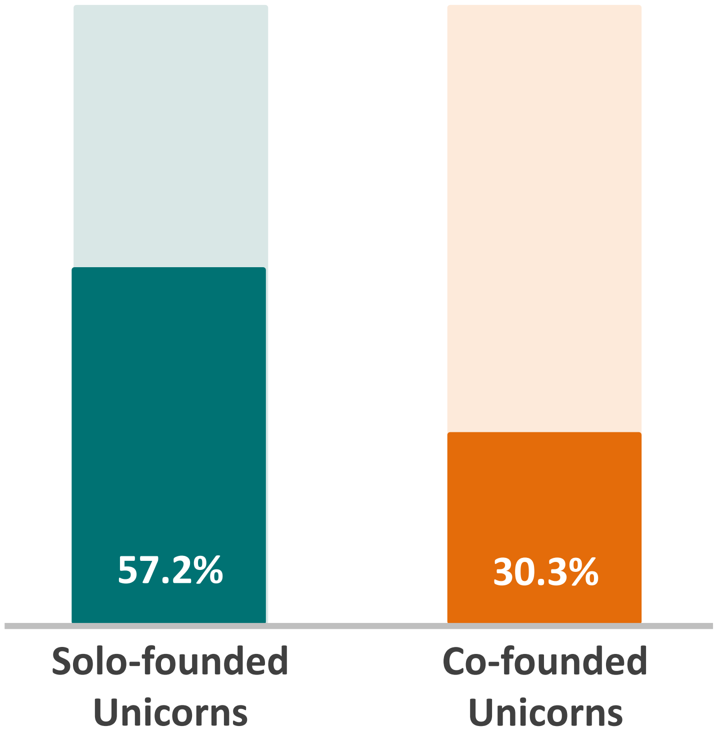
Founders of solo-founded unicorns are older than founders of co-founded unicorns.



Source: Hendricks, Howell and Bingham 2021

Solo-founded Unicorns are More Regionally Dispersed

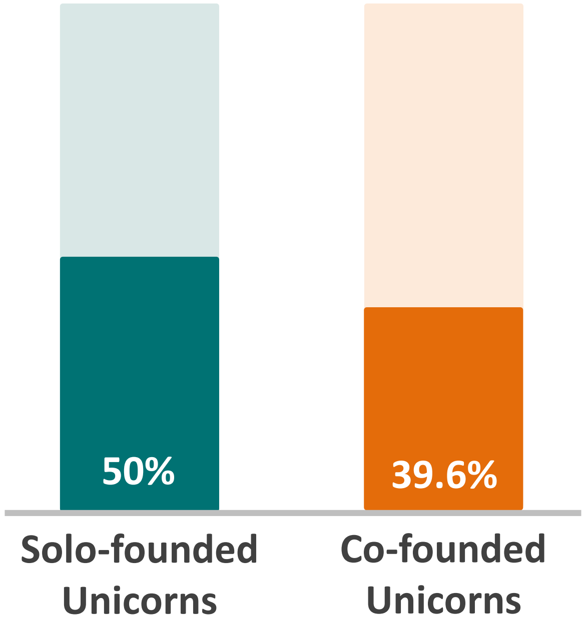
Solo-founded unicorns are more likely to be headquartered outside of Silicon Valley than co-founded unicorns.



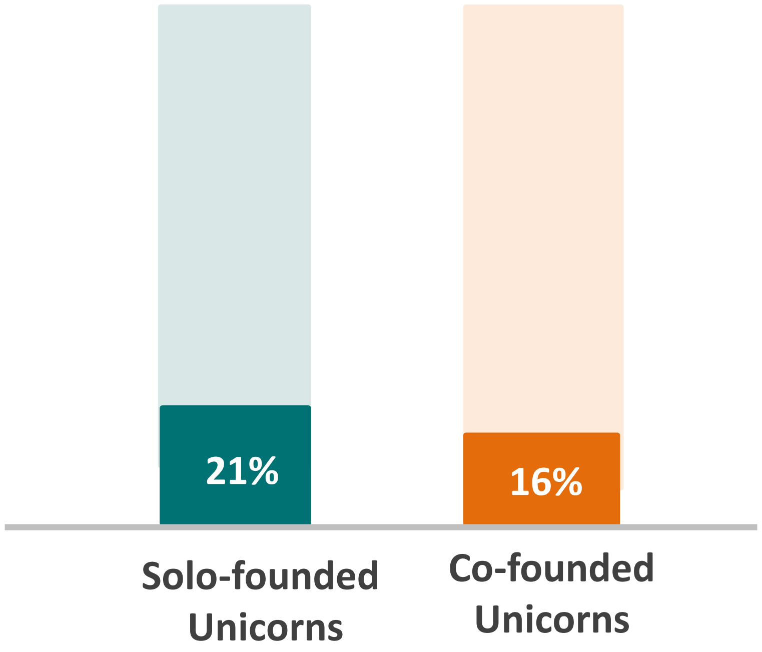
Source: Hendricks, Howell and Bingham 2021

Solo Unicorn Founders are More Likely to Be Serial Entrepreneurs

Founders of solo-founded unicorns are more likely to have founded a prior venture relative to founders of co-founded unicorns.

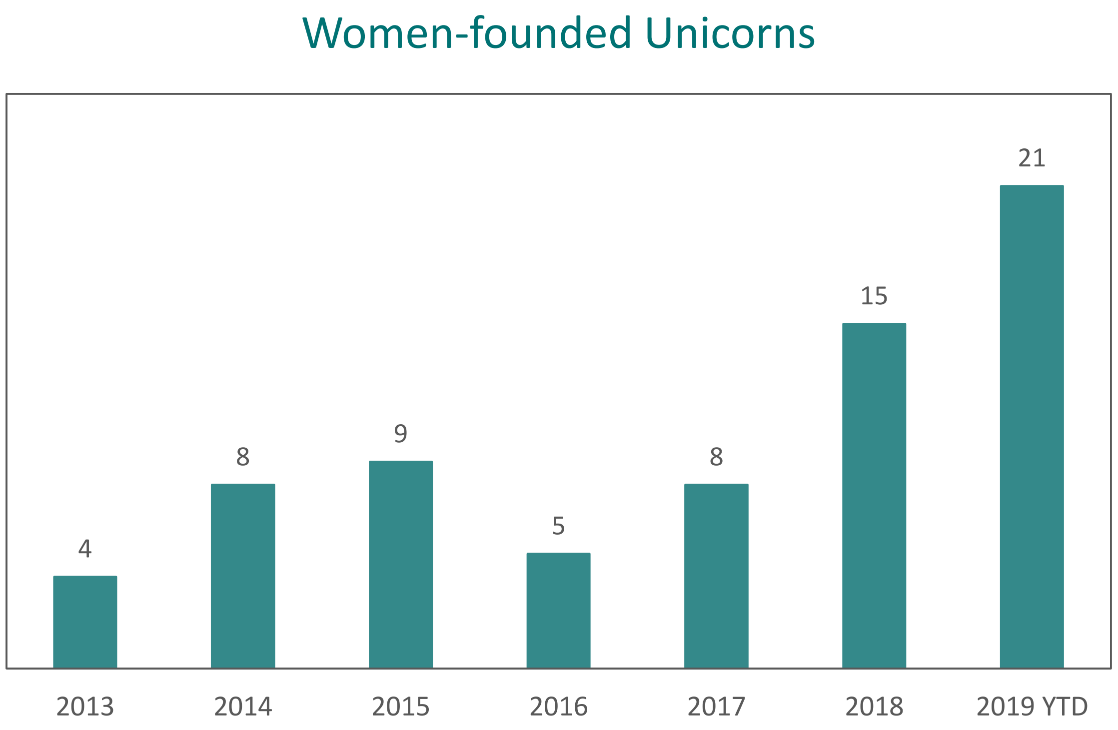


Solo-founded unicorns are more likely to exit via acquisition than co-founded unicorns.



Source: Hendricks, Howell and Bingham 2021

The Number of Women-founded Unicorns is Growing…But Not Fast Enough



- Nationally, less than 2% of all venture funding goes to companies led by women, and .006% to companies led by Black women.
- Female-founded unicorns make up only 4% of startups that reached a valuation of $1 billion or more in 2019.
- Female-only-founded teams are only raising $3 for every $100 spent.

Source: Crunchbase News: Mascarenhas (2019). Data as of December 2019

Black- & Latino-founded Unicorns are Too Few

In their annual Diverse Founder report (2020), Harlem Capital found that there have been 14 unicorns founded by Black or Latino founders. These companies account for:

$5.7B	$28.3B
Capital raised	Total value

Harlem Capital also notes that 16 other companies have raised $100m+, with the expectation to become unicorns in the coming years.

Source: 2020 Diverse Founder Report (2021)

HUMAN CAPITAL: TEAMS & TALENT

Remote Work: The new normal?

Notable Trends

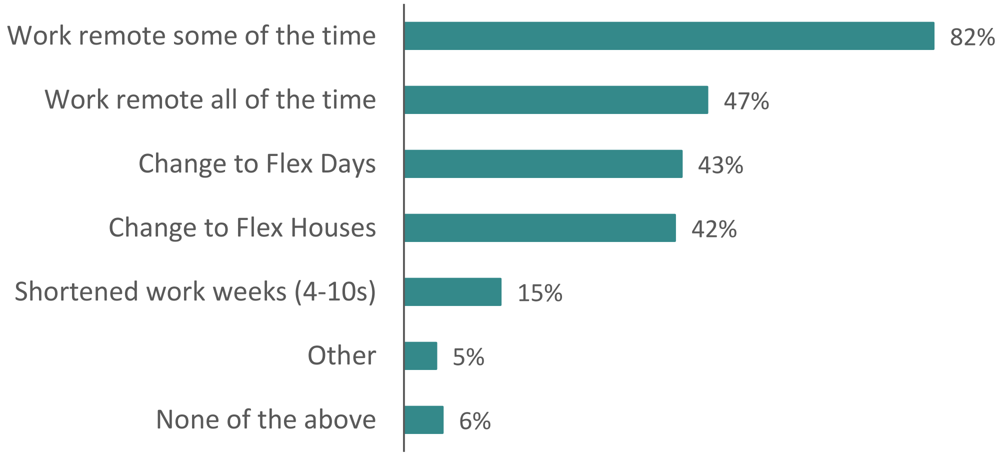
- Many leaders are realizing that remote work is central to their shorter- *and* longer-term strategy.
- The workplace of the future will reflect a blend of remote and on-site working, a *hybrid virtual model* where some organizational employees are on site and some are remote.
- The new hybrid model has the potential to help organizations by providing more access to talent, lowering costs, and improving productivity and flexibility.
- Yet the new model has the potential to hurt organizations, because combining remote and on-site work is often much harder than it appears.
- These learnings have implications for founders and startup managers as they grow their business, hire more employees and compete for talent.

Extending Remote Work

60%	50%
of leaders report that they plan to allow much more remote work than they did before COVID-19	of employees would like to continue remote work

Source: Gallup

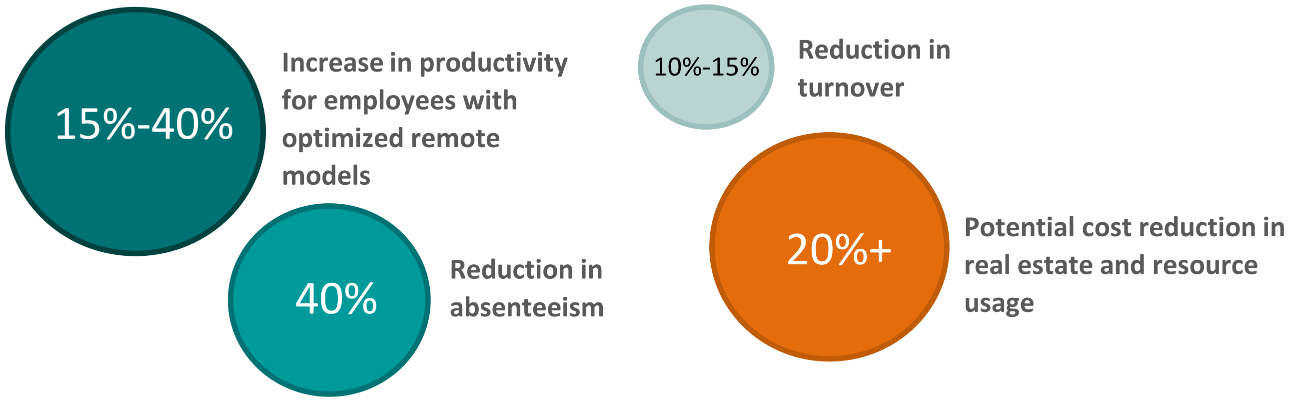
Managers views on flexible work post Covid-19

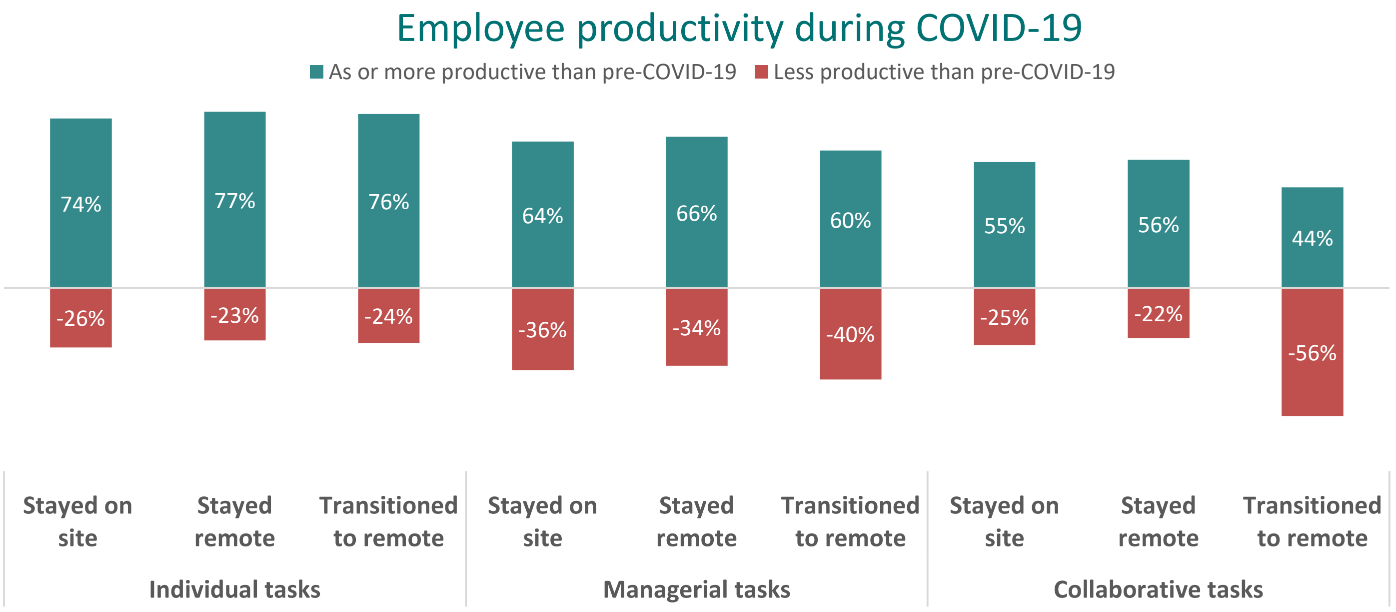


Source: Gartner

The organizational workplace will be defined by work teams working both on site and remotely.

Remote Work Can Work





Source: BCG – see Kaufman et al 2020

- 75% of surveyed employees report they are at least as productive on individual tasks working remotely as they were in person before the pandemic.
- On collaborative tasks (including exchanges with coworkers, working in teams and interacting with clients), productivity is a little less pronounced, but still shows benefits.

But What About Work-from-anywhere?

What is the difference between work-from-home and work-from-anywhere?

While traditional work-from-home (WFH) programs offer the worker temporal flexibility, work-from-anywhere (WFA) programs offer both temporal and geographic flexibility (Choudhury et al., 2019). This means that workers can live in states, and potentially countries, that are not the home location of their employer.

Does WFA affect productivity?

Studying the U.S. Patent and Trademark Office's WFA policy and its effect on worker productivity, Choudhury et al. (2019) found that workers experienced a 4.4% increase in work output under WFA compared to WFH, with no effect on rework. It is important to note that the USPTO had their WFA policy in place prior to the pandemic. In the USPTO model, patent examiners spend two years in an office setting before transitioning to WFH and, eventually, WFA.

Potential logistical challenges for WFA:

- Taxation and employment law compliance: Work-from-anywhere creates additional considerations for employers regarding labor and employment law compliance, tax compliance and other business considerations when employees permanently work remotely in a new location (Barth et al., 2020).
  - Employers will need to consider state tax and registrations, income tax withholdings, unemployment insurance and other legal obligations.

Even Still, Remote Work is Hard

A survey of employees found:

80%	43%	52%	84%	41%
said relationships would improve with more frequent team communications	said that increased face time would help develop stronger team relationships	said they did not feel as though they were treated equally by colleagues	said that workplace challenges or concerns dragged on for a few days or more	believe that colleagues made negative comments behind their backs, vs. 31% of co-located workers

Researchers have found that working from home creates unique challenges for remote workers due to (Eddleston and Mulki, 2017):

- Work roles becoming embedded in the family domain, such that employees' homes come to be associated with their work roles.
- Remote workers finding that work physically and psychologically intrudes upon their family.
- Habits and norms form that induce remote workers to be preoccupied with work when home.

Source: McKinsey – see Comella-Dorda (2020)

Technology Adoption is Critical to Successful Work from Home

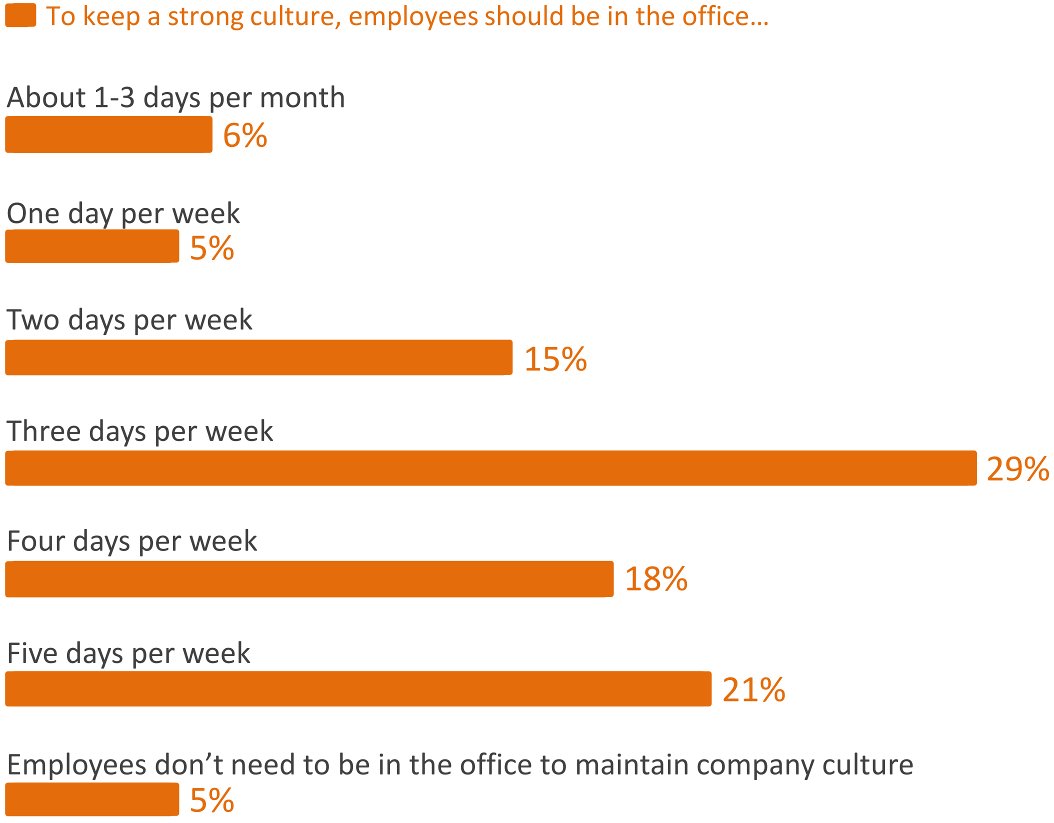
Research indicates that firms that were better prepared with the digital tools needed to transition to work from home were more resilient during the pandemic (Bai et al., 2021). In particular, the researchers found that:

- Firms with higher digital resilience performed significantly better in general, particularly those in nonessential industries where work from home was necessary to continue operation.
- Work-from-home digital technologies mattered more in non-high-tech industries than in high-tech ones.
- Firms with lower pre-pandemic WFH feasibility attempted to catch up to their more resilient competitors via greater software investment.

Research exploring worker productivity during the transition to increased WFH amid the pandemic found that widespread adoption of WFH technology increased the productivity of college-educated workers working from home relative to their productivity working in the office by 30-50% between the onset and the end of the pandemic (Davis, Ghent, & Gregory, 2021).

And the Office Is Here to Stay

Few executives think company culture will survive a purely remote working set up



Q: If COVID-19 was not a concern, how often do you think a typical employee needs to be in the office, if at all, in order to maintain a distinctive culture for the company?
Totals do not add up to 100% due to rounding.
Source: PwC US Remote Work Survey
January 12, 2021. Base: 133 US executives

- Research indicates that remote work is an imperfect substitute for work at the office, which is critical to understanding the future of work. (Davis, Ghent, & Gregory, 2021). It is likely many high skilled workers will move to a hybrid working environment post pandemic – working both from home and an office.
- Employees believe an office environment is important for collaborating and building relationships.
- Workers with less professional experience (0-5 years) demonstrate different needs:
  - 30% prefer being remote no more than one day a week vs. just 20% of all respondents.
  - The least experienced workers are more likely to feel less productive while working remotely.

How to Blend Depends

■ Desirable outcome
■ Cost to be managed

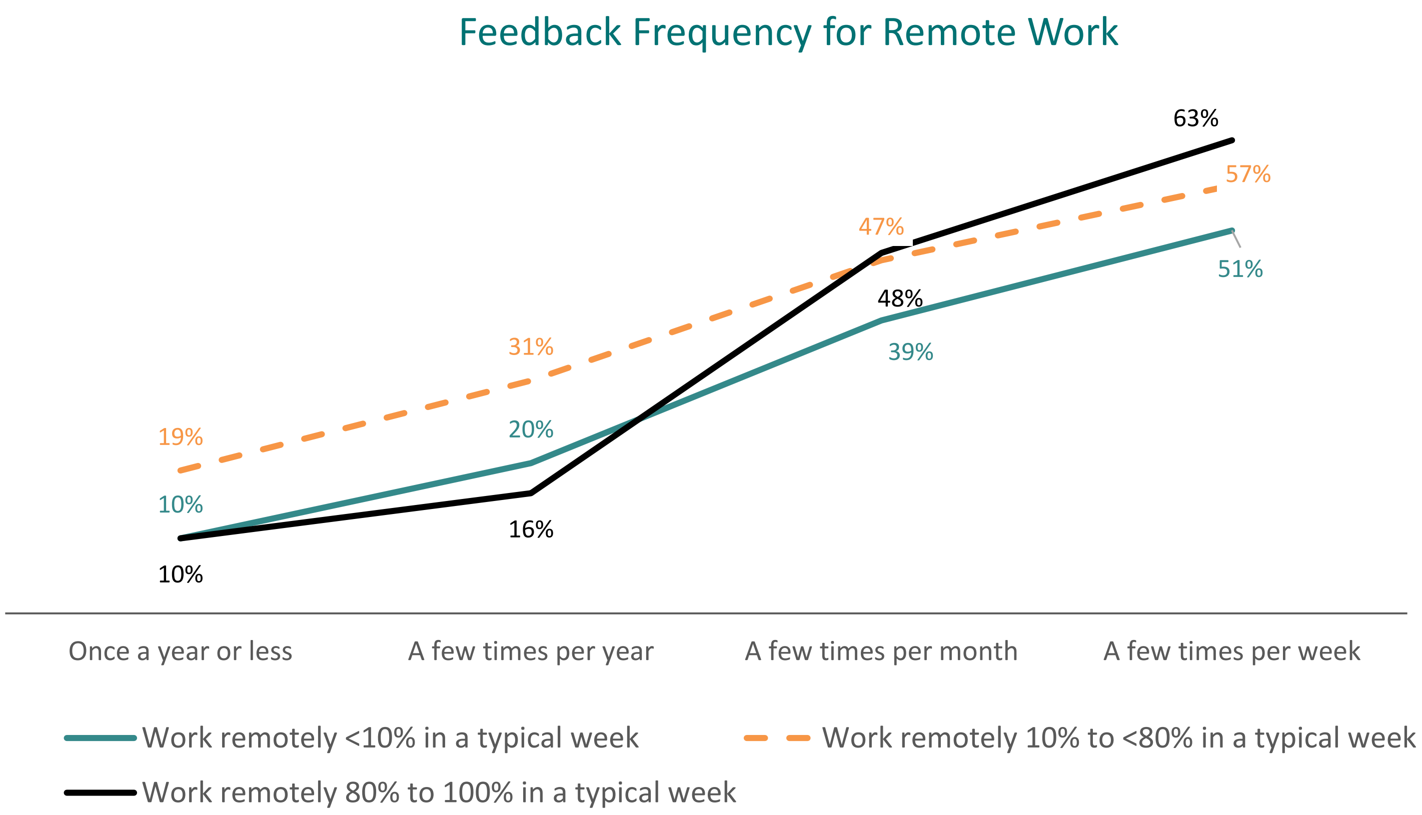
			Ability to access talent	Productivity (individual and team)	Cost of real estate
Almost entirely on premises	Limited remote work, large HQ	Company leaders and employees are centralized in 1-2 big principal offices	◑	◕	●
Hybrid models	Partially remote work, large HQ	Company leaders and most employees spend most, but not all, of their time in 1-2 principal offices	◕	◕	●
	Partially remote work, multiple hubs	Multiple proportionate-size offices with leadership and employees dispersed among all offices	◕	◕	◕
	Multiple "microhubs"	Leadership and employees dispersed across small-footprint "microhubs" located in various geographies	◕	◕	◕
	Partially remote work with flex space*	No permanent offices; rented flex space* used for periodic in-person collaboration (but not connectivity)	●	◕	◑
Almost entirely off premises	Mostly remote work, no office sites		●	◕	○

*Flex space includes temporarily (e.g., monthly) rented space used in select cities for periodic gathering and collaboration.

Source: McKinsey Quarterly, see Alexander (2020)

- Choosing the right blend of remote and on-site work depends on the factors for which leaders are optimizing (e.g., real estate cost, productivity, access to talent, etc.).
- All of these are worthy goals, but in practice it can be difficult to optimize one without considering its effects on the others.

Frequent Feedback is Vital

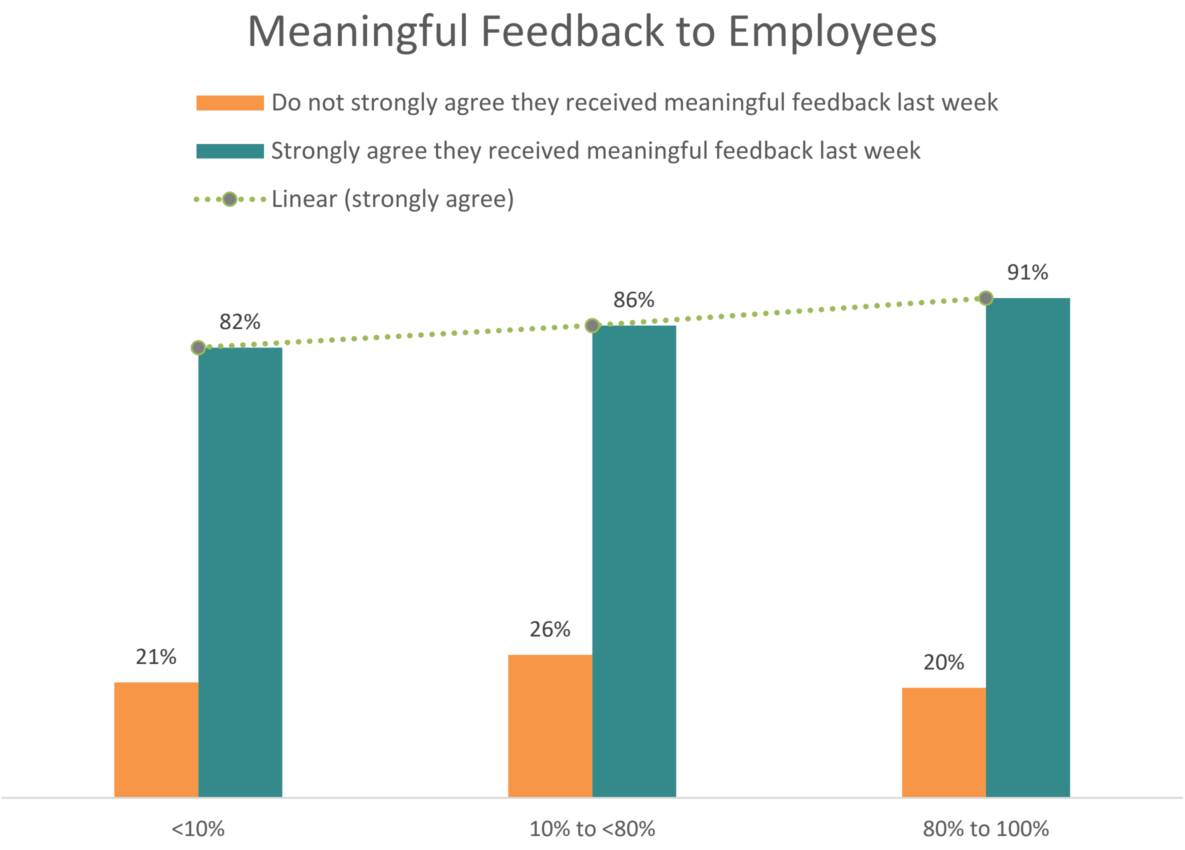


Make feedback frequent.

- Managers drive employee engagement by communicating frequently.
- Too little feedback decreases employee engagement yet remote workers who work from home *most of the time* rarely receive feedback from their manager.
- Engagement increased for fully or near-fully remote workers when they received feedback a few times per week.

Source: Gallup

Frequent Feedback is Vital



Make feedback meaningful.
Be present and tuned in to employees' needs and priorities.

- Meaningful communication elevates engagement and performance.

- Fully and nearly fully remote employees who strongly agree they received meaningful feedback in the past week are 4.6 times as likely to be engaged than those who do not strongly agree.

Source: Gallup

Tsedal Neeley

Naylor Fitzhugh Professor of Business Administration, Harvard Business School

Tsedal Neeley is an award-winning professor in the Organization Behavior unit at Harvard Business School. Prior to her academic career, Neeley spent ten years working for companies like Lucent Technologies and The Forum Corporation in various areas, including strategy for global customer experience. This helped shape her work, which focuses on the effects of globalization on organizations and their employees. Tsedal received a Ph.D. in Management Science and Engineering from Stanford University, specializing in work, technology and organizations. She was named to the Thinkers50 2018 *On the Radar* list for making lasting contributions to management, honored as a Stanford Distinguished Alumnus Scholar and received the Stanford University School of Engineering Lieberman award for excellence in teaching and research.

EXPERT INSIGHT

- The rapid and unprecedented changes brought on by the COVID-19 pandemic have accelerated the transition to remote working, requiring the wholesale migration of nearly entire companies to virtual work in just weeks and leaving managers and employees scrambling to adjust. This massive transition has forced companies to rapidly advance their digital footprint, using cloud storage, cybersecurity and device tools to accommodate their new remote workforce.

- Experiencing the benefits of remote working — including nonexistent commute times, lower operational costs and a larger pool of global job applicants — many companies, including Twitter and Google, plan to permanently incorporate remote days or give employees the option to work from home full time. But virtual work has its challenges. Employees feel lost, isolated, out of sync and out of sight. They want to know how to build trust, maintain connections without in-person interactions and maintain a proper work/life balance. Managers want to know how to lead virtually, how to keep their teams motivated, what digital tools they'll need and how to keep employees productive.

Growing DEI Infusion into Venture Capital

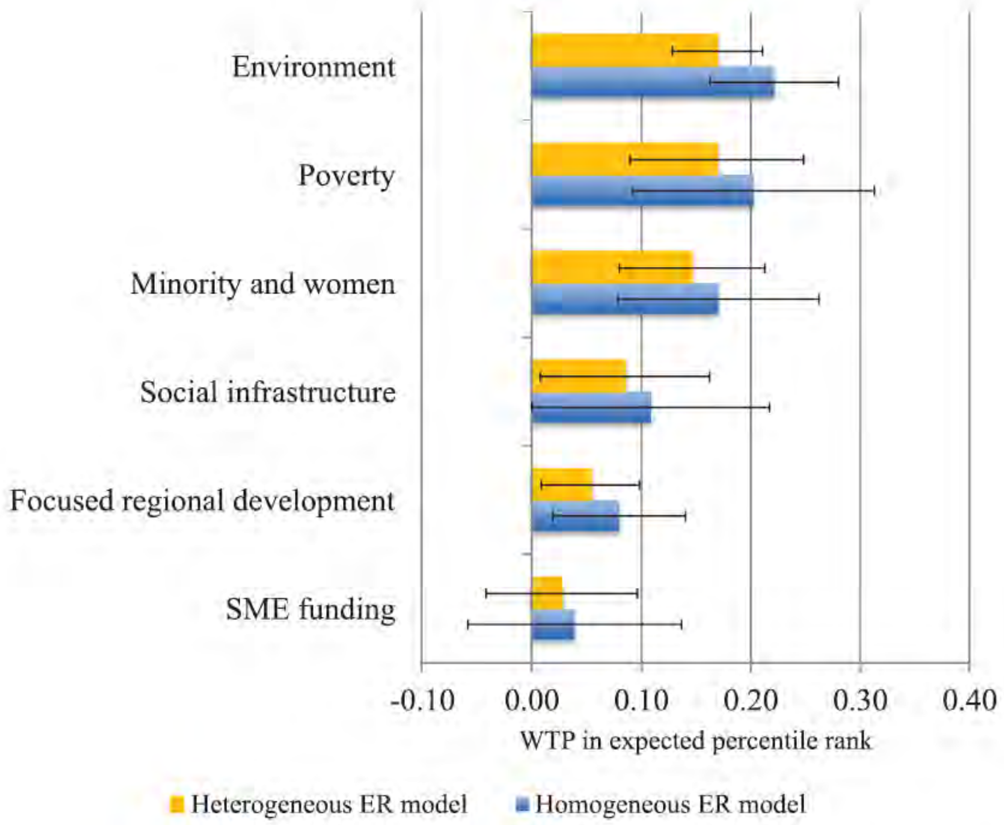
Notable Trends

- Impact investors are willing to forego 2-4% in excess internal rate of return. With this "willingness to pay" is highest in impact funds focused on environment, poverty alleviation, and women and minority issues.
- Some limited partners and portfolio companies are starting to request DEI details from venture capital firms.
- More investors are using AI to help with investments, yet this technology can have implicit biases within the algorithms.

Source: Hendricks, Howell and Bingham 2021

Investors Willing to Take Lower Returns for Impact Investment

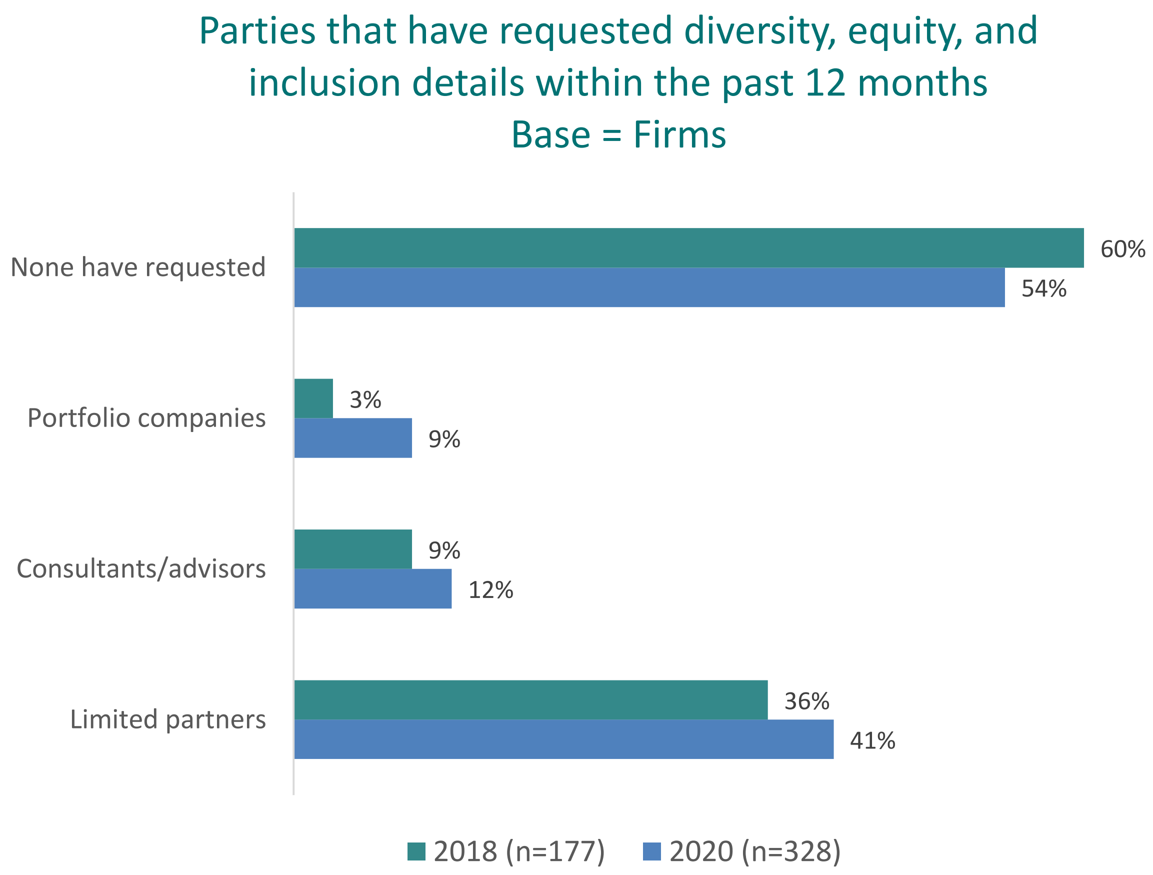
- Impact investors are willing to forego 2-4% in excess internal rate of return.
- This “willingness to pay” is highest in impact funds focuse on environment, poverty alleviation, and women and minority issues.
- Investors most likely to invest in impact funds are those with organizational missions, those facing political or regulatory pressures and those who benefit from politica good will.
- Laws that discourage sacrifice of financial returns for imp (e.g., ERISA) reduce this effect.



Credit: Barber et al (2021)

Source: Barber et al (2021)

Stakeholders Requesting DEI Details from VC Firms



- Between 2018 and 2020, there was a slight increase in the percentage of limited partners and portfolio companies that requested DEI details from venture capital firms.

Source: VC Human Capital Survey, NVCA

Laura Huang

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Huang's research examines early-stage entrepreneurship and the role of interpersonal relationships and implicit factors in the investment decisions of financiers, such as angel investors and VCs. Her work studies the subtle signals and cues that often impact the behavioral perceptions of investors, which can lead to implicit bias in the investing process. Her research has been published in several academic journals, including the Academy of Management Journal, Administrative Science Quarterly and the Proceedings of the National Academy of Sciences, and has also been featured in the Financial Times, The Wall Street Journal, USA Today, Forbes and Nature.

EXPERT INSIGHT

- Companies are being pressured by the public to recognize and change their biased business policies/interpersonal interactions, but this has the potential to give investors another "out" in how they choose to invest, where they can be more biased and exercise more (negative) personal discretion.
- Investors are using AI to invest. Machine learning/AI code is susceptible to the implicit biases/prejudices of the person creating the algorithm, so consideration must be given to how these algorithms can result in (perhaps unintended) gender- and race-based disparities. For example, if AI is used to filter for only those startups with huge potential for scale and growth, this will disproportionately impact women- and minority-owned startups. My research, for instance, finds that people communicate differently, and this affects perceptions of scale and growth.
- Women and other underrepresented groups are still in the minority in the business/entrepreneurial space. Can an increase of participation by these groups minimize implicit bias?

HUMAN CAPITAL: TEAMS & TALENT

Necessity Entrepreneurship Grows During Pandemic

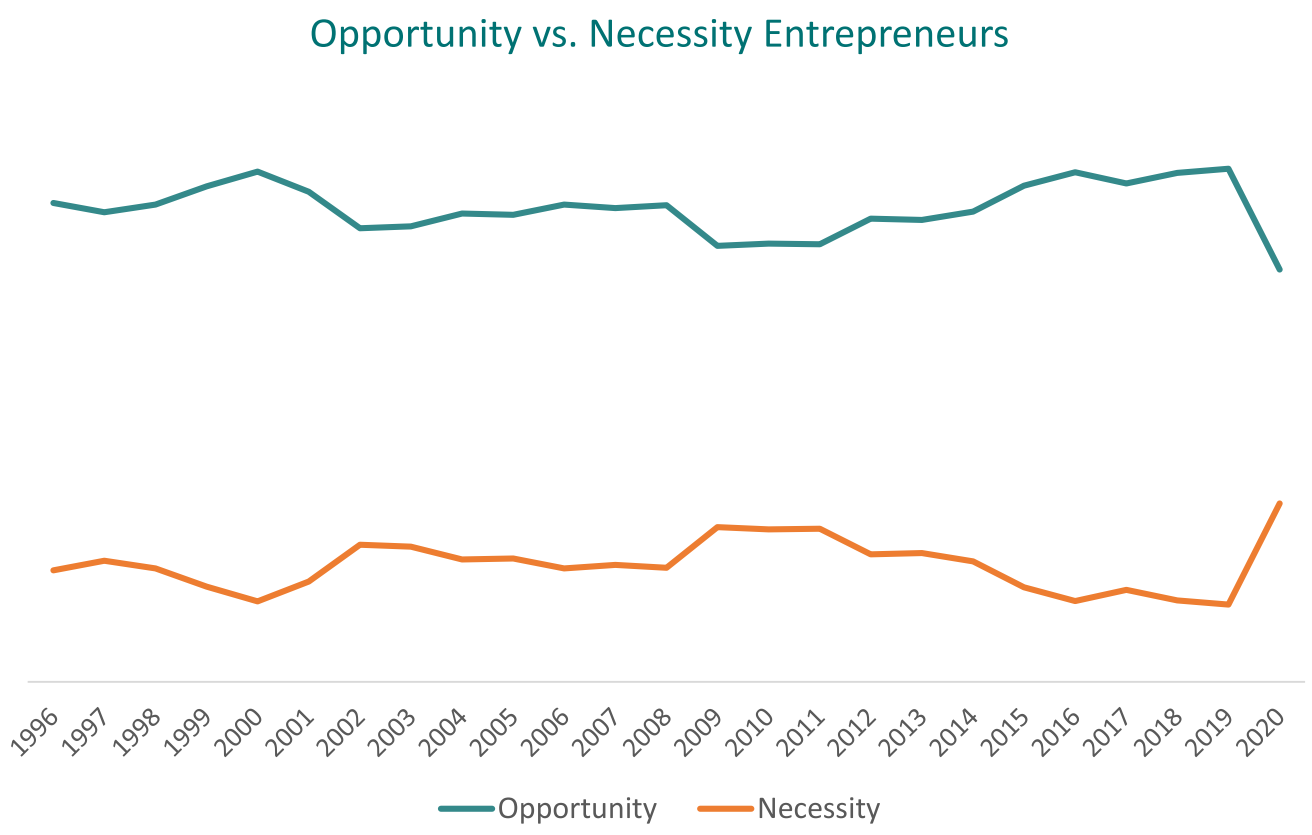
Notable Trends

- Amid the pandemic, many new entrepreneurs started businesses out of necessity in 2020.
- The type of knowledge and strategic advice that necessity entrepreneurs require will differ from that required by more common opportunity entrepreneurs.

Necessity vs. Opportunity Entrepreneurs

Opportunity Entrepreneurs	Necessity Entrepreneurs
Those individuals who are not unemployed (i.e., wage/salary workers, enrolled in school or college, or not actively seeking a job) before starting businesses	Those individuals who are initially unemployed before starting businesses

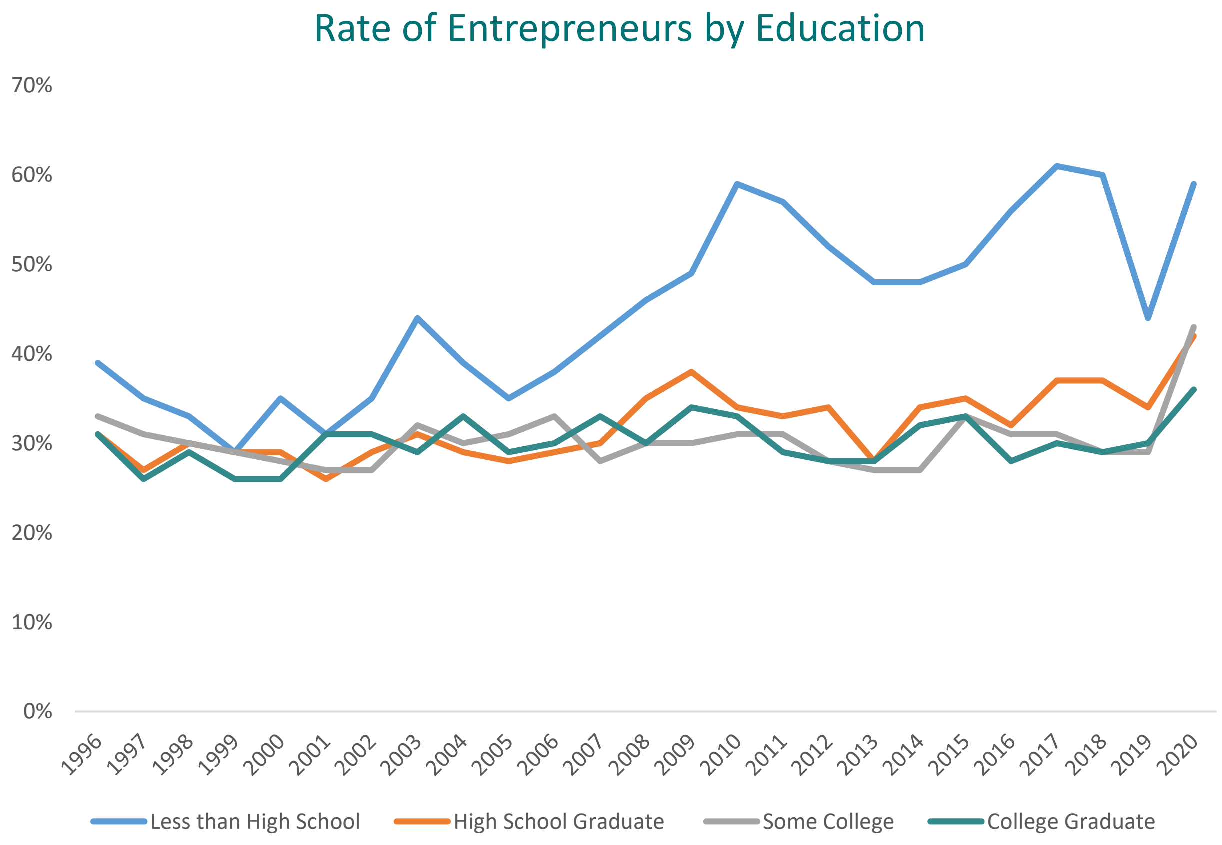
Necessity Entrepreneurs in the Time of COVID-19



- Rates of "necessity" entrepreneurship are sharply up, and rates of "opportunity" entrepreneurship are down.
- There has been an increase in individuals who are starting businesses because they lost their job during the pandemic.
- "The decline in opportunity share of new entrepreneurs from 2019 to 2020 was 17.1 percentage points. In comparison, the drop in the opportunity share from 2008 to 2009 during the Great Recession was 6.9 percentage points." (Fairlie & Desai, 2021)

Source: Estimates calculated from the Current Population Survey

Entrepreneurship Rates Highest Among Those with Lower Education Attainment



- Rates of new entrepreneurs increased for all education groups in 2020, but increased the most for those with less than a high school education and those with some college (Fairlie & Desai, 2021).
- In general, the rate of new entrepreneurs is highest for those with less than a high school education (Fairlie & Desai, 2021).

Source: Estimates calculated from the Current Population Survey

Sekou Bermiss

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Sekou Bermiss' research investigates how institutional factors shape the perception of firms by critical stakeholders. His research also explores the antecedents and consequences of human capital mobility and how different forms of employee movement affect a firm's ability to compete with rivals. Bermiss teaches courses in people analytics, managing human capital, leading for impact, and organizational theory and design. He is a fellow at the Filene Institute, where he leads the research efforts of the "War for Talent" Center of Excellence.

EXPERT INSIGHT

- Necessity entrepreneurs require a different kind of mentoring. The individuals who are increasingly engaging in entrepreneurship at higher rates are arguably those who are less equipped to do so; many do not have a formal education, let alone a business education.
- More individuals who are becoming entrepreneurs are doing so not because they are *inspired* to, but because they lost their jobs.
- These are the people who are MOST in need of advice and mentorship!

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We will continue to work this year to identify, research and translate related special topics. We invite you to submit your relevant research or topic ideas to us at frontiers@kenan-flagler.unc.edu.

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