PRIVATE EQUITY FINDINGS

Insights from private equity research worldwide

ISSUE 17 2021
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A WINNING STRATEGY
Does private equity genuinely outperform public equity?

THE VANISHING PUBLIC COMPANY
Is the public company an out-of-date model in the 21st century?

IS THE RACE TO THE SWIFT?
Why some LPs seem to consistently outperform their peers

SHOOTING THEMSELVES IN THE FOOT
Are male investors neglecting female entrepreneurs at their own cost?

BUILDING VALUE

Is value creation in buy-and-builds principally from multiple arbitrage?

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Coller Capital
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FOREWORD

Professor Josh Lerner
Entrepreneurial Management Unit,
Harvard Business School

Jeremy Coller
Chief Investment Officer,
Coller Capital

At a time when many companies are feeling the pain of repeated lockdowns and economic malaise, there is a greater need than ever for investors capable of building stronger, more efficient businesses.

Private equity firms, which have increasingly adopted buy-and-build strategies, might argue that they fit the bill perfectly by creating resilience through scale and operational synergies. But some detractors counter that, by pursuing serial add-on acquisitions, the industry is simply engaging in multiple arbitrage. Our cover feature, **Building value**, uses the results of recent academic research to examine which version of the story is closer to the truth and which buy-and-build approach might offer the greatest potential for operational and performance improvements.

Despite tougher economic conditions, limited partners continue to allocate capital to PE, with many increasing their exposure to the asset class. While PE has grown over the past two decades, the number of companies listed on public markets has declined markedly. In this issue's roundtable discussion, **The vanishing public company**, leading academics and practitioners discuss the reasons behind the decrease and whether PE's rise is part of the answer.

Comparisons of public and private markets also feature in another of our pieces: **A winning strategy**. Here, prominent academics Ludovic Phalippou and Steven Kaplan offer opposing views of whether PE really outperforms public markets.

Of course, in an asset class with a high dispersion of returns among fund managers, there will be clear outperformers. Much research has been done to determine the extent to which outperformance can be explained by the expertise of fund managers, but rather less on the skill of LPs. **Is the race to the swift?** explores the findings of two new papers that uncover the variation of performance among LPs' investments in funds and in alternative vehicles such as co-investments, culminating in a discussion of what makes a successful LP.

Finally, in an era when diversity and inclusion have become key action items for the industry, we profile the findings of a recent paper on whether there is a gender bias among early-stage investors. To the extent that a gender bias does exist, **Shooting themselves in the foot** also asks whether this harms returns.

We hope you find our latest issue an engaging and thought-provoking read. As ever, we welcome any feedback you may have; please get in touch with questions or comments at: *pefindings@collercapital.com.*

BY THE *NUMBERS*

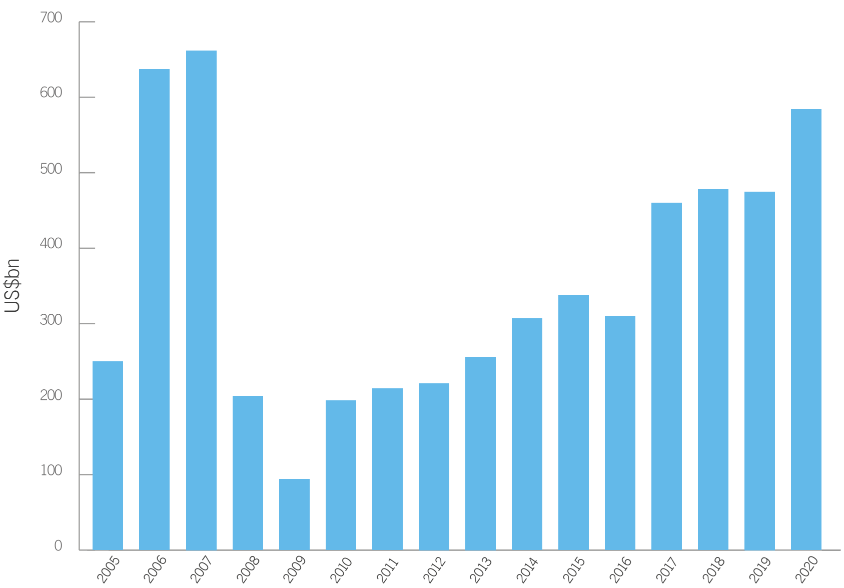
Global private equity activity soars through the pandemic

- Despite disruption from the onset of the pandemic in the first half of the year, 2020 proved to be exceptionally busy for private equity firms globally. Over US$580bn of buyout deals were recorded – the highest annual figure since the run-up to the Global Financial Crisis, when a record US$662bn of PE deals were struck, Refinitiv figures show.

- The second half of 2020 accounts for much of the increase in activity for the year. In H2 2020, US$378bn of PE deals were struck, up significantly from the H1 value of US$210bn. After a pause in Q2 as investors digested the effects of the pandemic on the economy, PE houses resumed dealmaking from Q3 onwards in a bid to deploy dry powder.

- PE activity levels in H2 2020 reflect broader M&A trends. According to Mergermarket, US$2.2trn of M&A deals were announced in H2 2020, the highest half-year figure on record. However, at US$3.2trn, the whole year's total was down slightly on the US$3.4trn of M&A value for 2019.

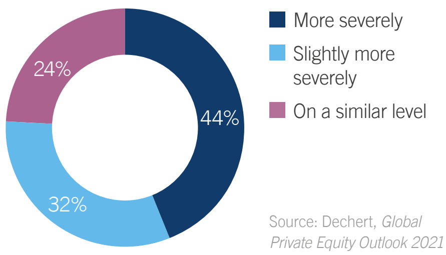
Global PE investment by value



Source: Refinitiv

Covid-19 impact on private equity potentially worse than the Global Financial Crisis

How will the Covid-19 crisis affect the industry compared with the GFC?



Source: Dechert, *Global Private Equity Outlook 2021*

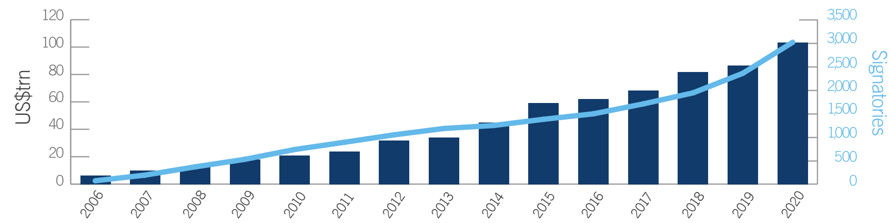
- The GFC certainly disrupted the private equity industry, but many executives believe the eventual impact of Covid-19 will be worse, according to Dechert's *Global Private Equity Outlook 2021*. Three-quarters of the survey's respondents believe the pandemic will affect the PE industry more severely – either to a greater (44% of respondents) or a lesser extent (32%).

- It is well known that certain sectors – hospitality, bricks-and-mortar retail, and travel, for example – have suffered significant damage from lockdowns, but the extent of the scarring on the wider economy remains to be seen. With 90% of Dechert's respondents expecting an increase in distressed deals in the wake of the pandemic, PE professionals may be anticipating more widespread pain.

- Other effects of the pandemic expected by industry players are: delays to deals (82%); more fund restructurings (64%); and suspended fundraisings (55%).

Growth in PRI signatories is accelerating

PRI signatories by number and AUM



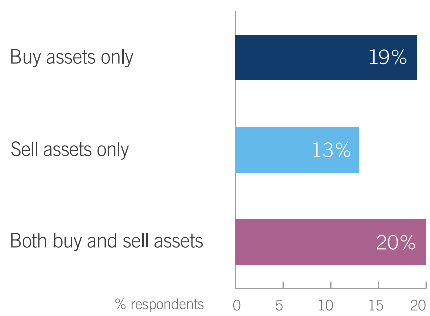
Source: PRI Association ■ AUM (US$trn) — Number of signatories

- With responsible investing and environmental, social and governance issues entering mainstream investing, the Principles for Responsible Investment (PRI) Association passed two major milestones in 2020 – the number of PRI signatories topped the 3,000 mark for the first time and the total AUM of signatories exceeded US$100trn.
- Indeed, the acceleration of PRI's growth was particularly noticeable in the year just gone.
- The number of new PRI signatories increased by 28% in 2020 (to 3,038) compared with 2019 and signatory AUM rose by 20% (to US$103.4trn).

Over half of limited partners plan to access PE's secondary market

- Just over half of limited partner institutions (52%) expect to buy or sell assets as secondaries in the next two years, according to Coller Capital's latest *Global Private Equity Barometer*. Some 20% plan to be both buyers and sellers; another 19% to be buyers only; and 13% to be sellers only.
- This finding demonstrates LPs' reliance on the secondaries market as a portfolio management tool, particularly at a time of great economic change. Nearly nine in 10 LPs planning to access the secondary market (88%) say they will use it to refocus resources on their best-performing general partners; 84% to increase liquidity; and 77% to rebalance their portfolios between different types of private equity.

Planned LP activity in the secondary market in the next two years (excluding GP-led secondaries)



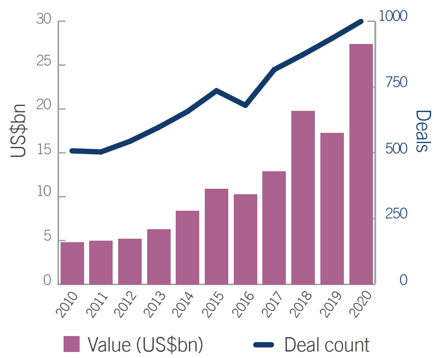
Source: Coller Capital, *Global Private Equity Barometer, Winter 2020-21*

- The *Barometer* notes that "these priorities are broadly similar to those reported by investors at the time of the Global Financial Crisis" (Winter 2008-09).

Biotech and pharma venture capital deals smash records

- With annual venture capital deals in the US breaking the US$150bn mark for the first time in 2020, one of the brightest spots was the biotech and pharma sector, according to the *Pitchbook-NVCA Venture Monitor* for Q4 2020. This was perhaps unsurprising given the huge health impact of Covid-19.

US VC biotech and pharma deal activity



Source: *PitchBook-NVCA Venture Monitor, Q4 2020*

- US VC investment in the sector in 2020 reached a record high of US$27.4bn across 998 deals – easily surpassing the previous record of US$19.8bn set in 2018. The report adds that in 2020, investment was equally split between late, early, and seed investment stages.
- Amid an increased need for disease treatments and prevention during the pandemic, valuations have increased markedly. The *Monitor* finds that valuations for VC deals in the sector hit an all-time high in 2020, reaching an average of US$134.2m and a median of US$35m – up from just US$97.3m and US$22.8m, respectively, in 2019.

BUILDING *VALUE*

Buy-and-build strategies have become a standard component of the private equity toolbox. But do they deliver value creation via operational synergies or simply via multiple arbitrage? A group of academics decided to find out. By Nicholas Neveling.

Buy-and-build capabilities have become a key part of private equity's value creation pitch to investors and management teams. As the asset class has become more competitive and entry multiples have climbed, buy-and-build activity has ballooned. In 2020, add-on acquisitions accounted for over 72% of all US buyout activity, according to PitchBook figures – an all-time high.

But do buy-and-builds deliver genuine operational synergies, or are they simply an exercise in accumulating assets so financial sponsors can capitalise on the higher multiples and refinancing opportunities available to larger entities?

Academics Dyaran S. Bansraj, Han Smit and Vadym Volosovych explored this question in a new research paper, *Can Private Equity Funds Act as Strategic Buyers? Evidence from Buy-and-Build Strategies*.

The research looked into whether serial buy-and-build acquisition strategies delivered the kind of operating synergies, such as economies of scale, that would be expected from strategic acquisitions, or whether these strategies were little more than window-dressing – a charge that has been levelled at the industry by some critics.

Hybrid M&A approach

In fact, the paper evinces strong evidence that buy-and-build transactions deliver profitability superior to comparable strategies. It finds, specifically, that return on sales (for the whole sample of exited and non-exited investments) increases by an average of 27% over the first five years of PE ownership, compared with a pre-deal average of 5.6%.

"Our research confirmed that buy-and-build strategies provide an additional source of value creation for PE managers, compared with traditional leveraged buyouts," Smit says. "Leveraged buyouts create value through the use of debt and restructuring. Buy-and-builds give managers the same tools as strategic buyers to implement operational synergies. PE is combining complementary resources to build a unique hybrid approach to M&A."

Co-author Volosovych adds that although the study did reveal cases of underperformance – suggesting that some general partners are not focused on post-deal integration – on average, buy-and-builds did create operational value.

"Limited partners will be aware of the possibility that some GPs use buy-and-builds to justify fundraising or spending unused capital," Volosovych says. "We do see some underperforming strategies in our sample but, on average, buy-and-builds do seem to deliver improvements in operating performance consistent with a synergy interpretation."

View from the ground

For GPs, these findings ring true. It is only in the decade following the 2008 Global Financial Crisis, however, that PE has genuinely focused on operational integration.

"From 2000 to 2010, we experienced what I would describe as a period of 'rampant' buy-and-build strategies," says Duncan Johnson, head of Caledonia Private Capital. "We saw a number of aggressive, acquisition-driven, growth strategies in the decade running up to the GFC. By the end of the decade, though, it was apparent that in rampant buy-and-builds it is harder to deliver fundamental value."

> "PRIVATE EQUITY IS COMBINING COMPLEMENTARY RESOURCES TO BUILD A UNIQUE HYBRID APPROACH TO M&A"
>
> **Han Smit**
> *Erasmus University Rotterdam*

Johnson cites the asset class's consolidation of the insurance broking sector pre- and post-GFC as an example of how PE's approach to buy-and-build has evolved. In the 2000s, firms saw the opportunity to consolidate myriad small brokers and find synergies, but also to lock in revenue upside (because brokers handling a larger volume of business can obtain better pricing from insurance providers). In the race to vacuum up businesses, however, integration was neglected and cost synergies were never realised.

"Firms piled businesses on top of each other without integrating. That was fine until the music stopped in 2008," Johnson says. "EBITDA in many cases was substantially less than forecast because synergies were not delivered and due diligence had not been done well enough when buying bolt-ons. To keep the EBITDA story going, firms had to keep doing the next bolt-on."

PE's return to insurance broking in the decade following the GFC, however, was more thoughtful. "PE has since made a better fist of it. Banks have got better at assessing the risks, and sponsors have built more coherent businesses, rather than simply accumulating EBITDA," Johnson says.

Nordic Capital partner Thomas Vetander says operational integration is now essential and increases value on exit. "Buy-and-build only works when it delivers improvement in margins and increases growth," he explains. "An operational strategy is essential for that to manifest. If you just do a series of acquisitions without proper integration, you end up with a platform that is unstable and at risk of disintegrating."

He cites Nordic Capital's buy-and-build investment in veterinary clinic group AniCura as an example. AniCura completed 150 bolt-on acquisitions before it was sold to Mars Petcare in 2018. The exit value was undisclosed, but media reports suggest the deal secured a €2 billion valuation to deliver a 7x money multiple for investors.

"AniCura was a successful buy-and-build in the veterinary industry," says Vetander. "At the core of that strategy was the creation of a business that offered clinicians opportunities for peer-to-peer collaboration and care quality that could not be delivered outside the group. That sat at the heart of the value proposition."

Horizontal or vertical?

In addition to its core conclusion that buy-and-builds deliver operational synergies, the study also uncovered interesting findings about the types of bolt-on deals pursued by buyout managers.

At the start of the project, Smit says, the expectation was that most buy-and-builds would be horizontal acquisitions, where sponsors combined businesses in fragmented markets. As the research progressed, however, "we also saw a high number of vertical acquisitions, where sponsors used buy-and-build strategies to integrate supply chains", he adds.

Buy-and-build strategies have become more sophisticated over recent years, with PE firms pursuing different objectives. "Some buy-and-builds will be about driving revenue synergies through additional products, wider geographies, or cross-sell opportunities," says Dunedin partner Nicol Fraser. "Other strategies are more focused on cost rationalisation or on driving value through the supply chains of bolt-on acquisitions. In our investment in Kee Safety, for example, a value creation driver was to acquire companies in our installer base and replace the products of competitor suppliers of safety-at-height-equipment with products procured from our own, lower-cost, supply chain in China. This saw big improvements to the gross margins of the acquired businesses."

"IF YOU JUST DO A SERIES OF ACQUISITIONS WITHOUT PROPER INTEGRATION, YOU END UP WITH A PLATFORM THAT IS UNSTABLE"

Thomas Vetander
Nordic Capital

The paper concludes that, as buy-and-build plays evolve and take on a deeper operational approach, PE firms "need to target longer-term investment opportunities and carefully select the types of company in their portfolios, taking into account the entire production value chain".

This raises interesting questions about whether PE firms are becoming more and more like acquisitive corporates, which in turn could see managers re-think fund structures. "Longer-term investment strategies such as buy-and-build may require longer investment periods, since completing deals takes time," says co-author Bansraj. "Therefore, the limited lifetime of a PE fund may complicate the successful execution of a buy-and-build strategy, essentially motivating a change in the fund structure that allows for longer holding periods."

Nordic Capital's Vetander notes the expansion of operational teams and resources as "PE has become far more sophisticated in the approach to, and execution of, operational change".

He says: "At Nordic Capital, a strategic agenda has always sat at the core of the investment thesis, but our operational team has expanded and we have put in place institutional processes that enable us to build on past learnings and achieve repeatable success."

Yet while there is an argument that PE is moving closer to strategics in some respects, exit timelines and the requirement to recycle capital draws a significant distinction between the two. "PE is paid when a liquidity event happens and a business is sold. That has a fundamental impact on strategy," Johnson says.

Smit adds that PE firms are also "less driven by empire-building motives" and "less exposed to the risk of overvaluation on entry, which is a feature of corporate deals, where buyers can use their own shares to make acquisitions".

KEY FINDINGS

In their paper *Can Private Equity Funds Act as Strategic Buyers? Evidence from Buy-and-Build Strategies*, Dyaran S. Bansraj (Cass Business School), Han Smit (Erasmus University Rotterdam and Erasmus Research Institute of Management) and Vadym Volosovych (Erasmus University Rotterdam and Tinbergen Institute) ask whether buy-and-build acquisition strategies deliver the operating synergies expected from strategic buyers.

The study looks at 818 platform companies and 1,346 follow-on acquisitions completed between 1997 and 2016 in seven European PE markets. The authors also construct a "synthetic portfolio" of control group companies with similar attributes (industry, size, profits, and growth histories) to act as comparators. Using their largest sample (both exited and non-exited investments), the research identifies a 27% increase in return on sales (ROS) for buy-and-build acquisitions.

The paper then considers only the exited investments to pinpoint the effect of operational synergies resulting from buy-and-build strategies. The authors find evidence of synergies among these exited buy-and-builds, in both short-term exit strategies (exits four or fewer years after the platform acquisition) and long-term exit strategies (exits after five or more years) – with, for the former, improvements of 41% against pre-acquisition ROS; and, for the latter, improvements of 55% against pre-acquisition ROS.

The research also shows that PE is not just pursuing horizontal acquisition strategies (consolidation of fragmented industries), but is also seeking to integrate supply chains with vertical investments. It finds that these vertical strategies result in increased sales-to-assets and labour productivity – key measures of operating synergies.

Next steps

The paper's findings suggest new avenues for additional research. Bansraj is interested in exploring what buy-and-builds mean for consumers. "The consolidation may not be immediately visible on the streets, but, behind the scenes, more and more companies will be owned by the same investor, and this changes market competition. The effect of this strategy on the consumer is unclear," Bansraj says.

For Volosovych, a thought-provoking follow-up "would be to look at what is similar and different between the acquisition strategies of corporates and buy-and-build platforms, given the differences in their management and governance structures".

Meanwhile, Smit is intrigued by whether operational synergies from buy-and-builds impact net returns for investors. He is also curious about how bolt-on acquisitions are valued, given that sponsors pursuing buy-and-build are incentivised to make acquisitions.

"What premium does the sponsor have to pay? It would be interesting to explore this using discounted cash-flow and game theory models," Smit says.

IS THE RACE *TO THE SWIFT?*

Picking the best private equity funds is clearly vital for investors. But how important is limited partner skill when it comes to generating strong performance? Or does it all just come down to access? Two recent academic papers explore this issue. By Vicky Meek.

As many limited partners continue to increase their allocations to PE, their investment performance in the asset class is becoming an ever more important element of the overall returns they need to meet their obligations and liabilities. Yet what determines how well individual LPs perform across their PE portfolios?

When it comes to making PE fund investments, a group of academics believe they have the answer. In their paper, *Measuring Institutional Investors' Skill at Making Private Equity Investments*, Daniel R. Cavagnaro, Berk A. Sensoy, Yingdi Wang and Michael S. Weisbach look at how LPs' skill levels impact their returns from PE. "There is so much research around mutual funds, and if ever there was an investment type that doesn't have skill, that would be it," says Weisbach. "Yet PE executives really have to know what they are doing and to know the businesses they back to add value. The questions we wanted to address are how investors decide which funds to back, especially given the limited access to some funds, and to what extent is selecting PE funds similar to selecting mutual funds (or to PE investing itself) in terms of skill?"

The researchers' initial analysis showed that skill exists among LPs. When compared with a simulation in which LPs were identically skilled, they found that the differential in actual performance between individual LPs was too great to be explained by chance. They also found that some LPs perform consistently well, while others perform consistently poorly.

They then sought to quantify the impact of skill on performance. Weisbach explains the process: "We ran statistical tests to uncover the extent of skill needed to pick the best-performing PE funds," he says. "Having established that skill is needed, we wanted to work out how much this matters. We had to assume a distribution of ability, because you can't say, for example, that three points of extra ability leads to two percentage points of increase in returns – what, after all, constitutes a point of ability? So the standard deviation is a way of expressing that distribution of ability and the effect this has on returns."

“SOME LPs ARE DEFINITELY SEEN AS THOUGHT LEADERS IN PE. GPs ARE KEEN TO HAVE THESE ON BOARD”

Warren Hibbert
Asante Capital

The academics found that a one standard deviation in skill results in a one to two percentage-point increase in annual IRR, suggesting it has a pretty large effect. "Any investor that can generate an extra 2% in PE returns is making a significant contribution – that usually translates into many millions of dollars," says Weisbach. He adds that the research team also tested other explanations for outperformance, such as access to funds and risk preference, but they found that the results for skill were far stronger.

"ANY INVESTOR THAT CAN GENERATE AN EXTRA 2% IN PE RETURNS IS MAKING A SIGNIFICANT CONTRIBUTION – THAT USUALLY TRANSLATES INTO MANY MILLIONS OF DOLLARS"

Michael S. Weisbach
The Ohio State University

Digging deeper

The importance of skill in LP fund investment decisions naturally comes as little surprise to those at the coalface – PE practitioners themselves. But it does lead to the question of what constitutes LP skill in today's market. "Everyone should be able to analyse a track record these days, so you can't differentiate yourself as an LP that way," says Rhonda Ryan, partner and head of European PE at Mercer. "So it really comes down to qualitative analysis: How good is the investment team? Are they going to stay together, even if things get tough? What's the culture like? You also need to be diligent in reference checking, going well beyond the list given by general partners, and then trying to join the dots."

Investment skill is as much about the funds LPs don't choose as the ones they do, adds Ryan. "Knowing when to say no is a critical skill," she says. "Some funds were great in the late 1990s; they're not so great now. You can't just look at historical track records because the best may be behind some groups and there may be much better options available today."

It's a view shared by Mark Florman, chairman and CEO at Time Partners. "Skill is important in LP returns, and I think there is an interplay here with relationships – these really help with judgment calls. There is only so much that desktop research can tell you, and so you really need to get under the skin of the team to understand who makes the decisions and what drives them. GP decks are so similar, you have to get to what differentiates a firm or team."

Yet, in contrast to the paper's findings, they both also stress the importance of access to funds when it comes to returns. As Ryan points out, "in an industry with such a high dispersion in returns between GPs, it doesn't matter how skilled you are if you don't have access to the best-performing funds".

Skill or access?

This relationship between access and skill is the subject of another academic paper that looks at LP performance in PE, venture capital, and private debt alternative vehicles (AVs), such as co-investments, parallel funds, and feeder funds. In *Investing Outside the Box: Evidence from Alternative Vehicles in Private Equity*, Josh Lerner, Jason Mao, Antoinette Schoar and Nan R. Zhang find that LPs with the strongest returns from their overall PE portfolios also do well in AVs, while those with lower overall PE performance fare poorly in AVs. The authors suggest that this, at least in part, is because top LPs are offered preferential access to top AVs and that high-performing LPs have strong bargaining power.

The research builds on previous work by Lerner together with Victoria Ivashina and Lily Fang (*The Disintermediation of Financial Markets: Direct Investing in Private Equity*) that analysed direct investments by seven LPs. In this later paper, however, the dataset is far richer – it is drawn from custodial information from State Street covering more than 100 of the largest LPs. "We can see every dollar flowing in and out of funds, co-investments and special purpose vehicles," says Lerner. "It allows us to capture between 5% and 10% of PE activity over four decades."

"YOU REALLY NEED TO GET UNDER THE SKIN OF THE TEAM TO UNDERSTAND WHO MAKES THE DECISIONS AND WHAT DRIVES THEM. GP DECKS ARE SO SIMILAR, YOU HAVE TO GET TO WHAT DIFFERENTIATES A FIRM OR TEAM"

Mark Florman
Time Partners

AVs are an important area to study, given the rise of co-investments and other investments being made outside main funds. Indeed, the paper shows that by 2017, almost 40% of PE capital was raised through AVs. Yet, despite the lower or non-existent fees and carried interest often associated with these vehicles, the research shows that even average AVs underperform the main funds of the GPs sponsoring them. "LPs can't view AVs as a cure-all," says Lerner. "Co-investments won't necessarily boost returns or make up for poorer performance elsewhere. Fund investing is a tough enough game; co-investments are even harder."

"YOU ARE MORE LIKELY TO BE SHOWN GOOD DEALS AND OFFERED A DECENT ALLOCATION IF YOU ARE SEEN AS A RELIABLE, PROFESSIONAL AND PREDICTABLE PARTNER WITH THE CAPACITY TO ACT QUICKLY"

Geoffrey Geiger
USS

Is bigger better?

So what does the paper tell us about LP skill and how it relates to other factors such as LP ticket size, reputation and access? It is often said, for example, that larger investors can have significant advantages over others in terms of GP access and invitations to high-quality co-investments. Yet Schoar says the research suggests this is not always the case. "We find that the sheer size of a limited partner is not predictive of performance," she says.

Indeed, the size and quality of the team matter far more than investment ticket sizes, say some. "The size of annual PE allocation has very little correlation to the budget for paying the investment team," says Warren Hibbert, managing partner at Asante Capital. "There may even be an inverse correlation, as some LPs with the most capital to deploy have the lowest team budget and end up aggregating their capital across fewer mega-managers, rather than selecting the best from thousands of GPs."

Instead, it appears that a combination of access – LPs need to see the best opportunities to do well – and skill leads to outperformance. *Investing Outside the Box* looked at results according to whether LPs had discretion over AV investments. "We found the biggest differential in performance between the top and worse-performing LPs for the AVs where LPs had discretion," says Schoar. "There is definitely something about sophistication and skill that accounts for some LPs' better performance."

Even more interestingly, the paper also looked at the AV performance of top and lower-tier LPs when investing in the same fund. The authors found that top LPs still outperformed the rest. "It has long been a mantra of the PE industry that as long as you get into the top-quartile funds, then you're all set," says Schoar. "Yet our paper shows that, even when looking at a given GP, there is still a difference in performance among top and lower-tier LPs in AVs. This matters because AVs are attracting increasing amounts of capital."

And it's perhaps here that the interconnection of access and skill shows most. The paper suggests this is down to preferential access for top LPs, who have the most bargaining power. Yet it could also equally demonstrate Ryan's earlier point that skill is about knowing when to say no to an opportunity.

"IN PE YOU REALLY NEED TO LOOK AT WHAT OPPORTUNITIES ARE AVAILABLE AND DETERMINE YOUR EXPOSURE FROM THAT – YOU CAN'T FORCE ALLOCATIONS"

Antoinette Schoar
MIT Sloan School of Management

Opening doors

For Geoffrey Geiger, head of PE funds and co-investments at USS, co-investments have, on average, outperformed the underlying funds they invest in. He says achieving this requires an appropriately staffed and skilled investment team, which in turn opens access to good opportunities. "Securing the best co-investments is down to access and the relationships you build with GPs," he says. "You are more likely to be shown good deals and offered a decent allocation if you are seen as a reliable, professional and predictable partner with the capacity to act quickly."

Indeed, having a reputation for skill – being a savvy investor – is a sought-after characteristic for GPs where access may be an issue. "Some LPs are definitely seen as thought leaders in PE," says Hibbert. "GPs are keen to have these on board." He adds that this is a function of team size, experience and talent.

"The Ivy League endowments are typically at the top of the list – they are able to pay market rate compensation to retain the brightest academics and investors their systems produce. They tend to focus on GPs that can generate the highest absolute risk-adjusted return globally."

Building that reputation takes time as well as resources, as Lerner points out. "It's clear that some LPs are more attractive to GPs than others," he says. "Some of this can be down to financial firepower, but it's also a combination of: staying power – that the LP is in private markets for the long haul; continuity of the team, which can really matter when you're raising your next fund, because you really want existing LPs to re-up; the LP's sophistication and level of understanding of PE; and whether the LP is seen as 'smart money', because that can really help attract other investors to your fund."

"KNOWING WHEN TO SAY NO IS A CRITICAL SKILL. YOU CAN'T JUST LOOK AT HISTORICAL TRACK RECORDS BECAUSE THE BEST MAY BE BEHIND SOME GROUPS AND THERE MAY BE MUCH BETTER OPTIONS AVAILABLE TODAY"

Rhonda Ryan
Mercer

This all really matters to LP performance at a time when access to the best-performing GPs and, by extension, their co-investment opportunities, may be more constrained than usual because of the pandemic. "There will be a flight to the familiar in the short to medium term as LPs have been unable to meet new GPs," says Florman. "We'll see a lot of re-ups and larger ticket sizes in situations where LPs already know GPs, because they will have a higher conviction on those opportunities than on new ones."

"LIMITED PARTNERS CAN'T VIEW CO-INVESTMENTS AS A CURE-ALL – THEY WON'T NECESSARILY BOOST RETURNS OR MAKE UP FOR POORER PERFORMANCE ELSEWHERE. FUND INVESTING IS A TOUGH ENOUGH GAME; CO-INVESTMENTS ARE EVEN HARDER"

Josh Lerner
Harvard Business School

Quite how this will affect LP performance will only be known several years down the track. Yet the findings from the two papers serve as good reminders that PE investing is very different from other types of investment: pressure to deploy capital can result in negative outcomes because LPs really have to discriminate between GPs with the potential to perform well and the rest if they are to generate strong returns. "The most successful LP strategies tend not to treat PE like an asset class," says Schoar, drawing on this and her previous research. "Unlike fixed income or public equities, where you have a target allocation and then find investment opportunities to reach that allocation, in PE you really need to look at what opportunities are available and determine your exposure from that – you can't force allocations."

Indeed, Lerner says the overall lesson from the two papers is that "LPs are not created equal and skill is an important differentiator – I'd argue that skill and bargaining power are two sides of the same coin. In private capital, unlike in mutual funds, where you get your money from makes a big difference. It's clear that some LPs are just more savvy and this plays out not just at fund level, but also at the AV level."

THE RESEARCH

In *Measuring Institutional Investors' Skill at Making Private Equity Investments*, Daniel R. Cavagnaro, Yingdi Wang (both of California State University, Fullerton), Berk A. Sensoy (Owen Graduate School of Management, Vanderbilt University) and Michael S. Weisbach (The Ohio State University) set out to examine the extent to which LPs' skill affects their returns from PE.

Using a sample of 27,283 investments made by 1,209 LPs between 1991 and 2011, the authors first examine whether differential skill exists. They simulate the distribution of LP performance on the assumption that all LPs are identically skilled and then compare the results against actual performance data. The comparison reveals that more LPs do consistently well or consistently poorly (above or below median performance, respectively) in selecting PE funds than would be the case if there were no differential skill. "Some LPs appear to be better than other LPs at selecting GPs who subsequently earn the highest returns," the paper says.

The paper finds that a one standard deviation increase in LP skill leads to a one to two percentage-point increase in annual IRR for the LP's PE investments. After testing a number of other explanations for outperformance, such as risk preference, political pressure to invest in certain types of funds and access constraints, the authors conclude that skill is an important factor in LP performance and that the difference in performance is "economically meaningful".

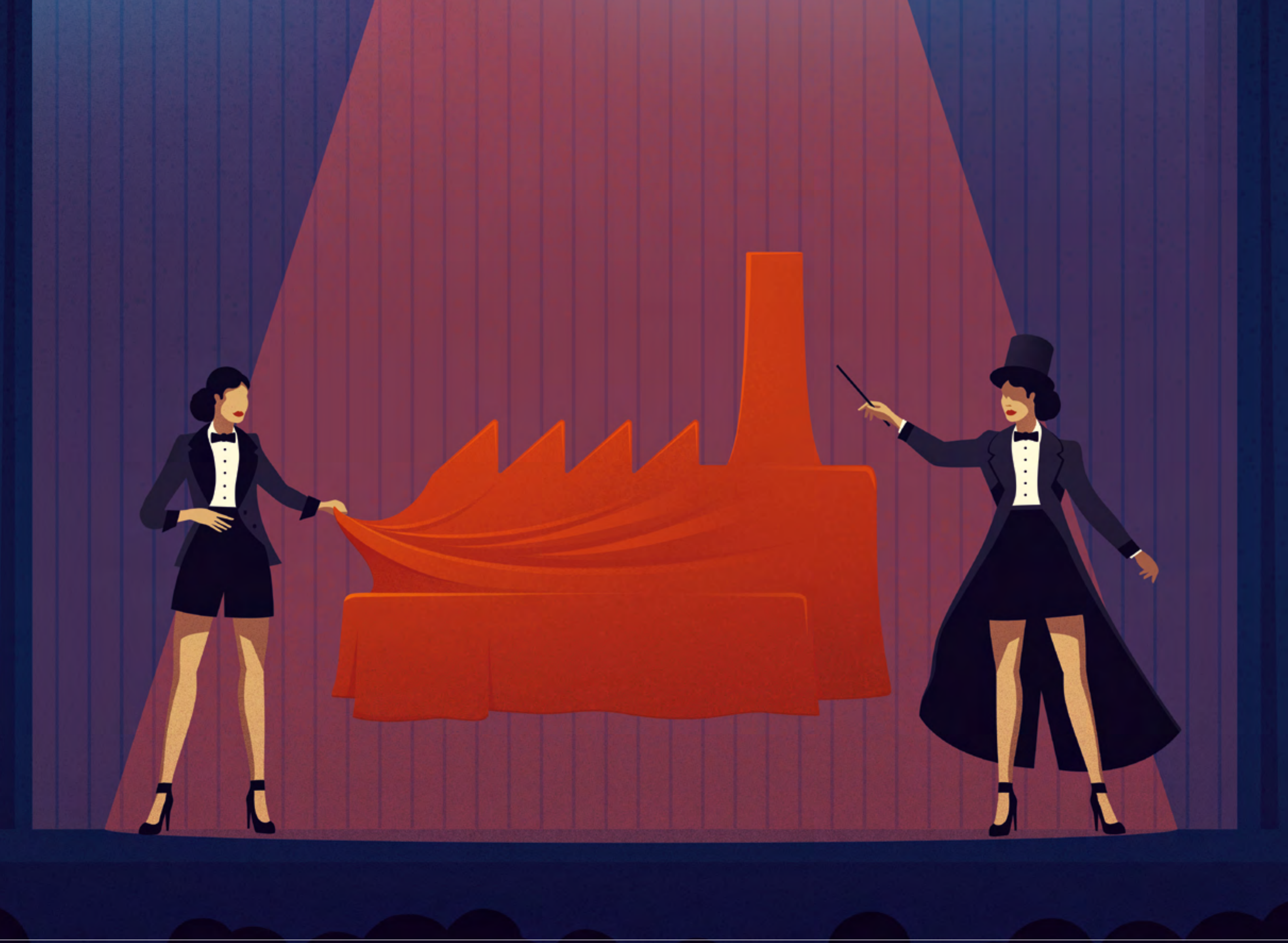
In *Investing Outside the Box: Evidence from Alternative Vehicles in Private Equity*, Josh Lerner (Harvard Business School), Jason Mao and Nan R. Zhang (both of State Street Global Exchange) and Antoinette Schoar (MIT Sloan School of Management) examine the performance of LP investments in alternative vehicles (such as co-investments, parallel funds, and feeder funds) with a view to understanding why some investors outperform others.

The researchers use custodial data from State Street on 108 LPs, capturing US$500bn of commitments and 20,000 investments, to analyse cash flows between the LPs and GPs. They find that AVs accounted for almost 40% of capital raised by PE firms by 2017 and that better-performing managers – based on past fund performance using public market equivalent (PME) measures – offered higher-performing AVs than those offered by poorer-performing GPs, but that AVs overall perform worse than the main funds of a GP.

They also find that LPs with better past performance across their entire PE portfolio had above-average performance in the AV investments and that they often outperformed the main fund of the GP sponsoring them, while LPs with worse past performance invested in AVs with lower PMEs. The authors suggest this reflects a combination of access and skill. Top-tier LPs are almost three times more likely than lower-tier LPs to be offered AV investments by top-tier GPs. But they also note that the outperformance of the top LPs is strongest in discretionary vehicles, where the LPs' skill matters. "The sophistication of an LP within the PE space becomes more important as partnerships offer a gamut of different vehicles," the research says.

THE VANISHING *PUBLIC COMPANY*

The past decade has seen the number of public companies shrink, while the ranks of businesses owned by private market investors have swelled. What's driving this trend – and does it matter?



After steady growth in the 1980s and 1990s, the number of public companies in the West has plummeted over the last two decades, with peak-to-trough declines of around 30% across many large economies, according to World Bank data. At the same time, assets under management in private markets have soared to US$6.5trn, an increase of 170% in the decade to 2020, according to McKinsey & Company.

But what are the reasons for the sharp decline in the number of public companies? To what extent do cost of capital, the contrasting governance models of private and public ownership, and relative investment performance play a part? And how have changes in the regulation governing public and private markets altered the picture?

Here, three academics who have studied why public markets have lost their shine join forces with three private markets investors to debate why the number of publicly listed companies has declined so dramatically. They also discuss the consequences of there being fewer public companies, why this matters to retail investors unable to access private markets, and how this trend will affect businesses that have historically raised capital through public markets. Chaired by Amy Carroll.

Why are fewer companies listing on public markets?

Roberto Quarta: "I have a foot in both public markets and private equity, and my view is that there is a time for entrepreneurship, a time for companies to be held privately, and a time for companies to go public. There is no doubt, however, that regulations and governance requirements in public markets have become a lot more demanding in the past two decades, so while there may be attractions to public ownership in terms of liquidity, there are a lot of obligations to fulfil as well."

David Layton: "I agree that it is about the cost of regulation and compliance. Both investors and entrepreneurs have grown weary of the corporate governance changes required in order to go public. In an attempt to address the implicit tension between managers and owners, there have been successive waves of laws. But the combination of regulations, proxy advisers and so-called best practice codes, combined with the short-term nature of public markets, has diluted a board's decision-making capabilities, stifling the entrepreneurial spirit of many companies. We call these things governance correctness. That has become so entrenched, it is a real inhibitor.

"The other major factor, of course, is the maturation of private markets. I don't think it's a coincidence that from 2000 to 2019, the number of public companies fell significantly, while private markets' assets under management grew to almost US$7trn."

Gregory Brown

Gregory is professor of finance and director of the Frank Hawkins Kenan Institute of Private Enterprise, University of North Carolina. He is also the founder and research director of the Institute for Private Capital. He previously served as director of research for Amundi Smith Breeden and worked at the Board of Governors of the Federal Reserve System.

Thomas Chemmanur

Thomas is professor of finance and Hillenbrand Distinguished Fellow at the Boston College Carroll School of Management. He was previously associate professor of finance at the Graduate School of Business, Columbia University, and has also taught at Massachusetts Institute of Technology, New York University, and Duke University.

Joan Farre-Mensa

Joan is an associate professor in the department of finance at The University of Illinois at Chicago, having previously worked at Northeastern University and Harvard Business School. He is particularly interested in understanding how a firm's listing status affects its financing environment and policies.

Gregory, your research posits that there is a cost/benefit framework in which investors and management teams balance the benefits of a lower cost of capital in public markets with the governance advantages of PE. What are those governance advantages?

Gregory Brown: "Public company ownership structures are diffused. Even the biggest institutional investors, such as Vanguard and BlackRock, may hold just 5% [of a company]. And those investors will own stakes in thousands of companies, so their ability to undertake good governance and monitoring of management is extremely limited. The other disadvantage of public ownership is the 'free rider' problem. Even if you spend a lot of time and effort trying to influence a company, you get just a small fraction of the benefit.

> "WHEN COMPANIES HAVE IMPORTANT STRATEGIC CHOICES TO MAKE, IT IS FAR EASIER TO DO THAT IN A PRIVATE SETTING"
>
> **Gregory Brown**
> *University of North Carolina*

"The notion that public boards and public owners are going to be well positioned to undertake difficult decisions is therefore quite a stretch. When companies have important strategic choices to make, it is far easier to do that in a private setting, where you have just one or, at most, a handful of controlling shareholders."

David Layton: "I think PE's advantage is the ability to focus on those things that will have real impact. You could argue that in the past this focus has been applied one dimensionally to returns. But I think the industry is maturing and firms are now taking broader stakeholder needs into account. That is far more easily achieved when the board, management team, and entire company are aligned with a single set of objectives, rather than being pulled in 10 different directions.

"I would also say: do not underestimate private capital's ability to look into the future. Private market solutions are increasingly long term. Quarterly reporting is restrictive. Public markets get tired of long-term stories in a way that private capital doesn't."

David Layton

David is co-chief executive officer of listed private markets investor Partners Group. He is also head of the PE business department and a member of the global investment committee. Layton was previously head of Partners Group's PE business in the Americas.

Anne Glover

Anne co-founded Amadeus Capital Partners alongside Hermann Hauser in 1997. She started out in the US at Cummins Engine Company and was then at Bain & Company, before returning to the UK to join Apax Partners. She was also chief operating officer of investee company Virtuality Group, after it listed on the London Stock Exchange.

Roberto Quarta

Roberto is chairman of Clayton, Dubilier & Rice Europe, having played a particularly important role in the firm's investments in SPIE and Rexel. Quarta is also chairman of listed companies WPP and Smith & Nephew, and served as chief executive officer of BBA Group from 1993 to 2001, before taking over as chairman.

"DO NOT UNDERESTIMATE PRIVATE CAPITAL'S ABILITY TO LOOK TO THE FUTURE. PUBLIC MARKETS GET TIRED OF LONG-TERM STORIES IN A WAY THAT PRIVATE CAPITAL DOESN'T"

David Layton
Partners Group

Roberto Quarta: "With the PE model, the management team and investors are on the same side of the table. That allows for a direct conversation in real time. In a public company, there might be thousands of investors, as Gregory says. Anyone looking to make a significant move usually sounds out their top 20 investors to get a sense of support, but it's very different to having that close rapport. Then there is a real regulatory burden with public ownership and potential compensation issues in some markets, too. That is particularly true in the UK, and can cause real problems with attracting and retaining talent."

Do you think we are seeing a delay to the point at which companies are listing, or are more companies just avoiding public markets altogether?

Gregory Brown: "We are definitely seeing both. We see cases where companies are staying private longer. The average time from the first round of venture funding to initial public offering has increased significantly. But we are also seeing an increase in companies that never go public. They either remain private companies or go straight into strategic acquisitions."

David Layton: "I would say that more companies are staying private altogether. This isn't a delay; it's about a structural shift in behaviour and I think it's fuelled by a private markets industry that is broader, more substantial and able to solve more problems than ever before."

When can it start to make sense for companies to list? In what circumstances does the lower cost of capital in public markets win out?

Gregory Brown: "From an investor standpoint, the biggest advantage of public ownership is liquidity. If they want to trade out, they can do so in a nanosecond. And when a business reaches a certain size, it can definitely make sense. There are no trillion-dollar private companies. Access to cheaper capital is a real draw. And when the company's strategy is relatively easy to understand, information asymmetry is low. By far the most corporate value is held on public markets after all, so clearly there are some benefits."

Anne Glover: "I think the lower cost of capital argument is a bit spurious. In addition to the governance benefits, in private capital it is possible to create a leverage structure that optimises what is needed for a company's specific situation. This is in contrast to public markets, where you can clearly raise debt, but it is all intermediated by ratings agencies and bond issuances.

"The whole capital structure in public markets only makes sense for very large companies. Listed markets are incredibly important for those multinationals – being able to issue corporate bonds during the coronavirus crisis has been essential to their survival. But that is only relevant to a certain market capitalisation and above."

So is it just about size?

Roberto Quarta: "I think size is critical. In my experience, when you get to a certain size it becomes far more difficult to sell in a private setting and an IPO almost becomes inevitable."

Anne Glover: "I don't think it's just about size. It's about predictability. The public markets don't like unpredictable performance. Three strikes and you are out. If you disappoint three times, you are a stock that no one will touch, even if there are valid reasons for why you have disappointed – perhaps a drug trial has failed or a particular currency has gone haywire. It doesn't matter. Public markets don't like volatility."

David, your firm – Partners Group – is a public company, but your role is to extol the virtues of private ownership to management teams. How do you balance the two?

David Layton: "Despite having listed our management company, we have continued to apply a corporate governance philosophy that prioritises entrepreneurial growth. In any case, I absolutely believe that public markets can provide opportunities for businesses – to increase their profile, for example, or to provide an important channel for succession planning. We took one of our portfolio companies, VAT, public in 2016 and we continued to govern it with an entrepreneurial spirit even as it transitioned onto the public markets. That was the right move for that company at that time, and we would do it again.

"ACCESS TO LATE-STAGE VENTURE CAPITAL IS SO MUCH GREATER NOW, SO THESE UNICORNS DON'T NEED TO GO PUBLIC AND INCUR ALL THE COSTS ASSOCIATED WITH THAT"

Thomas Chemmanur
Boston College Carroll School of Management

"In the past, companies would have wanted to go public to achieve an attractive valuation, or because they didn't have other means with which to access capital. Yet today, private markets players are willing to pay prices on a par with public markets because they have confidence in their ability to drive value."

So how much of the increase in private capital AUM is about deregulation – and how does that square with the superior governance and resulting outperformance we've just discussed?

Joan Farre-Mensa: "Deregulation plays a significant role. Our argument is that a US federal law passed in 1996 – the year when IPOs peaked in the US – made it easier for private firms to raise capital across multiple states by unifying the states' regulatory environments. We think that was so significant because we observed a sharp increase in the ability of late-stage start-ups – traditional IPO candidates – to raise large amounts of private capital from investors at that time. Slow-changing factors, such as private firms' potential superior governance, would not have resulted in such immediate changes."

Thomas Chemmanur: "We also found support for the more abundant PE financing hypothesis, which we also believe was driven by deregulation and the end of the US blue sky laws [state-by-state laws against securities fraud]. Access to late-stage venture capital is so much greater now, so these unicorns don't need to go public and incur all the costs associated with that."

Gregory Brown: "There is no doubt that regulatory changes in the US and elsewhere did make it easier to raise private capital. But just because you can do something doesn't mean it makes sense. There has to be an economic rationale behind it as well. And the evidence is that capital is going into venture and buyout funds because the returns have been superior."

Anne Glover: "Actually, I would invert the argument altogether. Deregulation is not material here. In the US, the Sarbanes-Oxley Act has added $1m to $2m annually to the cost of going public. No small company can withstand that. And in Europe, MiFID II has reduced sell-side research dramatically, while the Combined Code [in the UK] has made being the non-executive director of a small public company an extremely unenticing prospect. We have regulated our way against attracting talent to the boards of public companies. So, I would say that it is increased regulation that has kept companies private, rather than deregulation."

Thomas's paper suggests that the quality threshold for public companies has increased since 2000. Do you think that is the case, and how relevant might that be to this debate?

Thomas Chemmanur: "We found a greater sensitivity to product market competition in firms going public since 2000 – only stronger firms with better business models have chosen to list since then. The evidence we have to support this is firms that have gone public since 2000 have had greater total factor productivity on average, compared with those that went public previously."

Anne Glover: "Quality is an interesting term, though. Start-ups can be high quality but might have losses. And if you are looking at quality in terms of simple measures of productivity, such as revenue per employee, that is misleading. Google and Microsoft have incredibly high revenue per employee and therefore incredibly high profitability. But a start-up or growth company may not. The whole point is that you are investing in the creation of wealth, and that is not the same thing as productivity. Productivity is a function of scale and misses innovation completely."

"WE HAVE REGULATED OUR WAY AGAINST ATTRACTING TALENT TO THE BOARDS OF PUBLIC COMPANIES... IT IS INCREASED REGULATION THAT HAS KEPT COMPANIES PRIVATE, RATHER THAN DEREGULATION"

Anne Glover
Amadeus Capital Partners

Joan Farre-Mensa: "Some commentators are claiming the opposite: they argue that by trying to incentivise more companies to go public – by reducing disclosure requirements for smaller listed companies, for example – we could be degrading the protections that public offerings provide. Indeed, commissioner Allison Herren Lee of the Securities and Exchange Commission recently argued that, if we stay on this path, we may see a continued decline in both the quantity and quality of public offerings, to the detriment of all investors."

Gregory Brown: "Has the threshold for going public increased, or are these companies better positioned to remain private? It is hard to say for certain, but I do think there is evidence to refute the quality threshold claims. What about special purpose acquisition companies [SPACs]? People are just throwing money into the market for what is essentially a blind investment. That's not low quality; it's completely unknown quality. And if you look at some of the Chinese companies that have been able to raise substantial sums of money in the US, despite inferior transparency, that doesn't support this hypothesis either."

How does the rise in SPACs inform this debate?

Anne Glover: "Originally, public markets were used to form capital – to do IPOs. Today, 99% of trading is in the secondary market. That's what has led us to this fascinating phenomenon of the SPAC. Capital raising is now so difficult, even in the US, that backable teams are raising capital and then going on the hunt for acquisitions. It is just a way of short-cutting the whole IPO process, which has become extremely painful."

Can you foresee anything that would slow or change the direction of this trend from public to private ownership?

Anne Glover: "More appropriate regulation of public markets. I am spending a lot of my time on exactly this point because, even if only 10% of our companies go public, it is of massive benefit to underlying investors when high-potential businesses list and to the domestic economy where they list, because it keeps that company and that leadership at home."

Thomas Chemmanur: "Regulation is certainly one answer. The JOBS Act – or Jumpstart Our Business Startups Act – in the US, was designed to do just that, by relieving the regulatory and transparency burden of going public for smaller companies. The evidence of success, however, is mixed. The alternative is to reduce the cost of going public, possibly in the form of the direct listings we have seen from the likes of Spotify and Slack."

Joan Farre-Mensa: "If disclosure requirements and other regulations that apply to public companies were extended to private companies, that could make all the difference. For example, if the Sarbanes-Oxley Act were to be applied to private companies, that could reduce the appeal of remaining private. So, anything that makes private companies look more like public companies could eventually slow the trend."

"IF DISCLOSURE REQUIREMENTS AND OTHER REGULATIONS THAT APPLY TO PUBLIC COMPANIES WERE EXTENDED TO PRIVATE COMPANIES, THAT COULD MAKE ALL THE DIFFERENCE"

Joan Farre-Mensa
The University of Illinois at Chicago

David Layton: "But I think the phenomenon of governance correctness has become so entrenched it is likely to persist for the foreseeable future. If private markets fail to meet broadening needs for environmental, social and governance considerations and stakeholder impact, that could possibly slow the trend. But in fact we are seeing real progress on that front, and as long as that continues, I think the shift towards private ownership will persist."

Finally, does it matter that there are fewer public companies if PE has the capital and skills to build strong businesses?

Gregory Brown: "Personally, I think it's fine. The economy is evolving, and it is not clear to me that small companies, where almost all of the decline in public ownership has taken place, are better served by public markets. So, economically, we could be better off with more private companies. Certainly, there is productivity research to suggest that this is the case.

"One challenge we do face, however, is who has access to those private investments. At the moment, PE is available only to institutional investors and the very wealthy, and it seems unfair to tell ordinary citizens that they cannot have access to the highest-returning investments."

David Layton: "I agree. If a larger and larger share of the economy – and increasingly the most compelling, best-governed, and best-returning situations – is owned in the private markets, then I think society has to wrestle with the lack of access that ordinary people currently have to those investment opportunities."

Anne Glover: "But PE is not a long-term holder of businesses. It is very good at transitions – restructurings or high growth spurts. It is not good at long-term sustained planning.

"For example, companies like BP and Shell that operate in climate-sensitive sectors are having to plan far into the future. Yes, they need to deliver short-term performance, but scenario planning needs to be long term.

"I think for some of the big problems we are facing in the world today, public ownership is the right answer."

Joan Farre-Mensa: "Society is putting a lot of effort into making sure public companies behave in a certain way. Take, for instance, the recent board diversity requirements passed in California. If more and more of the economy remains in private markets, those regulations will apply to a smaller and smaller set of companies – not necessarily a good or a bad outcome, just a matter of fact.

I also agree about this issue of investor access. Not only are more companies now unlisted, making it hard for retail investors to invest directly, but more pension plans are now defined contribution, which, unlike defined benefit plans, rarely allocate assets to PE."

Roberto Quarta: "I think having a healthy public market matters because, ultimately, PE has to exit. We are transitional owners, as Anne says. We buy businesses, make them better and then exit in some form. That will typically involve the public markets at some stage.

"Of course, that listed company may then be taken private once again, for all sorts of reasons. Then we see the story come full circle and we begin again."

"HAVING A HEALTHY PUBLIC MARKET MATTERS BECAUSE, ULTIMATELY, PE HAS TO EXIT. WE ARE TRANSITIONAL OWNERS"

Roberto Quarta
Clayton, Dubilier & Rice

THE RESEARCH

Three separate academic research papers attempt to explain the dramatic shift away from public company ownership structures in favour of private markets.

In *Public or Private? Determining the Optimal Ownership Structure*, Gregory Brown and Sarah Kenyon (University of North Carolina, Frank Hawkins Kenan Institute of Private Enterprise) and Andrea Carnelli (Pantheon) argue that there is a cost-benefit framework in which companies trade off the governance benefits of private equity ownership with the potential for a lower cost of capital in public markets when deciding on an ownership structure.

The authors note that public markets offer a large pool of capital and extensive risk sharing but can be expensive to access, inherently short-term in outlook, and can suffer from misalignment between management and shareholders. PE may not have the same depth and risk-sharing capabilities, say the authors, but it offers strong alignment that can overcome the governance issues of diffuse public markets.

The paper finds that companies pursuing complex strategies or requiring a long-term investment horizon benefit most from private ownership and argues that governance engineering by PE sponsors can explain the rise of private markets to the detriment of public ones.

Deregulation of Private Equity Markets and Decline in IPOs, by Joan Farre-Mensa (The University of Illinois at Chicago) and Michael Ewens (California Institute of Technology), takes a different approach. The paper explores how the deregulation of securities laws in the US, and in particular the National Securities Markets Improvement Act of 1996, increased the supply of private capital to late-stage start-ups, giving entrepreneurs more bargaining power and enabling companies to remain private for longer.

Meanwhile, *The Disappearing IPO Puzzle*, by Thomas Chemmanur (Boston College Carroll School of Management), Jie He and Xiao Ren (both of the Terry College of Business, University of Georgia), and Tao Shu (Chinese University of Hong Kong), investigates the decline in US IPOs since 2000. They find that abundant PE funding is keeping companies private, while also suggesting that the quality threshold has been raised for public companies since the year 2000.

A WINNING *STRATEGY*

Has private equity really outperformed public markets? Two academics present their contrasting views on this important issue.

In his recent paper, *An Inconvenient Fact: Private Equity Returns & The Billionaire Factory,* Ludovic Phalippou finds that performance between PE funds and public markets has been remarkably similar since at least 2006. Steven Kaplan, however, takes a different view, arguing based on his research that PE has outperformed public markets.

Ludovic Phalippou

Ludovic Phalippou is professor of financial economics at Saïd Business School, University of Oxford. With a focus on private equity and asset management, his research focuses on areas of the industry that are of interest to investors. He is the author of *Private Equity Laid Bare*.

In the 20th century, the financial economics literature studied companies' cost of capital, and a puzzle emerged: why is capital so expensive? Raising public equity in the US was found to cost up to 7% of the amount raised, and raising public debt was found to be only slightly less expensive. Further exacerbating the high cost of capital, funding vehicles that intermediated between savers and public markets added significant additional expenses through fees, some of which were opaque and indirect.

The 21st century only exacerbated the puzzle. During this time, capital was diverted from public markets to private markets through vehicles such as PE funds. These funds, however, involve expensive fees: the consensus lower bound estimates for the total expense ratio is approximately 6% per year.

In addition, transaction costs associated with PE funds are large and frequent, as portfolio companies change hands every four years. To illustrate the high cost of fees, I estimated the total cost of financial intermediation for $200bn of equity and $400bn of debt invested (which is about the yearly volume for US PE) to be $100bn. This must be recouped over the typical four-year holding period of a portfolio company.

For PE investors to break even, they must also recoup their cost of capital, which can be approximated using public market returns. The annual US public market return has averaged approximately 10% over the long run. This is equivalent to a 1.46x return over a four-year holding period, indicating a high cost of capital for PE investors.

There are, however, exceptions to high equity returns. First, the largest size decile of stocks returned 7.2% annually between 1996 and 2009, whereas the other nine deciles returned a more common 11.2%. Thus, any large-cap index, such as the S&P 500, underperforms smaller-stock indices over that time period. Second, indexing follows ex-ante rules which may or may not be good trading strategies. This means that different indices can perform differently from one another. The Russell 2000, for example, underperforms the S&P 600 by a wide margin, even though both are mid-cap indices. Third, emerging market stock returns in US dollars have been poor, especially over the past 10 years, as a result of foreign exchange effects.

This diversity in public market indices thus allows GPs and consultants to cherry-pick vintage years and benchmarks strategically to make relative performance appear stronger. In addition, as PE has been divided into many asset classes, it is possible to cherry-pick what is defined as PE.

For example, funds investing in the natural resources industry have performed poorly. They can be labelled real assets and thus taken out of the PE universe. PE returns are thus stronger against the public markets if we exclude real asset funds. Similarly, an international portfolio of PE will compare favourably to global public equity benchmarks. Even if both the PE portfolio and the public equity benchmark put the same geographic weight on the US, the PE portfolio still has an advantage over the public equity benchmark. This is because emerging markets, which have historically performed poorly, make up a relatively smaller share of global PE but a relatively larger share of a global public equity benchmark.

Similarly, PE funds with vintage years from 2006 onwards will look as if they performed poorly when measured against a large-cap stock index but will look as if they performed well when measured against Russell or MSCI world indices. Performance for pre-2005 vintage funds, however, will look great against large-cap stock indices, Russell and MSCI world indices, but will look poor against mid-cap indices such as the S&P 600.

Taken together, these points emphasise the need to choose a reasonable benchmark to properly measure PE returns over time. If we compare all US buyout funds against the S&P 600, the public market equivalent (PME) is 1.10 for 1996-2005 vintages and 1.05 for 2006-2015 vintages. Widening the sample to all PE funds yields PMEs of 1.07 and 0.99 respectively, using Cambridge Associates data. This implies that PE investments outperformed stocks of similar size by between 0% and 2% per year depending on the exact benchmark and time-period – quite a low relative performance.

We might expect this low relative performance of PE funds to worsen, given low interest rates, which increase asset prices and decrease returns. The deterioration in performance is further exacerbated by the industry's high fixed transaction costs and fees. Yet, an odd but popular line of reasoning concludes the opposite: one obtains higher returns with more risk and illiquidity; PE has both, so it must outperform, especially in a low interest rate environment.

"DIVERSITY IN PUBLIC MARKET INDICES ALLOWS GPs TO CHERRY-PICK VINTAGE YEARS AND BENCHMARKS TO MAKE RELATIVE PERFORMANCE APPEAR STRONGER.
IN ADDITION, AS PE HAS BEEN DIVIDED INTO MANY ASSET CLASSES, IT IS POSSIBLE TO CHERRY-PICK WHAT IS DEFINED AS PE"

Another curious argument maintains that fund managers must be paid performance-based fees to incentivise hard work and strong returns. Although data is kept secret, it is easy to estimate these fees with reasonable precision. We find that investors had to reward US fund managers with a payoff of US$370bn – despite an unimpressive relative performance. This is an extraordinary wealth transfer and another puzzle that has still to be addressed.

Steven Kaplan

Steven Kaplan is professor of entrepreneurship and finance at The University of Chicago Booth School of Business, a research associate at the National Bureau of Economic Research, and associate editor of the *Journal of Financial Economics.* He is co-creator of the Kaplan-Schoar public market equivalent (PME) private equity benchmarking approach.

In his recent and widely publicised paper, Ludovic Phalippou claims that private equity fund managers have made a great deal of money without outperforming public markets net of fees. He also argues that PE return expectations going forward rely on unrealistically high increases in portfolio company earnings. However, by any reasonable measure, PE funds have outperformed public markets. While there is no guarantee that PE will continue to outperform, his second claim relies on a significant conceptual error which, when corrected, results in more reasonable PE return expectations.

Phalippou claims that PE "has returned about the same as public equity indices since at least 2006". There are many ways in which this statement is misleading, if not wrong.

First, the analysis is misleading because he chooses an unusual time period over which to measure performance

– vintages from 2006 to 2015. One might have picked post-Global Financial Crisis vintages or post-2000 vintages. It turns out that 2006 to 2015 is probably the worst performing set of vintages one could choose. In that period, an investment in PE returned slightly less than an investment in the S&P 500. The public market equivalent (PME) is 0.99. In other words, $1 in PE returned 1% less than the S&P 500 over the life of the funds raised in the period.

Yet if we look at 2000 to 2015, the result flips – the PME goes to 1.05. And if we look at 2009 to 2015, the same thing happens – the PME goes to 1.04. In fact, for any contiguous choice of vintages between 1996 and 2015, the only choice that does not outperform is 2006 to 2015. Most observers would conclude that PE has outperformed, and Phalippou is disingenuous in making the one possible choice of vintages that gets a different result.

Second, he defines PE as leveraged buyouts, growth equity, venture capital, real estate, real assets, natural resources and infrastructure. Most analyses of PE separate the true equity PE – buyout, growth and VC – from the others because they behave differently. Real estate PE tends to move with the real estate market, and natural resource PE tends to move with energy markets. Notably, both real estate PE and natural resource PE, like the underlying real estate and energy markets, underperformed the S&P 500. The different types of PE should therefore have different benchmarks.

When we appropriately exclude real estate, real assets, natural resources and infrastructure, the pooled PME even for 2006 to 2015 vintages is 1.05; for 2000 to 2015 vintages, it is 1.10; and, post-GFC, for 2009 to 2015 vintages, it is 1.11. This is an alpha of 3% per year and shows again that, when we use the correct analysis, PE outperforms.

Phalippou's article also makes an unusual choice of benchmark equity indices. Buyout, growth and VC funds invest in companies that are smaller than those in the S&P 500. The most commonly used small-cap index is the Russell 2000. Phalippou does something unusual by using the S&P 600 for a small-cap index: it is not nearly as commonly used and it outperformed the Russell 2000 from 2006 to 2019. When we apply the Russell 2000 to the 2006 to 2015 vintages, we get a PME of 1.11 for buyout, growth and VC funds (versus 1.05 for the S&P 500). We even get a PME of 1.03 if we include the real estate and other funds that Phalippou inappropriately includes (compared with 0.99 for the S&P 500). Again, when we use the correct analysis, PE outperforms.

The fourth issue is that Phalippou ignores the fact that limited partners increasingly co-invest in PE deals at lower or no fees. Some estimates suggest that co-investment accounts for around 25% of PE investment today. Given that co-investment decreases the amount of fees LPs pay, if they co-invest in an average-performing deal, the true net performance is substantially higher.

A fifth concern is that Phalippou ignores diversification benefits. Even if PE were to generate similar returns net of fees as public equity, it would remain valuable if it provided a way for investors to diversify. In fact, in a previous paper, Goetzmann, Gourier and Phalippou (2018) find that "large buyout and VC funds have provided substantial diversification benefits to investors; most real asset funds, overall, have not".

So, Phalippou's claim that PE has not outperformed or has not provided a benefit to investors does not survive scrutiny. The historical evidence that PE has outperformed is arguably overwhelming. There is no guarantee, however, that it will continue to do so, and Phalippou argues that it will be difficult. According to his calculations, PE-funded companies will need to grow earnings organically at 11% per year for the capital invested to increase by a factor of 2x in four years. His calculations, however, make the conceptual error of not accounting for company earnings. If annual earnings are applied to paying down debt, earnings have to increase by a far less daunting 2.4% per year.

There is one final point on PE's broader social consequences. Phalippou looks exclusively at the gains shared by LPs and general partners, ignoring the fact that GPs usually have to pay a premium to selling shareholders. Some of the value GPs create, therefore, goes to sellers.

PE has clearly outperformed historically for its investors. This is a major reason why assets invested in PE have increased so much. PE also has created additional value for sellers and the economy. That is not to say that PE will outperform going forward. Increased capital puts pressure on future returns. But if that capital underperforms public markets and fails to provide diversification benefits, we are likely to see capital move to other assets.

SHOOTING THEMSELVES *IN THE FOOT*

Early-stage investing has long been a male-dominated arena, and allegations – often anecdotal – of gender bias are common. A new study asks the questions: Are early-stage investors really gender-biased? And if so, how does this affect their choice of investment opportunities? By Vicky Meek.

Diversity and inclusion has risen up the agenda over recent years, driven by societal pressure and research demonstrating the value that a variety of experience and background can bring to teams. McKinsey & Co, for example, recently found that companies in the top quartiles for gender diversity and ethnic diversity were, respectively, 25% and 36% more likely to have above-average profitability than those in the bottom quartile for each dimension.

But what of venture capital and early-stage investing? Where does it stand in terms of gender diversity? As a PitchBook/NVCA report found in Q1 2020, just 6.7% of the total value of US VC deals went to businesses founded by female teams. The figure is only 2.8% by number of deals, a percentage that has barely changed since 2010. It's true that female founders account for a lower proportion of the overall number of start-ups, yet recent Crunchbase data suggests that this has been rising globally, from 10% in 2009, to 20% in 2019.

The gender question

Against this backdrop, academics Michael Ewens and Richard R. Townsend sought to determine whether gender bias exists in investors' early-stage investment screening. Using data drawn from internet-based platform AngelList, the authors analysed, by gender, the interactions between potential seed-stage investors and those seeking funds. Overall, they found that both men and women were more likely to share the profiles of, or request an introduction to, founders of the same gender. However, given that 92% of investors active on the platform were male, this preference is potentially of far more concern for female-led start-ups than it is for male-led ones.

The authors then turned their attention to why this same-gender preference exists. They investigated whether potential differences between men and women relating to risk attitudes or industry experience might explain the apparent bias. They found that neither of these explanations was supported by the data.

However, the research did find that female-led start-ups in which male investors expressed interest were likely to outperform male-led start-ups in which male investors expressed interest. "Our results do seem to suggest that, among male early-stage investors, the bar is set higher for female founders than it is for their male counterparts," says Ewens. "Where a male investor shared information on, or requested an introduction to, a start-up, those led by females were more likely to have a successful exit or to raise follow-on capital, and less likely to fail, than those led by males."

Redressing the balance

In contrast, the research did not find the same pattern in female investors' interactions with male-led start-ups. Indeed, Ewens suggests that the same-gender preference among female investors may be "a result driven by female investors having a deliberate objective of being female-focused" in their investments to redress the gender imbalance.

The results clearly point to bias, says Ewens. "One of the interesting things about the research is that it doesn't look at whether people are writing cheques, it's simply looking at whether someone will 'press a button' [ie, express an interest in a start-up] or not," he explains. "And, after controlling for almost everything else, we found evidence of gender bias even in such low-stakes actions with no cost to investors."

No surprises

This may come as little surprise to many women in the early-stage investment community. But, as Sarah Turner, CEO and co-founder of angel network Angel Academe, says: "I'm very glad to see research being done in this area, as it's a question that isn't asked enough."

She goes on to explain why she was motivated to create her network, which aims to bring together people from a variety of backgrounds to make angel investing accessible, transparent and collaborative. "I established Angel Academe because I could see, first hand, what the paper claims is happening," she says. "When I started angel investing, I was often the only female in the room and often felt patronised – I was often mistaken for the event organiser, for example."

It's an experience that Nazo Moosa – managing partner, Energy Impact Partners (EIP) and a 20-year veteran of early-stage technology investment – knows only too well. "There are so few women on both the entrepreneurial and investment sides, especially in technology," she says. "This research is welcome because it helps bring more attention to the issue of gender bias. While this is most likely to be unconscious, people being more interested in those they feel more comfortable with doesn't necessarily lead to better investments and returns. Staying in your comfort zone is not helpful if you want to deliver results."

"CROWDFUNDING IS GREAT FOR CONSUMER BUSINESSES, AND MANY WOMEN HAVE HAD SUCCESS RAISING CAPITAL THROUGH THIS ROUTE. BUT YOU ARE NOT GOING TO GET MORE COMPLEX BUSINESSES, SUCH AS DEEP TECHNOLOGY OR ENTERPRISE SOFTWARE, FUNDED THIS WAY"

Sarah Turner
Angel Academe

Ewens agrees, while emphasising that the research does not measure returns directly; rather, it measures the probability of success. "A high proportion of early-stage investments will fail, but our findings suggest that male investors may be leaving money on the table," he explains. "They may be lowering their probability of successful outcomes because of a gender bias."

Growing new talent

Part of the answer, the researchers suggest, may lie in fostering more female investors, although the fact that many of these – in the US, at least – tend to be drawn from the pool of former entrepreneurs, which is itself currently mostly male, makes this a difficult solution. So they also suggest the facilitation of crowdfunding as a key tool for changing the equilibrium.

Turner, however, disagrees. "If men are urged to invest more with female entrepreneurs, one of my concerns is that they end up backing businesses in areas where women already perform relatively well, such as fashion and beauty," she says. "This is partly why I don't think crowdfunding is the answer – it's great for consumer businesses, and many women have had success raising capital through this route. But you are not going to get more complex businesses, such as deep technology or enterprise software, funded this way."

At EIP, there has been a deliberate attempt to address gender balance: 36% of the firm's staff are female, and women make up 21% of professionals at vice president or partner level. The firm also measures ethnic and racial diversity.

"You need to look further afield and be more creative when you hire," says Moosa. "It can be difficult, but if you really want to find the people best suited to the job, you have to realise they don't always come from Harvard or MIT, and many of us probably have to build out new networks instead of relying on the same channels."

"THERE ARE SO FEW WOMEN ON BOTH THE ENTREPRENEURIAL AND INVESTMENT SIDES, ESPECIALLY IN TECHNOLOGY. THIS RESEARCH IS WELCOME BECAUSE IT HELPS BRING MORE ATTENTION TO THE ISSUE OF GENDER BIAS"

Nazo Moosa
Energy Impact Partners (EIP)

THE RESEARCH

In *Are Early Stage Investors Biased Against Women?* Michael Ewens (California Institute of Technology) and Richard R. Townsend (University of California San Diego) study the private interactions between investors and fundraising start-ups to determine whether a gender bias exists when screening investment opportunities.

The research uses data from the AngelList platform, which connects angel and VC investors with seed-stage companies, to analyse expressions of interest among investors (either by sharing a start-up profile with others or by requesting an introduction to the founder) according to the gender of the investor and of the founder. The paper finds that female-led start-ups – 21% of those listed on AngelList – experience significantly more difficulty garnering interest and raising capital from male investors compared with similar male-led start-ups, and that this holds true even where the business does not focus on female-centric products or services.

The paper also finds that, for a given male investor, the male-led start-ups in which he expresses interest underperform the female-led businesses in which he expresses interest (performance being measured by: the probability of an exit via an initial public offering or acquisition; the probability of failure; and the probability of raising a follow-on VC round). This suggests that female-founded companies are subject to a higher "quality bar" among male investors than their male-founded counterparts.

The authors conduct the same analyses of female investors – comprising 8% of investors with some activity on AngelList. They find that women are more likely to express interest in female-led start-ups than similar male-led ones, but they do not find evidence of investment underperformance for female-female pairings compared with female-male pairings. The paper concludes that the evidence is consistent with gender biases in both sexes, but since the vast majority of early-stage investors are male, this is of more concern for female-led start-ups than male-led ones.

Subtle influence

Moosa also points to limited partners as being instrumental in this, especially given that they are the ultimate beneficiaries of the returns generated by fund investments. "LPs have a subtle form of influence here," she says. "It can be the inclusion of diversity questions in due diligence questionnaires or it can be more systemic. In the US, a number of LPs have established emerging manager programmes that are designed to encourage under-represented groups to raise first-time funds – and the idea is starting to be adopted in Europe. I think this could be very helpful."

Change is happening. For example, a new group, Diversity VC, launched a standard in September 2020 encouraging the use of tools and practices that make more funding available to under-represented founders. However, few expect progress to be rapid. "Resolving the issue of gender bias in early-stage and VC investment is not an easy thing to do, because you can't just displace a whole set of people in what is still a small industry," says Ewens.

And while venture capitalists might be increasingly recruiting women in more professional roles, the fact that they tend to be at the junior level – with the exception of firms like EIP – means there is still a long way to go. As Turner says: "We are seeing some change, but I think we are 10 years away from a significant shift in the gender balance of VC teams and entrepreneurs. In the meantime, however, we can start to rebalance investment at least with more women participating as business angels."

PRIVATE EQUITY FINDINGS

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CONTRIBUTIONS FROM:

California Institute of Technology
Boston College Carroll School of Management
Erasmus University Rotterdam
Harvard Business School
MIT Sloan School of Management
The Ohio State University
Saïd Business School University of Oxford
The University of Chicago Booth School of Business
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Coller Capital

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

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