PRIVATE EQUITY FINDINGS

Insights from private equity research worldwide

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THE RIGHT RECIPE?
How governments spend public money on private markets

WINNERS AND LOSERS
Who really gains from SPAC investments?

MYTHICAL NO MORE
Why unicorns are becoming commoner by the day

A HELPING HAND

What kinds of value-add can entrepreneurs expect from venture capital backers?

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We've seen a boom in special purpose acquisition companies (SPACs) over the past two years, but who really benefits from these vehicles? The answer is not as straightforward as many might believe, as we discover through the findings of three recent academic studies.

"We were shocked at how expensive SPACs were. It took a long time for us to realise that the costs could be passed to non-redeeming shareholders."

Michael Ohlrogge, New York University School of Law

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It is widely acknowledged that venture capital firms can add value to portfolio companies, but how do they do it? We discuss this with the authors of three academic papers looking at this question, plus two seasoned venture capitalists, to determine whether networks or knowledge are the most valuable part of the venture capital toolkit.

28 Mythical no more

As the number of unicorns continues to rise sharply, we catch up with the author of an updated study that compares the characteristics of the current cohort of unicorns with those of the past and examines what's behind this growth in numbers.

"Hitting a billion dollars on the nose is what gets you into the club. But it's an artificial number, and it can be detrimental to the long-term valuation of a company if it's stretching to get there."

Keith Brown, The University of Texas at Austin

FOREWORD

Professor Josh Lerner
Entrepreneurial Management Unit,
Harvard Business School

Jeremy Coller
Chief Investment Officer,
Coller Capital

As venture capital investment sets new records – the US$621bn of VC investment globally in 2021 was more than double 2020's total – we take a timely look at how venture capitalists create value in the businesses they back.

Our cover feature, **A helping hand**, explores this question through a discussion with academics and seasoned practitioners. It looks at the contribution of relationships and networks to VC value creation compared with sector knowledge and experience, highlighting findings from three separate academic studies. The piece also explores how VC syndication affects the picture and what impact it has on strategic alliances.

The boom in VC funding in recent years has given rise to an increasing number of unicorns (private companies valued at US$1bn or more). In **Mythical no more**, we showcase a new research paper that charts the rise of the unicorn phenomenon. Building on a study conducted in 2015, this latest research compares the significantly expanded unicorn cohort of today with the previous one. We speak to one of the paper's authors about the role of the private capital boom in unicorn creation, where value from these investments is flowing, and what happens next.

A number of today's unicorns are likely to have benefited from some form of government funding in their early stages as states around the world seek to foster innovation through start-up funding programmes. In **The right recipe?**, we outline the findings of recent academic research into the extent of such schemes and how these interact with VC funding in early-stage businesses. We ask practitioners how helpful government programmes really are in creating success stories and how they can be most effective.

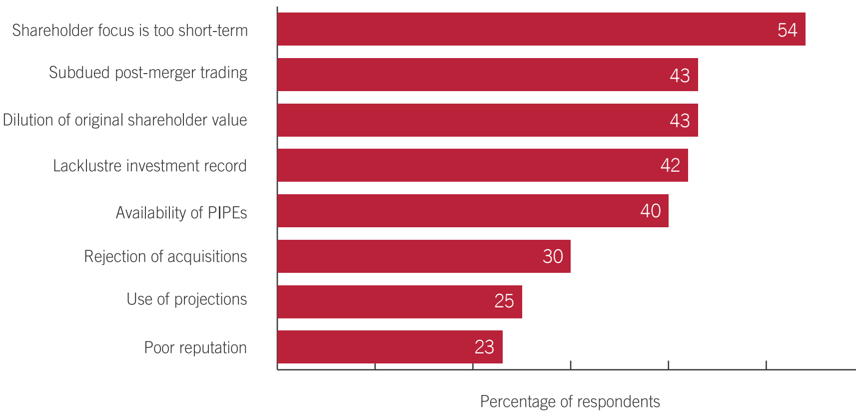
And finally, we take a look at one of the biggest public market trends of recent years – special purpose acquisition companies (SPACs). Some of the shine may have come off these vehicles recently, but there are now so many in the market seeking acquisitions, it's clear that they will continue to make headlines for some time to come. But who really benefits from them? **Winners and losers** examines the findings of three new academic papers, to debate who bears their costs, who reaps the rewards, what purpose they serve in the market, and how they need to evolve to become more balanced and efficient vehicles for taking companies public.

We hope you find this latest issue an engaging and thought-provoking read. We always welcome any feedback, comments or questions you may have, so please do get in touch at: *pefindings@collercapital.com.*

BY THE *NUMBERS*

The trouble with SPACs

What are the top three disadvantages of using a SPAC to raise capital or take business public?



Source: Dechert/Mergermarket, *2022 Global Private Equity Outlook*

- Special purpose acquisition companies (SPACs) may have risen in popularity over recent years, but private equity firms are well aware of their shortcomings.
- In Dechert/Mergermarket's *2022 Global Private Equity Outlook* survey of PE executives, more than half of general partners said the main disadvantage of SPACs was the presence of 'hot money' – arbitrage funds that park their cash and do not intend to become long-term shareholders.
- Meanwhile, 43% of GPs pointed to both share price falls following mergers and value dilution for original shareholders.

64%

The percentage increase in the number of institutional investors investing in venture capital globally in the last four years. Active investors in VC rose from 3,878 in 2017 to 6,365 in 2021.

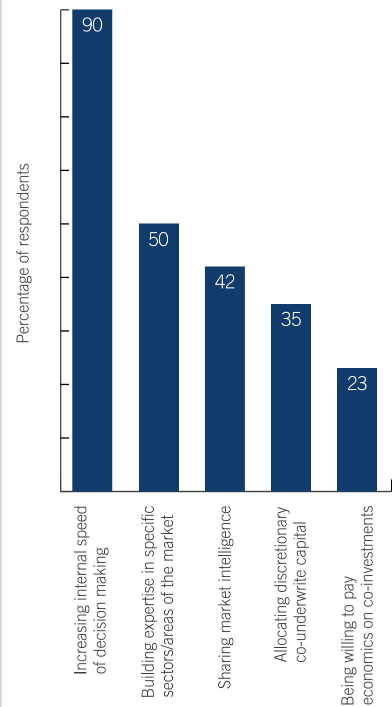
30.3%

The median net IRR of 2018 vintage VC funds. This is the highest net IRR of any alternative asset class in the 2018 vintage.

Source: Preqin

LPs seeking to be attractive co-investment partners

Steps taken by LPs to make themselves more attractive as co-investors

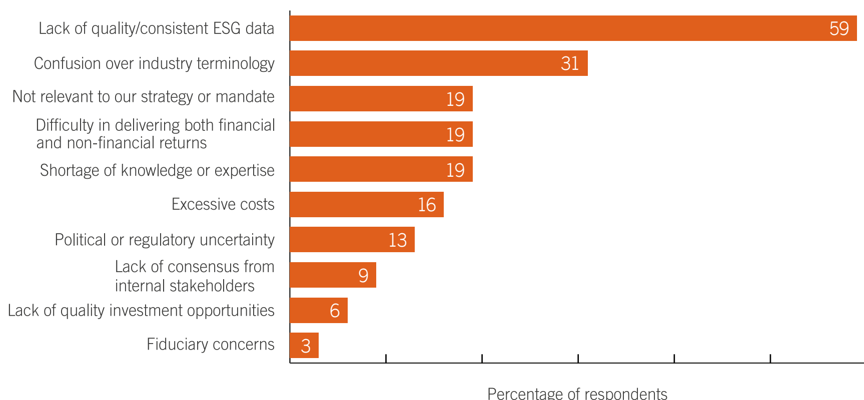


Source: Coller Capital, *Global Private Equity Barometer*, Winter 2021-22

- As competition for investments heats up, more than half of LPs (56%) are taking steps to improve their attractiveness as co-investment partners, according to Coller Capital's *Global Private Equity Barometer* for Winter 2021-22.
- Of those taking steps, 90% are improving their speed of their decision-making. Half are building up expertise in specific areas or sectors of the market, and 42% are sharing market intelligence.

Reliable data is the biggest barrier to implementing ESG policies

Fund manager views on the main challenges of implementing an ESG policy

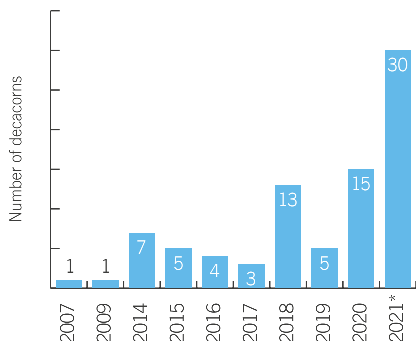


Source: Preqin, *Investor Survey 2021*

- Investing according to environmental, social and governance (ESG) principles may have picked up steam in recent years, but general partners continue to struggle with embedding policies in their processes.
- The top barrier to achieving this is a lack of good-quality or consistent data – mentioned by 59% of respondents to Preqin's *Investor Survey 2021*.
- The second barrier is confusion over industry terminology, cited by 31%.
- These barriers may diminish over time, however, as GPs are clearly becoming more expert in ESG – in 2020, 32% said they lacked the knowledge to implement policies; in 2021, just 19% said this.

Decacorn population swells

Global new decacorn count by year

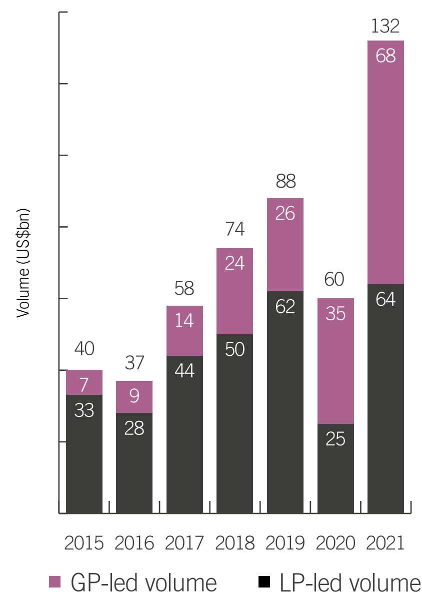


Source: Crunchbase *To mid-November

- The number of new decacorns (private companies valued at US$10bn or more) reached fresh heights in 2021. By mid-November, 30 new decacorns had emerged globally – double the 15 created in 2020 – according to Crunchbase data.
- This growth echoes the expansion in venture capital investment, which, at US$621bn, was a 111% increase on 2020, according to CB Insights.

Global secondary activity reaches record level

Annual secondary transaction volume (US$bn)



Source: Jefferies, *Global Secondary Market Review 2022*

- An explosion of general partner-led deals in 2021 resulted in a record-shattering year for secondaries transaction volume, according to the Jefferies *Global Secondary Market Review 2022*. Volume reached US$132bn last year, far outstripping the previous high of US$88bn.
- For the second year running, GP-led deals took a greater share of secondary volume than LP-led portfolio sales – the US$68bn of GP-led transactions accounted for 52% of total secondary market volume.
- Overall GP-led volume in 2021 was 94% up on 2020 figures, reflecting both the wider acceptance of these transactions in the market and a step-up in deal size – there were over 15 GP-led investments of more than US$1bn in size.
- LP-led volume also rose year-on-year – by 156% – although the increase is a reversion to historical growth after a slow 2020, when just US$25bn of volume was transacted.

THE RIGHT *RECIPE?*

Governments frequently view a mixture of state and private sources of capital as a winning combination for encouraging early-stage company growth and innovation. We look at new research that examines how these two types of funding interact and ask how they can best work together.

By Nicholas Neveling

"SO MUCH TIME IS SPENT LOOKING AT THE IMPACT OF PRIVATE MARKETS ON INNOVATION AND ENTREPRENEURSHIP, YET THERE IS MINIMAL FOCUS ON HOW GOVERNMENT PROGRAMMES ARE STRUCTURED AND DEPLOYED"

Shai Bernstein
Harvard Business School

Since the early 2000s, governments around the world have become increasingly interested in expanding the intellectual capital economy, with investment in early-stage venture funds a popular lever for doing so. However, government-backed initiatives designed to boost early-stage companies have had a patchy track record. For every Silicon Valley, which emerged out of various military and government research hubs in the San Francisco Bay Area, there are many examples of state-funded inefficiency, often at great cost to taxpayers.

So what predicts whether government investment programmes will work or fail, and what does this mean for private market investors backing start-ups?

In a recent paper, *The Dance between Government and Private Investors: Public Entrepreneurial Finance around the Globe*, Jessica Bai, Shai Bernstein, Abhishek Dev, and Josh Lerner explore how government funding for early-stage companies interacts with funds invested through private markets.

A global view

Bernstein says a primary objective for the study was to build a picture of how governments and private investors around the world have tackled early-stage investment, and to investigate whether such interaction has, for the most part, been effective.

> "A PROFIT-MOTIVATED PRIVATE MARKETS INVESTOR LOOKS AT HOW THE MARKET WILL ADOPT A TECHNOLOGY MORE BROADLY AND IS FOCUSED ON SCALING THAT BUSINESS COMMERCIALLY. GOVERNMENTS AREN'T SET UP TO LOOK AT THINGS THAT WAY"
>
> **Ken Pentimonti**
> *Paladin Capital*

The paper's global coverage is one of its distinctive characteristics, according to Bernstein. The study analysed a proprietary database that covered 755 government programmes in 66 countries worldwide and took more than a year to assemble. It provided a springboard for understanding the scope of government investment in start-up ecosystems internationally.

"We started to look at the literature on government funding programmes, and we realised that a lot of it focused on a certain programme or country," says Bernstein. "Most papers on the topic drilled deeply into a single programme and tried to identify its causal impact. There was very little understanding of what funding programmes looked like across different regions, governments, and countries.

"We tried to take a step back and broadly explore how governments think about structuring these initiatives."

The paper's authors were also interested in unpacking the different priorities and skillsets of government and private sector organisations, and then understanding whether co-operation between them delivered good outcomes.

"When a pathway to commercialisation is far away and capital requirements are substantial, governments can step in and fund technology or research that will benefit society and may lead to commercial opportunities in the future," Bernstein says. "Where the tension emerges is that investors who allocate capital to very risky projects are experts in doing so. The notion that governments should fill funding gaps is very appealing, but are they equipped to do so effectively?"

For Ken Pentimonti, a principal at Paladin Capital, government interventions have proven successful in identifying promising innovation, but require private market expertise to put technology-rich companies on an independent financial footing. "It's one thing identifying an innovative technology and getting a company up and running, but quite another to make it sustainable and build a platform that grows over a long period," he says. "A profit-motivated private markets investor looks at how the market will adopt a technology more broadly and is focused on scaling that business commercially. Governments aren't set up to look at things that way."

Profits from partnership

The study found that government start-up investment plays a significant role in early-stage company ecosystems. On average, between 1995 and 2019, governments spent US$1.85bn a year and the average funding programme lasted 11 years. Over this time, total global government spending on these types of programmes increased from US$50bn in 1995 to more than US$170bn in 2019.

> "PRIVATE CAPITAL IS LESS PREPARED TO INVEST IN SCIENTIFIC AND TECHNOLOGICAL RISK, GIVEN THAT YOU CAN GET LESS RISKY RETURNS FROM PURE SOFTWARE. THIS IS WHERE GOVERNMENT INVESTMENT CAN ADD REAL VALUE"
>
> **Harry Briggs**
> *OMERS Ventures*

"As we worked through the data, it was surprising just how substantial government investment in start-ups was," Bernstein says. "We found that government allocations to these funding programmes were in line with global venture capital deployment over the past 10 years.

"So much time is spent looking at the impact of private markets on innovation and entrepreneurship, yet there is minimal focus on how all these government programmes are structured and deployed."

The paper also found statistically significant evidence that government funding programmes increased local innovation: for instance, following the initiation of a government programme, total patenting activity increased by 41% and the number of high-quality patents increased by 32%. Moreover, positive outcomes such as these were especially prominent when governments collaborated with the private sector. In countries with good governance and established private capital communities, this collaboration was greater and mutually reinforcing.

"We observed different types of structure for governments working with the private sector," explains Bernstein. "In some cases, you would have professional investors sitting alongside government officials on investment committees. Often, you would see a requirement under which a government would match private sector allocations. What emerged is that the willingness of private markets investors to allocate to a project was an important sense-check for a government and a stamp of approval for a project's viability."

For the private sector, meanwhile, co-investing alongside a government changes the risk-reward dynamics from an investment perspective and creates sufficient comfort for private markets players to deploy capital into opportunities that would otherwise be viewed as too risky. Indeed, the authors found that private market investors were involved in 85% of all government funding programmes, and that in 43% of government programmes, funding was conditional on raising matching capital from private market investors.

"The VC investor base in the UK and Europe is not as deep as it is in the US," says Saul Klein, who is the founding partner of start-up investment funds LocalGlobe and Latitude, and who also holds UK government advisory roles on science and technology, the digital economy, and entrepreneurship. "Governments have played a crucial role in ensuring that the plumbing is in place to direct funding to research and entrepreneurs. They do not want to be seen to be picking winners, but they are needed to fund innovative companies and to help get them across that 'valley of death' between early seed-funding rounds and market commerciality."

"GOVERNMENTS DO NOT WANT TO BE SEEN TO BE PICKING WINNERS, BUT THEY ARE NEEDED TO FUND INNOVATIVE COMPANIES AND TO HELP GET THEM ACROSS THAT 'VALLEY OF DEATH' BETWEEN EARLY SEED-FUNDING ROUNDS AND MARKET COMMERCIALITY"

Saul Klein
LocalGlobe and Latitude

For Harry Briggs, a managing partner at OMERS Ventures, government tax incentives and matched funding have delivered, especially in the development of more nascent technologies. "VC returns over the past 20 years have predominantly come from low-capital-intensive internet software and consumer tech," he says. "Much less private capital is prepared to invest in scientific and technological risk, given that you can get less risky returns from pure software. This is where government investment can add real value."

He adds that government funding is most effective when there is collaboration with private capital managers. "Government programmes are much more sophisticated and targeted now," he says. "But in the past, interventions could be piecemeal and sub-scale, with small pockets of funding and a lot of bureaucracy that limited people's ambitions."

Capital where it's due

The effectiveness of government funding is also contingent on the depth of a country's private markets. In Europe, for example, the European Investment Fund and Luxembourg Future Fund – two government-backed limited partners providing matched funding for managers on the fundraising trail – have provided key support for the market by cornerstoning early-stage funds and "crowding in" third-party private capital, Pentimonti says. In the larger, more mature US market, however, the need for government funding is less relevant, as the pools of liquidity available to entrepreneurs are far deeper, he adds.

Indeed, when there is excessive private and government capital in the market, a government's involvement can prove counterproductive to its objectives. "It is interesting that the widespread debate and interest around ramping up public investments in start-ups is happening at a time when VC funding for tech companies is far from short in supply," says Spyro Korsanos, managing partner at Fuse Venture Partners. "There is also an inherent weakness to most government support schemes that cannot be overlooked: firms that have secured funding at a level close to, or above, the official threshold for receiving government support (£21m under the new UK Future Fund, for example) might worry that partaking in a scheme gives the impression that there hasn't been enough interest in co-investment." This, he adds, can "generate unjust hesitancy among private investors".

Bernstein says the question of how governments should target and structure their programmes to deliver the best results – and avoid any unintended outcomes – presents an interesting avenue for further research.

"We observed significant variation in the way these programmes are structured across different types of financial instruments, ranging from equity to debt," he says. "There is also a lot of variation in the types of collaboration with private capital markets.

"Given the sheer scale of government investment in early-stage companies, this paper is just the first step in thinking about the optimal structures for incentivising innovation around the globe. It's a stepping stone for investigating what this means for countries that don't have deep private capital markets ecosystems."

KEY FINDINGS

In their paper *The Dance between Government and Private Investors: Public Entrepreneurial Finance around the Globe*, Jessica Bai (Harvard University), Shai Bernstein and Josh Lerner (Harvard Business School) and Abhishek Dev (Yale University) examine how government funding programmes geared towards early-stage companies interact with private capital markets.

The study uses a proprietary database, covering 755 government programmes in 66 countries worldwide between 1995 and 2019, to produce a distinctive international overview of how governments and private markets interlock when backing start-ups.

The research finds that the average annual government budget for investing in early-stage companies between 2010 and 2019 was US$156bn, which is comparable to global annual average venture disbursements of US$153bn over that period. It also finds that government capital tends to follow private capital investments, including when VC activity increases in particular industries and countries. Using World Bank metrics, the authors find that private sector involvement is greater when government programmes target early-stage businesses in countries where governments are deemed more effective. And finally, from metrics based on US patent filings, the research finds a meaningful and statistically significant improvement in innovation following the initiation of government funding programmes.

The results suggest a socially beneficial complementarity between public and private funding, and that governments rely on private capital expertise to improve capital allocation and mitigate investment friction.

WINNERS *AND LOSERS*

Special purpose acquisition companies have seen a resurgence since the start of the pandemic and nowhere more so than in the US. But who really gains from SPAC transactions? And do they play a useful role in public markets? Three new research papers examine these issues.

Special purpose acquisition companies (SPACs) may have been around for decades, but their popularity rocketed in 2020 and 2021. In many markets around the world the number of SPACs rose, but activity in the US far outstripped both historical trends and that in other regions. In 2020, there were 248 SPAC IPOs in the US, accounting for 55% of the country's IPO market by volume and for 46% of proceeds, according to SPAC Analytics data. In 2021, there were still more – a total of 613 SPAC IPOs (63% of the volume and 48% of the proceeds). That compares with just 59 SPACs in the whole of 2019 in the US, representing only 28% of volume and 19% of proceeds.

The search for returns is likely to have been a driving force behind the resurgence of SPACs, particularly given the record low interest rate environment that has largely persisted since the start of the pandemic.

The allure of gaining access to private companies through SPAC mergers – companies that public market investors would not historically have been able to access – is likely to have been another major selling point for SPACs.

For companies, SPACs have often been marketed as offering speed and certainty of listing, when compared with an IPO.

Meanwhile, on the fund manager side, some private equity firms have exited investments through the SPAC market, and others are raising or investing in SPACs themselves. TPG's Pace Group has sponsored a number of SPACs in recent years, for example, and Apollo Global Management is even believed to be raising a US$500m fund to invest in SPACs.

In fact, SPACs became so popular that politicians and sports stars muscled in on the act – former US House speaker Paul Ryan has raised a SPAC, as have tennis players Serena Williams and Naomi Osaka, and former basketball player Shaquille O'Neal, among others.

SPAC SPONSOR
IPO INVESTOR
POST-MERGER INVESTOR

Regulatory interest

This boom has attracted plenty of attention – including that of regulators. The US Securities and Exchange Commission (SEC) is considering new rules for SPACs in a bid to improve transparency and to level the playing field with IPO regulations. One area of focus is forward-looking statements, given that some had interpreted existing laws as allowing SPACs to benefit from "safe harbour" provisions (which exempt an entity from legal liability if certain conditions are met). And while this scrutiny has slowed the US SPAC IPO market somewhat, new listings continue to be announced – this year, there had already been 21 by 24 January.

Against this backdrop, academics have been working on three research papers to determine who benefits from SPACs and what purpose they serve in the market. The first, *A Sober Look at SPACs*, by Michael Klausner, Michael Ohlrogge and Emily Ruan, was originally intended to look at what the authors could learn from SPACs about the process of going public and how the IPO process could be improved. Yet the research soon took on a different dimension.

"We found that SPACs are so complex, opaque and poorly understood that it was hard to draw meaningful conclusions about the process of going public without really getting under the hood of SPACs first. That is what led us to look at them so closely," says Ohlrogge.

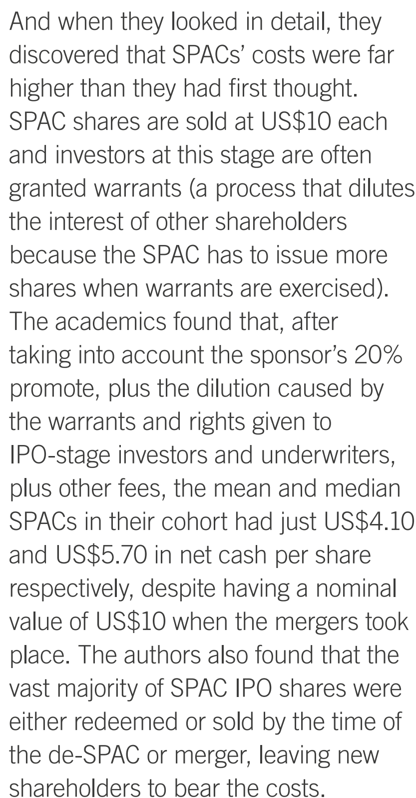
THE SPAC PROCESS

Formed by a management team known as the sponsor, a SPAC raises capital through an IPO for the purpose of acquiring a company. The sponsor invests a nominal amount in the vehicle, for which it typically receives a 20% share, known as a promote. Investors in the SPAC are sold units at US$10 per share, which usually include both common stock and warrants. The IPO proceeds are placed into a trust account and the SPAC typically has two years to find and buy a target. If no merger is executed in that time, capital is returned to investors minus fees, while the sponsor forgoes compensation.

Frequently, a SPAC raises further capital via private investment in public equity (PIPE) transactions to fund the company acquisition, especially as SPAC IPO investors have the option to redeem or sell their shares. The merger between the SPAC and the target company is commonly known as a de-SPAC.

"OUR PAPER HIGHLIGHTS THE ROLE THAT SPACS PLAY IN SPURRING INNOVATION AND FILLING A GAP IN PUBLIC MARKETS BY BRINGING SMALLER AND RISKIER COMPANIES TO MARKET"

Jessica Bai
Harvard University



And when they looked in detail, they discovered that SPACs' costs were far higher than they had first thought. SPAC shares are sold at US$10 each and investors at this stage are often granted warrants (a process that dilutes the interest of other shareholders because the SPAC has to issue more shares when warrants are exercised). The academics found that, after taking into account the sponsor's 20% promote, plus the dilution caused by the warrants and rights given to IPO-stage investors and underwriters, plus other fees, the mean and median SPACs in their cohort had just US$4.10 and US$5.70 in net cash per share respectively, despite having a nominal value of US$10 when the mergers took place. The authors also found that the vast majority of SPAC IPO shares were either redeemed or sold by the time of the de-SPAC or merger, leaving new shareholders to bear the costs.

"We were shocked at how expensive SPACs were," says Ohlrogge. "That led us to look at why a company would choose this as a way of going public. It took a long time for us to realise that SPAC merger agreements could be structured in such a way that the costs could be passed on to non-redeeming shareholders."

For exiting PE firms, the SPAC boom has been something of a windfall, according to Ohlrogge. "Our research finds that the owners of target companies do very well in SPAC mergers," he says.

"As long as they structure the deal so that they get as much or more value post-merger as they owned pre-merger, it will be a good deal for them. The research shows that the target owners are able to do this quite effectively. They are sophisticated venture capitalists and PE firms who would not be willing to bear SPACs' huge costs themselves, but are happy to sign merger agreements that pass on those costs to non-redeeming SPAC investors."

A second research paper, *SPACs*, by Minmo Gahng, Jay Ritter and Donghang Zhang, also finds that costs are high. It finds that SPAC IPO investors do well, earning an average annualised return of 15.9% between the IPO and merger, but that de-SPAC-period investor returns are more mixed – equally weighted average one-year returns are -8.1%, while those holding warrants earned an average annual return of 68%.

"We hadn't expected to find that warrants did so well relative to common stock following a de-SPAC," says Ritter. "And this is not yet part of the received wisdom around SPACs – there is a fairly large difference between the equally weighted and value-weighted returns. In poor deals, there tend to be high redemptions, so that even if the share price drops by 90%, investors do not lose much because they have pulled out most of their cash."

"I DON'T SEE SPACS AS A PROXY FOR PE. IN ADDITION, SPAC SPONSORS ARE NOWHERE NEAR AS WELL RESOURCED AS PE FUNDS, WHICH ARE FAR MORE LIKELY TO SEE DEALS WELL BEFORE SPACS AND GET FIRST REFUSAL"

Christopher Schelling
Venturi Private Wealth

Who bears the costs?

Yet unlike the research by Klausner et al, this paper suggests that the merged company bears the costs, not the de-SPAC-period investors. "We don't see the public de-SPAC shareholders as bearing most of the SPAC structure costs," explains Ritter. "That's because the de-SPAC shareholders include the legacy shareholders from the target business, and they experience largely paper losses computed from the merger price – a price they didn't pay."

For Christopher Schelling, director of alternative investments at Venturi Private Wealth, this is a false dichotomy. "In many respects, it doesn't matter if it's the company or the investors that pay," he says. "The investors are paying in the end because lower reported earnings reduce the equity value of the businesses."

However, both papers agree that many SPACs have performed poorly post-merger. The Gahng et al paper even says: "On a point forward basis, there are many reasons to believe that de-SPAC period returns may be still disappointing." One of these is the incentive for sponsors to execute a deal within the two-year time frame – a tough ask in a highly competitive market for private companies flush with PE capital.

Indeed, there is increasing evidence that recent SPACs have not performed well. Analysis by the *Financial Times* of 199 SPAC mergers completed in 2021 found that share prices had fallen by 40% on average by 19 January 2022; that just 15 were trading higher than their share price at the time of merger; and that only eight had outperformed the S&P 500.

Companies have also increasingly been pulling out of their SPAC mergers, including Acorns Grow, Fertitta Entertainment, Apex Clearing Holdings and Valo Health.

There may be signs that investor sentiment is finally cooling on these deals, but it seems odd that this has taken so long.

"IT TOOK A LONG TIME FOR US TO REALISE THAT COSTS COULD BE PASSED ON TO NON-REDEEMING SHAREHOLDERS"

Michael Ohlrogge
New York University of Law

This slow chilling of sentiment may be partly explained by the time horizon over which the valuations fall, according to Ohlrogge. "There is an oddity with SPACs – the average price of shares immediately post-merger is around US$10. Yet longer-term performance is consistently quite poor. That shouldn't happen in an efficient market – if prices drop, they should drop quickly after the merger, not slowly over time. This, I think, is one of the reasons why SPACs have persisted. The reduction in share price happens gradually over time. The decision to hold shares rather than redeem is therefore less crazy than it would seem, at least as long as you can keep finding someone else to sell them to before they drop."

Yet it may also be because of the type of investor that many of these vehicles attract. "Many retail investors think that SPACs are a way to gain access to PE through the public market," says Schelling. "There has been a huge appetite for them among individual investors."

He adds, however: "I don't see SPACs as a proxy for PE. In addition, SPAC sponsors are nowhere near as well resourced as PE funds, which are far more likely to see deals well before SPACs and get first refusal. SPACs are likely to be getting transactions that PE has already turned down."

A useful purpose?

The third paper, *Segmented Going-Public Markets and the Demand for SPACs*, by Jessica Bai, Angela Ma and Miles Zheng, offers a different perspective: it asks what role SPACs play in the market. The authors find that SPAC targets tend to be younger and riskier than traditional IPO candidates, and that they have similar or higher three-year growth rates by revenue, market capitalisation and assets. The authors then posit that the promote incentive structure and more lenient regulatory framework enable SPACs to perform a useful purpose by bringing value-creating, smaller and riskier companies to the market, satisfying the demand from yield-seeking investors.

"Our paper highlights the role that SPACs play in spurring innovation and filling a gap in public markets by bringing smaller and riskier companies to market," says Bai. "This is in contrast to traditional IPOs, where the high potential for Section 11 litigation (around misleading statements or omissions) deters investment banks from working with these companies."

The authors suggest that this may help to stimulate entrepreneurial activity, although Bai is clear that there is a balance to be struck. "Of course, it's not necessarily clear whether all smaller and riskier companies should be public," she says.

A future path

What all three papers agree on is the need for adjustments to the SPAC model to create a more sustainable market. For Ohlrogge, the answer lies in more stringent regulation. He says: "The SEC should – and likely will – implement regulations that make the costs more transparent and level the playing field between SPACs and IPOs around forward-looking statements and liability for misstatements."

The Bai paper argues against such a policy on the grounds that it would reduce incentives to bring riskier companies to market, but the paper does call for greater alignment between sponsors and long-term investors through the use of earn-outs and optimising the mix of stocks and warrants.

Bai says this has already started to happen with more recent SPACs. "Overall, there is a trend for SPACs to become less attractive for SPAC IPO investors and more aligned with investors post de-SPAC," she explains. "Part of this is through lock-ups of up to five years, as well as earn-out provisions based on long-term performance."

"ONE ISSUE IS THAT THE SPONSOR'S CUT IS STILL TOO LARGE. THE OTHER IS THE VALUE TAKEN BY THE SPAC IPO INVESTORS, WHICH AVERAGES OUT AT AN EQUALLY WEIGHTED ANNUALISED 15.9% RETURN – THAT'S FOR WHAT ARE ESSENTIALLY DEFAULT-FREE CONVERTIBLE BONDS, SO THERE IS NO DOWNSIDE"

Jay Ritter
University of Florida

Ritter agrees that the market is moving towards a greater equilibrium, although he believes there is still some way to go, especially given the redemption rights and warrants offered to IPO-stage investors. “One issue is that the sponsor’s cut is still too large,” he says. “The other is the value taken by the SPAC IPO investors, which averages out at an equally weighted annualised 15.9% return – that’s for what are essentially default-free convertible bonds, so there is no downside.”

But he believes that the market will ultimately work through this, especially as PIPE investors are withdrawing from the market following some significant losses. “Previously, we didn’t see many liquidations,” he says. “Yet now, because of the flood of SPAC IPOs, it’s quite likely that many won’t be able to find deals. Companies and PIPE investors now have much greater bargaining power because there are fewer of both, relative to the number of sponsors searching for deals. Sponsors are having to agree to vesting conditions to their promote. We found that in some recent mergers, only 25% of sponsor shares weren’t subject to vesting and a three to five-year lock-up. And if the shares don’t reach the price thresholds set, they can’t sell and the warrants are worthless. Sponsor economics have deteriorated tremendously over recent months.”

The market may yet take care of some of the frothier elements of SPACs, while the SEC has also made it clear that it is watching these structures very closely. Together, these forces could create a more sustainable market that attracts rather fewer former politicians and sports stars and more professional dealmakers.

In the meantime, however, there may be more pain to come. “The research papers are relatively recent and we’re still working our way through the bubble,” says Schelling.

THE RESEARCH

In *A Sober Look at SPACs*, Michael Klausner and Emily Ruan (Stanford Law School) and Michael Ohlrogge (New York University School of Law) examine the structure and costs of SPACs. Initially analysing the 47 US SPACs that merged between January 2019 and June 2020, they find that the costs are subtle, opaque and far higher than previously recognised: on average, of a SPAC's value at the time of its merger, the sponsor takes 31% in the form of promote shares purchased for a nominal price, underwriters and other financial advisors claim an additional 14%, and a further 14% goes to IPO-stage investors in the form of warrants to induce them to, in essence, rent money to sit in the SPAC's trust account while it searches for a target.

By the time of a SPAC's merger, nearly 100% of the initial IPO-stage investors have either redeemed or sold their shares, walking away with the warrants they received in the IPO while contributing nothing to the company going public. The research finds that net cash per share falls from the US$10 typically attributed to them in the SPAC merger to a mean US$4.10 per share. The SPAC shareholders that do not redeem or sell shares bear these costs – the research says that their mean and median market-adjusted returns (as of 1 November 2021) are -64% and -88%, respectively.

In an updated version of the paper, the authors analyse the 209 US SPACs that merged in the 16 months to November 2021 to take account of the "SPAC bubble" period from Q4 2020 to Q1 2021. This period featured lower redemptions by SPAC investors, fewer warrants in new SPAC IPOs, and larger PIPEs, relative to the 2019-20 cohort. The mean net cash per share is higher, at US$6.60 during the boom period of Q4 2020 to Q1 2021, and at US$6.20 post-boom, but it is still meaningfully lower than the US$10 per share issued at the SPACs' IPOs.

In their paper, *SPACs*, Minmo Gahng and Jay Ritter (University of Florida) and Donghang Zhang (University of South Carolina) examine the performance of 210 US SPAC IPOs that took place between January 2010 and December 2018. They find that SPAC IPO investors earned, on average, an annualised return of 15.9% during the SPAC period, but that investors in the post-merger period saw more mixed results. They earned -8.1% on an equally weighted average one-year buy-and-hold return basis, while average dollar-weighted returns were 4.5% (largely because of investor redemptions of shares for mergers that ultimately performed disappointingly). They also find that the warrants issued to SPAC IPO investors achieve significant gains post-merger – the equally weighted, one-year buy-and-hold return is 68%. They find, in contrast to Klausner et al, that the merging companies mainly bear the SPAC costs: the cost of the median company listing via a SPAC is 14.6% of the post-issue market capitalisation, but just 3.2% for a traditional IPO.

The authors note that SPAC IPO terms are now evolving as sponsors frequently take haircuts, giving up shares (17% on average) and/or warrants (19% on average) to existing investors to prevent them from redeeming, or to PIPE investors to induce them to provide cash. They conclude that the market is adjusting to a more sustainable equilibrium.

Segmented Going-Public Markets and the Demand for SPACs, by Jessica Bai and Angela Ma (Harvard University) and Miles Zheng (University of Illinois at Urbana-Champaign), takes a different approach to analysing SPACs. It finds that SPAC activity is correlated with positive equity market sentiment, and that SPACs target companies that are younger, smaller and have significantly lower revenues (and are therefore more risky) than those that opt for a traditional IPO, but that they grow at similar or higher rates after going public.

The authors build a model to explain these facts and find that the more lenient regulatory framework for SPACs, together with the equity-based compensation structure, incentivises sponsors to bring value-creating but riskier companies public, thereby filling a gap. However, the authors also suggest that improvements to sponsor compensation structures could better align incentives with those of long-term investors.

A HELPING *HAND*

How do venture capital firms add value to their portfolio companies? We discuss the findings of three recent academic papers that explore: what value is added by VC management; what VC contacts and networks bring to the table; and the effects of VC syndication on portfolio company growth.

The idea that VC firms add value to the young businesses they back is nothing new. But how much of that value comes from the skills and experience of the investor, and how much from the investor's connections? Successful VC firms have vast networks of talent, of co-investors, and of potential acquirers – all of which they can exploit to enhance the performance and value of their portfolio companies.

And, of course, VC firms often join forces for investments, so entrepreneurial businesses can benefit from a diverse range of expertise and relationships – at least in theory. In reality, conflicting agendas and divided attention can sometimes prove problematic.

Drawing on the findings of three research papers, a group of academics and venture capitalists discuss whether what you know or whom you know is more important when it comes to building successful businesses, and whether VC syndication is a winning formula or a necessary evil. Chaired by Amy Carroll.

What are the most important ways in which VC firms can add value to entrepreneurial businesses?

Morgan Flager: "Number one, for us at least, is the recruitment of talent to start-ups. As an early-stage investor, the second most important source of value creation is connections to providers of follow-on capital, and then third would be input to strategy. Obviously, we have worked with a host of different businesses in a host of different situations. That means we can apply our knowledge and experience to support these young companies on their journey. But it is our relationships that typically have the biggest impact."

Antoine Papiernik: "I would absolutely agree. The most important source of added value is helping to construct management teams and boards. Every company is different. You have to understand what or who a particular company needs at a given time. We can also help by connecting companies with co-investors. We know who invests in what, and we know who we like and those who are best avoided. Finally, we bring the benefit of our experience."

Do venture syndicates mean more connections and therefore more added value?

Giang Nguyen: "Yes. Different VC firms have different skills and information at their disposal that they can share with the other syndicate partners, ultimately adding value to entrepreneurial companies."

Morgan Flager: "Each firm within a syndicate has its own set of relationships on which it can draw to help the company. There is also the question of the follow-on reserves that might be necessary, to fuel the fire if everything is going well, or to support the company through a challenging period. If there are multiple investors, all with their own funds, theoretically it is possible to aggregate more capital than in a scenario involving a single venture capital firm."

Antoine Papiernik: "Having diverse opinions and experiences around the table is always good. A syndicate also brings with it diverse contacts, which can mean the entrepreneur gets more bang for their buck."

What about the negatives to investing in a syndicate?

Giang Nguyen: "There may be disadvantages. In particular, investors might have different investment horizons. Those with shorter ones might want to exit earlier, and that could potentially lower valuations and returns."

Morgan Flager: "It all depends on how engaged the syndicate partners are. If a firm has spread its capital too thinly across multiple syndicates, an investment might not be significant enough for it to feel any real responsibility. Also, if there are too many people involved, everyone can assume that a particular task will be picked up by someone else.

Thomas Chemmanur

Thomas is a professor of finance at Boston College, Carroll School of Management. Before joining Boston College, he was associate professor of finance at the Columbia Business School.

Tereza Tykvová

Tereza is a professor and chair of private markets and alternative investments at the Swiss Institute of Banking and Finance at the University of St.Gallen. Her fields of interest include private equity, entrepreneurial finance and M&A.

"In addition, you can end up with a signalling issue if one or more of the syndicate investors chooses not to step up into the next round. Outside investors will naturally wonder why they have chosen not to move forward."

Antoine Papiernik: "The truth of the matter is that if we had the money to do it on our own, we would. Early investors build conviction in a company, and they do all the heavy lifting. But while they might start out owning a 30% stake, by round C or D, they might own only 13%. Yes, syndication means de-risking, but it also means sharing success – and, therefore, returns. VC firms syndicate primarily because they have to. But as venture funds grow and as private equity firms move into venture, I think we will see less syndication. The writing is on the wall."

Giang's research shows that companies backed by syndicates command premiums on exit. Given these concerns about syndication, is that surprising?

Antoine Papiernik: "I am not surprised at all. If five firms want to invest in a company, that suggests it is high quality. It is less about syndication and more about appetite. That is one reason why we might have to be careful what we wish for if syndication declines. Without that tension, it may become easier to invest in companies that are ultimately less interesting to the outside world."

Thomas Chemmanur: "I agree. When multiple parties are putting their money where their mouth is, it's a strong indication that they are dealing with a high-quality company. In that sense, syndicates offer credibility to the market. An individual VC firm can always make a mistake, but it is far less likely that multiple firms will all make the same one. In addition, when you have experienced individuals from several different VC firms offering advice and support, that's likely to create greater value than advice from a single investor."

Tereza Tykvová: "Syndicates create value because they combine complementary resources, networks and information. I am not surprised that this leads to price premiums in M&A transactions."

Morgan Flager

Morgan is managing partner at Silverton Partners, which he joined in 2006. He has more than 25 years of experience as a venture investor and technology executive. During his time at Silverton, he has sponsored 24 investments and has realised 11 acquisitions and two IPOs.

Antoine Papiernik

Antoine is chairman and managing partner at Sofinnova Partners, which he joined in 1997. He has been selected twice for the *Forbes* Midas List, an annual ranking recognising the world's top VC investors.

Giang Nguyen

Giang is an assistant professor at the Faculty of Political Science and Economics, Waseda University. His research interests cover corporate finance, entrepreneurial finance, M&A and IPOs.

The research also shows that companies backed by syndicates go on to perform better for the buyer in the long term. Why do you think that is?

Giang Nguyen: "Our research shows that VC syndication is associated with better alignment between the acquirer's management team and the portfolio company CEO, and bigger and more independent boards. Interestingly, we also find that syndicates prefer stock as a method of payment. There is a tax component to the decision to take stock, but in previous research I have shown that investors can earn more if they retain a long-term interest in the buyer. There is also evidence to show that VC firms that continue to hold equity after an IPO, or else hold stock in listed acquirers, contribute to the buyer by giving advice and monitoring the business it has bought."

Morgan Flager: "A higher equity mix incentivises the VC investors to remain active post-sale, which would seem the most significant driver of enhanced performance to me. Naturally, when investors cash out, they move on to other things. The fact that boards tend to be larger and more independent could also be a factor because it means the CEO has to be a better communicator. That is likely to play better in a post-acquisition environment, when the company becomes part of a bigger organisation."

Tereza Tykvová: "I was actually a bit surprised about the findings on stock as a method of payment. First, I would have expected that where there are multiple VC firms, some of them would be exposed to pressure to exit and would therefore prefer to take cash payment so they could distribute those proceeds. I would also question the argument that VC firms with stakes in an acquirer provide monitoring and advice – after all, a VC firm's stake in a merged company would typically be very small. That could be an interesting area of future research."

Tereza, the importance of venture capitalist relationships is also highlighted in your research. You find that biotech companies backed by VC firms with a prior syndication history are more likely to forge successful strategic alliances. Why did you choose to focus on the biotech industry, first of all?

Tereza Tykvová: "Strategic alliances are more common in biotech than in other sectors, largely because of the costly and long product development cycles involved. Young companies therefore tend to partner with more established and well-resourced firms. A great example is the recent Pfizer alliance, which managed to develop and commercialise the first approved Covid-19 vaccine. That was a partnership with a young biotech company with insufficient resources but great knowledge of mRNA technology. Pfizer, meanwhile, had all the capacity required for testing, production and marketing. Together, the two companies made this work."

And why are strategic alliances more common among the portfolio companies of linked VC firms?

Tereza Tykvová: "Our research offers three possible explanations. First, finding a partner can be difficult and costly. VC firms can bring their networks and know-how to help establish a connection. It can also be challenging to assess the quality of a potential partner, particularly if the company concerned is very young and lacks a track record. Two connected venture capital firms may have established a level of trust that helps to overcome that challenge, particularly as they will want to retain their reputation within the network.

"Finally, there is always the possibility of misconduct when companies are considering a strategic alliance. Sensitive information is shared that could be misused or even stolen. Here again, connected VC firms are able to monitor their companies to protect the counterparty."

Thomas Chemmanur: "This is entirely intuitive. There is already research showing that different companies owned by the same VC firm are more likely to form strategic alliances. This paper goes a step further to show that the same is true even when the VC and investee firms involved are not directly linked. The point is that these companies need someone to bring them together in an efficient and productive way. That is more likely to happen when an intermediary, such as a VC firm, is involved."

Morgan Flager: "The co-investment process builds up a ton of trust, so we would definitely be more likely to support our portfolio companies in forging relationships with companies that are backed by firms we've worked with previously."

Giang Nguyen: "It's not just current relationships between VC firms, but also historical ones, that can add value to entrepreneurial companies. These relationships serve to reduce information asymmetry, and this enhances the level of trust between the VC firms and also their ability to agree on a plan that will create value."

As Morgan and Antoine both said at the outset, a VC firm's relationships are also critical when it comes to recruiting talent to start-ups. And Thomas's research proves that venture-backed companies have higher-quality top management. But how much of that is actually about selection bias on the way into a deal and how much is about added value?

Thomas Chemmanur: "It is probably a mix of both. On one hand, VC firms are known for selecting the best companies to invest in and high-quality management teams are an important aspect of this. But VC firms have also been shown to add value by bringing talented individuals from their networks into the companies that they back."

Morgan Flager: "I think it varies, depending on the investment stage. As a seed investor, some of this is a product of our diligence process. Of course, we want to invest in exceptional individuals. I believe in the old adage: 'A-list talent hires A-list talent, and B-list talent hires B-list talent.' So, it is important to back quality from the outset.

"But equally, a lot of the management team is created after that initial financing round, and this is an area where we can add a lot of value. We have invested in more than 30 companies in Austin, Texas, for example, which means we have either worked with the best managers or know them through our network. We can act as matchmaker. We know what skillsets are required. We know who possesses those skills, and we can facilitate introductions. We are not a control investor, so it is only ever a suggestion. But a poll we conducted 18 months ago found that 35% of hires above vice-president level came from introductions we made."

Tereza Tykvová: "We know from previous literature that VC firms are active in shaping top management teams. They help young companies to find high-quality talent through their networks. Their reputation in the market can also attract talent to what are sometimes small and unknown businesses. At the same time, high-quality managers are better able to create value and – crucially – are incentivised by the VC firms to do so."

Antoine Papiernik: "I would emphasise a VC firm's ability to help construct a high-quality team, particularly in the early stages. We often see great technology backed by an academic founder, for example. There's a very high likelihood that a lot of team building will be needed there. If you are waiting for a fully fledged management team to come along, you will never invest, particularly in Europe. There are some essential elements that need to be in place, of course, such as ethics and transparency. Those are things you can't change."

> "SECTOR EXPERTISE GOES HAND IN HAND WITH SECTOR NETWORKS AND CONNECTIONS. I'D SAY THEY ARE COMPLEMENTARY AND HIGHLY CORRELATED."
>
> **Tereza Tykvová**
> *University of St.Gallen*

So, ethics and transparency are key. What else makes a top-quality management team in a high-growth, young company?

Morgan Flager: "We look for passion and clarity of vision, reinforced by domain expertise. Typically, the top team will either be highly experienced, possibly involving individuals we have backed before, or mid-level executives who have quickly climbed through the ranks and are now looking to step out from the shadows and shine. I wouldn't say that either one is more likely to be successful than the other."

Thomas's research shows that management team quality and VC backing both independently lead to higher IPO values and better post-IPO performance. That is partly attributed to ability, and partly to credibility. To what extent do you think public markets put an automatic premium on VC backing?

Thomas Chemmanur: "There is a large body of evidence showing that VC firms help to improve the performance of businesses, but interestingly, this research shows that top management teams also help to increase value and – equally importantly – that there is an interaction between VC backing and top management team quality in enhancing value. The two factors are complementary. Where both are present, they add more value than either factor alone.

"OUR RESEARCH SHOWS THAT VC SYNDICATION IS ASSOCIATED WITH BETTER ALIGNMENT BETWEEN THE ACQUIRER'S MANAGEMENT AND THE PORTFOLIO COMPANY CEO, AND BIGGER AND MORE INDEPENDENT BOARDS"

Giang Nguyen
Waseda University

"That's partly down to ability; the combination of an experienced VC firm's support plus an experienced management team leads to better accounting and operating performance. It's also partly down to credibility.

"The markets have greater confidence in claims made about a company's future when both of these factors are involved. All of that leads to higher valuations at the time of the IPO."

Morgan Flager: "I definitely think there are certain managers on whom public markets place a premium. Take Sequoia or Benchmark, for example. They have produced outstanding outcomes on multiple occasions. So there is a bit of a bias towards investors that have repeatedly excelled over decades. However, the value that VC firms bring tends to manifest itself before the IPO, which then, of course, influences the IPO itself. The quality of the initial investors helps to attract better quality later-stage investors and a better quality management team as well. All of that affects exit valuations."

Giang Nguyen: "I agree. It's hard to separate the effect of VC backing from that of top management team quality. VC firms will naturally influence the quality of top management, and they are also part of that management in some situations."

Finally, on balance, how much of a VC firm's added value do you believe comes down to networks and connections, and how much is a reflection of skill and sector expertise?

Giang Nguyen: "It has to be both. Networks and connections are vitally important, but so are skills and expertise, particularly in technical industries, such as the high-tech and biotech sectors."

Tereza Tykvová: "I'm convinced that you can't look at the two separately. They reinforce each other. Sector expertise goes hand in hand with sector networks and connections. I'd say they are complementary and highly correlated."

Thomas Chemmanur: "There's plenty of research showing that VC firms help to improve the efficiency of firms they invest in – through their advice they help companies to sell more and sell better. But the network component is also key. I don't think there is any data that shows exactly what the split between those two factors is when it comes to the impact on financial value, but there is no doubt that both expertise and networks have a real role to play."

Morgan Flager: "If I had to put a number on it, I would say it is 70% networks and connections, and 30% skill and sector expertise."

Antoine Papiernik: "I agree. You need both, but the weighting would lean more towards contacts. Yes, I have seen a lot, but I still learn every day. That's because I put myself in a room with people who know more than me. It is through your network and contacts that you build your expertise and sector knowledge."

THE RESEARCH

Does Venture Capital Syndication Affect Mergers and Acquisitions? by Giang Nguyen (Waseda University) and Le Vu (Monash University) explores the benefits of VC syndication for M&A outcomes – the dominant exit route for venture capitalists. The research examines 2,614 acquisitions of VC-backed targets that took place between 1990 and 2017, three-quarters of which involved syndicates. It finds that syndicate-backed targets have higher sales multiples than individual-backed targets. After controlling for acquirer characteristics, the transaction/deal/sales multiple increases by 63% relative to the average when targets are syndicate-backed.

The research also shows that, while syndicate backing results in lower cumulative abnormal returns for the buyer upon the acquisition announcement, syndicate-backed businesses perform better for new owners in the long term. It finds that the long-term operating efficiency of the acquirers of syndicate-backed targets, measured by return on total assets (ROA) and adjusted ROA compared with the average ROA of similar-sized acquirers in the same industry, increases by 3.9% and 4.8%, respectively, within three years, relative to the long-term efficiency of individual-backed companies.

Meanwhile, *Connected VCs and strategic alliances: Evidence from biotech companies*, by Leonhard Brinster (University of Hohenheim) and Tereza Tykvová (University of St.Gallen), uses a dataset of 1,073 strategic alliances formed by US biotech companies between 2004 and 2019 to show that entrepreneurial companies benefit from the syndication history of VC firms. In 427 cases, both the biotech company and its alliance partner were VC-backed, and in 197 the two parties were linked by connected VC firms. The study finds that alliances are more frequent between companies connected through VC syndication networks and that those alliances tend to perform well and are associated with higher IPO chances.

The research attributes the findings firstly to the ability of connected VC firms to mitigate the transaction costs of alliance formation. It also suggests that adverse selection costs are lower where the VC firms are connected, owing to a higher level of trust, and that reputational concerns mean there is a willingness to protect the counterparty from moral hazard and expropriation risks by limiting misconduct in the respective portfolio companies.

The Relationship Between Venture Capital Backing and the Top Management Team Quality of Firms Going Public and Implications for Initial Public Offerings, by Thomas Chemmanur and Hassan Tehranian (Boston College, Carroll School of Management), Manish Gupta (Nottingham University Business School) and Karén Simonyan (Sawyer Business School, Suffolk University), explores the impact of VC backing and of top management team quality on IPO valuations and post-IPO performance. It uses data on the top management team quality and reputation of 3,903 entrepreneurial companies that went public between 1993 and 2012. Top management team quality is gauged using eight proxies, including academic and professional qualifications.

The research firstly shows that VC backing is associated with higher top-management quality and that both management quality and VC backing improve IPO prospects. Critically, however, the paper also finds that top management team quality and VC backing are complementary. In other words, the effect of management team quality on post-IPO operating performance is stronger for companies with venture backing than for those without.

MYTHICAL *NO MORE*

Once a rarity, unicorns are becoming ever more common. So what's driving this trend? And how enduring will it be? A recently updated academic paper throws light on these questions.
By Hannah Stodell.

Keith C. Brown
Keith C. Brown holds the positions of University Distinguished Teaching Professor and Fayez Sarofim Fellow at the McCombs School of Business at The University of Texas at Austin, where he specialises in teaching investments, portfolio management and security analysis, capital markets, and derivatives. He is also a member of the University's Academy of Distinguished Teachers.

Back in 2019, investment commentators were warning that a bubble had formed around unicorn companies – privately funded firms that had achieved a valuation of US$1bn or more – and was at risk of bursting. In *Forbes*, journalist David Trainer, for example, wrote: "I believe this profligate allocation of capital could ultimately crush many private equity funds."

But nearly three years on, such predictions have yet to come true – and today, unicorns are far from mythical. Indeed, the number of unicorns has increased dramatically since August 2015, when academics Keith C. Brown and Kenneth W. Wiles (of The University of Texas at Austin) published their first study of the unicorn phenomenon, *In Search of Unicorns: Private IPOs and the Changing Markets for Private Equity Investments and Corporate Control.*

Their 2015 paper chronicled the characteristics of 142 private companies around the world that were able to achieve unicorn status by securing sufficient non-public financial capital. The authors then sought to unpack the transformative benefits that private ownership could bring to these companies' governance structures and operating performance.

"WHEN INTEREST RATES GO BACK UP, I THINK THERE WILL BE A ROTATION BACK OUT OF PRIVATE MARKETS TO PUBLIC MARKET EQUITY, AND FROM EQUITY BACK INTO TRADITIONAL FIXED-INCOME PRODUCTS. BUT INTEREST RATES ARE GOING TO HAVE TO CLIMB A FAIR BIT BEFORE THAT HAPPENS"

When the authors embarked on a follow-up study in 2020, they found the number of unicorns had more than tripled – to 464 as of March 2020.

Despite this seemingly rapid growth, in their latest research Brown and Wiles suggest the true birth rate may be even greater than these figures suggest, since 72 companies from the 2015 dataset lost their unicorn status prior to March 2020. (Many companies in the original 2015 sample have since gone public, for example, or undergone M&A activity, or lost market value, or failed.) Net of these 72 companies, nearly 400 new unicorns were birthed.

We spoke to Brown to get his take on how the unicorn population has changed and what this means for private capital.

Why did you decide to revisit your 2015 research?

"When we wrote our 2015 paper, unicorns were still a relatively new phenomenon. We wanted to provide an update on the status of the market and test some of our earlier predictions."

And the number of unicorns had grown substantially?

"It had – and the number has grown further even since our 2020 paper. According to CB Insights, there were 917 unicorns on 22 November 2021, and 554 of these had achieved that status after the end of our 2020 study's sample cut-off period, just a year-and-a-half before. So the proliferation we described has accelerated since then."

"HITTING A BILLION DOLLARS ON THE NOSE IS WHAT GETS YOU INTO THE CLUB, SO THERE ARE A LOT OF COMPANIES PLAYING THAT GAME. BUT IT'S AN ARTIFICIAL NUMBER, AND IT CAN BE DETRIMENTAL TO THE LONG-TERM VALUATION OF A COMPANY IF IT'S STRETCHING TO GET THERE."

What surprised you most in your recent study?

"What surprises us is the amount of money from institutional investors, and even mutual funds, coming into this space. Over the past five to 10 years, these institutions have been compelled to take private market positions in search of returns. When interest rates go back up, I think there will be a rotation back out of private markets to public market equity, and from equity back into traditional fixed-income products. But interest rates are going to have to climb a fair bit before that happens."

So how has private capital funding changed since your earlier research?

"The biggest change is the sheer volume of capital available. As I just mentioned, investors have been pivoting from public to private markets in search of the higher returns expected from less liquid investments. But there's also a belief that private markets are less efficient than public ones, so there's alpha, on top of higher risk premiums for taking on more liquidity risk. That has suited many companies with a preference at the margin for growing with private capital. The increased flow of capital into the private markets space has accelerated the growth of companies and the expansion of unicorn numbers."

Your 2020 research finds that nearly a third of unicorns have a valuation of exactly US$1bn. Why is this, and what are the implications?

"It's important to some of these companies to attain unicorn status and we're doing some more research to unbundle why. There's clearly a push from a publicity and marketing point of view. Of the 917 unicorns that existed in November 2021, 216 were valued at exactly US$1bn – on a percentage basis, that's slightly down from our 2020 study, but it's still nearly a quarter. There is no way that is a random event; it has to be manufactured. It might have something to do with investors. For example, a company with unicorn status might effect a quicker IPO – and if there are mutual funds investing, they may want out more quickly than a longer-term player.

"Hitting a billion dollars on the nose is what gets you into the club, so there are a lot of companies playing that game. But it's an artificial number, and it can be detrimental to the long-term valuation of a company if it's stretching to get there."

What were your main findings about the nature of unicorns today?

"The blessing (the collective noun for unicorns) continues to grow and it is also getting more diverse. It's more of a global phenomenon now, although companies are still concentrated in the US and China. However, the US share of total global capital invested in unicorns has shrunk, with Europe taking some of it. Unicorns are also splintering out into various areas of the tech sector – such as edutech, fintech, insure-tech, and transportation-tech – as well as spaces like artificial intelligence."

How might increased government intervention in China affect the growth in the number of unicorns there?

"I think it will affect the growth there. The rule of law; whether capital is protected; liquidity issues – these are all big concerns. Environmental, social and governance (ESG) issues are also becoming a lot more pronounced in institutional investment circles – and generally speaking, Chinese investment opportunities raise more ESG questions than those in the US.

"Of the 917 unicorns recorded in November 2021, 470 were US-based and 169 were Chinese. The Chinese share is only 18% – down from 24% in Q1 2020. We can infer that recent government interventions have had an impact in the period following our study."

What does your study tell us about returns from unicorn investments?

"It tells us that private rather than public investors are capturing the lion's share of the growth premium as unicorns move from start-up to established firm. We predicted that – but what was surprising was the size of the difference. We showed, rather dramatically, that for unicorns that had exited – particularly those in the IPO sample – there was a median conversion ratio of 6.7x invested capital, versus just 1.1x in the public market."

How relevant will the unicorn moniker continue to be, given that these companies are far from mythical today?

"In 2015, a unicorn company was still sufficiently special to warrant the name. Of the 917 in existence in November 2021, 45 had valuations in excess of US$10bn – such companies are dubbed 'decacorns' – so we're blowing past US$1bn fairly regularly now. In public markets, US$1bn is still where we draw the line between small cap and mid cap, so it's kind of institutionalised. And as a planet we love round numbers, so I don't really see us redefining the unicorn term any time soon."

What should private capital investors, their limited partners and company founders draw from your most recent paper?

"I've seen so much institutional money go into this space. The 'illiquidity switch' has been in the 'off' position, but that could change quickly, like it did in 2008. I think a lot of institutional investors are going to get caught."

THE RESEARCH

The Growing Blessing of Unicorns: The Changing Nature of the Market for Privately Funded Companies is a second major study of the market for unicorn companies by Keith C. Brown and Kenneth W. Wiles (both of The University of Texas at Austin).

Their latest research notes a thriving market for unicorns, whose numbers more than tripled from 142 to 464, and whose aggregate market valuation increased from US$522bn to US$1.37trn, between 2015 and March 2020. Larger amounts of total capital are being invested in these companies, with the mean and median size for a unicorn's most recent capital-raising growing – from US$228.6m and US$145m in 2015 to US$303.6m and US$200m by 2020.

The authors find that unicorns are able to remain privately held for longer before turning to public sources of capital – on average for a decade or more, versus historical norms of three to five years – enabling PE investors to capture far more of the value created during the growth phase.

The global unicorn market continues to be dominated by companies domiciled in the US and China, as it was in 2015, but the US share of total global capital raised shrank from 62% to 46% between 2015 and 2020, while China's share grew from 16% to 27%, and Europe's increased from 13% to 16%.

PRIVATE EQUITY FINDINGS

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CONTRIBUTIONS FROM:

Boston College, Carroll School of Management
Harvard Business School
Harvard University
New York University School of Law
The University of Texas at Austin
University of Florida
University of St.Gallen

www.collercapital.com
www.bellaprivatemarkets.com
www.bladonmore.com

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COLLER RESEARCH INSTITUTE

Park House, 116 Park Street, London, W1K 6AF, UK
+44 20 7631 8500

950 3rd Ave, New York, NY 10022, USA
+1 212 644 8500

Level 14, Two Exchange Square, 8 Connaught Place, Central, Hong Kong
+852 3619 1300

www.collercapital.com
pefindings@collercapital.com

COLLER RESEARCH INSTITUTE