Global Corporate Venturing

THE WORLD OF CORPORATE VENTURING

the definitive guide to the industry

2023

the world of corporate venturing

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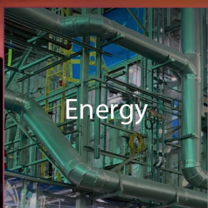
“TDK Ventures has brought tremendous value to AMB. Besides financial support, TDK Ventures has been helping tremendously in connecting AMB with industrial partners and providing mentorship in various aspects including strategic planning, hiring, IP, etc.”
Heng Pan | Co-founder & Chief Scientist | AM Batteries

“Continued investigation for product and market synergies. Nearly all interactions with TDK are first class/best in class.”.
Alastair Westgarth | CEO | Starship Technologies

"Of all the corporate VCs and even among the well-established tier 1 VCs, I have never known a venture capital firm like TDK Ventures with such a dedicated platform team to help on various functions essential for a start-up success - marketing, recruiting, PR, finance, etc.”
Vishal Sarin | Founder, President | Analog Inference



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New answers needed for familiar questions

James Mawson
Founder

In 2011, the publication of *Global Corporate Venturing*'s (GCV) first annual review saw insights shared by dozens of corporate venture capitalists (CVCs). Now, about 500 have answered at least some of our survey questions. And many of the themes remain the same.

In 2011, Dominique Mégret, head of Swisscom Ventures, said a key theme was understanding "whether the economic recovery would be confirmed and the IPO window finally open for tech companies, or will the number of VCs keep declining, leading to lower competition for good deals and healthier VC returns."

You could ask those same questions today. US and European stock markets last year had their lowest issuance for nearly a decade, according to accountancy firm EY, while VCs backed 25% fewer deals than the year before, according to data provider Pitchbook.

MIXED FORTUNES

In 2023, therefore, the outlook for the venture market is still uncertain, as valuations continue to decline in response to public market falls and as forecasts for inflation and interest rates remain mixed. Returns on deals done over the next few years are likely to be better than for those done in the investment rush of 2021, just as Mégret recognised a decade earlier coming out of the global financial crisis. GCV coined this 2011 to 2016 period the golden age for venture.

Venture capital is a procyclical business. When VCs rely on institutional capital, they do more when the markets are high, and less when markets fall, as the limited partners' (LP) allocation is affected by other parts of their portfolio.

>

GETTING SMARTER

In one area, at least, the past decade has seen a transformation. In the 2010s there was still a view that corporate venturing was "dumb money" and CVCs were "tourists". VC Fred Wilson told the Future of Fintech Conference in 2016: "I hate corporate investing... it is stupid. Corporations should buy companies."

Wilson can be forgiven for his rather scathing assessment, given that at the time there were ever-increasing numbers of so-called unicorns – private companies worth at least $1bn – with few exit options. Now, there are more than 1,000 private companies valued at more than $1bn. There are, however, only 200 companies in the past decade that have floated in an initial public offering (IPO) with a market capitalisation of more than $1bn, according to VC Jesse Randall.

Now, the estimated $22 trillion of cash on corporate books enables them to both use their mergers and acquisitions (M&A) teams to buy, and CVC units to invest in private companies. Those that show their edge in the innovation matrix, which also includes research and development (R&D), venture building and partnering with entrepreneurs, outperform their less-successful peers.

The GCV list of the 100 most active US-listed CVCs will outperform their market peers, according to Touchdown research.

Whereas VC dealmaking fell off a cliff last year, for CVCs, deal volume was down 2%, according to GCV Analytics. They are stepping in to support the next generation of VCs, too. Corporate LPs were cornerstone investors in the majority of debut VC funds raised last year, GCV Analytics found (GCV's parent company is an active LP in emerging VC firms

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1,000

Number of private companies today that are valued at more than $1bn

> In the 2010s there was still a view that corporate venturing was "dumb money" and CVCs were "tourists". VC Fred Wilson told the Future of Fintech Conference in 2016: "I hate corporate investing... it is stupid"

set up by former strategic managers or CVCs raising external capital).

There is a potential for corporate venturing to go from about 1% of global corporate R&D budgets to 10% over the next decade, as executives realise corporate venturing's positive return on investment, allied to improved efficiency it causes among R&D and M&A teams.

REPEATING PAST MISTAKES

The challenge is that not all corporates follow venturing best practice and that too many repeat past mistakes.

Corporate executives continue to close or mothball CVC units to save cash short-term. More than 6,000 corporations tracked by GCV Analytics since 2010 have begun investing, but two-thirds fail to get through their first inflection point at around year three. With more than 1,000 CVCs striking their first deal during the pandemic years of 2020 and 2021, at the height of the market, many of them could quickly be shut. These failures are a waste of everyone's time and money and a disservice to the entrepreneurs and syndicate partners, let alone the staff and corporate parent.

Built on insights shared at the GCVI Summit and our other events, as well as through the BMG consultancy run by Liz Arrington, the GCV Institute trains hundreds each year on how to invest effectively and bring the value of working with startups back to the parent company. There has never been a greater need for this.

STARTUP ECOSYSTEMS

The current downturn is uncovering newer, more creative challenges in startup development.

Startup companies, most notably in crypto and blockchain/Web3, now sometimes use the funding they raise to create their own CVC units, to build an ecosystem of startups. These crossholdings can cause contagion when one participant struggles, as seen with the unfolding FTX's bankruptcy procedure.

200

Number of companies in the past decade that have floated in an IPO with a market capitalisation of more than $1bn

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We are also seeing large companies use CVC to access clients. Startups sometimes use part of their investment rounds to provide supplier contracts to their CVC's parent. Sometimes both sides benefit, as in the case of Microsoft's $1bn investment deal with OpenAI in 2019, which requires the startup to use its Azure cloud service.

Other times, the model can cause challenges. Palantir is a good example. As investor Jeffrey Funk, says, commenting on *Wall Street Journal* research: "The data-analytics company invested more than $400m in SPAC-funded startups that simultaneously signed deals to buy Palantir's software. Some deals called for startups to pay back Palantir large chunks of the investment within days of receiving the money. The arrangement gave Palantir more than $700m in total contracts."

However, now Palantir's 20 startup investments, including a flying-taxi and many electric-vehicle startups, are down more than 80%. One has already gone bankrupt and one was delisted from NY Stock Exchange. More than half are warning they may go bust. Palantir was unavailable to comment at the time of writing, but in its quarterly financial results to end-September it posted a $260m loss on its "marketable securities", which had shrunk to $57.3m on its balance sheet.

ADDING VALUE

Legendary investor Charlie Munger once said: "A majority of life's errors are caused by forgetting what one is really trying to do."

Corporate venturing is a service to entrepreneurs through adding value to help meet their needs. In return, the corporations benefit from a potential strategic and financial return. It is probably the hardest job in financial services, but it is also one of the most rewarding, as it offers a chance to genuinely make the world a better place.

In this, GCV is here to support the industry and so my personal thanks to Maija Palmer as editor and the team for producing this *World of Corporate Venturing* supplement in her first year since joining – I hope you like the improvements as much as I do. ■

> A majority of life's errors are caused by forgetting what one is really trying to do

The difference a year can make

Jacqueline LeSage
Munich Re Ventures, founder and MD, chairwoman of the GCV Leadership Advisory Board

When I penned last year's foreword, we were still in a boom: valuations were hitting all-time highs, the economy was roaring and jaw-dropping exits were the headlines of the day. Today we face a different reality.

Much has been written about the venture pullback, both in terms of startup funding and fundraising by firms. But how does CVC fit into this picture? The data paints a more nuanced story, one somewhat more open to interpretation.

In 2022, venture as an asset class saw a 25% drop in the number of deals, while CVC-backed deals fell 2%. Indeed, CVC-backed deals now account for 19% of all venture deals globally. Is this a testament to the inherent robustness of CVC, or is it indicative of a delayed reaction to market conditions? After all, quantity should never be confused with quality and decreased investment can be a good thing if it is the result of a broader strategy, such as deliberately shifting to seed or earlier-stage deals.

RELIABLE PARTNERS

The biggest indication of CVC resilience lies in the 101 new CVC units formed throughout the year, an all-time record and 19% higher than 2021. Even in the face of a turbulent market, it is clear that corporates view venture investing as a necessity, not a luxury. This flies in the face of stereotypes of CVCs as flighty partners. We have shown ourselves to be reliable providers of capital, even in challenging circumstances.

Beyond simply deploying capital, I believe this is the moment for the "C" in CVC to show what it can do. It is time to bring the entire weight of the platform and parent company to bear in support of the portfolio. Help your >

portfolio companies secure short-term cash to make it through a crunch, provide references, connect them with your corporate or other big potential customers – this is exactly the value a CVC brings. Even during a reset, our corporate parents need to pursue innovation and reinvent aspects of their businesses. That creates opportunities for fruitful and well-timed partnerships with portfolio companies, even in the midst of a downturn.

It also might be a moment to leverage the "C" in CVC to get a foot in the door with previously inaccessible deals. The strategic imperative of CVCs frees us as investors to take a deliberate hit to venture-level returns and "lean in" to do more frontier deals than was previously been possible. The opportunity set is shifting beneath our feet. Can we turn our unique circumstances to competitive advantage during a market reset? Leaning into strategic value might be a compelling response.

Or, it might not. Ultimately, CVCs are asset managers. We must ensure the legitimacy and longevity of our programmes. Unless a CVC is so dialled towards the strategic end of the equation that returns do not matter, then you need to focus on returns. In this environment, that means working harder, negotiating tougher, maintaining discipline around valuation and terms. It is also important to know when to walk away.

BALANCING OUR GOALS

This is one of the biggest challenges of being a CVC today. How do we balance our strategic and financial goals? In recent years, many CVCs and their corporate parents have refused to make a false choice between them. But that does not mean there are not trade-offs.

At the upcoming GCVI Summit in Monterey, we will discuss how to manage for both strategic and financial returns, considering the at times zero-sum interplay between the two. As the CVC industry has grown and professionalised, it is time to face this tension head on.

Though the market may be topsy turvy, the fundamentals remain strong. Areas of high impact continue to have venture tailwinds. Corporates continue to rely on innovation to build their futures, and that is what we as CVC investors are here to help them do.

It is our moment to decide how to do so stronger and better than ever before. Let's meet the moment. ■

"Corporates continue to rely on innovation to build their futures, and that is what we as CVC investors are here to help them do

The Global Corporate Venturing Survey 2023

Liz Arringon Co-founder and managing director, GCV Institute

SURVEY HIGHLIGHTS

CHARTER AND FUNDING
$100m AUM
60% of corporate venturing units have more than $100m in assets under management.

OPERATING MODEL
54%
While most CVCs invest off the corporate balance sheet, 54% have investment autonomy.

INVESTMENT STRATEGY AND MANAGEMENT
4+ investments a year
Three-quarters of CVC units are active deal makers targeting at least four new investments per year.

PERFORMANCE METRICS
1.6x+
Almost two-thirds of corporate investors target at least VC-level financial returns of 1.6x-2.5x the initial investment.

TEAM STRUCTURE AND COMPENSATION
40%
Two-fifths of CVC units have a business development team.

DIVERSITY, EQUALITY AND INCLUSION
45%
45% of CVC teams are relatively gender balanced or majority female.

ABOUT THE SURVEY

Annually GCV Touchstone conducts an in-depth global survey that provides an informed perspective on trends and best practice in corporate venturing programme strategies, processes, and team designs for accelerating performance and overcoming the corporate 'antibodies' that inhibit CVC programme impact and resiliency. The survey provides an industry aggregate basis for the GCV Touchstone benchmarking platform, which enables programme-specific filtering of the data by parent vertical sector and size, CVC maturity phase, investment focus, operating model, etc.

The 2023 survey delves into critical CVC building blocks including:

- Charter and funding
- Operating model
- Investment strategy and management
- Performance metrics
- Team structure and compensation
- Diversity, equity and inclusion
- Automation priorities and software tools

In 2023, GCV also provided support to the Private Equity and Venture Capital Association in Brasil (ABVCAP) for two local surveys that are summarised in an addendum to this review.

CONTRIBUTING CVCs

As corporate venturing has become a mainstream weapon in the corporate innovation arsenal, the bar for professionalism has been raised and the CVC community continues to demonstrate commitment to sharing best practices and learnings.

This survey tapped GCV's access to the largest pool of CVCs across the across the globe, targeting a representative cross-section of industries, charters, and programme maturity phases. Special efforts were made >

to ensure that input from both CVC industry leaders and emerging programmes was included in data set.

A total of 213 programmes contributed to three Q4 2022 surveys, with 146 providing input to the in-depth global survey.

RESPONDENT CORPORATE PARENTS

As every company has become a technology and data company, the survey sample reflects that most industries are now represented in the CVC landscape, and even mid-cap companies starting to punch above their weight, with fund commitments that mirror their large-cap and mega-cap peers.

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FIG 1: CVC PARENT INDUSTRY SECTORS

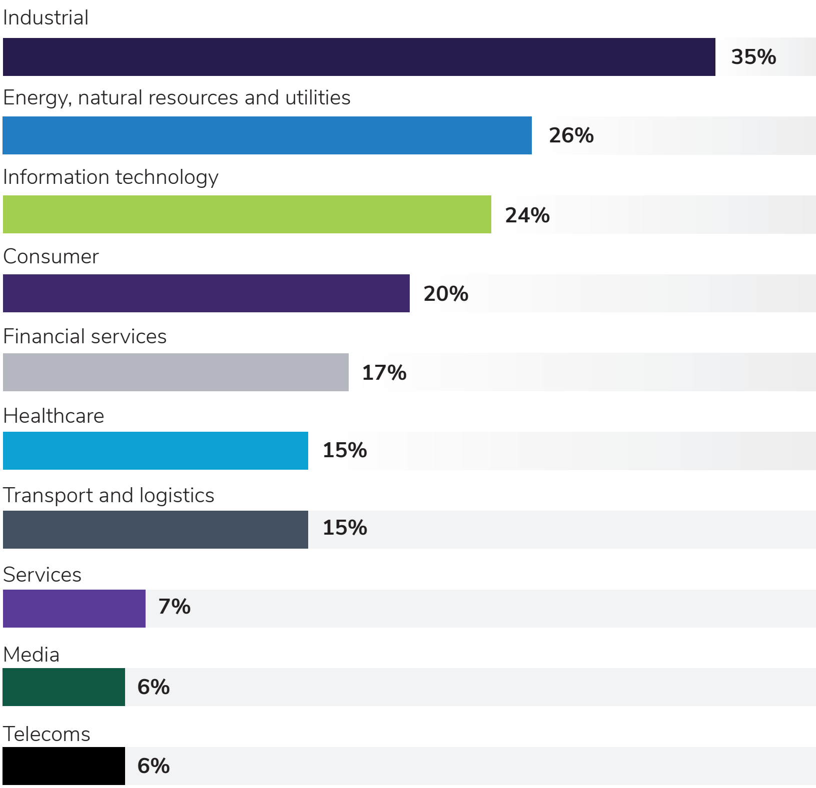


FIG 2: CVC PARENT HQ REGION

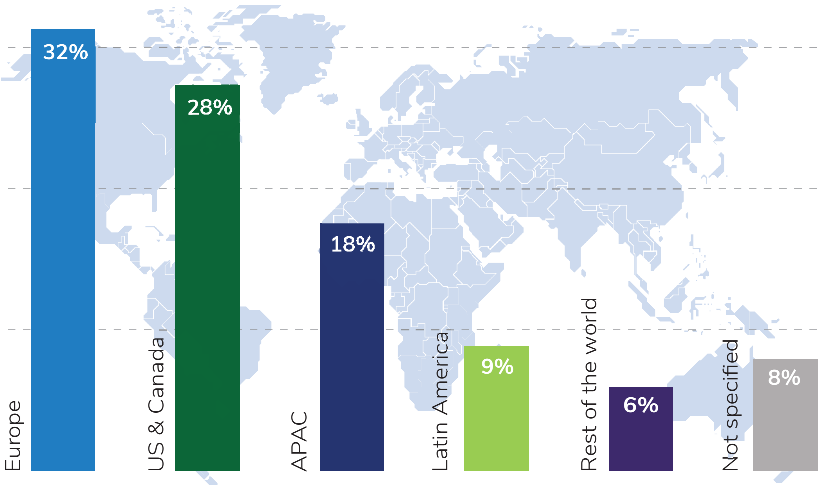
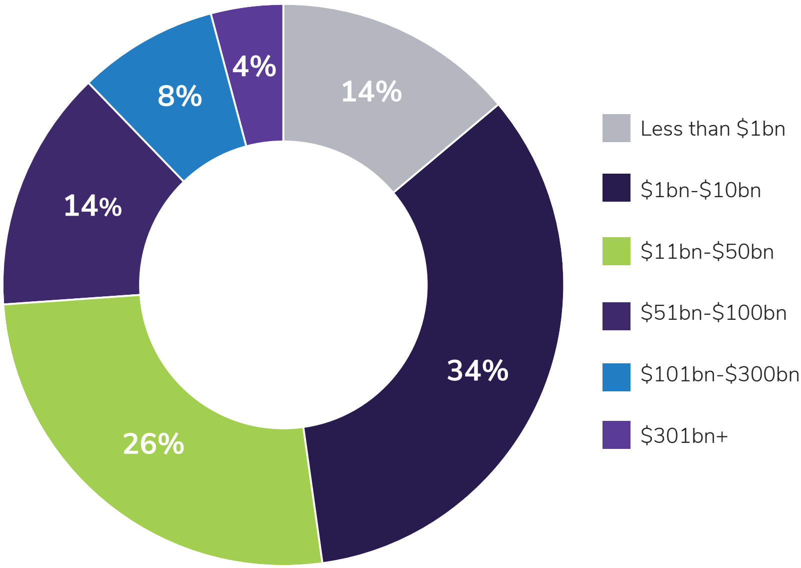


FIG 3: CVC PARENT ANNUAL REVENUES



The survey allowed participants to indicate that their parents serve multiple verticals, leading to high percentages for the industrial, energy and IT sectors.

Reflecting the global spread of corporate venturing, two-thirds of respondents represented US and Europe-based corporations, with 18% headquartered in Asia.

■ RESPONDENT CVCs

Although nearly 60% of respondents' corporate parents are headquartered outside North America, 41% of the CVC unit HQs (or significant operations) are in the US and Canada. However, at a programme level, 59% invest globally, with 20% focused solely on North America, 9% on Europe and 5% in Latin America and Asia, respectively, with Africa and the middle East on 1% each.

Innovation goals, operating style, performance priorities and challenges vary as a CVC programme moves through its maturity cycle, impacting strategic and operating model decisions. While 36% of responding programmes are less than three years old, nearly two-thirds have moved beyond the critical expansion phase inflection point, with 28% boasting track records exceeding seven years.

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FIG 4: CVC PROGRAMME MATURITY PHASE

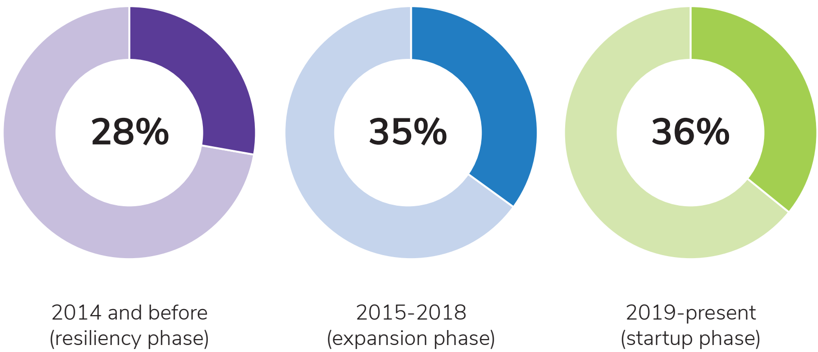


FIG 5: CVC PROGRAMME HQ REGION

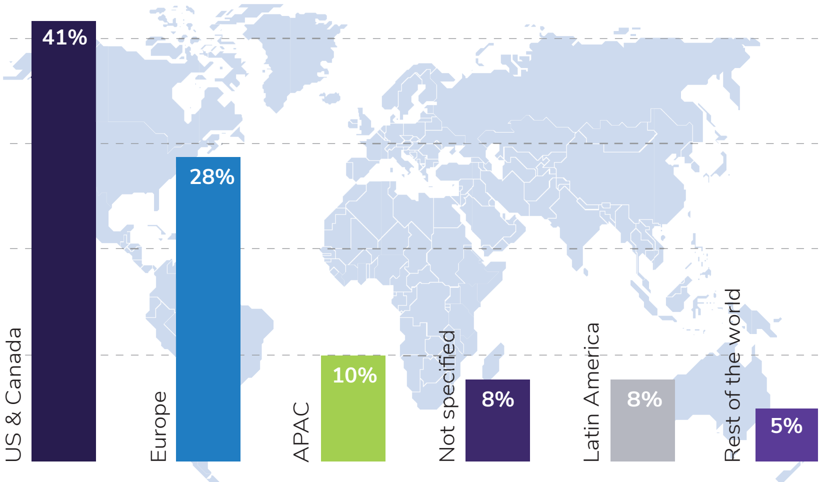
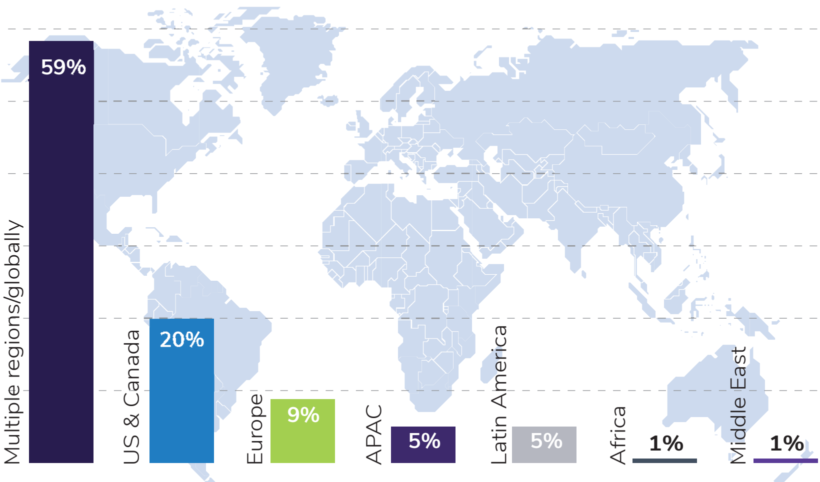


FIG 6: TOP CVC REGIONAL INVESTMENT PRIORITIES



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CHARTER AND FUNDING

Survey results suggest that most CVCs are chartered to invest beyond the scope of existing parent businesses, with preparing for future disruption (Horizon 3) and creating new businesses (Horizon 2) ranked as the top priorities for more than 70%.

However, the strong weightings for Horizon 1 mandates and financial returns, suggest that many CVCs have adopted multi-stage investment strategies for portfolio balance and to accelerate lead time to value.

Nearly half of respondents (47%) reported a current fund size of $100m or less, though the percentage of sub-$50m funds decreased, while $51-100m funds increased compared with 2021. The percentage of $200m-$300m funds also rose in 2022, as did the $1bn+ club, which doubled in size to 6% of the sample.

Not surprising given that two-thirds of respondents represented programmes more than seven years old, 60% reported AUM exceeding $100m. Compared with 2021, the percentage with AUM from $100m-$500m rose by 11%, with 8% now managing assets of more than $500m and 9% more than $1bn.

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FIG 7: CVC PROGRAMME CHARTER

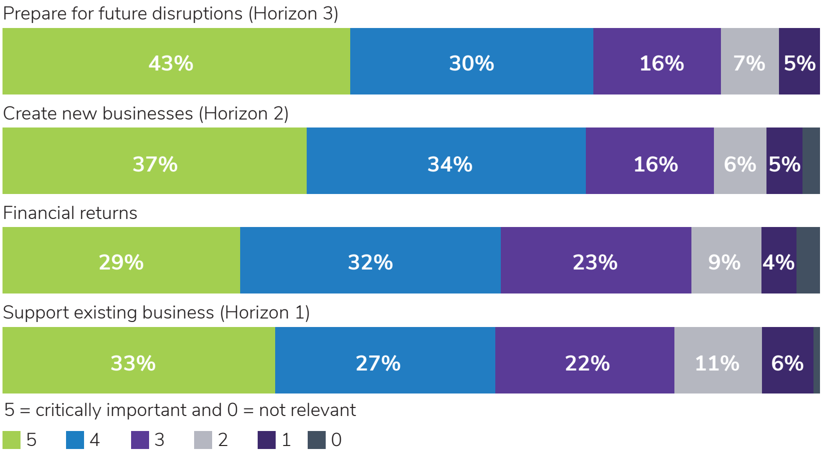


FIG 8: TOTAL ASSETS UNDER MANAGEMENT (AUM)

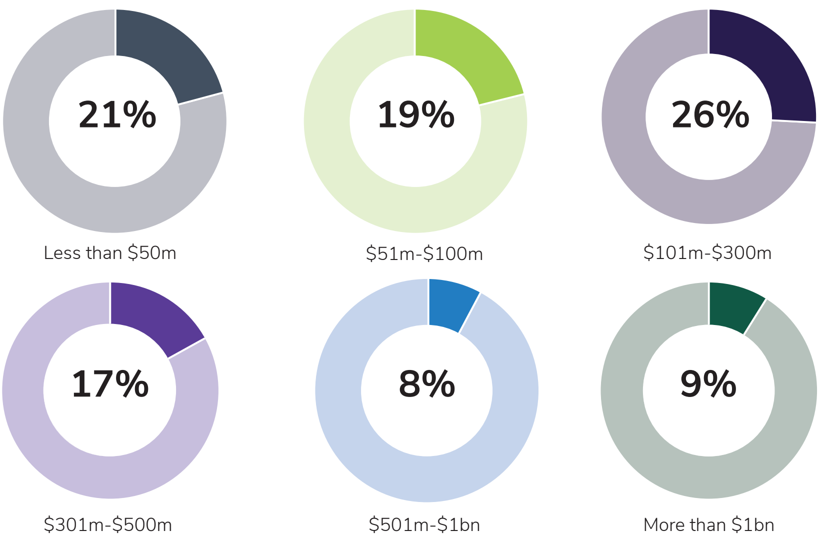
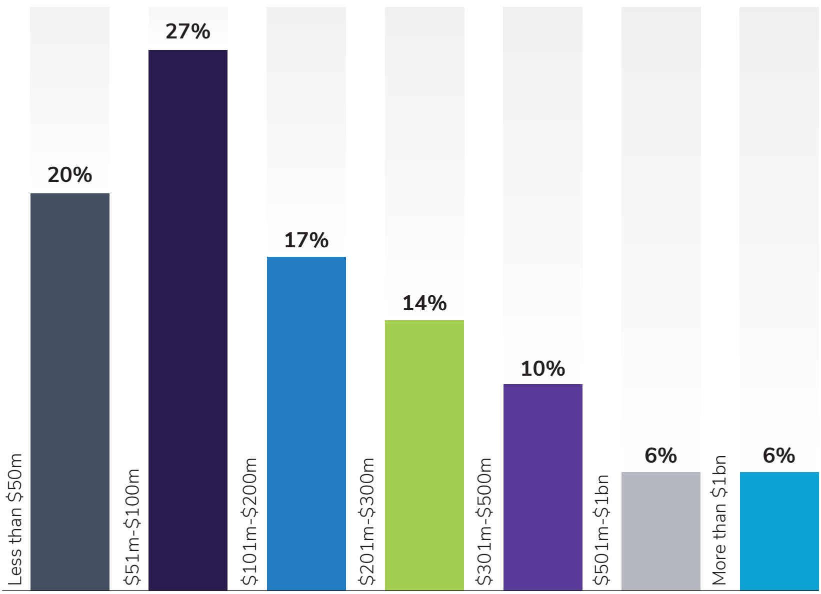


FIG 9: CURRENT FUND SIZE



LEGAL AND ORGANISATIONAL STRUCTURE

The past few years have seen the emergence of a range of CVC operating models, all of which are 'strategic,' even the fully independent GP/LP. Although 30% of CVCs now fall into the two more independent categories, the majority (70%) invest off the balance sheet.

But investing off the balance sheet takes many forms, with the biggest differences being among balance sheet models related to innovation and performance goals and

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FIG 10: CVC PROGRAMME OPERATING AND INVESTMENT MODEL

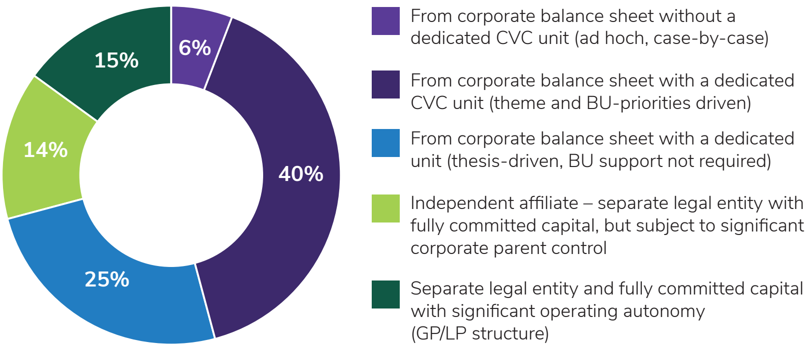
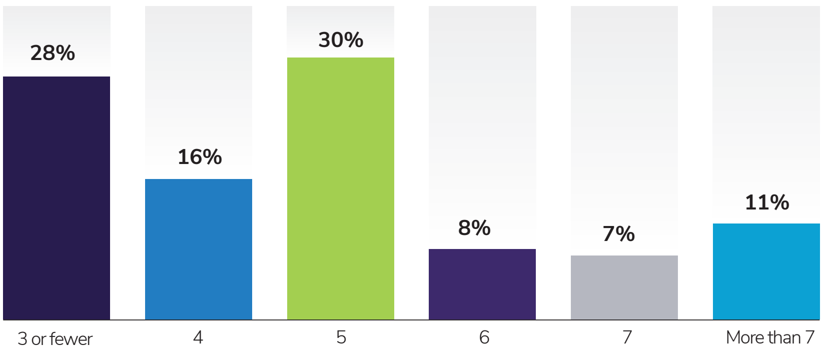


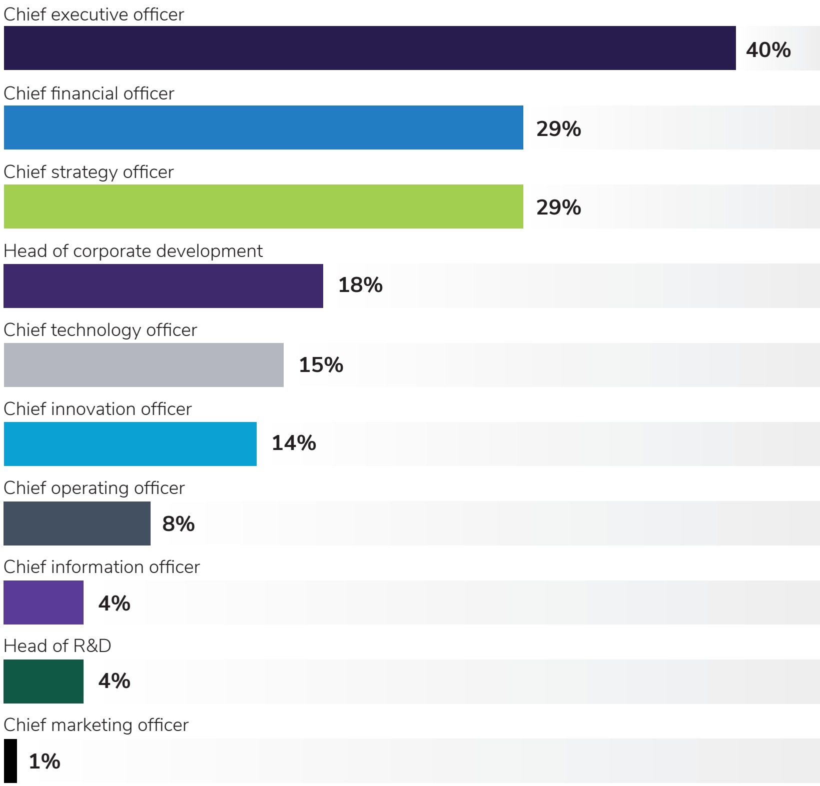
FIG 11: INVESTMENT COMMITTEE SIZE (VOTING MEMBERS)



associated levels of operating autonomy. While 40% of sample CVCs invest within broad themes driven by business unit priorities, 25% have earned permission to develop and execute on investment theses/insights related to emerging trends, technologies/platforms, business models and ecosystems that may impact the future of the parent or broader sectors. These may look more like their independent peers.

Playing an increasingly mainstream role in corporate innovation, most respondents at least matrix report to a C-level executive, with 40% answering to the CEO, 29% to the CFO or chief strategy officer and 18% to corporate >

FIG 12: CVC REPORTING LINE (MULTIPLE SELECT FOR MATRIX REPORTING)

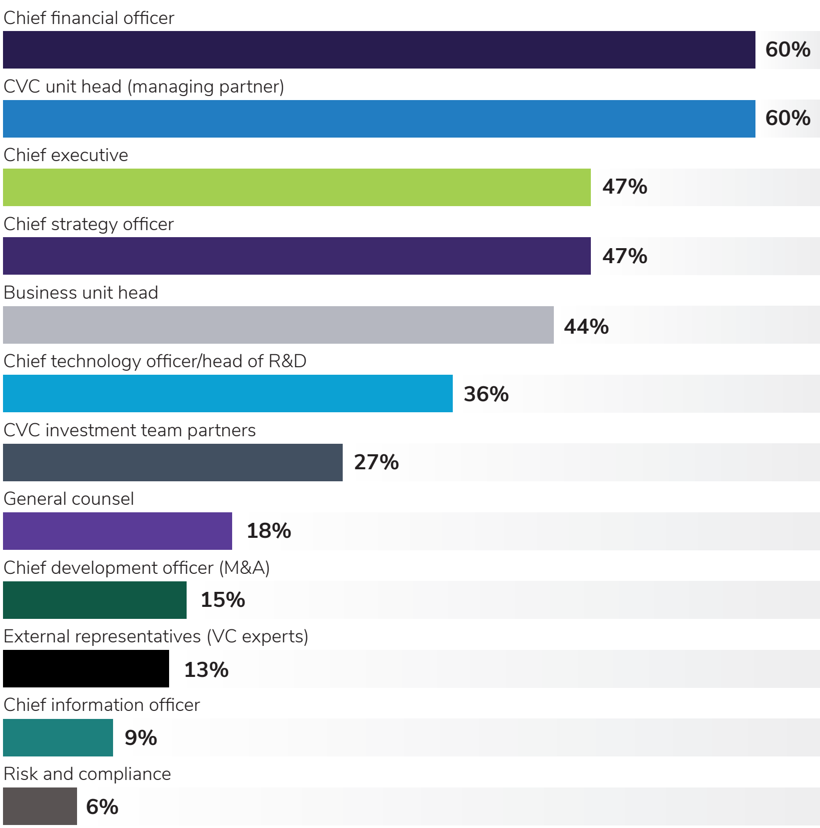


development. However, a key indicator of CVC longevity is the ability to survive two executive transitions, so 'wiring' the parent more broadly is critical.

Nearly three-quarters of CVCs have investment committees with five or fewer members, while 28% accelerate decision-making with no more than three.

Almost two-thirds (60%) of CVCs count the CFO and CVC head as investment committee members, with the chief strategy officer, CEO and business unit heads also represented on more than 40%. The more independent CVCs (30%) tend to operate as investment partnerships. >

FIG 13: ROLES / FUNCTIONS ON CVC INVESTMENT COMMITTEE



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INVESTMENT STRATEGY

Although two-thirds of respondents invest globally, North America is the top source of entrepreneurial talent for 89% of respondents, with 84% investing in Europe and 56% in Asia. Compared with the 2021 survey, interest in Latin America and Middle East and North Africa has risen.

74% are active investors with 40% looking to make four to six new investments per year, 18% to make seven to nine investments and 16% to investing in more than 10 new startups annually.

The sweet spot for the overwhelming majority (92%) is early-stage (series A or series B). However, around half of corporates will also invest in seed stage pre-revenue

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FIG 14: CVC INVESTMENT SECTORS

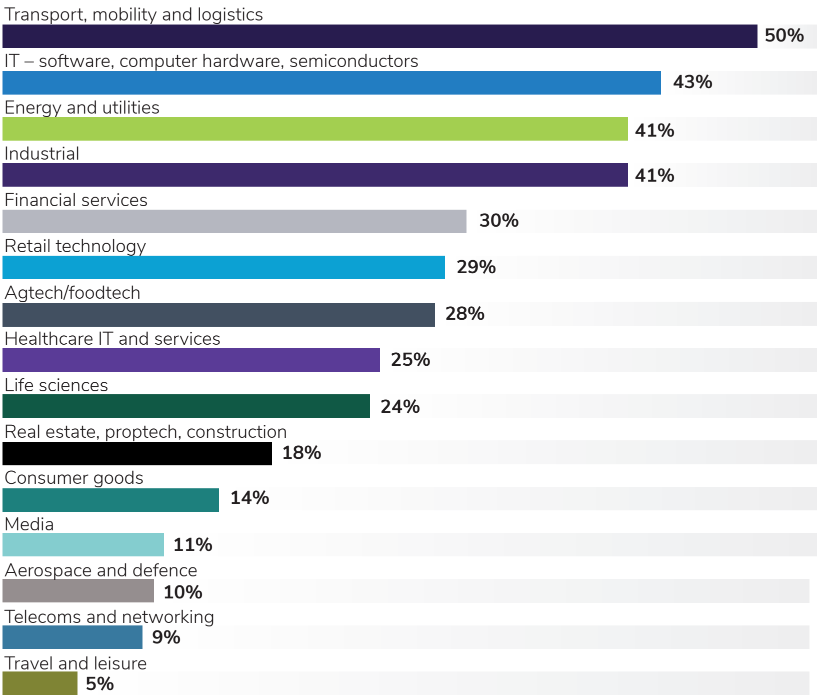


FIG 15: CVC INVESTMENT STAGES

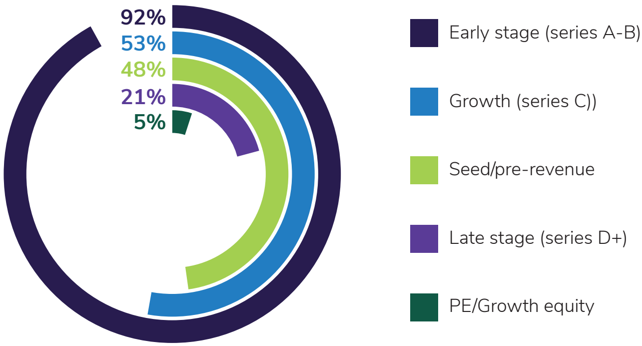


FIG 16: WHAT ROLE DOES YOUR CVC PROGRAMME PREFER TO PLAY IN AND SYNDICATE?

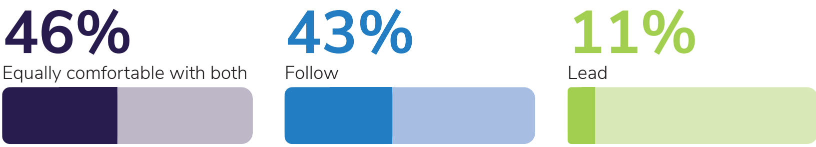


FIG 17: CVC INVESTMENT GEOGRAPHIES (MULTIPLE SELECT)

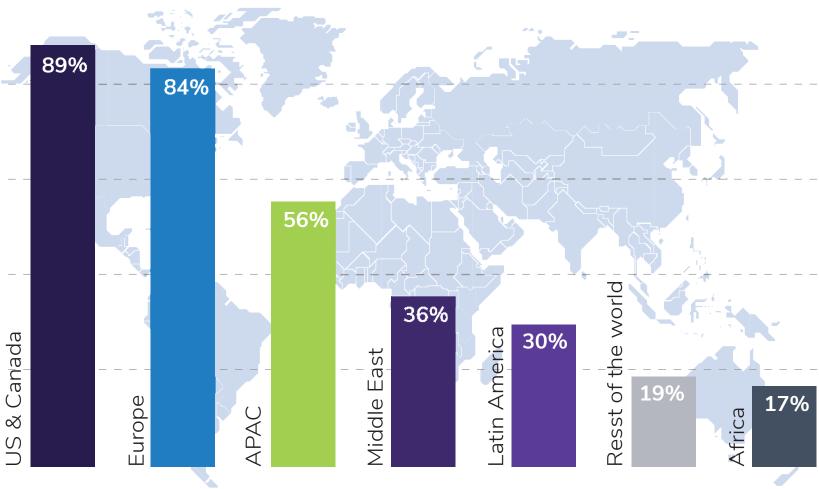
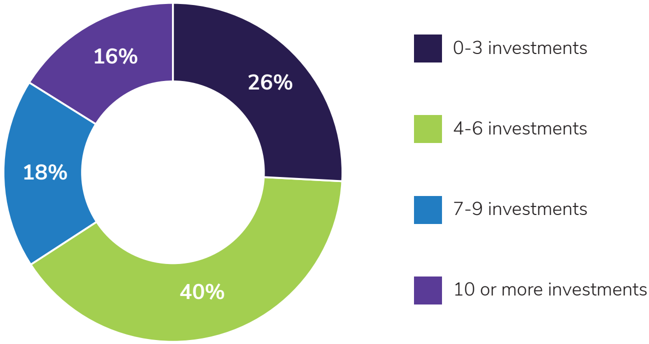


FIG 18: NUMBER OF NEW CVC INVESTMENTS PER YEAR



businesses (48%) or in growth stage (53%). More than a fifth (21%) also invest in late-stage companies (series D and beyond).

With the rising professionalisation of the community, more CVCs are prepared and willing to lead rounds. Nearly half of respondents (46%) say they are equally comfortable leading or following, while 11% actively seek to lead. A significant number (43%) still prefer to follow an institutional VC lead.

More than half reserve at least 20-30% for follow-on funding, but there is no standard for CVCs.

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FIG 19: PERCENTAGE OF FUND CAPITAL RESERVED FOR FOLLOW-ONS

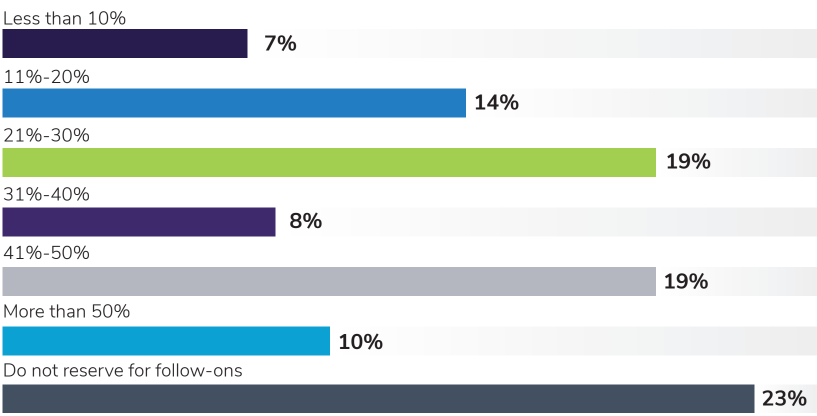

FIG 20: LP POSITIONS IN OTHER VC FUNDS

LP POSITIONS IN FUNDS

LP fund positions, historically, have been seen as a passive investment vehicle for corporations who lacked skills or did not seek to build out a dedicated investment programme/team. That is no longer the case. The survey shows that the majority of CVCs (56%) do invest in VC funds.

While some use LP positions as a 'toe in the water' for learning to make investments in startups, many now take LP stakes to:

- Expand into new geographies
- Access specialist sector expertise
- Draw insights from very early-stage startups via seed funds

Around two-fifths (43%) have invested in more than three funds, with 28% holding three to five LP positions, some of which may be legacy investments.

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FIG 21: NUMBER OF LP STAKES

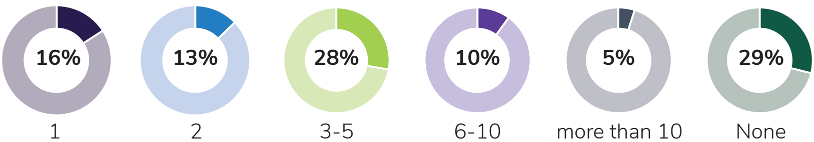
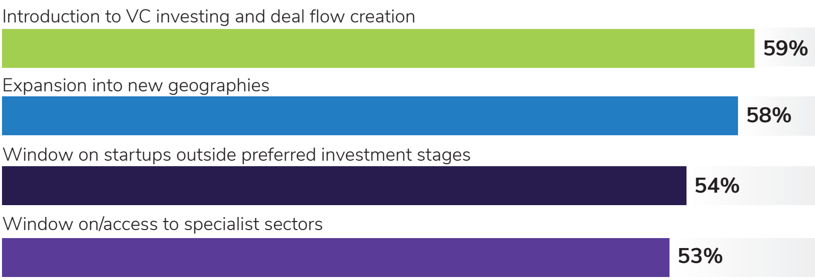


FIG 22: RATIONALE FOR VC FUND INVESTMENTS



INVESTMENT MANAGEMENT

Given the early-stage investment focus of most respondents, 62% do not generally require business units sponsorship or a commercial deal as a condition for investment, although parent engagement is an important strategic metric for many CVCs. On the other hand, 21% require at least line of sight to a portfolio company-parent commercial relationship.

Survey results highlight that professional CVCs increasingly understand the rules of the venture capital game and are less likely to ask for objectionable control terms.

Standard information rights are a requirement for 50% and nearly one-third of corporates (31%) do not ask for any specific rights related to the sale of a portfolio company. However, some seek right of first refusal (37%), right of first offer (21%) and right of first negotiation (12%), or the ability to block right on sale transaction (11%).

To both provide and derive value from strategic investments, 70% of surveyed CVCs look for board or observer seats.

In most cases (87%), the person taking the board seat is a professional from the CVC team assuming the fiduciary responsibility, but in 29% of cases it may be a representative from the corporate parent.

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FIG 23: RIGHTS NEGOTIATED WITH INVESTMENTS

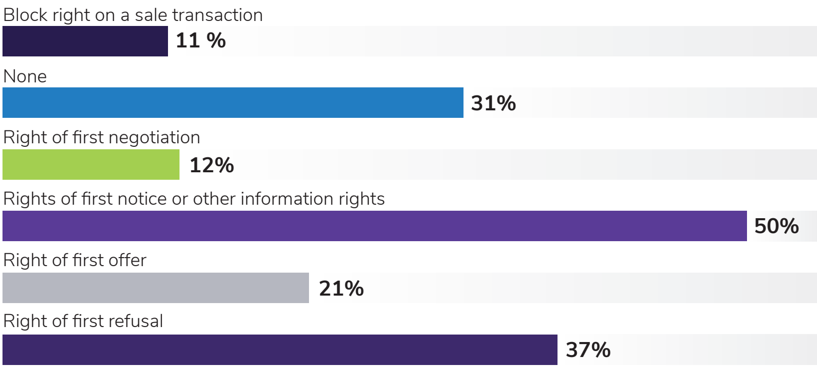


FIG 24: PERCENTAGE OF INVESTMENTS TIED TO BUSINESS UNIT SPONSORSHIP/COMMERCIAL DEALS

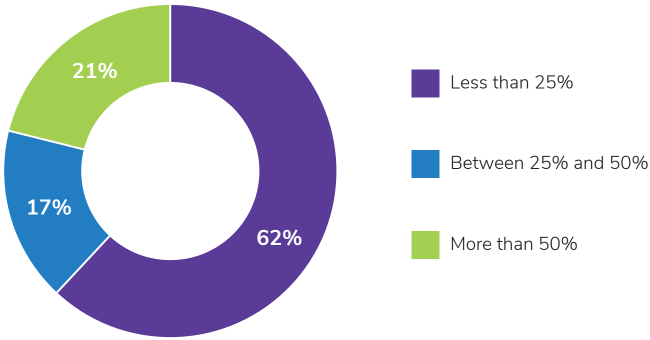


FIG 25: BOARD AND/OR OBSERVER SEATS

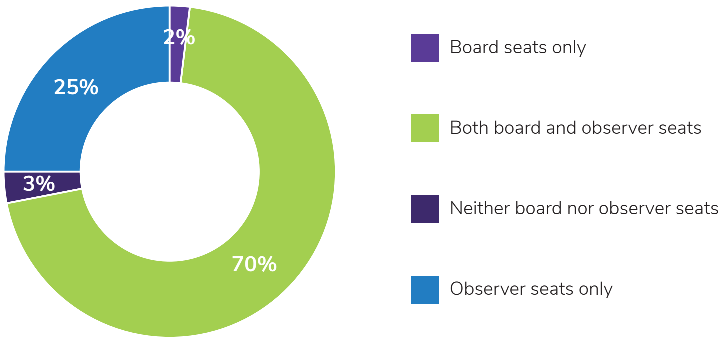
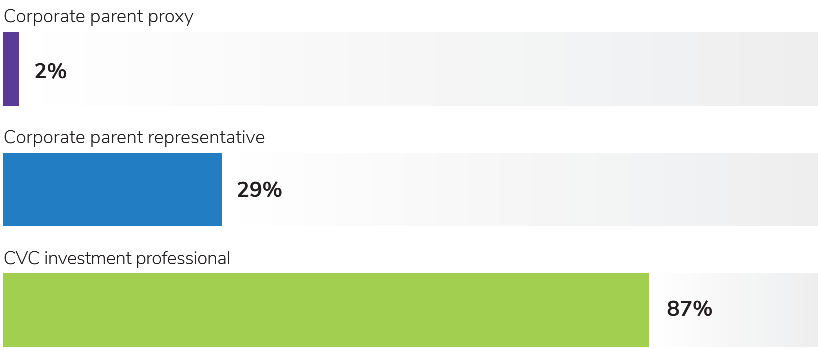


FIG 26: BOARD SEAT HOLDER



PERFORMANCE

■ FINANCIAL METRICS

Competitive financial metrics tend to grow in importance with CVC programme maturity and scale.

Survey results show that standard VC metrics such as IRR (79%) and total value to paid in capital or TVPI (73%) are the language of financial performance for most CVCs. Other important metrics are estimated fair market value of portfolio (63%), exits (61%), distributions to paid in capital (44%) and return on invested capital against a corporate hurdle rate (39%).

Respondents have increased the emphasis on financial returns compared with 2021, when 56% sought at least VC-level financial returns. Now, nearly two-thirds now target at least VC-level portfolio financial returns.

Reported 2022 fund TVPI and IRR, while still strong, have fallen in the face of current economic uncertainty. Recorded loss rates have not materially changed.

FIG 27: PORTFOLIO FINANCIAL PERFORMANCE METRICS TRACKED

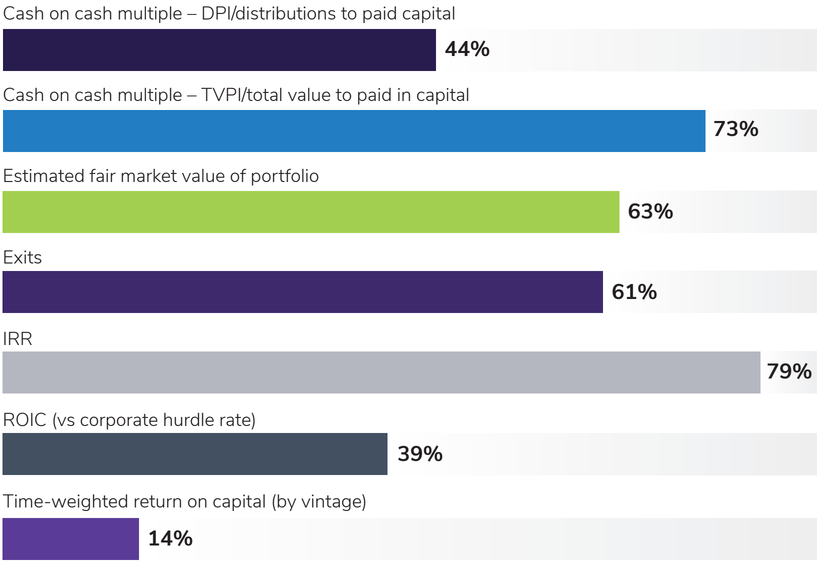


FIG 28: CVC FINANCIAL PERFORMANCE TARGETS

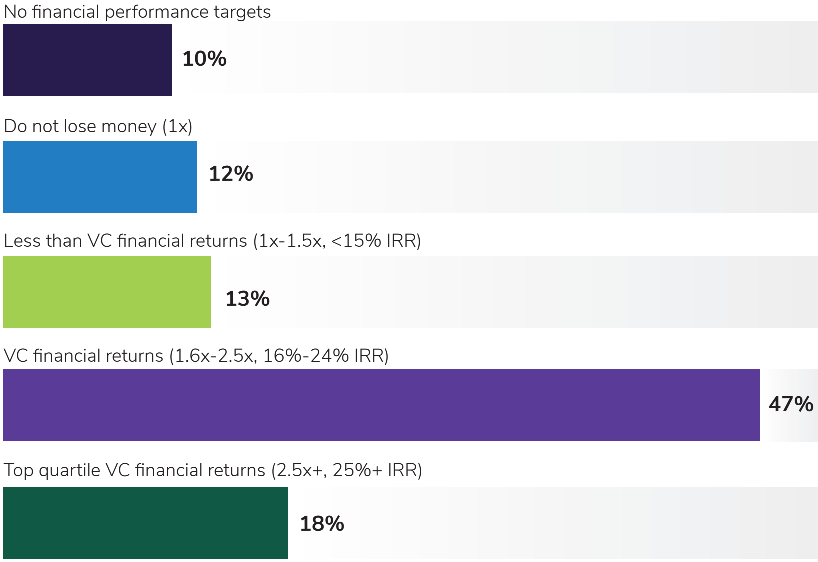


FIG 29: CURRENT FUND LOSS RATE

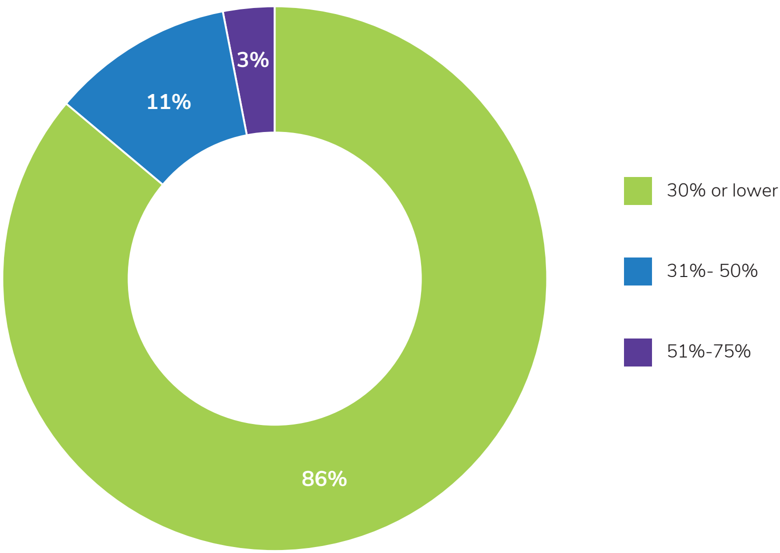


FIG 30: CURRENT FUND NET IRR

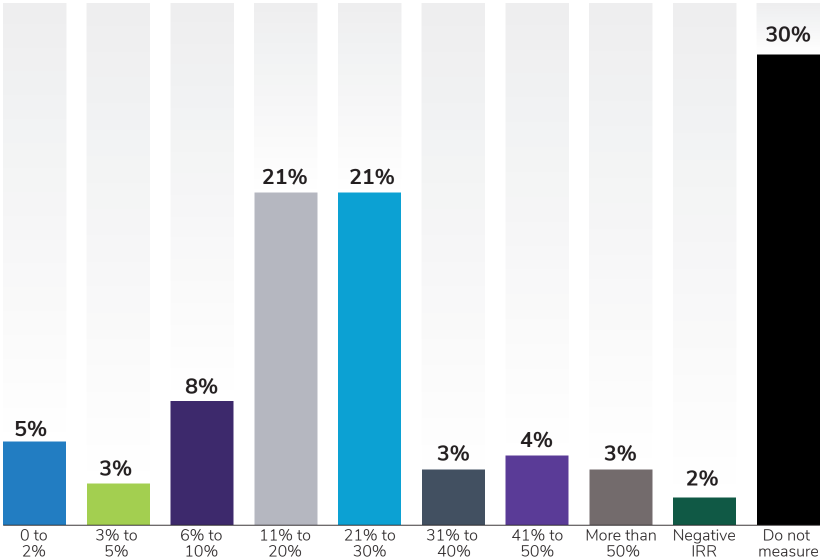
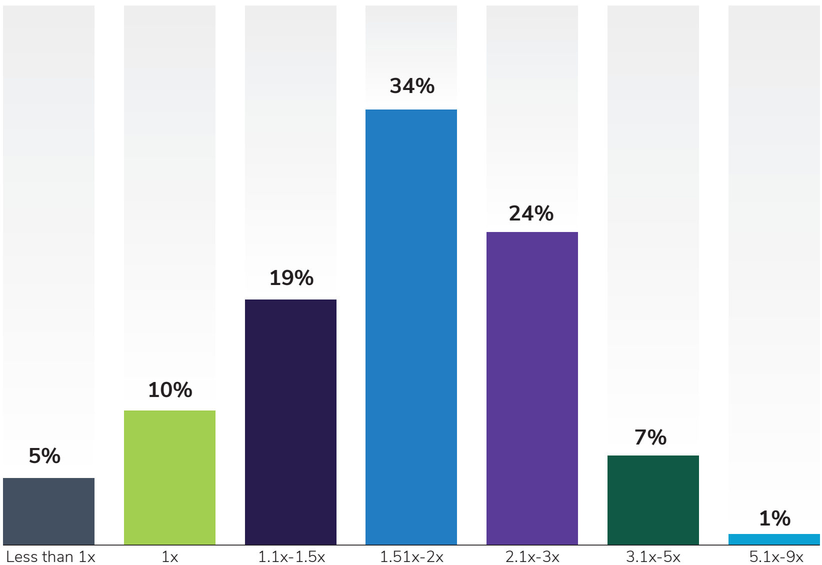


FIG 31: CURRENT FUND TVPI



STRATEGIC METRICS

For most CVC programmes, particularly those focused on Horizon 2 and Horizon 3 beyond the core, insights on emerging markets and technologies are seen as the most important strategic contributions – but also the hardest to measure.

Commercial engagements are a critical metric for many, but require that parent partners share responsibility for value delivery and tracking.

Access and optionality are high priorities for programmes with an M&A maorizon ndate. More than a half (56%) of surveyed CVCs play a role in sourcing potential candidates, but two-thirds have yet to see a portfolio company acquisition.

The primary vehicles for communicating strategic performance tend to be a combination of activity-based indicators (78%), parent commercial impact metrics (51%) and the ability to paint a compelling picture with effective 'story telling' (57%).

FIG 32: STRATEGIC PERFORMANCE COMMUNICATION APPROACHES

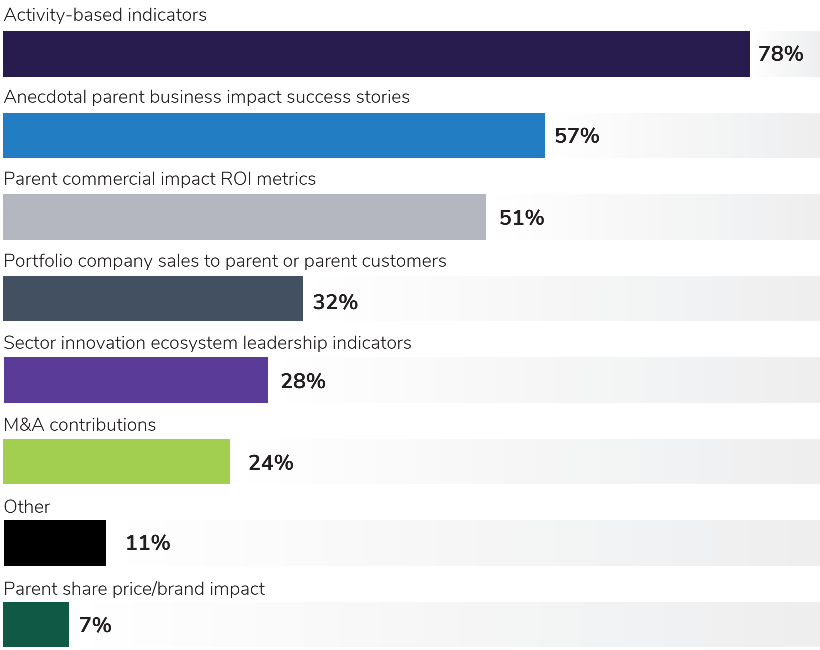


FIG 33: NUMBER OF PORTFOLIO ACQUISITIONS BY PARENT

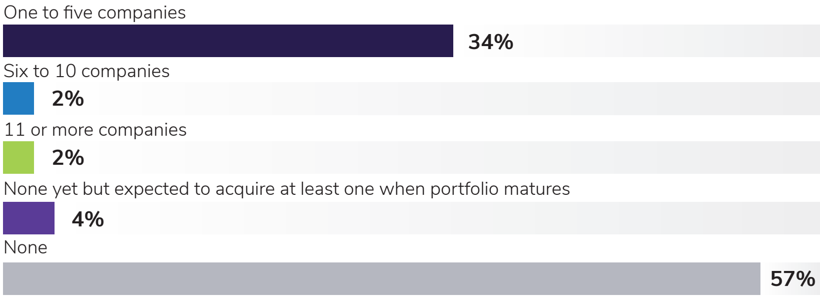


FIG 34: CVC TEAM INVOLVEMENT IN CORPORATE M&A ACTIVITY

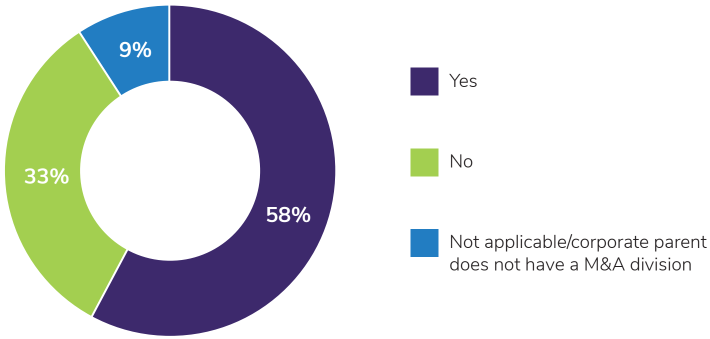
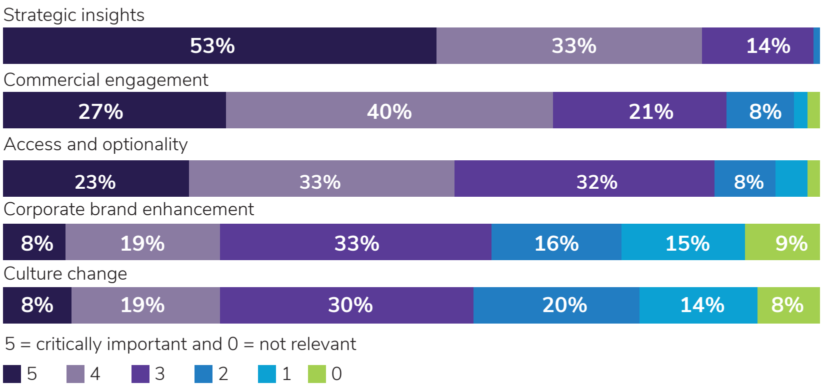


FIG 35: STRATEGIC VALUE CATEGORIES



TEAM

Team size and structure are formed by strategic innovation goals, programme maturity, fund size, portfolio strategy and operating model

Most CVC programmes run lean – 71% have a team size of less than 10 professionals, with 37% staffed by three to five in 37%.

While a new CVC may start with fewer than five people, as programmes scale, investment teams may add up to two levels of senior investment professional, senior associates, associates and analysts.

Nearly 40% of CVCs now include corporate venture business development teams to facilitate access to:

- Partnerships and supplier networks (85%).
- Research and development and technical expertise (82%).
- Regulatory and compliance resources (50%).
- Marketing and community development (48%).
- Project management office resources and funding for pilots and proof of concepts (43%).

Although most professional investment teams are increasingly recruited from outside, internally sourced resources play a critical role in wiring the parent for CVC programme impact.

FIG 36: CVC TEAM SIZE

FIG 37: AVERAGE YEARS OF EXPERIENCE ON CVC TEAM

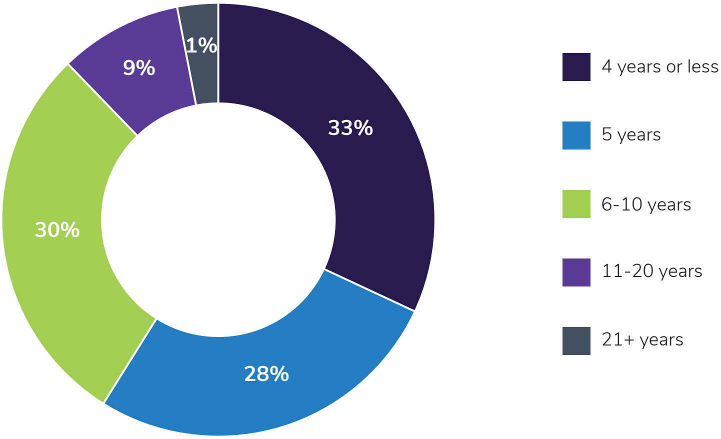


FIG 38: ROLES REPRESENTED ON CVC TEAM

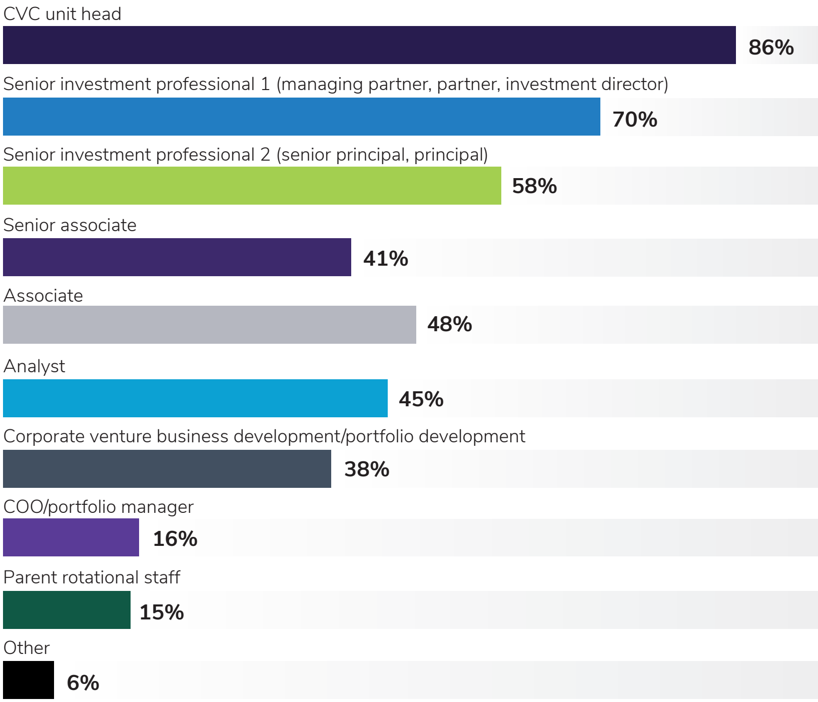


FIG 39: CVBD/PORTFOLIO DEVELOPMENT TEAM CAPABILITIES

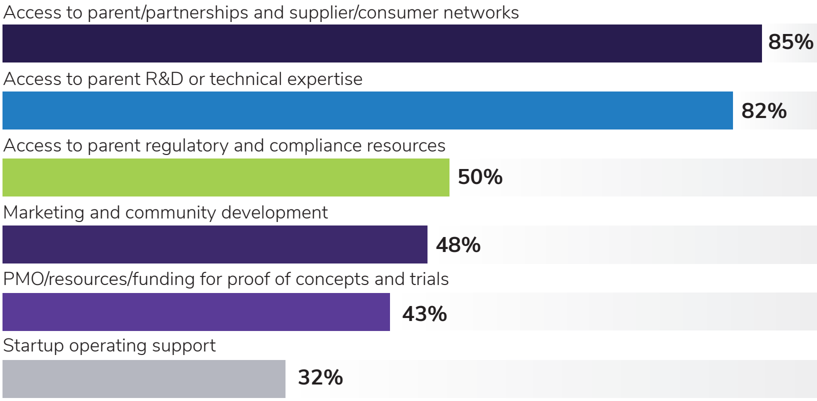
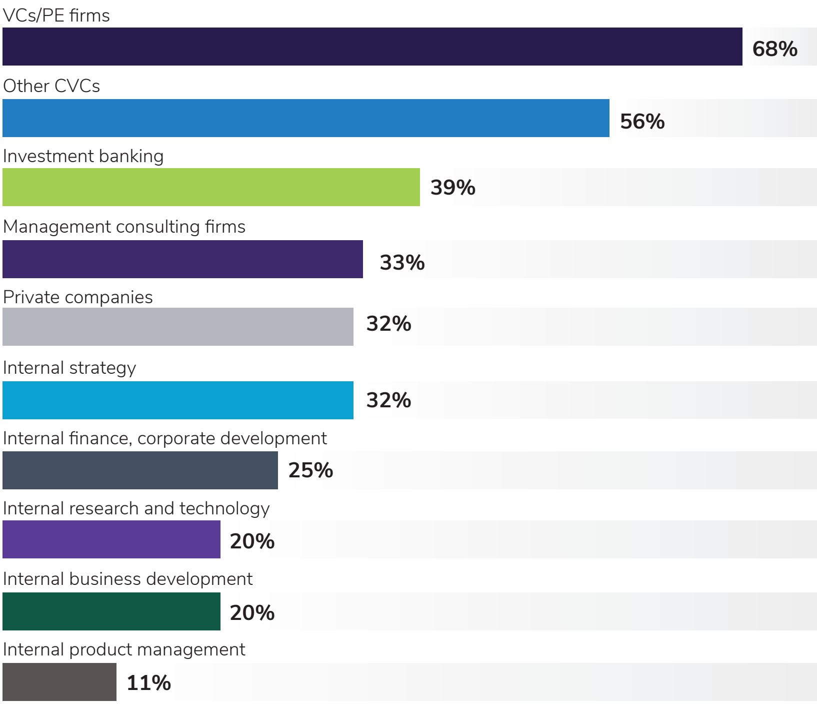


FIG 40: CVC TEAM MEMBER SOURCES



COMPENSATION

With CVC now 'main stage' in the toolkit for innovation and growth, corporations are acknowledging that to do it right takes specialists – so CVC has become a 'professional sport' and career path.

Recruiting and retaining a high-quality team is foundational to corporate venture performance and longevity.

Corporations have multiple levers to apply in differentiated ways - most rely on title or band-aligned base compensation (97%), standard corporate bonuses (90%) and parent equity (40%). Up from 27% in 2021, the 34% of CVCs with more operating autonomy incorporate 'carry-like' financial upside schemes.

The process for calculating financial upside ("carry") pools and the timing for payment varies widely. Half of respondents rely on a "spot bonus" system for rewarding exits. Some 44% take a fund-based approach with profit sharing once all fund investment capital has been returned. 20% have a form of deal-based profit share that enables interim payments ahead of full fund returns.

Compensation for CVC leaders has risen over 2021, with North American participants slightly better compensated than the full global pool, particularly in the top quartile.

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FIG 41: CVC COMPENSATION LEVERS

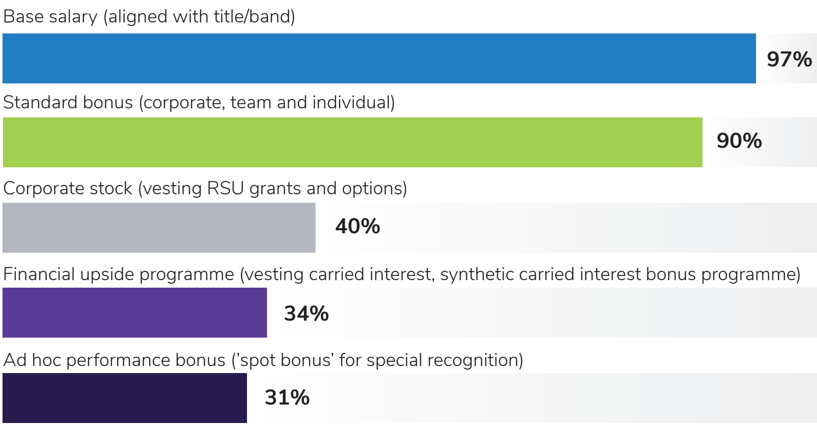

FIG 42: FINANCIAL UPSIDE ('SYNTHETIC CARRY') CALCULATION APPROACHES

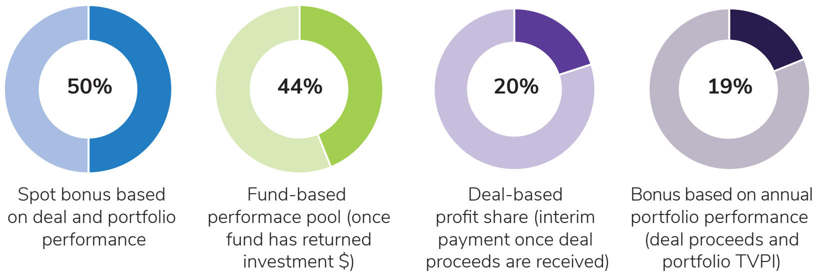

TABLE 1: CVC HEAD ANNUAL COMPENSATION – GLOBAL

CVC head compensation	25th percentile	Median	75th Percentile	Maximum
Total cash compensation	$300,000	$380,000	$500,000	$3.5m
Base salary	60%	70%	80%	100%
Bonus	20%	31%	40%	95%
Vesting corporate equity	$50,000	$100,000	$250,000	$1m
Vesting financial upside	$100,000	$200,000	$1m	$1.5m

TABLE 2: CVC HEAD ANNUAL COMPENSATION – NORTH AMERICA

CVC head compensation	25th percentile	Median	75th Percentile	Maximum
Total cash compensation	$330,000	$400,000	$800,000	$3.5m
Base salary	60%	65%	80%	100%
Bonus	25%	35%	40%	95%
Vesting corporate equity	$50,000	$100,000	$250,000	$1m
Vesting financial upside	$200,000	$1m	$1.5m	$1.5m

DIVERSITY, EQUITY AND INCLUSION

Though not a majority, 45% of respondents now include some diversity, equity and inclusion (DE&I) KPIs in their strategic scorecards. More than one third (36%) explicitly track full CVC team KPIs and 21% portfolio CEO targets.

Though CVC teams still tend to be male-dominated, 45% are either majority female or relatively balanced. However, for 51% of CVCs, fewer than a quarter of their teams are racially or ethnically diverse.

Portfolio company CEOs are overwhelmingly male with 83% reporting that less than 25% of portfolio companies are led by female founders or CEOs.

Track records are slightly better with respect to ethnic and racial diversity. Almost half (49%) of CVCs report that at least 26% of their portfolios are led by diverse CEOs. Many CVCs are working to address portfolio company diversity more broadly with the formal adoption of legally binding DE&I clauses in deal documentation.

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FIG 43: DIVERSITY, EQUALITY AND INCLUSION KPIs TRACKED

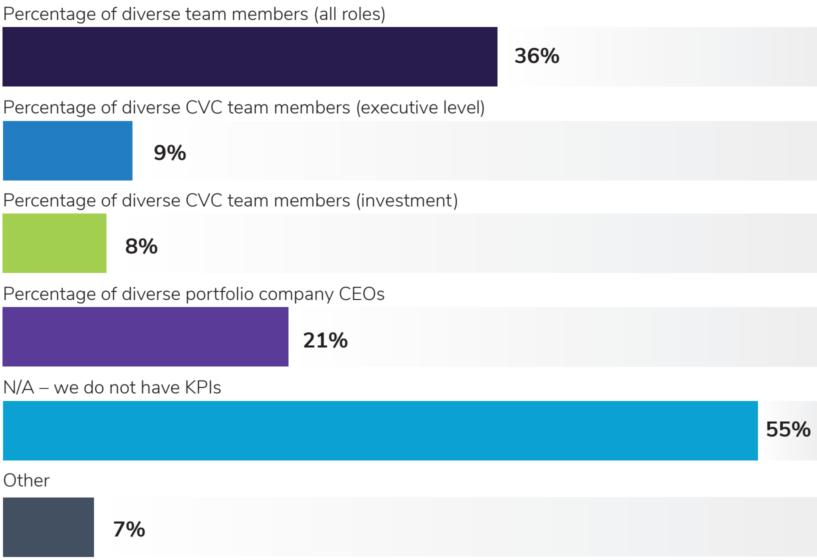


FIG 44: CVC RACIAL AND ETHNIC DIVERSITY (% OF TEAM)

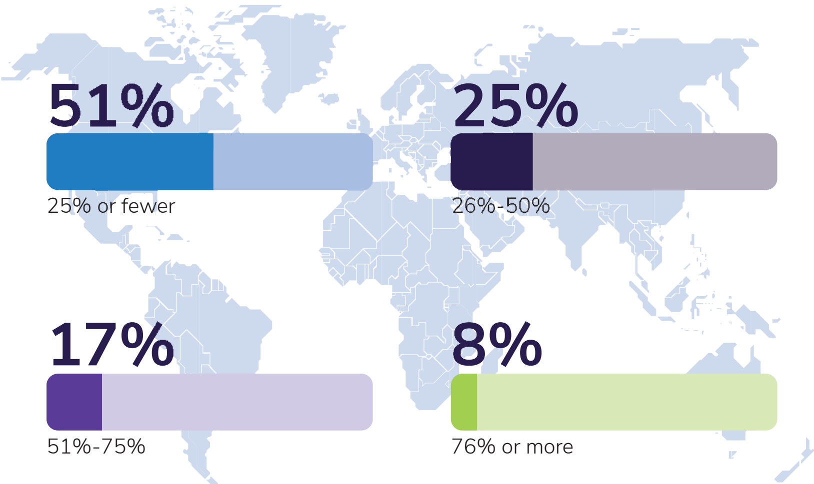


FIG 45: PORTFOLIO COMPANY CEO RACIAL AND ETHNIC DIVERSITY (% OF PORTFOLIO)

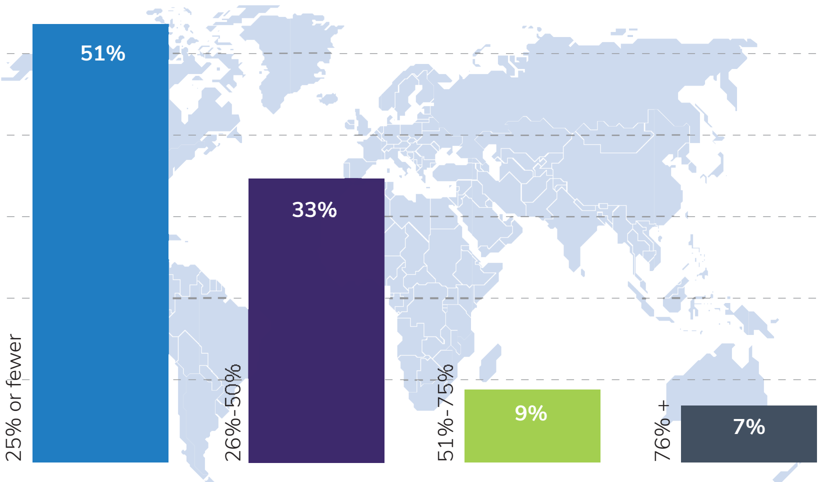


FIG 46: CVC TEAM GENDER BALANCE

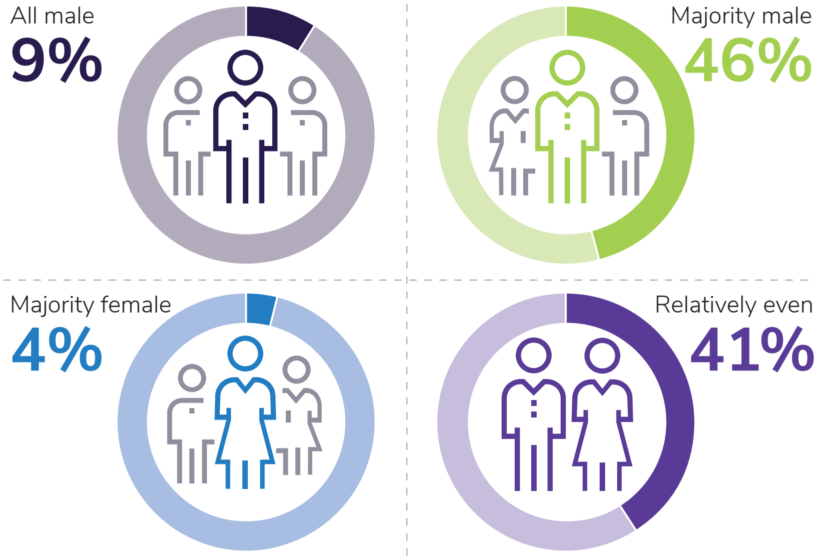
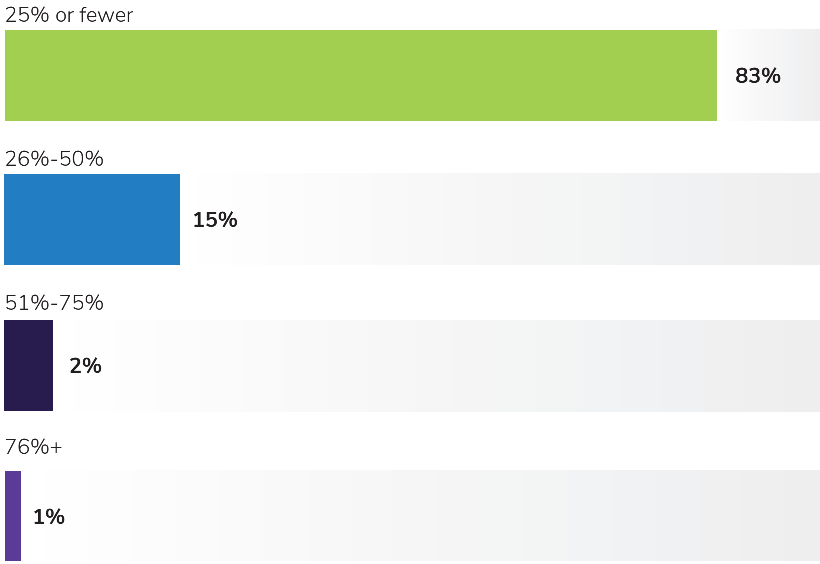


FIG 47: FEMALE PORTFOLIO COMPANY CEOS (% OF PORTFOLIO)



PROCESS AUTOMATION

Sourcing/deal flow automation was seen as the highest priority by respondents (44% ranked '1 or 2'). However, close to the same numbers gave high priority rankings to project portfolio management, fund portfolio management and customer relationship management (CRM).

Data visualisation, while a high priority for 38%, was seen as not at all important by 44%.

Given the breadth of operating models and activities that may fall under the 'corporate venturing' umbrella, it is not surprising that custom/proprietary applications (28%), along with Microsoft Office (55%) and Google Desktop (21%) were the most used tools.

However, Carta – cap table management and valuation (33%), Affinity – sourcing/deal flow (20%), and Salesforce – CRM (16%) were also in double digits. Collaboration platforms such as Airtable and Monday.com were mentioned by 7%.

>

FIG 48: CVC AUTOMATION APPLICATIONS USED

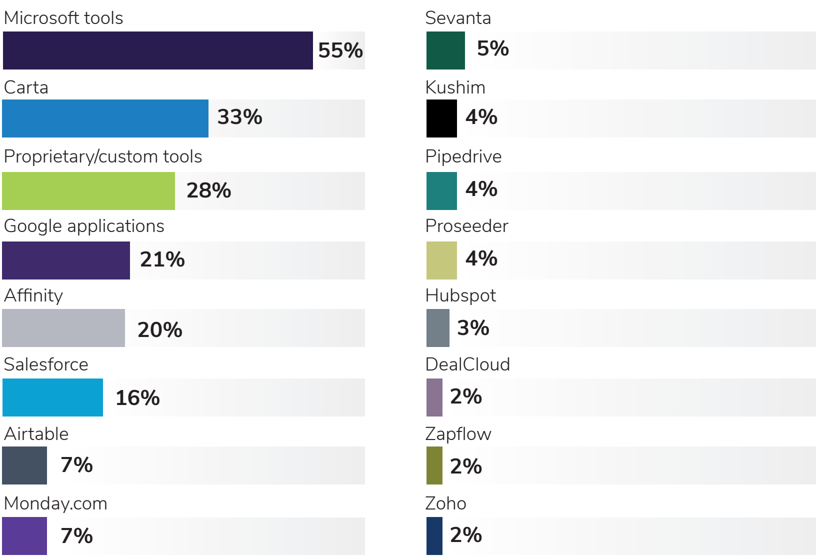


FIG 49: CVC FUNCTIONAL AUTOMATION PRIORITIES

Rank order 1-5, with 1 being the most important/top priority

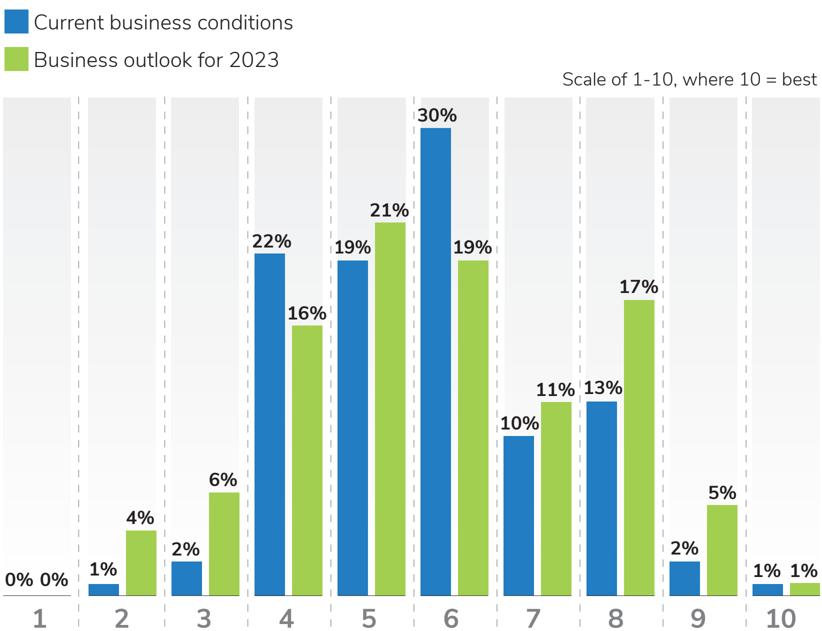
CONFIDENCE INDEX

The covid-19 pandemic and subsequent accommodative monetary policy brought about a raging bull market across most asset classes. As the world shakes off its effects and inflation has reared its ugly head, monetary policy makers have taken a different stance, the effects of which cut across all asset classes.

While one quarter of respondents felt business conditions are and would continue to be highly challenging for CVCs, 34% were optimistic that there would be significant improvement in 2023. Some 40% have adopted a 'wait and see' approach.

However, crisis can also be seen to create opportunity. GCV data shows that a record 101 CVCs were formed in 2022 and corporate-backed deal numbers fell only 2% compared with 25% for VC investment overall.

FIG 50: ASSESSMENT OF BUSINESS CONDITIONS



Signs of growth for Brazil's CVC scene

Kaloyan Andonov Analyst and reporter

> In 2022, GCV supported a survey of Brazil's corporate venture community by the Brazilian Association of Private Equity and Venture Capital (Associação Brasileira de Private Equity e Venture Capital – ABVCAP)
> The sample size of 41 responses is big enough to be statistically significant for a budding corporate venture ecosystem such as Brazil's and the findings give a good indication of the emerging venturing scene.
> The following charts, provided by ABVCAP, show the highlights

Brazil's corporate venture ecosystem is still relatively young compared with the rest of the world. The majority of the surveyed corporate venture programmes (72%) were set up over the past three years and only 12% pre-date 2018. In our global survey, only 36% of units were set up after 2018.

Nearly six out of every 10 (59%) of surveyed corporate venturers said their company had a formal CVC unit – a sign that corporate investing is becoming increasingly professionalised and woven into the corporate structure.

Brazil's relatively young corporate venture units have not yet built up a large tally of investments. Some 57% of CVC programmes have made fewer than eight investments since inception and 9% have yet to make their first deal. Around 18% of respondents, however, say they have more than 15 under their belt. Among global corporate investors, the majority (60%) intend to make more than four new investments annually.

There is also a small variation in the pace of investment. Some 79% of Brazilian CVCs say they plan to make up to six investments a year. Among global corporate investors, the majority (60%) intend to make more than four new >

FIG 1: YEAR CVC PROGRAMME WAS ESTABLISHED

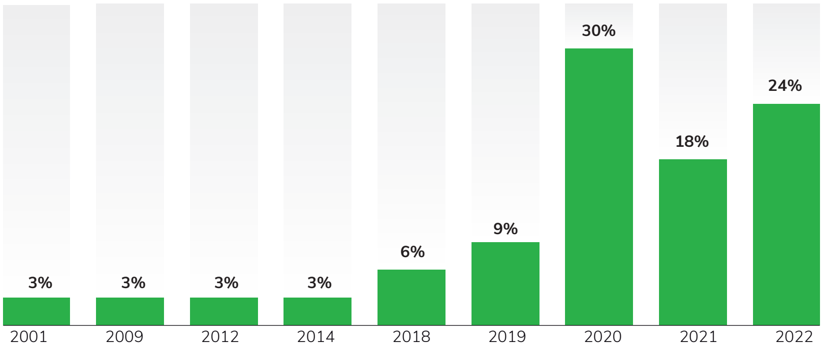


FIG 2: TYPE OF VENTURING ACTIVITY

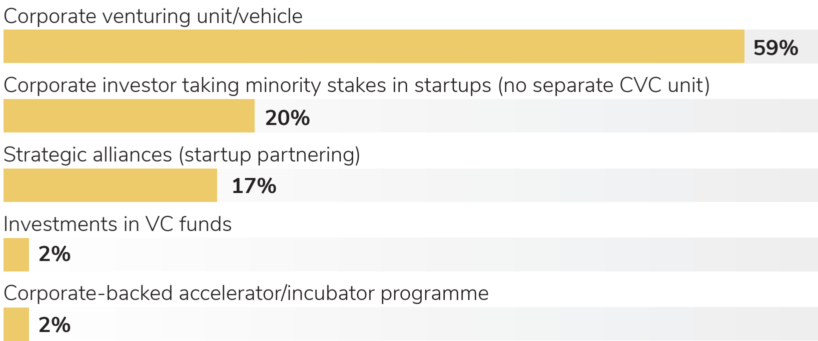
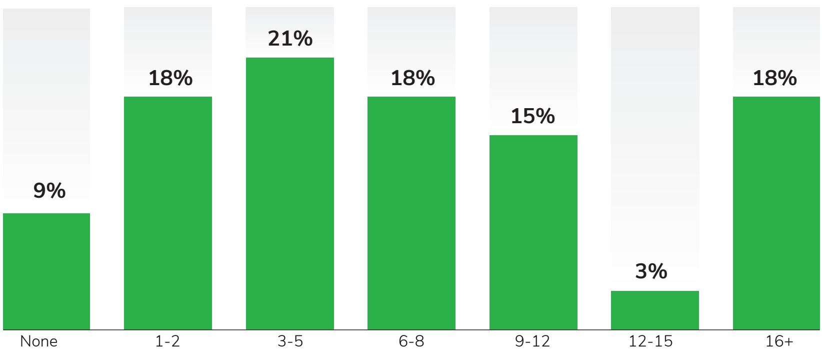


FIG 3: CUMULATIVE NUMBER OF INVESTMENTS



investments annually. Brazilian corporates focus on broadly the same stages of investment, preferring series A and B.

Financial performance targets at Brazilian CVCs follow global norms. Nearly half of those surveyed (48%), both in Brazil and globally, aim for financial returns of 1.6x to 2.5x (with an implied internal rate of return of 16% to 24%). Globally, 17% are aiming to reach the top quartile, with returns of more than 2.5x the capital invested. A more modest 12% of CVC teams in Brazil aim for this.

Failure rates are similar. In Brazil, nearly eight (79%) of every 10 corporates say they have never had to write-off on an investment. This is roughly consistent with the high number of their global peers (86%) claiming to have had only 30% or less of their portfolios failing to return the capital invested.

CVC initiatives in Brazil most commonly report directly to the company's CEO (39.4%) or to the head of innovation (18.2%), while 40% of global peers also report to the CEO, 29% report to CFOs or chief strategy officers and only 14% to innovation.

Corporate venture teams in Brazil tend to be a little smaller

>

FIG 4: PLANNED NUMBER OF NEW INVESTMENTS PER YEAR

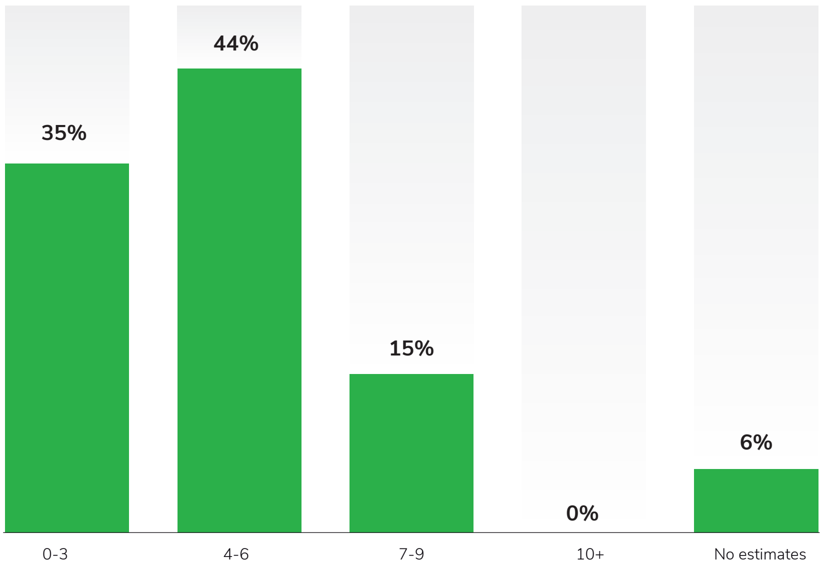


FIG 5: CVC FINANCIAL PERFORMANCE TARGETS

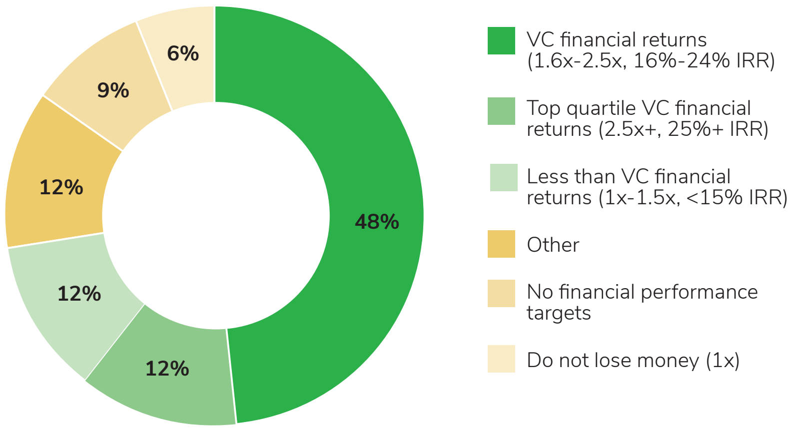
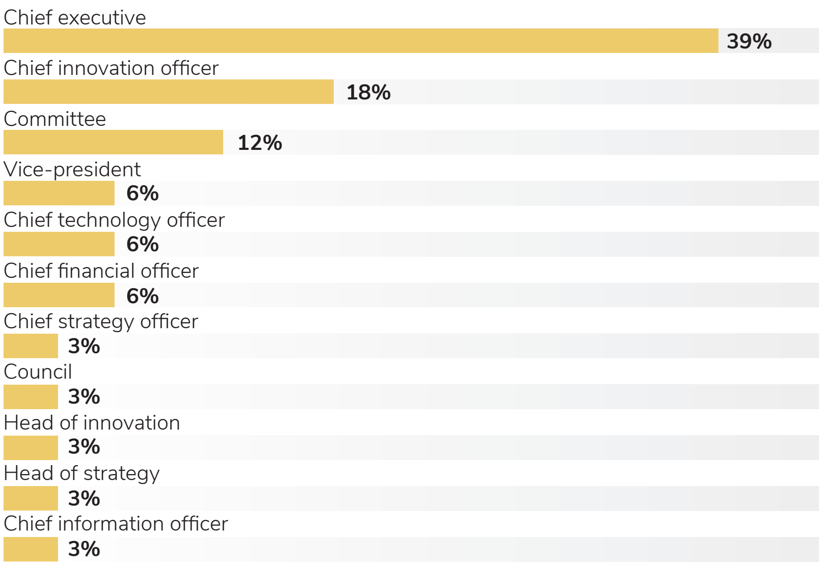


FIG 6: CVC UNIT REPORTING STRUCTURE



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than their global peers. The majority of CVC responding to the survey had a team of three to five people (61%) compared with 37% operating at that size globally. In this young ecosystem, there are no 20+ person teams yet.

In one metric, Brazil outshines global peers – the presence of female professionals. Only 27% of Brazilian corporate had investor teams where more than 75% of the teams were male. Globally, just under half (47%) of CVC units have majority male or all-male teams.

According to the ABVCAP survey, 84% of Brazil´s venturing units have a standard bonus as part of their compensation package. Only 22% have an *ad hoc* performance bonus or carried interest (22%) as part of pay. Carried interest is much more common globally, where 35% of CVC units use this as part of the pay package. As the Brazil ecosystem matures and corporate units start facing the problem of talent retention, carry may become more of a feature.

Corporate stock is rarely used in Brazil, with only 9% having this in their compensation package, compared with 39% of companies that use this globally. ■

FIG 7: CVC COMPENSATION LEVERS

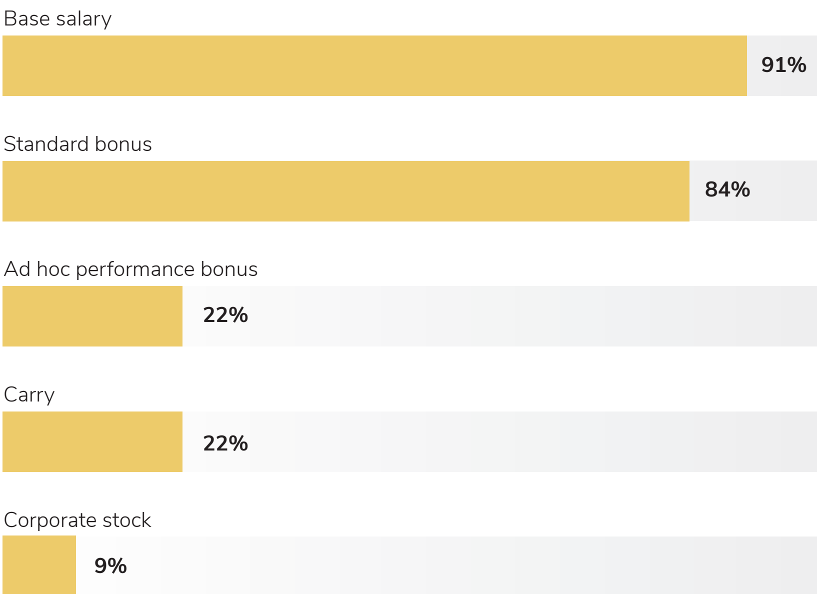

FIG 8: SIZE OF CORPORATE VENTURE TEAM

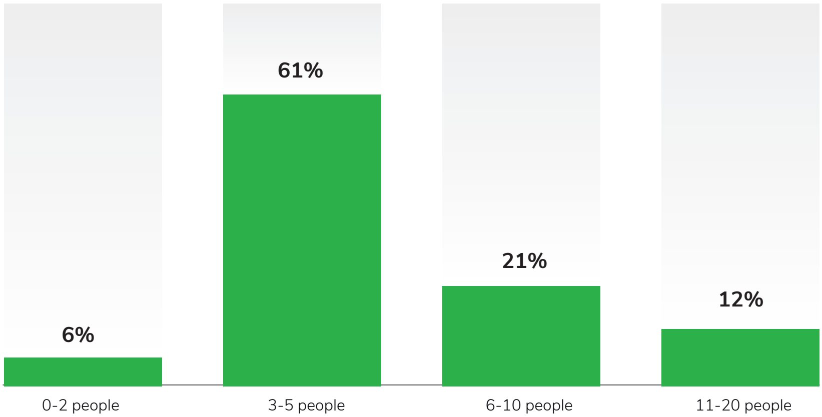

FIG 9: PERCENTAGE OF CVC TEAM MEMBERS IDENTIFYING AS FEMALE

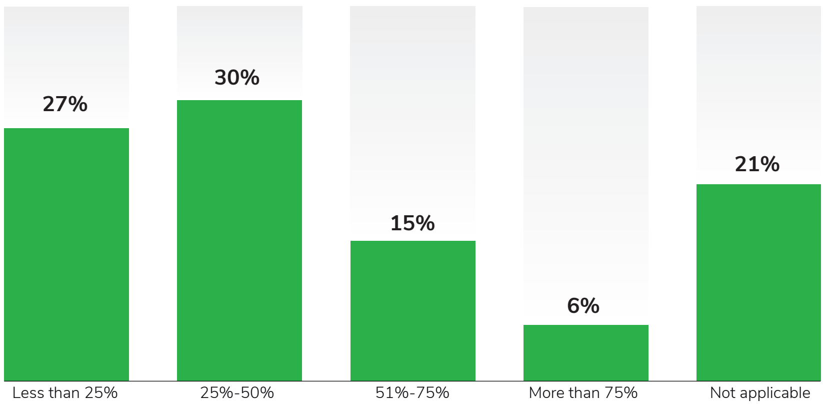

FIG 10: HAS YOUR CVC EVER MADE A WRITE-OFF (DIVESTMENT)?

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Corporate investors shift to seed stage

Kaloyan Andonov Reporter and analyst and **Maija Palmer** Editor

Corporate investors historically favoured later-stage deals, but a tough economic climate is driving a sharp shift to seed-stage investing

Historically, corporate venture investors have been reluctant to invest in seed-stage companies – startups that are far from having revenues or even a working product. They tend to prefer series A and B deals, when the startups are beginning the scale-up phase and there is potential for collaboration with the large corporate on projects.

But this appears to be changing. Seed-stage deals accounted for 18% of the corporate-backed VC investments we tracked in 2022, double the amount we have seen in past years.

SHIFTING FOCUS

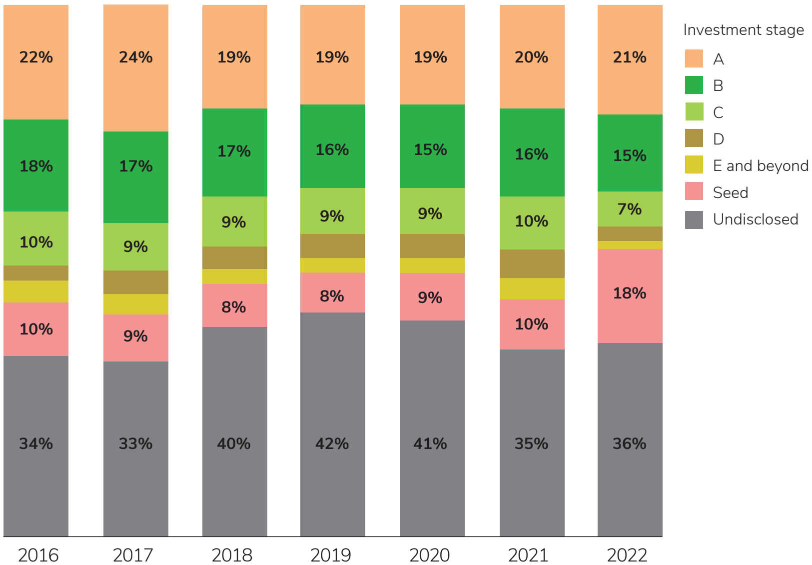
This may be due, in part, to the tough economic climate, when it has become difficult for mature startups to exit via a stock market float or acquisition. It makes sense for investors to shift focus to early-stage companies where a potential exit is, in any case, several years away.

"We have definitely seen the most prominent drop in later stage deals," says Raj Singh, managing partner at JLL Spark, the venturing arm of commercial real estate firm Jones Lang LaSalle.

"Early-stage deals have been more robust. Valuations also have to do with how long it would take [early-stage] companies to generate revenues or become profitable versus how long a downturn might last," he says. "The majority of early-stage companies do not expect such things within the next two years."

But we also observed, in the GCV *Touchstone* annual survey, an active focus on the seed stage. Corporate >

CORPORATE-BACKED VC DEALS BY INVESTMENT STAGE



investors told us that, while series A and B investments were still by far the most preferred stage, more than half were also looking for seed or pre-revenue startups.

SHIFTING HORIZONS

Many individual investors have told us they are shifting from Horizon 1 investments – the type of solutions you can plug into a company within six months – to Horizon 2 and Horizon 3 investment, which will only become relevant to the company in the medium-to-long term.

In part, it reflects a growing maturity among corporate investment units. "When we set up the unit around

>

> Early-stage deals have been more robust. Valuations also have to do with how long it would take [early-stage] companies to generate revenues or become profitable versus how long a downturn might last
>
> **Raj Singh,** JLL Spark

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About the Institute Curriculum

Created by CVCs for CVCs, Institute professional development combines an expert-driven case study approach, cohort-based learning and mentored problem-solving to arm participants with common language, tools, and best practices for professional startup investment and partnering.

The Institute curriculum is designed to address CV team (VC and CVBD/portfolio development) professional development as well as promote effective engagement with both parent and external stakeholders. The curriculum includes both overview and deep dive courses.

GCV Touchstone - Operational & Performance Benchmarking

The Institute's operational and performance benchmarking platform injects timely best practices data into the professional development curriculum. And it provides industry reference points for CVC strategic and operational planning with the ability to filter data to answer those tough 'it depends' questions

Institute Course Goals and Features

Informed

- Global CV industry data, insights, and best-practice case studies
- Leading CV "storytellers" discuss real real-world experiences in videos and live panels
- Seasoned CV program faculty and mentors

Engaging (Cohort-based)

- Combination of self-paced (conceptual) and real-time (feedback-based) learning
- Community-driven, active application of concepts in peer breakouts and Q&A panels with CV experts

ACTIONABLE

- Best practice solutions to address real world challenges
- Mentored, on-the-job problem-solving (deep dive courses)
- Professional CV library: extended access to Institute resources, tools, and templates
- Powerful communities of practice: alumni, CV experts, mentors

seven years ago, we were focused a lot more on those near-term investments, where you were bringing near-term strategic value to the enterprise," says Francis Lowry, senior associate, Allstate Strategic Investors.

"We are looking further ahead, instead of just what is in front of our noses over the next six months. We are trying to understand and make bets on technologies that are not necessarily relevant to Allstate today, but potentially will be at some point."

EARLY INTEREST

A Horizon 3 investment does not always have to be a seed-stage investment, but when looking at technologies that are much further out, companies naturally get involved with startups at an earlier stage of growth.

"We are looking at life sciences, for example," says John Wei, director at Applied Ventures. "There is a recognition that there are a lot of innovations, or a lot more new things, coming up that will eventually affect the semiconductor industry. It is totally unclear how that is going to impact semiconductors but there is a willingness to try to understand it."

Some corporate funds, such as Sony's Innovation

18%

Of the all the corporate-backed VC investments we tracked in 2022 were seed-stage deals

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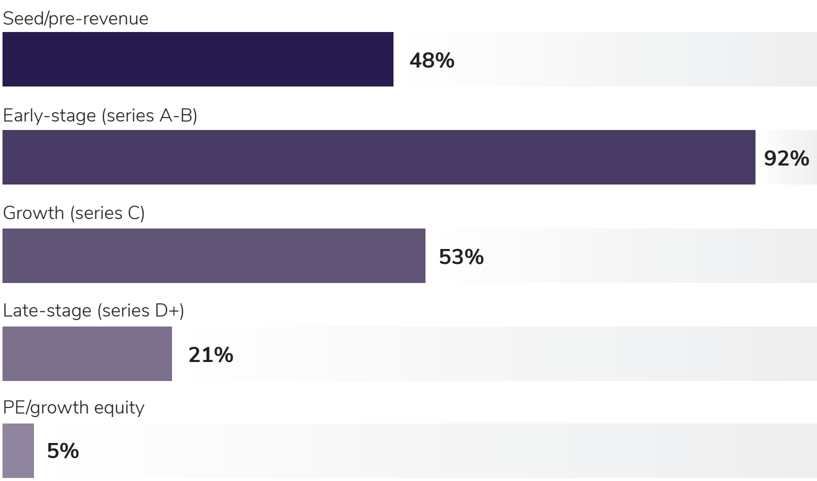
PREFERRED CVC INVESTMENT STAGE



Fund, begin with a focus on early-stage investments, and then added further investment vehicles to look at more mature deals. But more often corporate investment teams start with more mature propositions and then move to funding more "raw" startups after they have established a strong track record and won some trust from the rest of the company.

"We have spent a lot of painstaking time building relationships with business units now that were not there at the beginning," says Lowry.

It is not just about getting permission to invest in more futuristic ideas, a close relationship with business units also helps an investment team understand better what the company's future technology needs might be.

HEDGING YOUR BETS

Seed-stage investing is a very different discipline, however. A seed-stage company may not have a working product or clear idea of the target market. It is harder to pick the right one, so investors may need to make several bets in the market.

"In hydrogen power storage, I invest in the early stage," says Rongtao Sun, managing director at Sinopec Capital. "As these are fast-growing industries, you can get it wrong very easily. So, I invest in many early-stage hydrogen companies."

In contrast, in a more mature market, such as charging for electric vehicles or solar power, Sun will make a single, much larger bet in the top company in the sector.

A multitude of small, early-stage investments can require much more management than a handful of big ones. Scouting them also means keeping a much closer ear to the ground in the startup community. A move to seed stage may mean hiring bigger investment teams with different skill sets. ■

"

We are trying to understand and make bets on technologies that are not necessarily relevant to Allstate today, but potentially will be at some point

Francis Lowry, Allstate Strategic Investors

Global Corporate Venturing Institute

The first specialized institute dedicated to corporate venturing industry advancement, staying power and impact

By CVCs, For CVCs - professional development & certification, benchmarking, community building

Upcoming Courses

CVC INVESTMENT PROGRAMS

Meet the new high bar for strategic Investment program professionalism

- Cohort-based introduction to corporate venture capital (CVC)
- Leverages industry models and best practice case studies across CV program types and maturity phases
- Explores nuances for CVCs in VC investment process

LANDING THE VALUE OF CORPORATE VENTURING

Develop end-to-end investing strategies and programs

- Cohort-based deep dive course focused on key considerations for designing, building, and optimizing professional CVBD/portfolio dev (startup partnering) programs
- Includes mentored, on-the job project to address an end-to-end investing challenge

CV PARENT PARTNERING

Enhance parent and CVBD/Portfolio Dev understanding of CVC roles, practices

- Cohort-based introduction to corporate venturing and innovation partnering
- Illustrates high-value startup partnering approaches, interweaving industry concepts in expert stories from all perspectives: CV teams, parent partners startups

CVC INVESTMENT BASICS

Understand the nuances for CVCs in the VC investment process

- Primarily self-paced introduction to the VC investment process with emphasis on nuances for corporates (CVCs)
- Uses industry models and best practice video case studies and resources
- Includes quarterly live online expert Q&A panels

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Performance metrics for CVC programmes

Liz Arrington Co-founder and managing director, GCV Institute

How you set up effective performance metrics for teams whose outcomes are a combination of tangible and intangible effects, is often as much about influence and learning, as it is about revenue

Measuring performance is one of the most challenging areas of running a corporate venturing programme, and one of the subjects we are most frequently asked about by participants on GCV Institute courses.

There is no one-size-fits-all when it comes to the definition of performance metrics for a corporate venturing programme. CVC programme performance metrics and dashboards will be company specific and will evolve over time with experience.

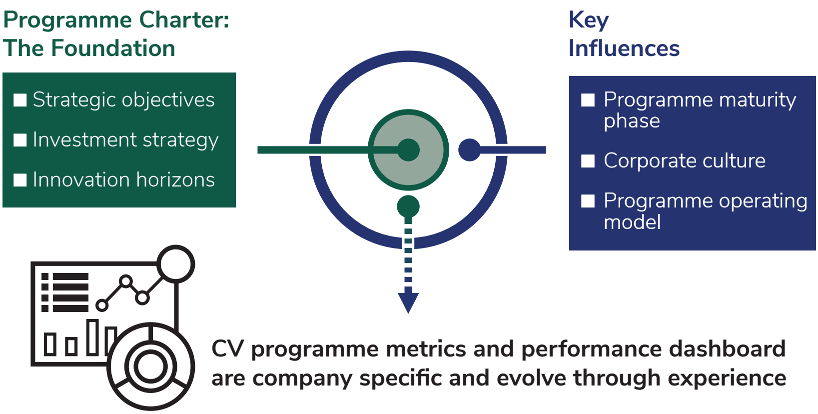
But there is a methodology to follow that can help develop a performance framework that fits a CVC's particular needs:

Programme charter – metrics will look very different for a corporate venture team focused on near-term internal technology adoption than for external ecosystem development, new business creation or future explorations.

Programme maturity phase – startup phase is all about hitting operational milestones in establishing a credible strategic investment platform. Expansion phase is showing momentum/proof of strategy and readiness to scale. Resiliency phase is demonstrating a measurable drumbeat of wins and impact, from both internal and external stakeholder perspectives.

Programme operating model – this is related to charter and maturity phase and influences performance priorities.

- While all CVC programmes are strategic, many are being designed with the objective that financial returns should cover the cost of the strategic investment platform. The more mature and >



independent the programme, the greater will be the expectation of superior financial results.

- CVC teams that are driven by the needs of parent company business units are likely to prioritise and measure key performance indicators (KPIs) related to engagement between the portfolio companies and the parent corporation. For many, this is the starting point for demonstrating value with early wins.
- Thesis-driven teams typically have earned the trust of the corporate leadership to act as a guide to future business trends and new business. They can find it hard to quantify short-term strategic results in terms of time and money, and it is easier to point to anecdotal evidence of wins and impact on parent strategic direction.
- Financially-driven teams still need to demonstrate strategic impact and relevance, or they will not survive. CVC financial returns are too small to move the needle for the corporation's overall results.

FINANCIAL PERFORMANCE

For the majority of this year's Touchstone survey respondents, competitive financial returns are seen as table stakes for CVC programme survival, with two-thirds targeting at least VC-level portfolio performance.

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An increasing number of programmes are employing a chief operating officer or dedicated finance team to manage portfolio reporting. Standard VC metrics such as internal rate of return (IRR) and total value to paid in (TVPI) are now the language of financial performance for most CVCs, with 79% using IRR and 73% looking at TVPI. Some groups also look at achieving ‘evergreen status’ – where returns allow groups to be self-funding – within five to seven years.

STRATEGIC PERFORMANCE

Measuring strategic performance remains the holy grail for CVC programmes. There is seldom a simple answer, because charters, objectives, investment strategies and the culture and sector of the parent company vary so much – not to mention the stage of the CVC programme. It is always a balance between what the CVC team would like to be able to communicate to key parent stakeholders and what it can easily track.

It can be helpful to think through how corporate priorities, CVC investment strategy, and portfolio management processes should be aligned to measure the programme’s strategic impact.

CHARTER

The CVC programme charter should be as concrete as possible, documenting shared understanding between parent management and CVC unit.

- Why does the programme exist? Why is it important to the parent strategically (growth, competitiveness, transformation)?
- How are CVC programme objectives reflected in investment and portfolio strategy (balance of strategic focus areas, theses, innovation horizons/ lead time to value)?
- What is the appropriate mix of financial and strategic performance goals and metrics?

79%

Are using internal rate if return to help show financial performance, while 73% are looking at total value to paid in

>

INVESTMENT

Strategic considerations are a key component of the CVC investment process, although the way they are defined and assessed may vary significantly.

- What strategic rationales are included in standard investment committee pitches?
- Are there standard approaches for describing and quantifying key strategic goals?
- Are the corporate venture business development team and potential business unit collaborators included in investment decisions?
- Are pre-investment strategic assumptions tracked after the investment?

PORTFOLIO DEVELOPMENT AND MANAGEMENT

It is in the best interest of the CVC team to proactively define the framework for assessing the programme's strategic performance, but they should ensure this reflects culture of the parent company. Think about:

- What performance metrics resonate with the parent and what can be efficiently tracked by the CVC team? This could include activity KPIs, such as the percentage of portfolio engagement with parent, the number of proofs of concept, meetings, reports and events, as well as quantitative business impact metrics such as time and money and also anecdotal success stories.
- What is the right mix of strategic insights, commercial impact, and softer measures (brand, culture change, diversity, equity and inclusion) for a scorecard?
- Are both the CVC team and parent 'partners' incentivised to drive portfolio strategic value delivery (end-to-end investing)?

COMMUNICATING PERFORMANCE

Effective performance communication is about managing parent expectations by delivering results in the 'corporate patience cycle' and speaking the language of the parent. Is it important to demonstrate contribution to innovation branding, customer satisfaction, or societal impact. Are there hot buttons to avoid?

The key thing is for the CVC programme to take the lead – it is much more challenging if you allow metrics to be defined for you by people who do not understand how corporate venturing works. ■

Build internal networks that boost your CVC

Maija Palmer Editor

Strong internal networks help corporate investment teams get better results. Chad Bown, of BP and Nicole Lapointe of Capital One, share tips on building them

The secret sauce of corporate investing is getting portfolio companies and parent company business units to collaborate. This is what takes corporate venturing into something beyond a simple financial transaction.

"The most successful organisations tap into the broader network beyond the corporate venture team, to benefit from the goodness that their larger corporation can provide," says Lee Sessions former head of portfolio development at Intel Capital, chairing the recent GCV webinar *Wiring the Corporation – Creating new pathways for disruptive innovation.*

Creating connections with multiple stakeholders across a large corporation is not easy, however. "There are often many players involved," says Sessions, who was part of an Intel team that invested in more than 400 companies over 12 years. "In most corporations, there are groups focused on M&A, R&D, various alliances or licensing. The challenge with this is understanding who is doing what, and finding a way that you neither duplicate resources, nor leave major gaps in the process."

To be a good corporate investor means being a champion networker and understanding the hidden currents of the corporate organisation.

Here, Chad Bown, managing partner at BP Ventures, and Nicole Lapointe, portfolio success lead at Capital One Ventures, give their advice on how to achieve this.

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Photo: © jj-ying on unsplash.com

1: GET A BUSINESS DEVELOPMENT FUNCTION

Many corporate investment teams are now hiring people specifically to look after the development of portfolio companies. BP Ventures has a global team of 20 investors but, now that it has more than 30 active investments, it is adding a strategic development team.

"We currently wear two hats in our ventures team – we are out chasing deals, putting together venture investments and sitting on the boards of those companies. We are also trying to deploy [those startup technologies] back in BP. It is too much to do, to be honest. So, as part of our budget for this year, we decided to get a business development team, working very closely with us," says Bown.

2: BUILD AN INTERNAL NETWORK OF CHAMPIONS

BP Ventures has built a network of "mavens", or experts, inside BP business units, who understand how the CVC unit works and act as liaisons and champions. Bown and his team took deliberate steps to create this network.

>

"We went to each of those business units and engaged with the senior leadership," says Bown. Once the CVC team explained that they had budget that could be used to help the business unit, executive vice-presidents were generally happy to suggest names of team members to act as liaison. BP Ventures was very careful who it chose.

"You need to make sure you keep it somewhat tight. This is a tight-knit group that you want to engage with a few times a month," says Bown. "From that we got a group across our business of 10 to 20 individuals that know about ventures and want to use our capital for their tech development."

A pre-existing internal group could also provide the network, says Capital One Ventures' Lapointe. "Unlike BP, we do not have an internally built and incentivised network. But there is one key group that we have formed a tight relationship with over the past couple of years. That is our sourcing and supplier management team," she says. "It is the first to receive any type of request for information or for proposals. That has been a great way for us to understand what is coming in terms of strategic business needs."

Out of Capital One Ventures' portfolio of more than 70 companies, around 60% have engaged commercially with Capital One at one point in time, Lapointe said.

3: INTERNAL NETWORKS CREATE DEAL FLOW

These internal networks are not just good for getting buy-in and support. They can tip CVC teams onto the best deals too.

"Our best deal flow now comes internally," says Bown. "It comes from those experts who understand what we are doing, know the tech that we are looking for, and are bringing opportunities to us."

60%

Percentage of Capital One Ventures' portfolio of more than 70 companies, that have engaged commercially with the company

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"

Our best deal flow now comes internally. It comes from those experts who understand what we are doing, know the tech that we are looking for, and are bringing opportunities to us

4: COLLABORATION COMES IN MANY FORMS

"There is not always something to be done upfront. When we make an investment, sometimes it is wait-and-see. It is bringing a company in, doing a series of demonstrations, bringing some learnings into Capital One," says Lapointe. "On the other hand, sometimes we are investing at the same time as a commercial contract is closing with Capital One. Success looks different for that type of investment."

BP Ventures has two ways of looking at the value a startup investment brings, Bown says. Some startups have a clear strategy – such as wanting to roll out 30,000 charging stations across the US. It is easy to see potential for commercial agreements and how BP might benefit from having some influence over the final look of the product.

"But we are also a venture capital team that looks 20 years into the future. In those scenarios, you cannot put in place a commercial agreement. It could be developing a hydrogen ecosystem, that is maybe five to 10 years out," said Bown. In these cases the value of the investment is understanding future market direction.

Bown estimates that around 50% of startup deals are ones that inform BP strategy and 50% are with businesses ready for a commercial agreement.

5. CONSIDER PAYING FOR PILOT PROJECTS

Pilot projects are a key way for a corporation to vet startup technology and see if a full commercial agreement might make sense. But who should pay for the pilot project – the corporate investment team or the business unit?

This has been another recent area of change for BP Ventures, having never previously paid for pilots.

"We have changed that this year. We saw an

Nicole Lapointe
Portfolio success lead
Capital One Ventures

>

opportunity to start putting budget towards pilots," says Bown. This is particularly useful for some of those early-stage technologies, such as hydrogen, where a commercial project would not be feasible for years yet.

"We have a small part of our budget, less than 10%, that we are going to put towards probably six or seven deployments this year, depending on the portfolio and what we invest in. It will be a positive and net positive in the long run," Bown says.

Capital One Ventures does not pay for pilots, says Lapointe. But In-Q-Tel, the US defence investment fund, where Lapointe previously worked, had a different model.

"A lot of times they fund the company to provide some pilots or preferred pricing – things of that nature – in their development agreement. That is a mechanism to really accelerate the timeline," she says.

6. TELL YOUR SUCCESS STORIES – WITH HARD NUMBERS

Success makes it easier to get buy-in from colleagues. "It has been very important for us internally to be able to tell that story of strategic success and impact," says Lapointe. "Where we can, we try and put a number to it. How many potential resources did the startup company save Capital One, did it save Capital One from deploying sprint teams when building something?" she says.

Bown agrees that measurement is helpful, especially for projects that are years away from commercial returns. "The venture lifecycle can be very long. If it takes 10 years to bring something new to the market, you probably have some proxy indicators along the way." ■

This article is based on a webinar in GCV's The Next Wave series, held on the second Wednesday of every month. See www.globalventuring.com for details of the topics we will cover.

Chad Bown
Managing partner
BP Ventures

Photo: © Townsend Walton on unsplash.com

How to get diversity in the CVC industry

Liwen-Edison Fu News editor

Research shows that diverse teams produce better returns, but the corporate venture industry is still largely white and male. We asked investors why, and what could be done to change it

The corporate venturing ecosystem is still predominantly white and male. But there is a growing recognition that diversity has clear benefits for investing teams.

"It is one of the most effective ways to remove biases from the investment decision-making process, bringing different and sometimes contrasting perspectives," says Mario Augusto Maia, head of Novozymes Investments.

"Bias, or confirmation bias – which can be exacerbated by egos – is the single main hurdle investors face when trying to make an objective investment decision and allocate capital well. Diversity is a great way to try to remove that from the equation."

Multiple studies have documented the fact that diverse asset management teams – both by gender and ethnicity – tend to have better financial results.

Diversity can also attract talent. "Our team is probably one of the most diverse in United Airlines, in >

both ethnicity and gender. That was one of the reasons I joined," says Andrew Chang, managing director of United Airlines Ventures.

"That also translates into the investments we have. That is part of our diligence process, understanding diversity, how they drive different diversity and how they promote it. It is important both to the team directly and to the investments we make."

Diversity in its widest sense is about background and experience, as well as just being about gender or ethnicity.

Dinsh Guzdar, partner and head of Rich Products Corporate Venture Fund, says that not only does his team have a mix of ethnicity and gender, but also diverse experiences.

"Sarah and I both come from the industry and as entrepreneurs. Andy and Brian have backgrounds in the food and banking industry and Andy in the tech world – this allows us to look at things differently and bring new things to the table."

Yet diversity is still lagging – just 15% of senior decision makers at corporate investment units are female according to our figures. We asked corporate investors about why lack of diversity persists and what it might take to change it.

DIFFICULT TO FIND DIVERSE TALENT

Johann Boukhors, managing director of Engie Ventures, says that, while there is a desire to recruit diversely, it can be difficult to find the talent. "We have worked on being [gender] diverse, with limited success so far. The basket of resources is limited. With the number of CVCs created, there are not enough resources," he says.

Indeed, with 101 new CVC units formed in the past few years, hiring has become increasingly competitive.

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15%

Percentage of senior decision makers at corporate investment units who are female

"

We have worked on being [gender] diverse, with limited success so far. The basket of resources is limited. With the number of CVCs created, there are not enough resources

Johann Boukhors, Engie Ventures

Working in a historically male sector can also make it difficult, says Vito Giallorenzo, senior vice-president, chief operating officer of IoT and head of corporate development at BlackBerry. "We struggle a little because when you look for automotive people, especially at the senior level, you end up only getting white men like me. This industry is not very diverse."

Giallorenzo says he was fortunate to inherit a team that was already fairly diverse, particularly in terms of gender. "We are lucky because our team mainly came from the mobile software area of Blackberry. Building a modern car, it is a bit like building a phone because you need fewer old-school mechanical people and more mobile capabilities."

FUNDS MUST COLLABORATE ON DIVERSITY HIRING

Rob Coppedge, CEO of Echo Health Ventures, says one way around the hiring challenge is to look further upstream, to hire more people directly from universities or from the startup community, for example.

"We have tried with every new hire to open the aperture more widely than we have in the past, to look at places where we historically have not had the resources or network to look," he says.

It can be a challenge, for a single corporate venture unit to create a meaningful programme, as they typically hire for a very small number of positions. However, several companies could club together to do this.

"I know a number of corporate venture funds that are working on these ideas. There is a huge opportunity, particularly in the US market. It is not beyond the scope of the corporates to work together on these topics," Coppedge says.

>

"

We have tried with every new hire to open the aperture more widely than we have in the past, to look at places where we historically have not had the resources or network to look

Rob Coppedge, Echo Health Ventures

A CAREFUL BALANCE NEEDED

"One of the things I hate about diversity initiatives in companies is that you all get bundled into the same package. There are people who have earned and worked hard over three decades to get somewhere and then you get washed up in this wave of more women," says Aruna Subramanian, managing director of Sabic Ventures.

Her team includes six women and staff from all over the world, but Subramanian is cautious about pushing the diversity message too hard.

"You want to celebrate the women who are out there, but you need to be careful you have the right group. On the one hand, it certainly needs to be done. On the other hand, you need to be careful not to annoy the women who worked their way up without any diversity advantage," she says.

"We need to be careful that we do not send the wrong message. There is a lot of work to be done and saying there are so many women out there should not demotivate the women who have worked hard to get somewhere and it also should not pass on the wrong message to the rest of the community that the work is done."

INFLUENCING PORTFOLIO COMPANY DIVERSITY

Investment arms not only need to ensure that they get their own diversity right, but should also think about the influence that they can have on diversity at their portfolio companies, says Amy Burr, president of JetBlue Ventures.

"A big focus for us in 2023 will be thinking about how we better diversify our portfolio. We have a fairly good handle on diversity and inclusion within our team. What we are not doing as good a job at is having a diversified and balanced portfolio from a founder's perspective," she says.

"It is making sure that our deal flow comes from diverse sources, and that will help us think about what our portfolio looks like, and start to move the needle. That is our next phase and we are definitely spending a lot of time within the VC community and thinking about how everybody is tackling it – trying to learn from others." ■

> "There is a lot of work to be done and saying there are so many women out there should not demotivate the women who have worked hard to get somewhere
>
> **Aruna Subramanian**
> Sabic Ventures

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Corporate investors hold firm as VCs fade

Kaloyan Andonov Analyst and reporter

> Corporate-backed deals account for 19% of global VC funding activity
> CVC deal numbers fall 2% versus 25% for VC overall
> Record 101 new CVC units created in 2022
> CVC investors shift seed stage investing

19%
Of all VC deals done globally now involve corporate backers, up from 15% last year

The paths of corporate venture investors and the rest of venture capital diverged dramatically last year. In a year which saw venture capital investors pull back from startup funding deals amid market turmoil, corporate investors remained much more steady. While the overall number of VC funding rounds fell by 25% from the previous year, rounds that included a corporate backer declined just 2%.

In some geographies, such as Western Europe and Canada, corporate investors increased the number of deals they did in 2022, compared with the previous year.

The number of US dollars spent by both VC investors and their corporate counterparts both declined. The total estimated dollar value of VC deals went down 42%, from $632bn in 2021 to $369bn last year, while corporate-backed deal spend dropped 38% from $301bn to $192bn.

Corporate investors in many cases made a shift to earlier stage funding rounds – we saw an increase in the percentage of corporate-backed deals that were seed rounds from 10% in 2021 to 18% in 2022. They may have spent less, but they remained active in the market.

Far from pulling back, there were a record 101 new corporate investment units created last year. We consider "new CVCs" those funds that have a corporate either as the one and only GP (general partner), or as the main LP (limited partner) in cases when the unit is managed by a traditional VC firm.

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FIG 1: DEAL COUNT VC VERSUS CVC YEAR-OVER-YEAR GROWTH 2012-2022

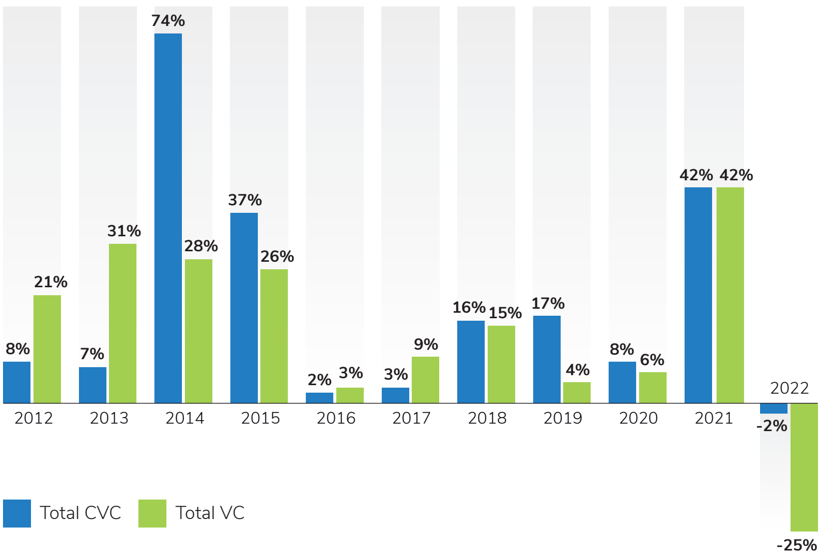
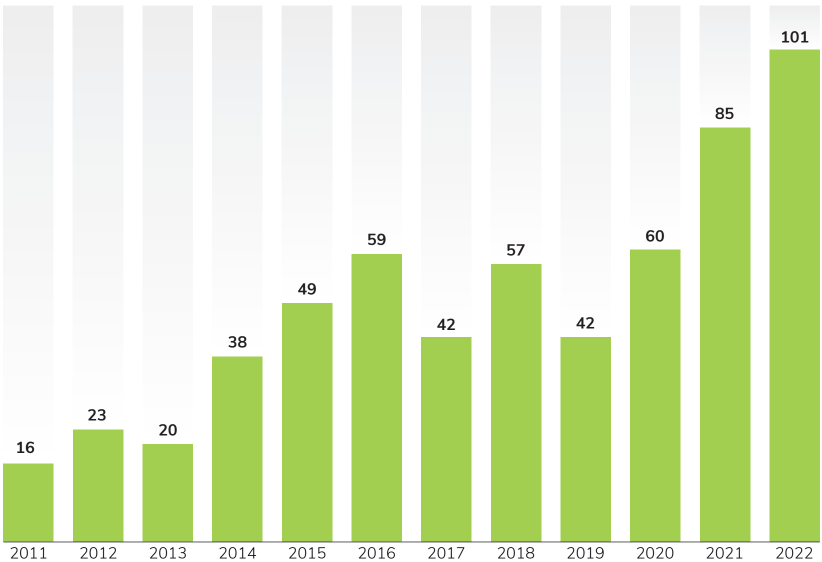


FIG 3: NEW CVC UNITS LAUNCHED 2011-2022



GROWING REGIONS

In 2022, GCV tracked 5,281 corporate-backed funding deals worth an estimated $192bn of total capital raised. That is 38% down in US dollar terms from the $310bn we tracked in 2021, but the number of deals has come down just 2% from 5,376 deals in 2021.

Corporate venture funding has often tracked general VC activity closely, moving up and down in line with general trends, but 2022 saw corporate venture investors break that pattern.

Around four out of every 10 tracked corporate-backed transactions in 2022 took place in the US (2,081). Other notable innovation geographies on the global scene were Japan (562), the UK (320), India (307) and China (294).

These were also the areas that saw the sharpest drop in the number of deals. But there was growth in the number of corporate-backed deals in the UK (320, up from 283 in 2021), Canada (124, up from 100), Germany (144, up from 115), France (89, up from 58) and Singapore (188, up from 165). However, it is worth noting that even when combined, the number of deals in these countries is less than half the volume of the US.

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FIG 4: GLOBAL VIEW OF CORPORATE-BACKED DEALS 2022

FIG 5: CORPORATE-BACKED DEALS BY YEAR 2012-2022

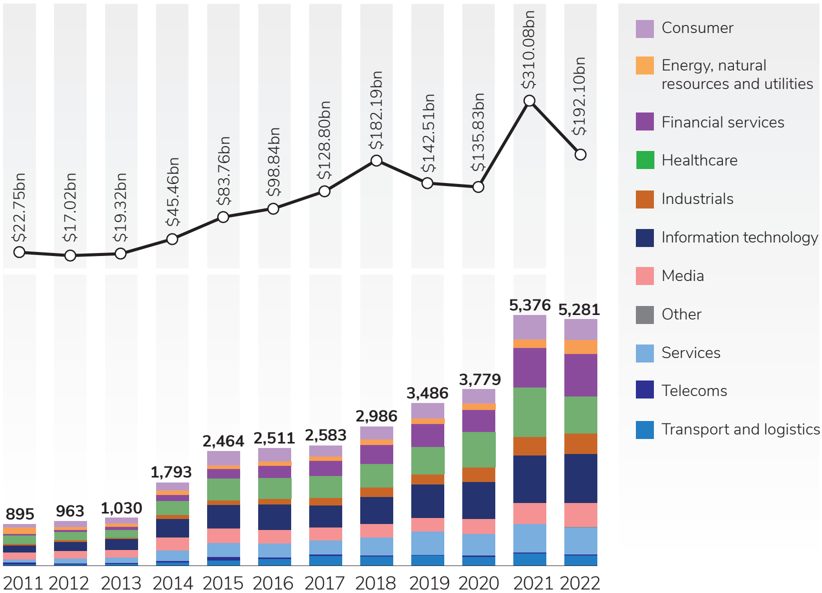
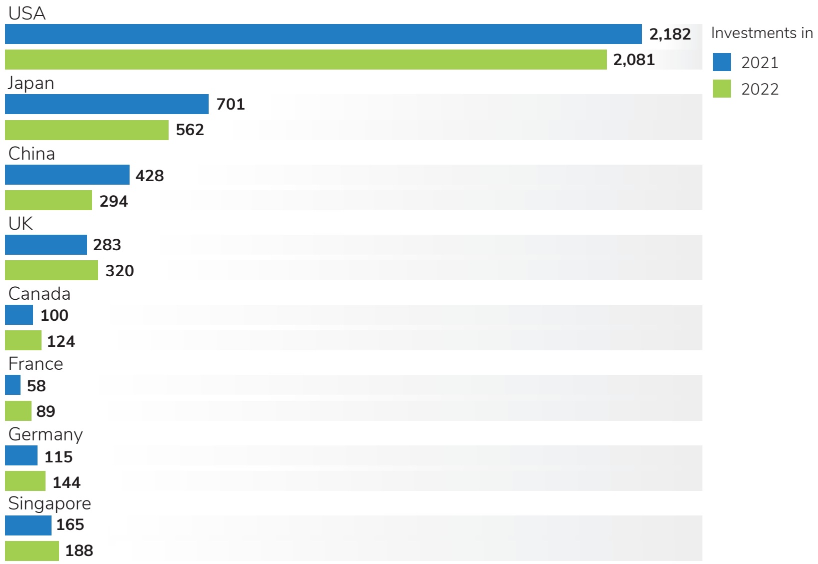


FIG 6: CORPORATE-BACKED DEALS IN 2022 VERSUS 2021 BY MAJOR GEOGRAPHY



NEW AND REPEAT INVESTORS

Previous economic downturns have usually seen corporates retreat from startup funding, and currently monetary tightening by central banks, Russia's war on Ukraine and the resulting energy crisis is creating extremely tough financial conditions.

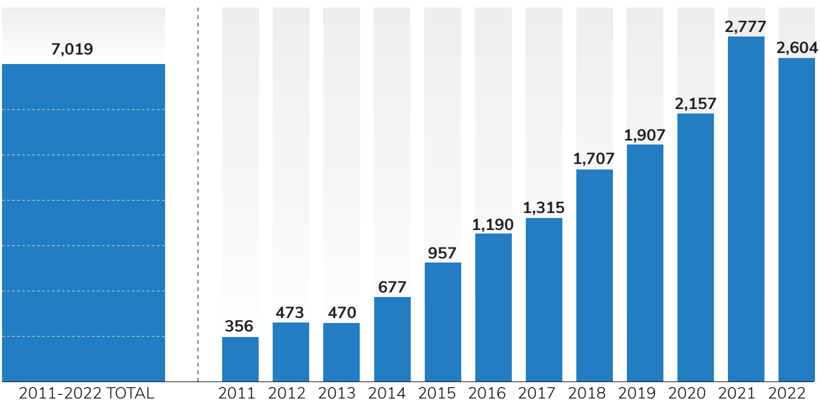
The number of active corporate investors dropped in 2022, when there were only 2,604 units actively participating in at least one deal, compared with 2,777 the previous year. But the number of active investors is still far ahead of 2020.

Since 2011, GCV has tracked more than 7,000 distinct corporate investors – with or without a formal investment unit – which have taken a minority stake in at least one deal. The number actively investing in any given year has gone up multifold from 473 in 2012.

Moreover, our data suggest that 14% to 17% of all corporate investors we track quarterly were first-time investors throughout the four quarters of 2021.

Corporate investors are also coming back to make more than one investment. Overall, half of all corporate investors that had participated in at least one minority stake round in 2021 made a further investment last year. Serial investing is particularly high in sectors such as telecoms (69%), financial services (62%), transport (52%) and media (51%). >

FIG 7: ACTIVE CORPORATE INVESTORS 2011-2022



Note: *Active corporate investor is defined as any investor that has participated in at least one minority stake deal in a given period.*

FIG 8: RETURNING CORPORATE INVESTORS BY SECTOR

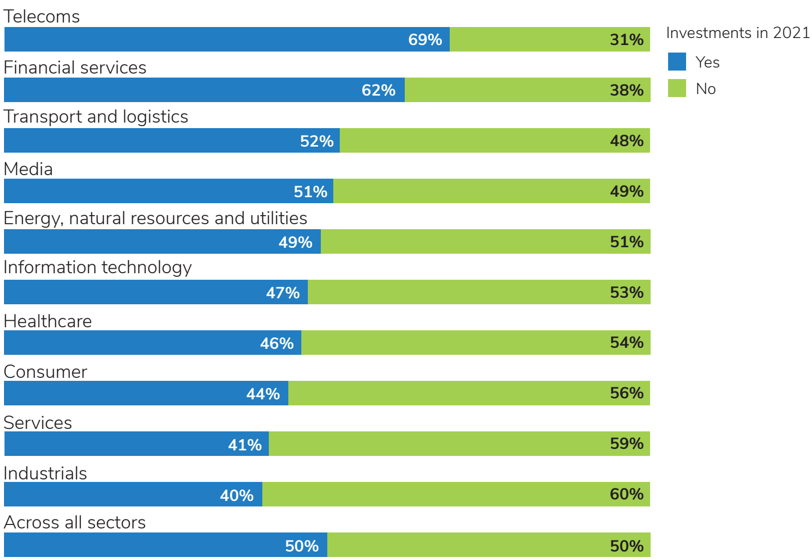
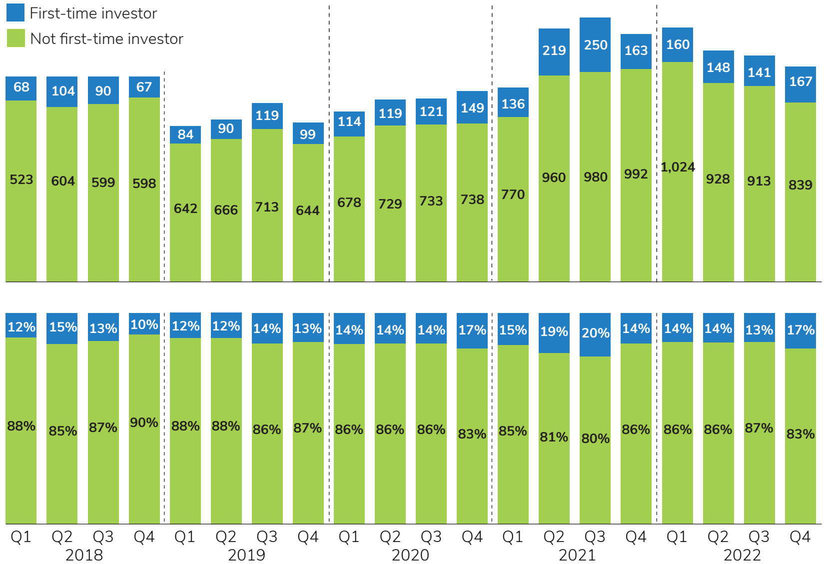


FIG 9 : FIRST-TIME VERSUS REPEAT INVESTORS 2018-2022



BURSTING THE 2021 BUBBLE

According to PitchBook, overall venture capital activity fell 25% from 36,314 deals to 27,097 by the end of 2022, as the investment frenzy of 2021 faded. Meanwhile, corporate-backed deals, which were slower to rise in 2021, were also slower to fall in 2022.

This has left the corporate-backed deals as a higher share of total VC deals. Globally, around 19% of funding rounds now include a corporate backer, the highest we have seen since GCV began tracking. It is worth noting, though, that corporate investing is continuing to fall on a quarter-by-quarter basis.

Data from both PitchBook and GCV suggest that total capital in corporate-backed rounds shrunk at similar pace >

FIG 10: CORPORATE-BACKED DEALS AS PART OF TOTAL GLOBAL VC DEAL COUNT

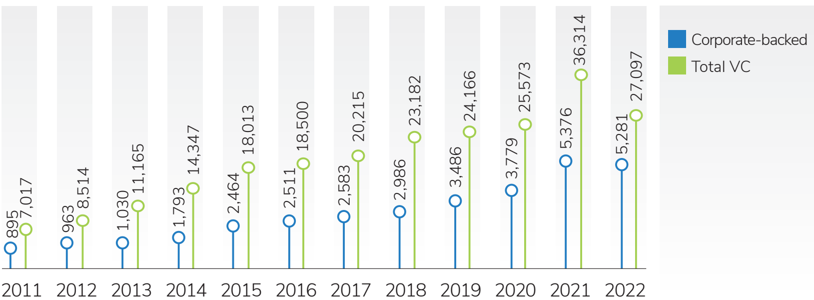
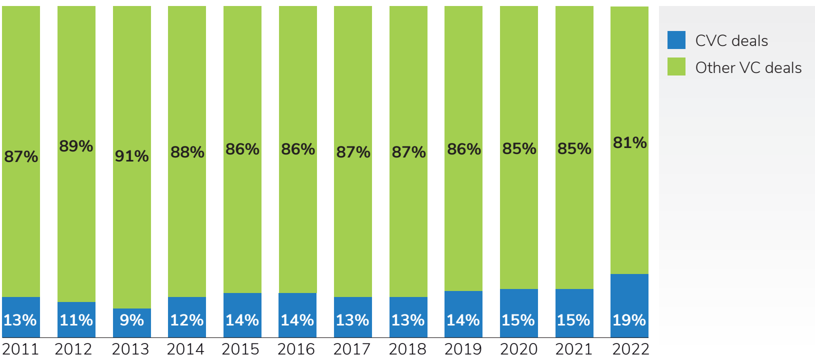


FIG 11: SHARE OF CVC DEALS AMONG TOTAL VC DEALS 2012-2022



along with total capital in all venture rounds over the past year. While both grew to all-time-highs and reached a peak in 2021, they fell sharply last year. In the total VC global arena, estimated US dollar spend went down 42% from $632bn in 2021 to $369bn in 2022. The drop in total estimated US dollar value of corporate-backed deals was similar (down 39%) from $310bn to $192bn.

The same drop in deal value can be seen particularly clearly in the decrease of "unicorn" deals valued at more than $1bn. The number of rounds raised by unicorns and decacorns (companies valued at $10bn+) nearly halved in 2022 versus the previous year (down 46%), as did the total estimated US dollar value, reducing from $247bn to $497bn.

>

FIG 12: CORPORATE-BACKED DEAL VALUES VERSUS TOTAL DEAL VALUES ($BN)

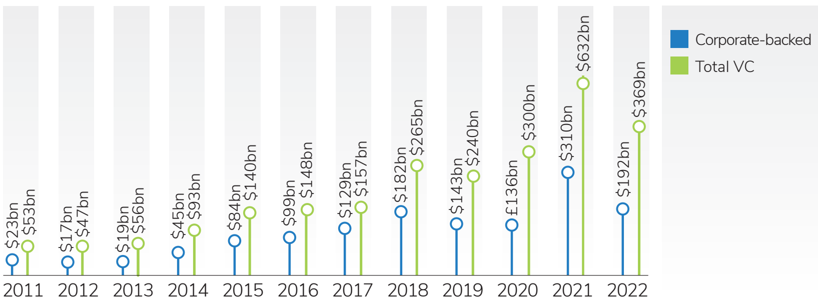


FIG 13: CORPORATE-BACKED DEAL VALUES AS A PERCENTAGE OF TOTAL DEAL VALUE ($BN)

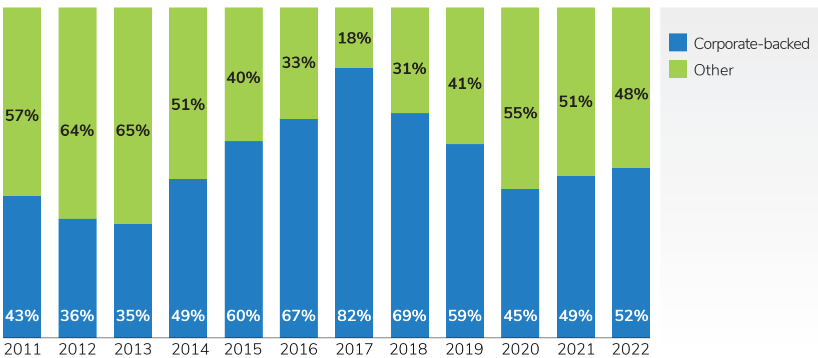


FIG 14: CORPORATE-BACKED DEALS IN 2022 BY QUARTER

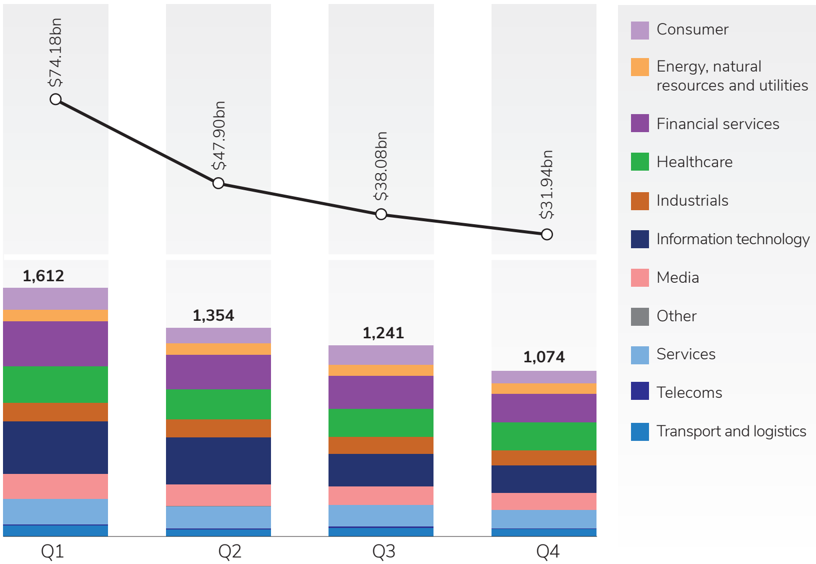
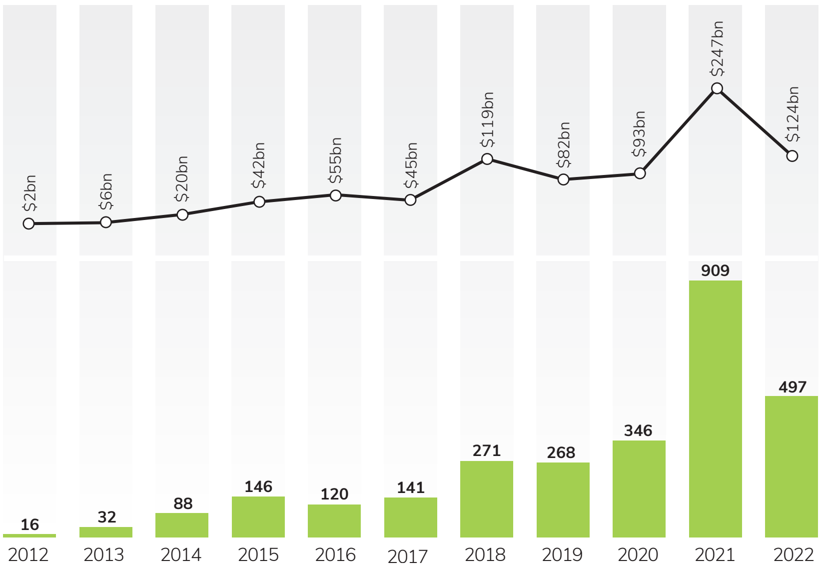


FIG 15: NUMBER AND VALUE OF DEALS RAISED BY COMPANIES WITH $1BN+ 'UNICORN' VALUATIONS



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WHERE ARE CORPORATES INVESTING?

Corporate investors are looking for opportunities in earlier-stage companies. Seed rounds accounted for 18% of all corporate-backed deals in 2022, up from 10% in 2021. This is the highest percentage since GCV has been tracking corporate deals.

The same can be seen across deals when segmented by size. The relative share of deals sized below $10m grew from about a third of the total in the first two quarters of 2022 to more than two-fifths (42%) later in the year. Simultaneously, we saw the share of deals of $100m or larger shrink from 16% in Q1 of 2022 to 8% in Q4.

Six sectors accounted for the bulk of corporate-backed rounds – IT with 1,039 deals, financial services with 917, healthcare with 792, business services with 569, media with 529 and consumer with 448.

FIG 16: DEALS BY SECTOR IN 2022

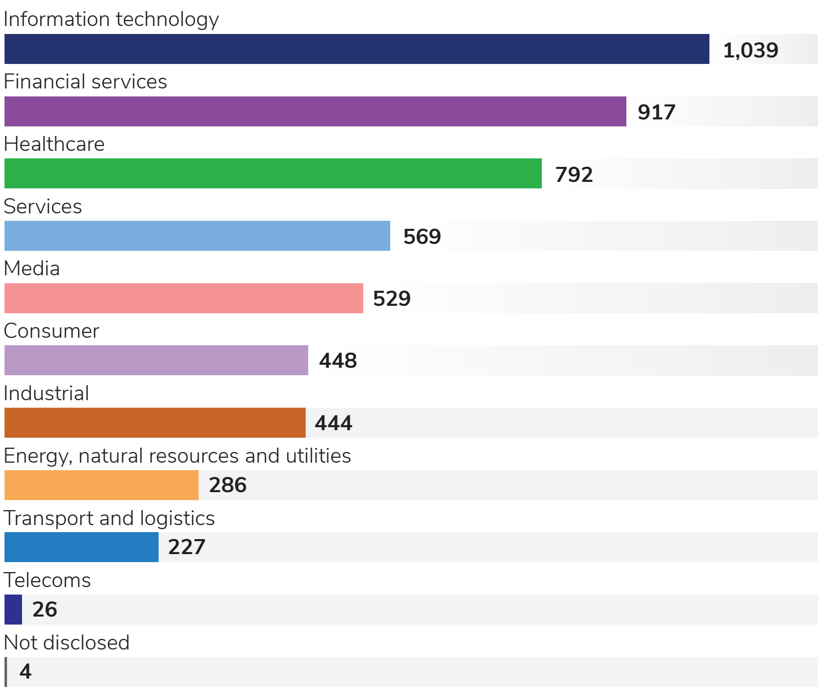


FIG 17: CORPORATE-BACKED REPORTED VC DEALS BY INVESTMENT STAGE

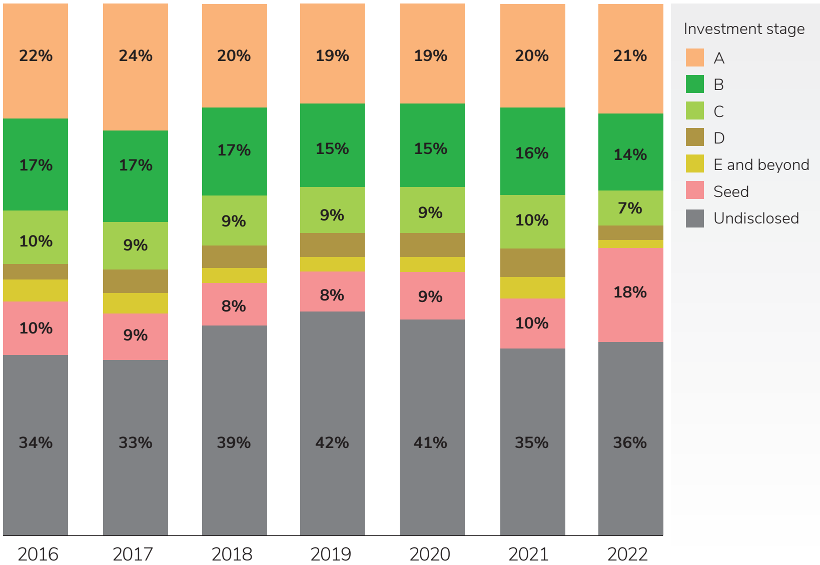
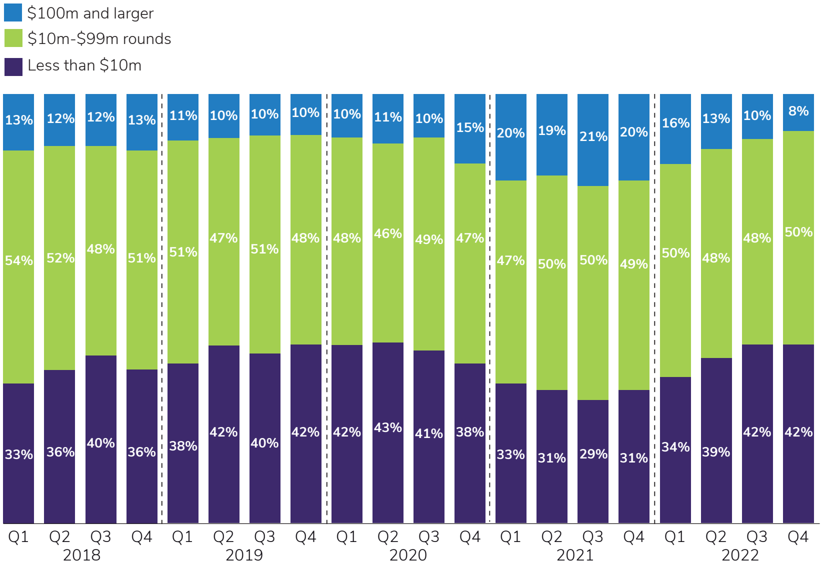


FIG 18: CORPORATE-BACKED DEALS BY SIZE 2018-2022



Most sectors saw deal numbers fall in 2022, except for IT and telcoms (only marginally higher), energy (286 round versus 189) and media (529 versus 454). The increase of deals in energy and media sectors was driven by cleantech and gaming.

Top corporate investors for 2022 included telecoms and internet company SoftBank with 167 deals, Google's parent company Alphabet with 160 investments, game software company Animoca Brands (127) and crypto asset exchange Coinbase (124). The top three investors involved in the largest rounds were also SoftBank, Alphabet and cloud enterprise software Salesforce.

FIG 19: CORORATE-BACKED DEALS 2022 VERSUS 2021 BY SECTOR

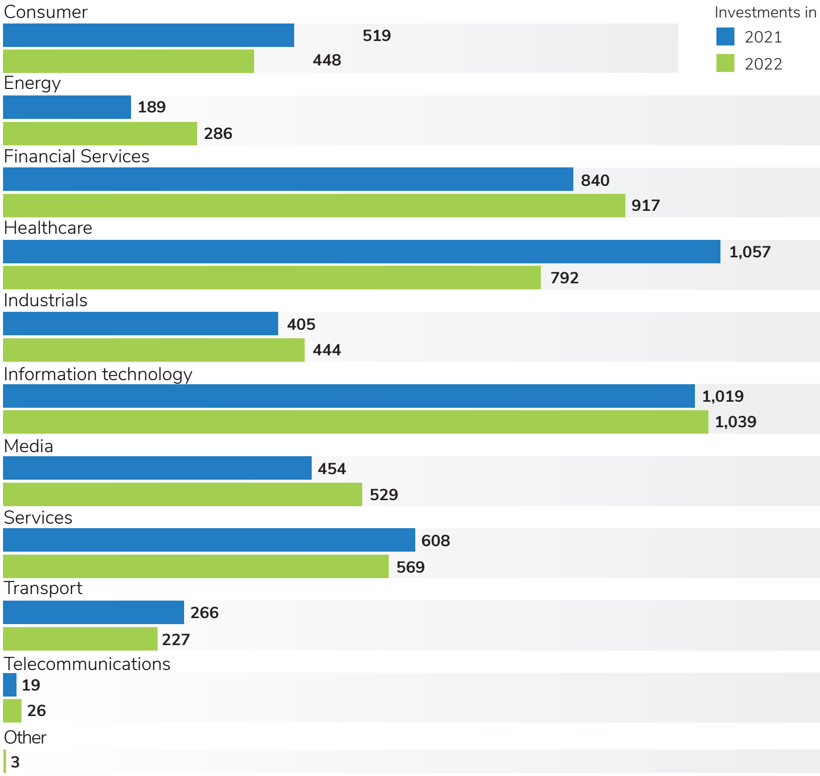


FIG 20: TOP CORPORATE INVESTORS IN 2022 BY NUMBER OF DEALS

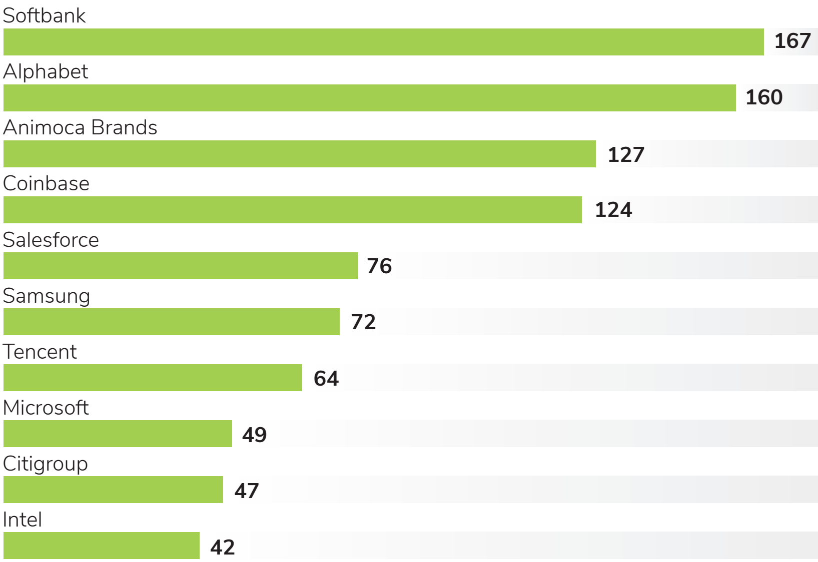
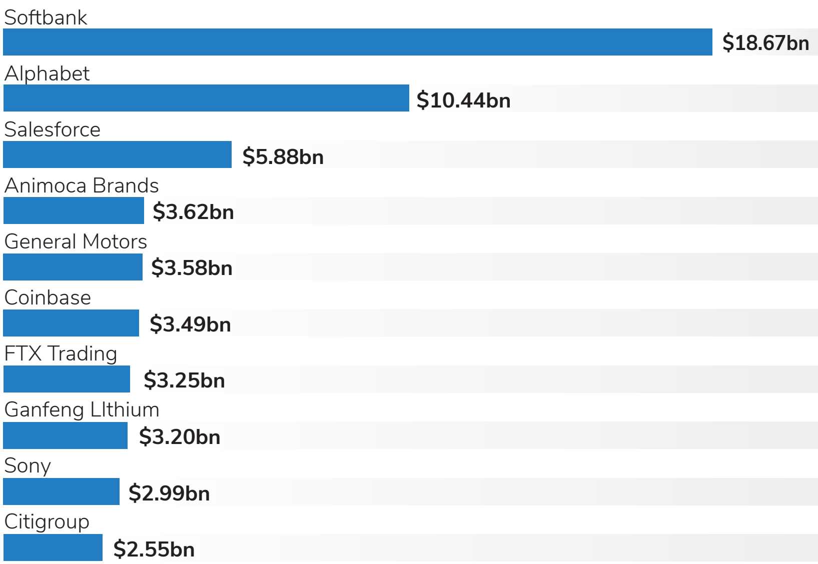


FIG 21: TOP CORPORATE INVESTORS IN 2022 BY TOTAL CAPITAL



RECORD NUMBER OF NEW CVCs

One notable trend in 2022's data is that, despite the bear market, there were a record number of newly launched CVC units – 101 that we reported.

GCV tracked 343 funding initiatives that received corporate backing throughout 2022, including 187 venture funds, where a corporate investor was one of many LPs in the fund and 127 venturing units, where the corporate was the sole investor.

Of these 127 venture units, 101 were new and 26 were rebranded or recapitalised. In addition, we also tracked 14 corporate-backed accelerators, four corporate-backed incubators and 16 other initiatives.

Most of these initiatives were set up in North America (131), Asia (107) and Europe (66), with the latter being the only one of the major innovation regions where such initiatives increased in number *vis-à-vis* last year.

The countries that hosted the largest number of such initiatives were the US (119), Japan (36) and China (18).

The overall number of corporate-backed initiatives registered a 9% decrease compared with the 374 we reported in 2021. The total estimated size of the initiatives ($46.86bn) was 37% lower than the 2021 figure of $74.28bn, though this was largely due to the effect of one large fund – the $30bn Vision Fund 2 in the 2021.

FIG 22: FUNDING INITIATIVES BY COUNTRY 2022

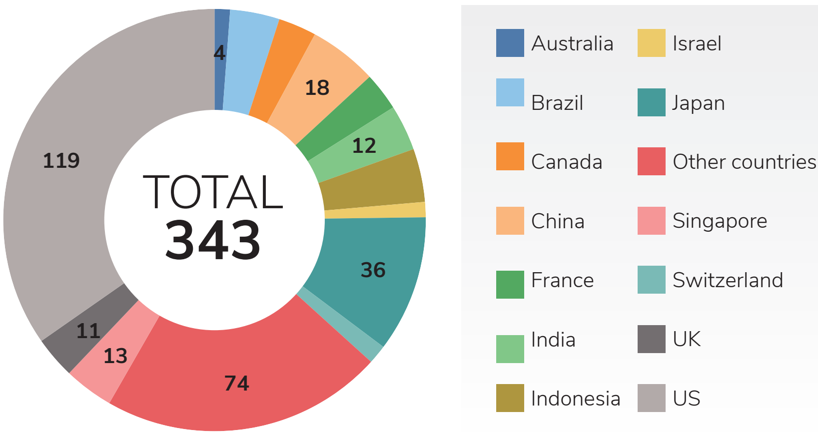


FIG 23: VALUE OF FUNDS RAISED BY REGION 2011-2022

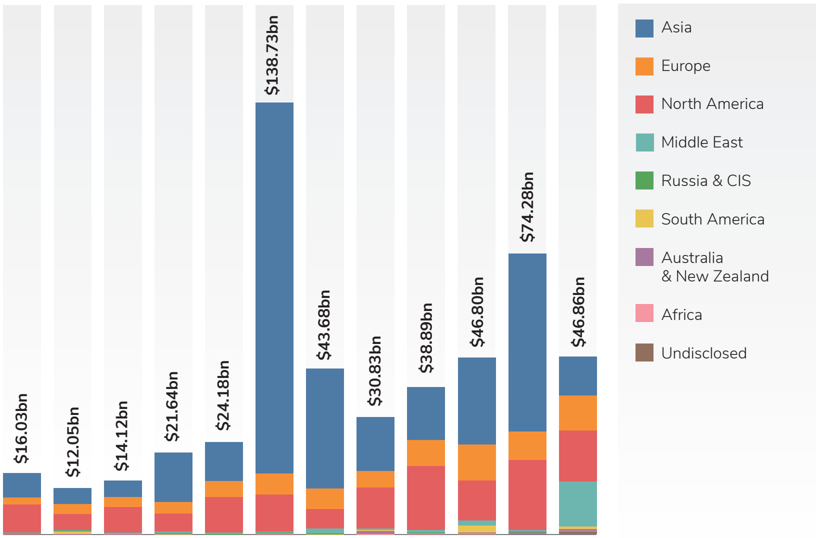


FIG 24: CORPORATE-BACKED FUNDING INITIATIVES BY REGION 2011-2022

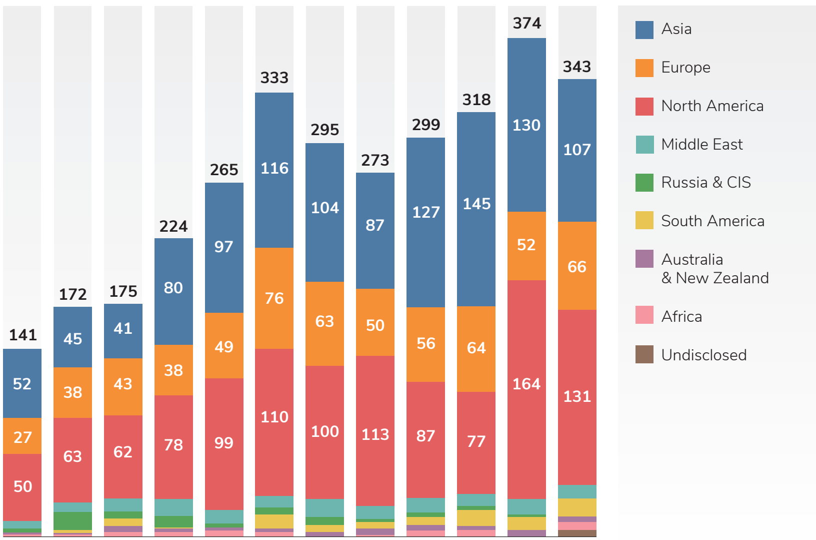


FIG 25: FUNDING INITAITIVES BY TYPE 2022

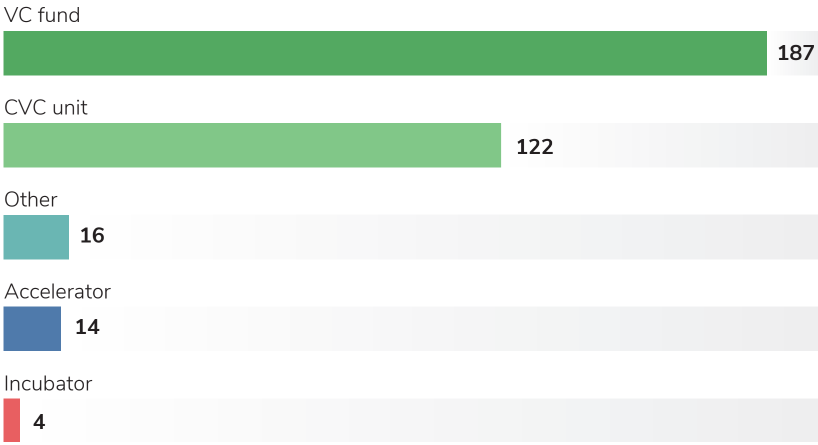
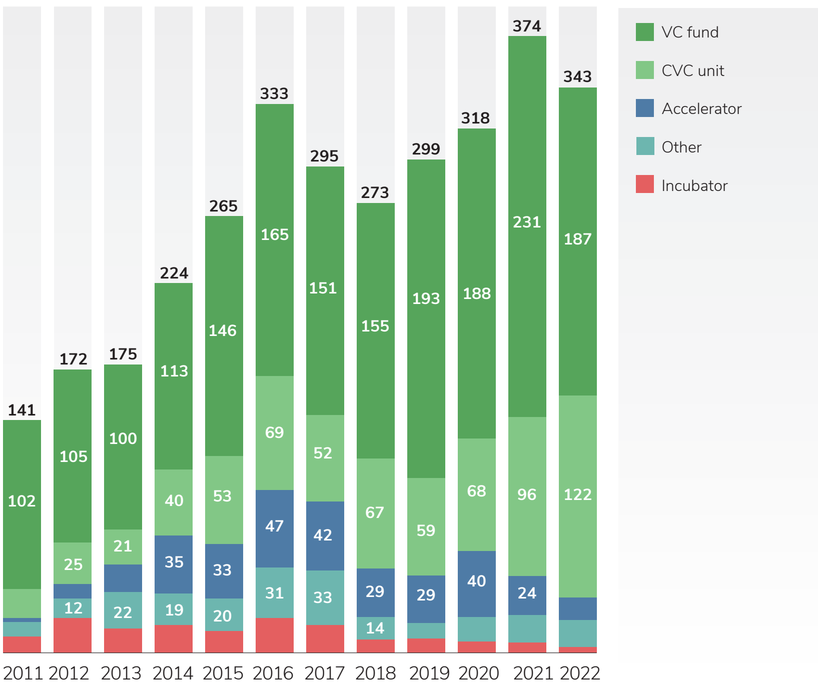


FIG 26: NUMBER OF CORPORATE-BACKED FUNDING INTIATIVES BY TYPE 2011-2022



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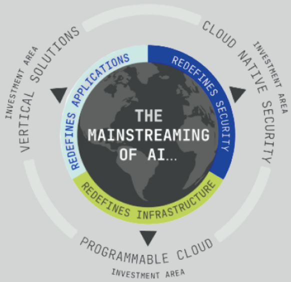

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2 OPPORTUNITY FUNDS
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$1B+ CAPITAL RAISED
$410M ASSETS UNDER MANAGEMENT

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For more info email emmanuel@eaigg.org

TOP DEALS OF 2022

> Large deals still happened in 2022, with six of the top 10 deals well above the $1bn mark. The large deals reflected the key trends of 2022. Five of the largest 10 rounds were connected to the energy transition theme – whether in the form of electric vehicles or batteries or renewable energies. Aside from those deals, we also saw big rounds raised by some non-cyclical businesses (cybersecurity, nutrition), logistics, gaming and e-commerce.

AION
The biggest round of the year went to Aion, the electric vehicle (EV) brand spun off by Chinese carmaker GAC, which raised $2.5bn in series A funding at a $14.6bn valuation from a consortium of more than 50 investors including chipmaker SMIC's China Fortune-Tech Capital fund, battery and lithium product provider Ganfeng Lithium and insurance group PICC.

HOZON
Another EV startup from China that made headlines with its large round was Hozon, which raised $1.5bn in series D funding from backers including cybersecurity software provider 360 Security Technology and battery manufacturer CATL. Hozon specialises in sports utility vehicles and has registered high sales, reputedly by targeting corporate and government customers rather than consumers.

NORTHVOLT
Volkswagen and Ikea holding company Ingka Group contributed to a $1.1bn round reportedly valuing the advanced battery maker Northvolt at $12bn, money which will be used to grow its battery cell and cathode material manufacturing output. Northvolt has developed lithium-ion battery for electric vehicles, which it claims to be eco-friendly, being manufactured with minimal carbon footprint and with recycling technology without compromising important ecosystems.

EPIC GAMES
Consumer electronics producer Sony and Lego holding company Kirkbi each provided $1bn for the video game producer Epic Games valuing it at $31.5bn. The decacorn valuation is attention grabbing but also reflective of the revenues Epic is generating. The company was expected to make $6.3bn in revenue in 2022.

FANATICS.COM
The online sports memorabilia retailer Fanatics.com proved to be a rare bright spot in SoftBank's portfolio last year, hiking its valuation to $31bn in a SoftBank-backed round in December, eight months after it had secured $1.5bn in funding. The National Football League led the earlier round, which also featured Major League Baseball, the National Hockey League and French football club Paris Saint-Germain.

SECURONIX
Cloud cybersecurity software producer Securonix recruited corporate VC units Capital One Ventures, Snowflake Ventures, Verizon Ventures and Wipro Ventures for a round that topped $1bn. The company claims to have half of the Global Fortune 10 as customers and its security information and event management software is cloud native.

NUTRABOLT
Beverage producer Keurig Dr Pepper paid more than $860m for a 30% stake in nutritional supplement provider Nutrabolt. The transaction valued the company at an estimated $2.87bn. Founded in 2002, the company develops dietary supplements for pre-workout, protein and post-workout recovery that are available in a variety of flavours.

FLEXPORT
US-based logistics services platform developer Flexport raised $935m in a series E round featuring SoftBank and e-commerce software provider Shopify at a valuation of $8bn post-money. SoftBank invested through its Vision Fund 1. Founded in 2013, Flexport operates a cloud-based logistics system allowing customers to book shipments by air, sea, land or rail globally, offering end-to-end cargo insurance, real-time tracking and all-inclusive billing.

SUNWODA ELECTRIC VEHICLE BATTERY
China-based Sunwoda Electric Vehicle Battery, an EV battery subsidiary of Chinese battery producer Sunwoda Electronic, received RMB6bn ($875m) in a series A round from a number of investors, including food delivery service provider Meituan. Launched in 2014, Sunwoda EVB develops EV battery cells and management systems, operating 11 production bases in China and India, with technical and customer service centres in the US and Europe, according to *Deal Street Asia*.

SILICON RANCH CORPORATION
Insurer Manulife's Investment Management subsidiary led a $775m round for Silicon Ranch Corporation that also featured Shell Energy, the Shell subsidiary that originally launched the solar power producer. Silicon Ranch builds and operates grid-scale solar farms, most of which are situated in the sun-rich south-east and south-west areas of the US, providing electricity to the grid as well as dedicated customers including factories, schools and defence facilities.

TABLE 1: TOP 10 DEALS OF 2022

Portfolio company	Round	Sector	Size	Investors
Aion	A	Transport	$2.5bn	Capital Operation, Ganfeng Lithium, Guangzhou Industrial Investment Group, SMIC.
Epic Games	Undisclosed	Media	$2bn	Kirkbi, Sony.
Hozon	D	Transport	$1.5bn	360 Enterprise Security Group, CATL, Dayone Capital, Hongtai Aplus, Insight Capital, private investors, QianHai Equity Investment FOF, Shenzhen Capital Group.

Portfolio company	Round	Sector	Size	Investors
Fanatics.com	Undisclosed	Media	$1.5bn	BlackRock, Fidelity, Major League Baseball, MSD Capital, National Football League, National Hockey League, NFL Players Association (NFLPA), Paris Saint-Germain, private investors, Qatar Investment Authority.
Northvolt	Undisclosed	Energy	$1.02bn	AMF, ATP, Ava Investors, Baillie Gifford, Compagnia di San Paolo, Folksam Group, Goldman Sachs, Ingka Group, Olympia Group, Omers, PCS Holding, Swedbank Robur, TM Capital, Volkswagen.
Securonix	Undisclosed	IT	$1bn	Capital One, Eight Roads Ventures, Snowflake Ventures, Verizon, Verizon Ventures, Vista Equity Partners, Wipro.
Flexport	E and beyond	Services	$935m	Andreessen Horowitz, DST Global, Founders Fund, MSD Partners, private investors, Shopify, SoftBank, undisclosed investors.
Sunwoda Electronic	A	Industrial	$875m	Broad Vision Funds, Co-Stone Capital, Meituan, Shenzhen Capital Group, Source Code Capital.
Nutrabolt	Undisclosed	Consumer	$863m	Keurig Dr Pepper.
Silicon Ranch	Undisclosed	Energy	$775m	Manulife Financial, Mountain Group, Royal Dutch Shell, Toronto-Dominion.

TOP EXITS OF 2022

- A pullback in the IPO markets in 2022 meant fewer exits. GCV Analytics tracked 458 exits involving corporate venturers and companies backed by such investors, a 31% decrease from the previous year's 658.
- The US hosted 227 of those transactions, followed by the UK (30), India (19), China (17), Israel (16) and Japan (14). The total estimated capital involved in the exits stood at $59.99bn, 71% below the $209.8bn registered in 2021.
- Most of the top exits in 2022 were acquisitions, although a handful of high-profile IPOs (initial public offerings) or IPO filings did take place.

SVOLT ENERGY
SVolt Energy, an electric vehicle producer spun off by China-based carmaker Great Wall Motors, filed to raise up to RMB15bn ($2.1bn) in an IPO on the Shanghai Stock Exchange's Star Market. Svolt is developing energy storage and related products including battery materials, cells, modules, packs and battery management systems.

PENSANDO
Semiconductor producer AMD agreed to acquire US-based edge computing technology provider Pensando in a $1.9bn deal allowing corporates Hewlett Packard Enterprise (HPE), Equinix, Alphabet, Ericsson, NetApp, Oracle, Liberty Global and Qualcomm to exit. Pensando has developed a distributed, programmable processor and software platform to help customers' existing network architecture function more like cloud networks in order to support high-velocity applications.

BUDBEE
Last-mile delivery service Instabox merged with Budbee, a Sweden-based smart lock technology developer backed by fashion retailer H&M, in a SEK18bn ($1.7bn) deal. Budbee runs an app-based last-mile delivery service that enables users to control parameters such as delivery times and how they should be notified once the package arrives. The company operates across Sweden, Denmark, Finland and the Netherlands.

UNITED IMAGING HEALTHCARE
China-based medical imaging company United Imaging Healthcare went public on the Shanghai Stock Exchange and its price soared in its first day of trading, with shares jumping 65%. The company reportedly raised $1.5bn in the flotation. Previous backers of the company include investment firm Maidexin Yiliao and grocery stores chain StarMarket.

IFOOD
Internet group Prosus (Naspers) agreed to buy the 33.3% stake in Brazil-based portfolio company iFood it did not own, from fellow food delivery service Just Eat for €1.5bn in cash and an additional contingent consideration of up to €300m. iFood runs an online platform that allows customers to order food from a network of more than 50,000 restaurants.

SERVICEMAX
US-based ServiceMax, a provider of asset-centric field service management, agreed to be acquired by lifecycle management developer PTC for $1.46bn. The acquisition is expected to strengthen PTC's closed-loop product lifecycle management offerings. The company counted cloud computing firm Salesforce among its previous backers.

LEAPMOTOR
Leapmotor, the China-based electric vehicle manufacturer backed by corporates Dahua Technology, Shanghai Electric and CRRC, raised a $1.5bn IPO on the Hong Kong Stock Exchange. The flotation attracted 15 cornerstone investors who agreed to purchase around $736m worth of stock. Leapmotor manufactures smart EVs including compact cars and sports utility vehicles, in addition to electronic parts, hardware and software that support intelligent power and self-driving systems.

DEEZER
Deezer, the France-headquartered online audio streaming service which counts French telecoms operator Orange among its backers, agreed to a reverse takeover with I2PO, a special purpose acquisition company that had floated on the Euronext Paris market in July 2021. The deal valued the music service at €1.05bn ($1.13bn) pre-money. In addition to Orange, corporate investors including Access Industries, Rotana, ProSiebenSat.1, Universal Music Group, Sony and EMI also benefitted from the exit.

FIGMA
Graphic design software provider Adobe agreed to acquire Figma, a US-based interface design tool developer backed by media group O'Reilly, for $20bn. This was the biggest exit scored in 2022 and somewhat unusual, given the overall bearish conditions in public and M&A markets. So much so, in fact, that the *Financial Times* even called it a "dumb deal". The company had been valued at $10bn as of a $200m series E round in June 2021. Founded in 2012, Figma provides an online platform that helps user interface engineers create projects together with their clients remotely and in real time. Airbnb, Alphabet, Google, Herman Miller and Kimberly-Clark are among its customers.

BUNGIE
Sony Interactive Entertainment (SIE), a subsidiary of electronics group Sony, agreed to acquire US-based video game developer Bungie in a $3.6bn deal allowing internet and online gaming company NetEase to exit. Bungie, which was founded in 1991 and is responsible for the creation of the Halo and Destiny game franchises, will operate as an independent subsidiary of SIE following the acquisition. The news came two weeks after the announcement of the planned $68.7bn takeover of Activision Blizzard, the studio that oversees game franchises including Call of Duty, World of Warcraft, Guitar Hero and Candy Crush, by Microsoft.

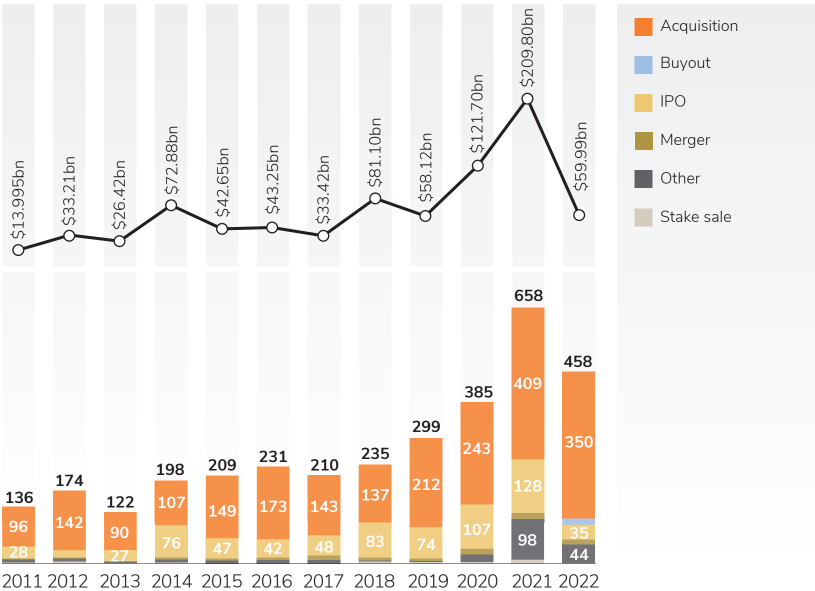
TABLE 1: TOP 10 EXITS OF 2022

Portfolio company	Sector	Exit type	Size	Investors
Figma	IT	Acquisition	$20bn	Adobe, Andreessen Horowitz, Greylock Partners, Kleiner Perkins, Sequoia, Tru Arrow Partners.
Bungie	Media	Acquisition	$3.6bn	NetEase.

Portfolio company	Sector	Exit type	Size	Investors
SVolt Energy	Energy	IPO	$2.1bn	Alan Asset Management, Bank of China, Beijing Financial Street Capital, Cathay Capital, CCB Investments, CDH Investments, Changzhou Venture Capital Group, China Development Bank, China Mobile, China Renaissance, Han's Laser Technology, Pine Venture Partners, Xiaomi.
Pensando Systems	IT	Acquisition	$1.9bn	Advanced Micro Devices (AMD), Alphabet, Equinix, Ericsson, Goldman Sachs, Hewlett Packard Enterprises, JC2 Ventures, Liberty Global, Lightspeed Venture Partners, NetApp, Oracle, Qualcomm.
Budbee	Services	Merger	$1.7bn	AMF, CNI, H&M, Instabox, Stena Sessan.
United Imaging Healthcare	Health	IPO	$1.6bn	Maidexin Yiliao, Qingsong Fund, Shenzhen GTJA Investment Group, StarMarket, Tianren Investment.
IFood	Consumer	Acquisition	$1.52bn	Innova Capital, Just Eat, Naspers.
Leapmotor	Transport	IPO	$1.5bn	Hong Kong Stock Exchange.
ServiceMax	IT	Acquisition	$1.46bn	Salesforce, Silver Lake.
Deezer	Media	Other	$1.28bn	Access Industries, Orange, ProSiebenSat.1, Rotana Group, Sony, Universal Music Group.

FIG 27: GLOBAL VIEW OF CORPORATE EXITS 2022

FIG 28: CORPORATE EXITS BY YEAR 2011-2022



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Benefits	Newly-Formed CVCs	Premium Level	Luminary Level
GCV news / website access	2 users	Unlimited users	Unlimited users
GCV Event Tickets (annual) Additional event ticket discount*	1 15%	2 20%	4 25%
GCV Institute Credit Additional Institute course discount*	$1,800 10%	$2,500 10%	$3,000 10%
GCV Touchstone CVC benchmarking – annual survey report	Included	Included	Included
Discounts on GCV Touchstone custom data slice, light touch advisory projects	10%	15%	15%
Event Partnership discount	10%	15%	20%
Institute Alumni and members-only gatherings	Included	Included	Included
Invitations to various VIP sessions	Included	Included	Included
Access to industry sector councils	Included	Included	Included
Right to showcase membership with GCV logo	Included	Included	Included
Assistance in arranging 1:1 meetings at GCV events	Included	Included	Included
GCV Global CVC Directory See 'who's who' in corporate venturing	Full Access	Full Access	Full Access
Biennial Editorial Interview / Overview of your CVC	n/a	Included	Included
Portfolio Company Showcase	n/a	2	4
Advisory Board Seat	n/a	by invitation only	1
Branding on Leadership Society Marketing Materials	n/a	n/a	Included
Annual	**$9,995**	**$15,500**	**$26,500**
2 Years	**$17,500**	**$28,000**	**$50,000**

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TOP FUNDING INITIATIVES

> Eight of the top ten largest corporate-backed initiatives stood at or above the $1bn mark. Their focus spans through everything that may conceivably be hot in the coming years – from sustainability, cleantech through consumer tech, media and life sciences to financial services and real estate.

G42
United Arab Emirates-based artificial intelligence and cloud technology provider G42 launched a $10bn venture capital fund, for which the government-owned Abu Dhabi Growth Fund provided most of the cash. The fund will target computing, communications, mobility, cleantech, renewables, digital infrastructure, new materials, multiverse, financial and healthcare technology. The vehicle will run as a private equity investor, with a significant focus on high-growth regions.

CIBC INNOVATION BANKING
CIBC Innovation Banking, a Canadian financial partner for investors and entrepreneurs, allocated an additional $1.5bn of growth capital to support later-stage companies as the venture capital market slows. The new initiative aims to back later-stage, venture-backed companies across software, life sciences, healthcare and cleantech industries, with deals ranging from $50m to $100m in capital.

ARAMCO VENTURES
Aramco Ventures, a corporate venturing subsidiary of Saudi Arabia-based oil and gas producer Saudi Aramco, formed a $1.5bn vehicle to back energy transition technology developers. Areas of interest for Aramco's Sustainability Fund include carbon capture and storage, greenhouse gas emissions, energy efficiency, digital sustainability, hydrogen, ammonia and synthetic fuels.

LEAPS BY BAYER

Leaps by Bayer, the corporate venturing unit of Germany-based drugs and crops company Bayer, committed a further €1.3bn over the next three years to more than double the pace of spending to date. The new investment plan was announced with a focus on cell and gene therapy and precision health for consumers and innovations enabling farmers to ensure food security and decarbonise agriculture. Bayer had previously invested €1.3bn in more than 50 companies in the past seven years.

SHELL

Energy group Shell set up a $1.4bn corporate venturing fund to invest in "innovative companies" working towards accelerating the energy transition. The fund will be deployed over the next six years to support startups and scaleups. Shell had set up its corporate venturing unit, then called Shell Technology Ventures, in 1997, initially to fund companies in the oil and gas industry, now has an active portfolio of more than 90 companies.

INTEL CAPITAL

Intel Capital, launched a $1bn investment vehicle with its semiconductor fabrication business, Intel Foundry Services (IFS), to foster an innovation ecosystem surrounding fab technology. The fund will back early-stage developers of foundry-related technologies with the potential to help reduce the time to market for IFS's customers, covering areas such as IP, software, innovative semiconductor architectures and advanced packaging.

AMAZON

Amazon announced a $1bn investment vehicle that will back customer fulfilment, logistics and supply chain technology developers. Amazon Industrial Innovation Fund will invest at early and late stage, targeting technologies capable of improving the speed and efficiency of product delivery. Robotics, artificial intelligence, machine learning and autonomous systems are among its areas of interest.

CATHAY INNOVATION

Cathay Innovation, a subsidiary overseen by France-based investment firm Cathay Capital, launched a third fund sized at $1bn, having secured multiple corporate LPs. Those include Groupe ADP, Kering, TotalEnergies, L'Oreal, Michelin, Pernod Ricard, Sanofi, SEB Groupe, Unilever and Valeo.

FIFTH WALL'S REAL ESTATE TECHNOLOGY FUND III
Among the LPs (limited partners) for US-headquartered VC firm Fifth Wall's Real Estate Technology Fund III, were conglomerate Keppel and real estate developers CBRE, Cushman & Wakefield, Equity Residential, Essent, Granite Properties, Hines, Invitation Homes, JBG Smith Properties, Meritage Homes, Meritage Homes, The Moinian Group, Move and PulteGroup. The vehicle reached a final close of $866m. Other LPs for the fund include Annaly Capital Management, Arbor Realty Trust, BPIfrance's Digital Funds of Funds, Koch Real Estate Investments, Lineage Ventures, Physicians Realty Trust, CFG Bank and its Capital Funding subsidiary, as well as employees of Northwood Investors.

BAI CAPITAL
Bertelsmann's Chinese venture capital arm, BAI Capital, received external investment for the first time to close a $700m fund that will help portfolio companies expand overseas. Also known as Bertelsmann Asia Investments, BAI Capital was set up by German media conglomerate Bertelsmann in 2008 to target the Chinese consumer market. Bertelsmann continues to supply finance for BAI, but its latest fund has received support from undisclosed internet groups, insurance firms, sovereign wealth funds and funds-of-fund. The firm targets retail and financial technology developers, as well as businesses focusing on online media content, the metaverse and the wider Web3 sector, which could encompass cryptocurrency, decentralised finance and non-fungible tokens.

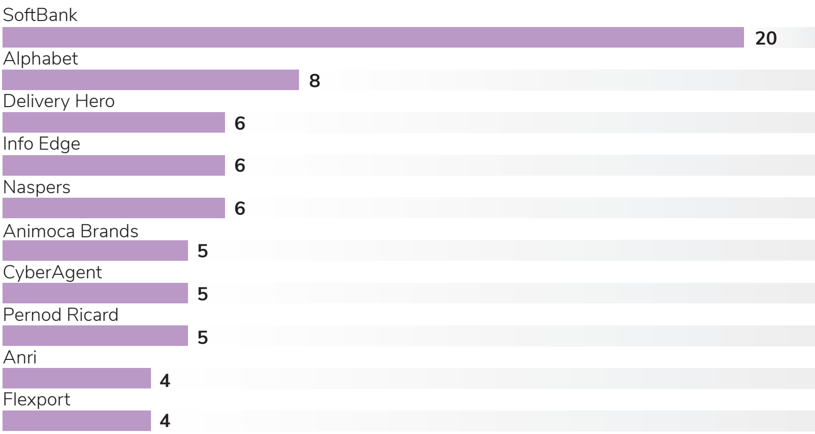
TABLE 1: TOP 10 FUNDING INITIATIVES OF 2022

Initiative name	Type	Sector	Size	Investors
G42 Expansion Fund	VC Fund	IT; Transport	$10bn	Abu Dhabi Investment Authority, Beyond Limits, Cerebras, Flyr, G42 , Oxford Nanopore Technologies.
CIBC Innovation Banking Fund (Unicorn Fuel)	CVC Unit	Financial services	$1.5bn	Canadian Imperial Bank of Commerce.

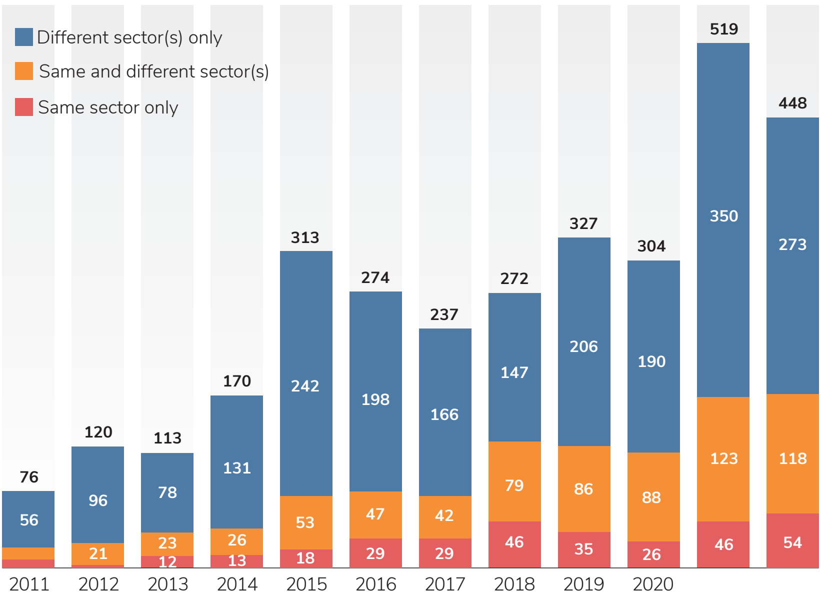
Initiative name	Type	Sector	Size	Investors
Saudi Aramco Sustainability fund	CVC Unit	Energy	$1.5bn	Saudi Aramco.
Leaps by Bayer	CVC Unit	Health	$1.44bn	Bayer.
Unnamed Shell Fund	VC Fund	Energy	$1.4bn	Royal Dutch Shell.
Unnamed $1bn Intel semiconductor fund	VC Fund	IT	$1bn	Intel.
Amazon Industrial Innovation Fund	CVC Unit	Consumer; Industrial	$1bn	Amazon
Cathay Innovation Fund III	VC Fund	Financial services	$1bn	Accor, BNP Paribas, Cathay Capital, Groupe ADP, Kering, L'Oreal, Michelin, Pernod Ricard, Pifrance, Sanofi, SEB Groupe, Total, Unilever, Valeo.
Real Estate Technology Fund III	VC Fund	Services	$886m	Annaly Capital Management, Arbor Realty Trust, Bpifrance, CBRE, CFG Bank, Cushman & Wakefield, Equity Residential, Essent, Granite Properties, Hines, Invitation Homes, JBG SMITH Properties, Keppel Corporation, Koch Industries, Link-Age, Meritage Homes, Northwood Investors, Physicians Realty Trust, PulteGroup, The Moinian Group.
BAI Capital	VC Fund	Media	$700m	Bertelsmann, undisclosed investors.

Consumer

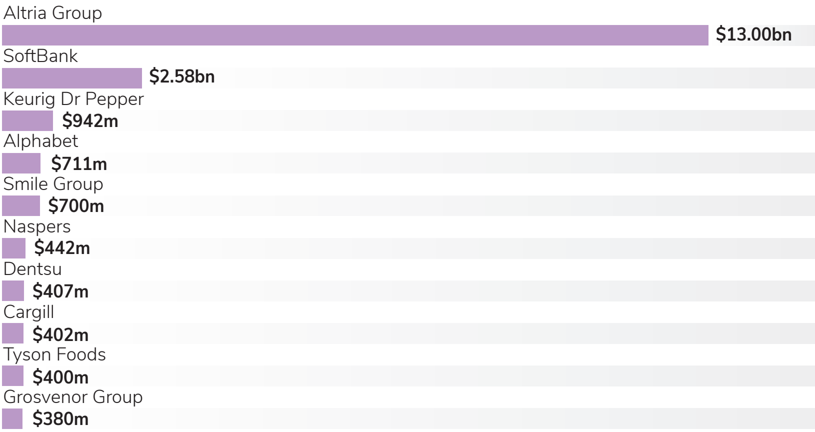
TOP INVESTORS IN CONSUMER SECTOR (VOLUME)



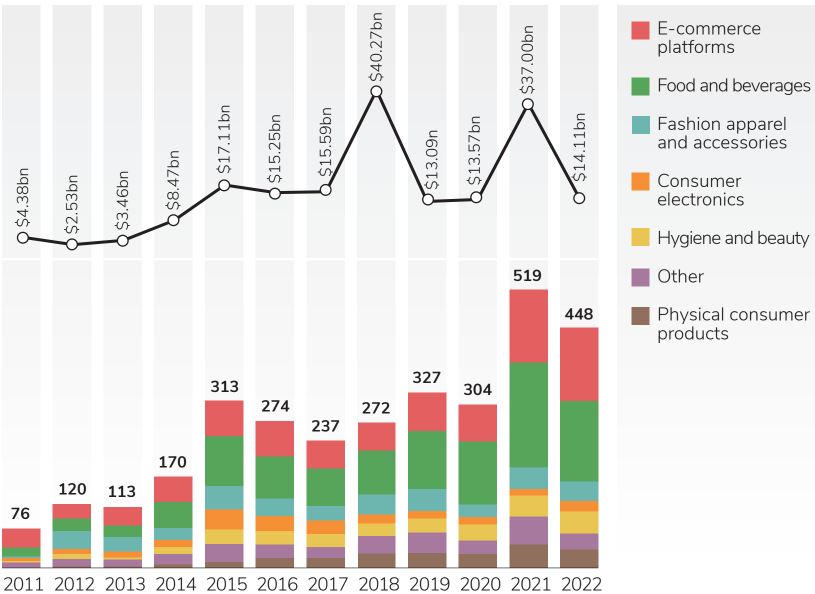
DEALS IN CONSUMER STARTUPS BY CORPORATE BACKERS



TOP INVESTORS IN CONSUMER SECTOR (VALUE)

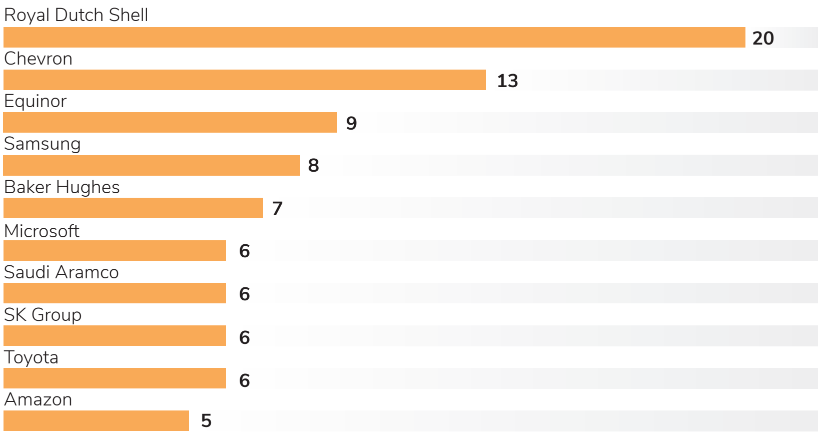


CORPORATE-BACKED ROUNDS IN CONSUMER STARTUPS BY SUB-SECTOR

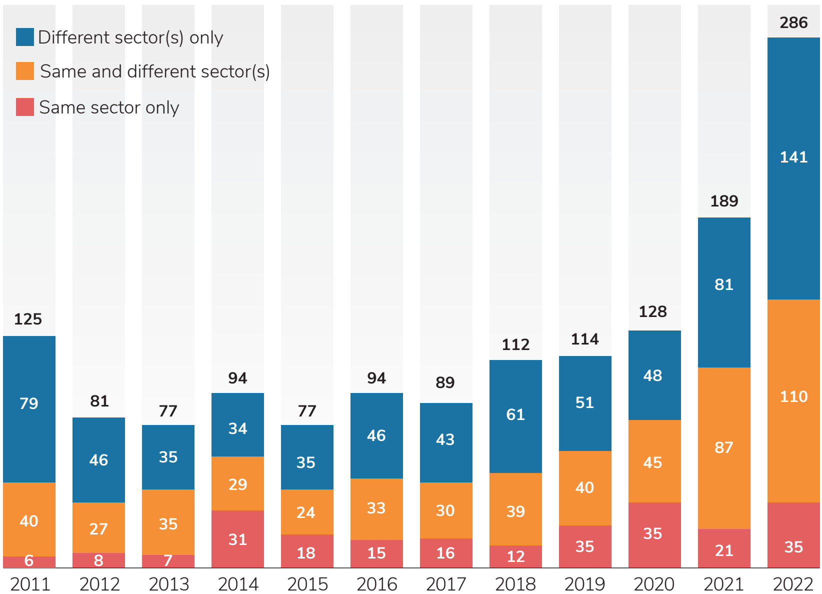


Energy

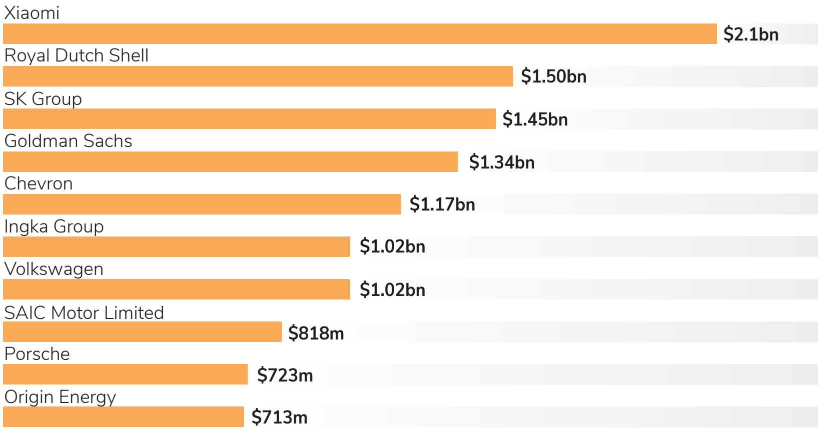
TOP INVESTORS IN ENERGY SECTOR (VOLUME)



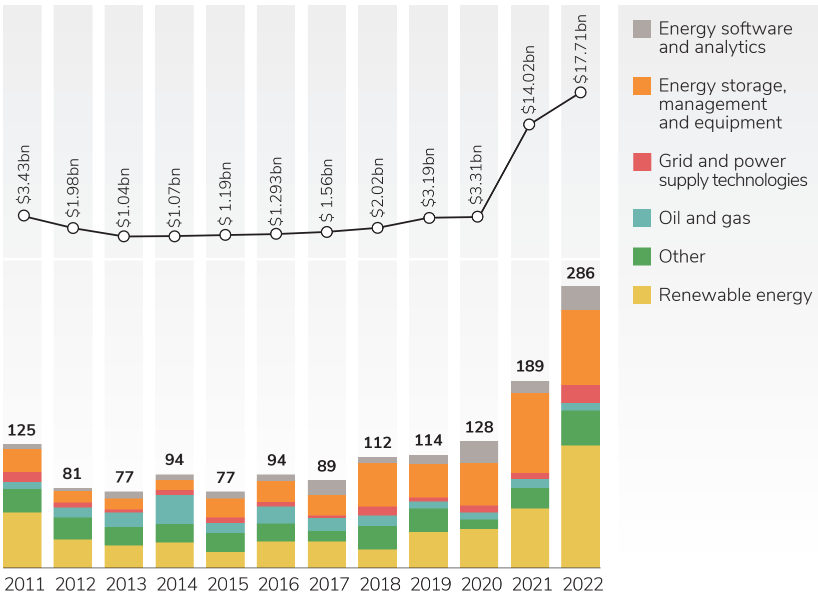
DEALS IN ENERGY STARTUPS BY CORPORATE BACKERS



TOP INVESTORS IN ENERGY SECTOR (VALUE)



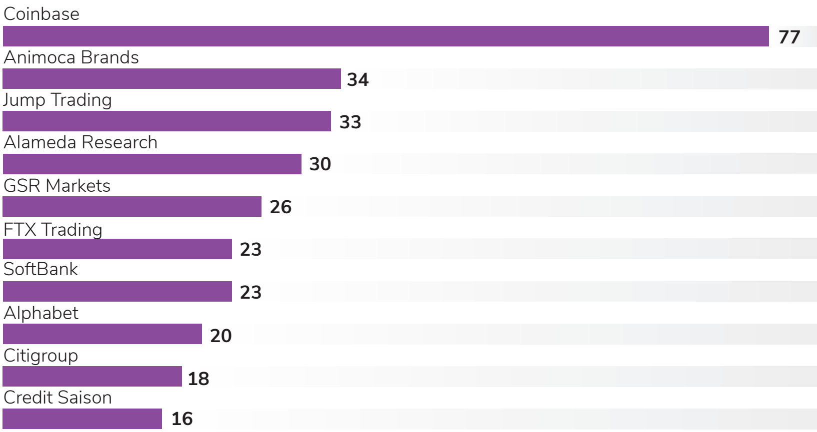
CORPORATE-BACKED ROUNDS IN ENERGY STARTUPS BY SUBSECTOR



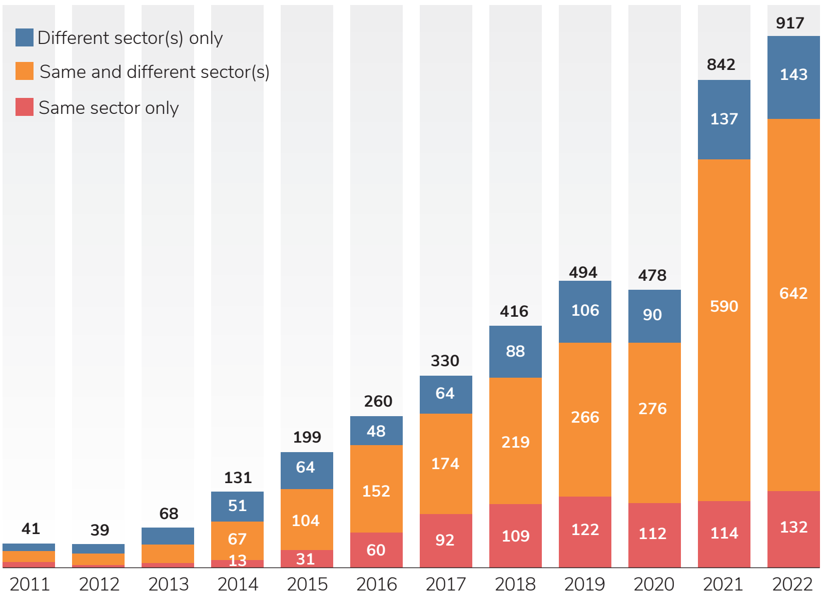
Global Corporate Venturing

Financial services

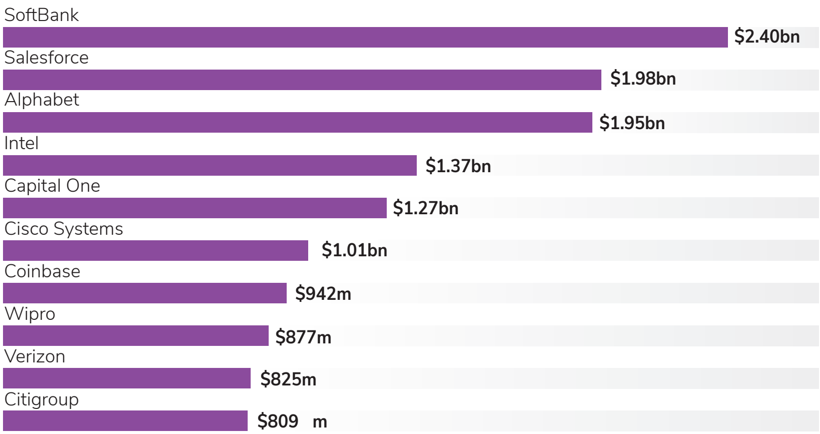
TOP INVESTORS IN FINANCIAL SERVICES SECTOR (VOLUME)



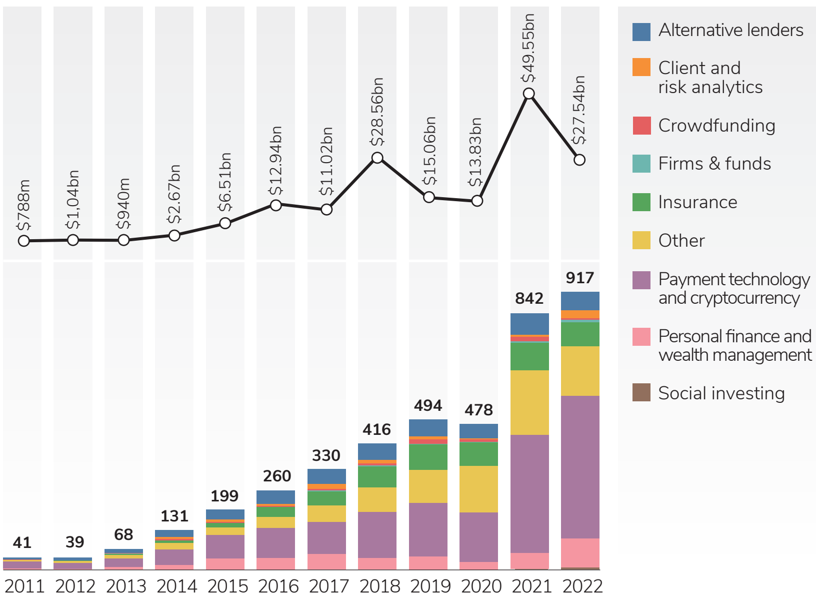
DEALS IN FINANCIAL STARTUPS BY CORPORATE BACKERS



TOP INVESTORS IN FINANCIAL SERVICES SECTOR (VALUE)

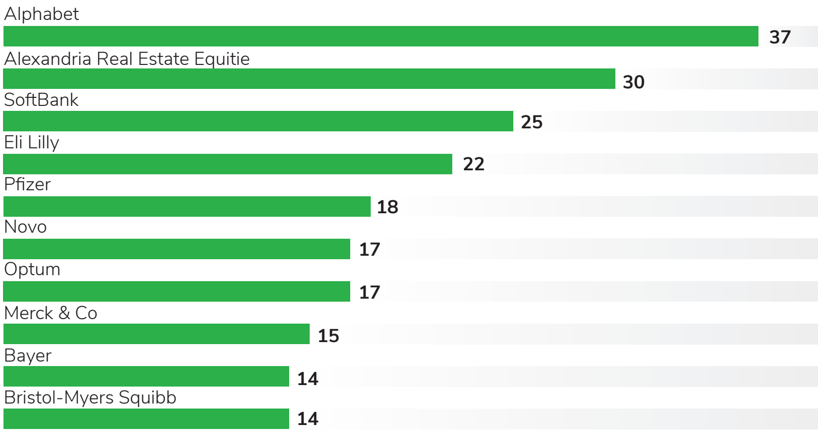


CORPORATE-BACKED ROUNDS IN FINANCIAL SERVICES STARTUPS BY SUBSECTOR

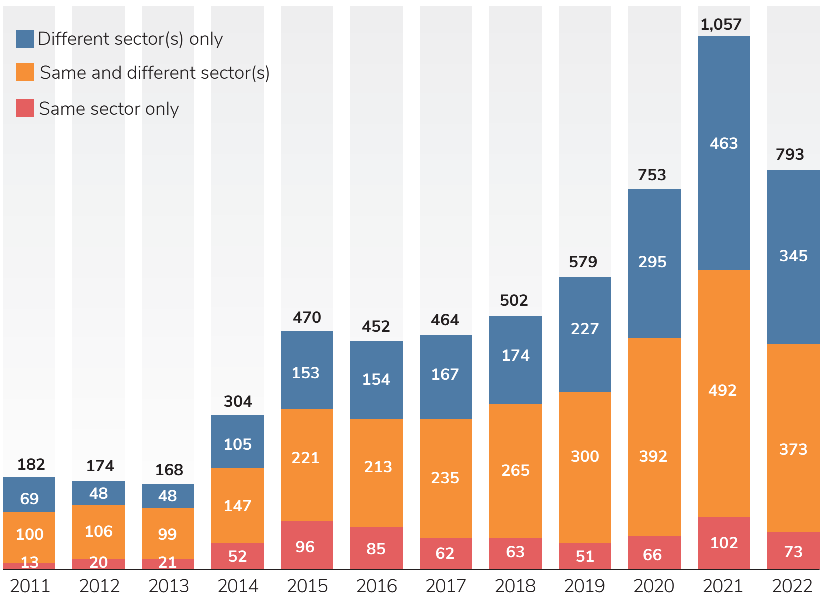


Healthcare

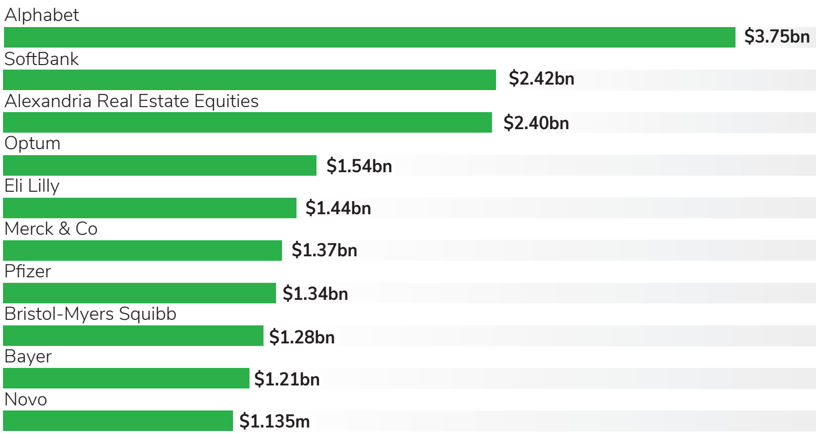
TOP INVESTORS IN HEALTHCARE SECTOR (VOLUME)



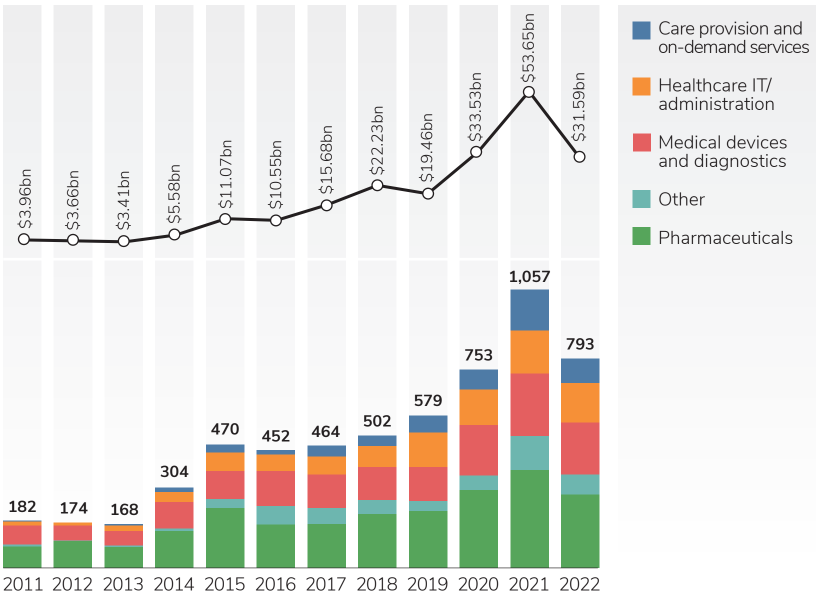
DEALS IN HEALTHCARE STARTUPS BY CORPORATE BACKERS



TOP INVESTORS IN HEALTHCARE SECTOR (VALUE)

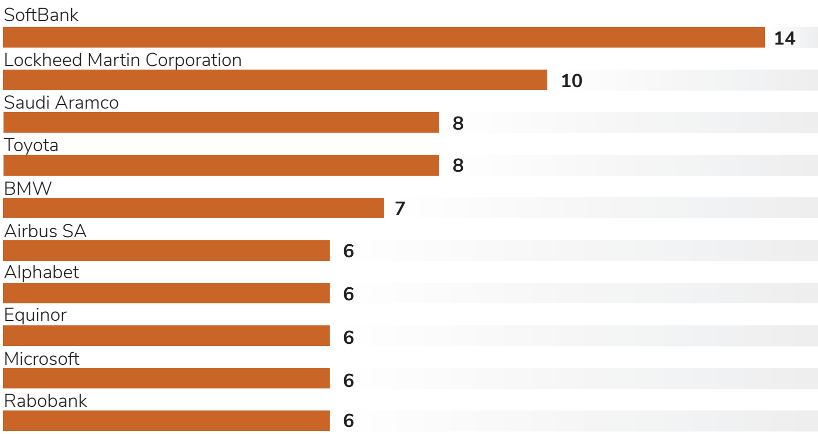


CORPORATE-BACKED ROUNDS IN HEALTHCARE STARTUPS BY SUBSECTOR

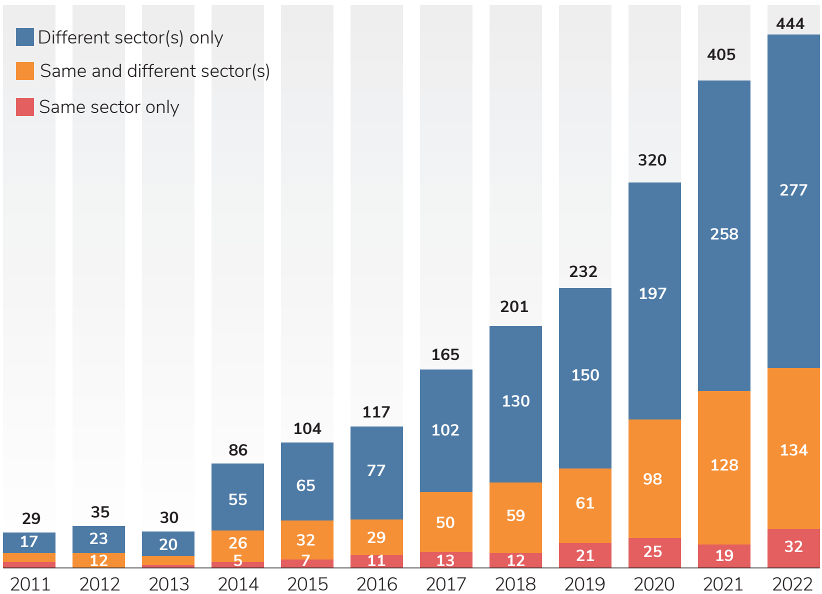


Industrial

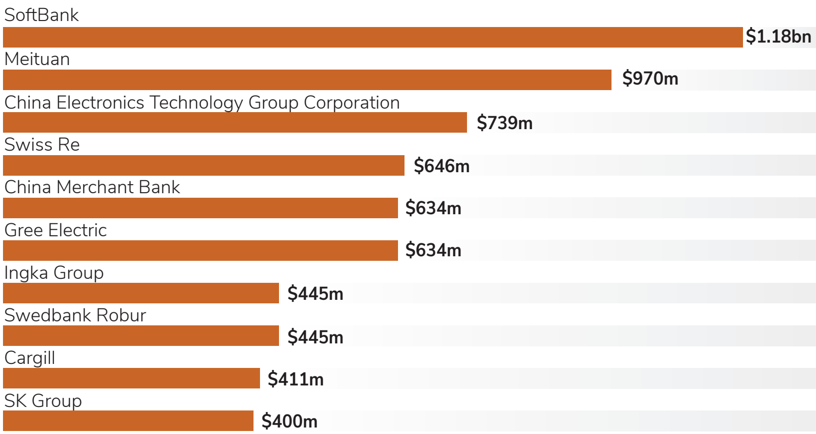
TOP INVESTORS IN INDUSTRIAL SECTOR (VOLUME)



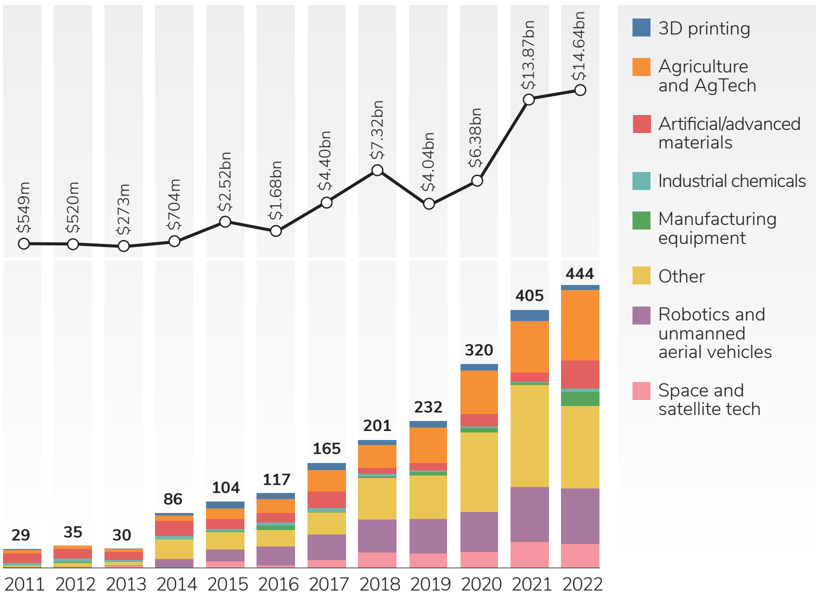
DEALS IN INDUSTRIAL STARTUPS BY CORPORATE BACKERS



TOP INVESTORS IN INDUSTRIAL SECTOR (VALUE)

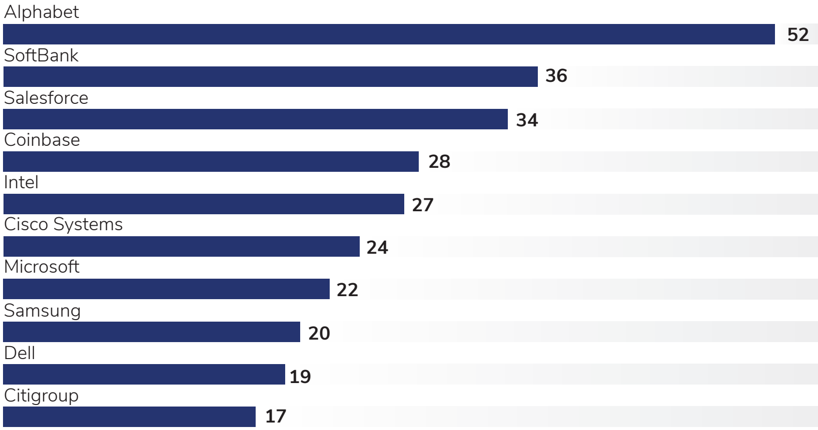


CORPORATE-BACKED ROUNDS IN INDUSTRIAL STARTUPS BY SUBSECTOR

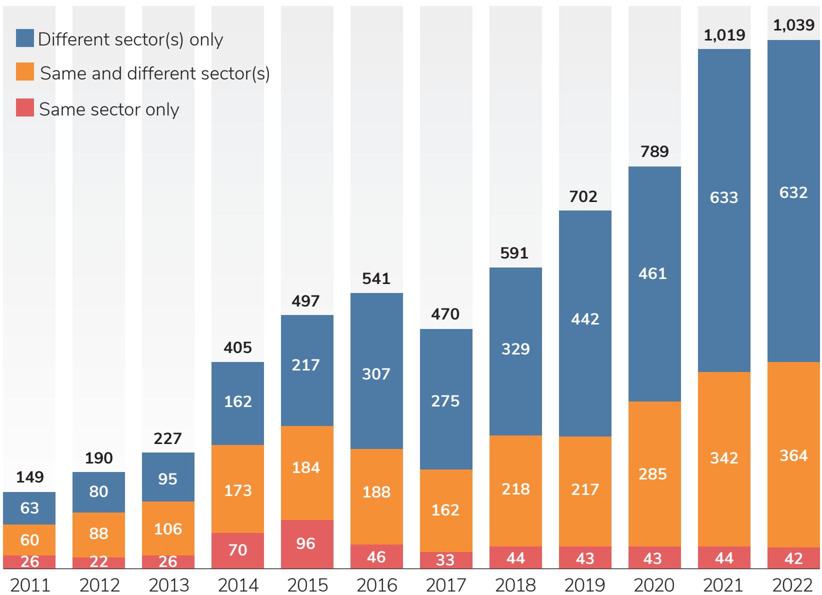


Information technology

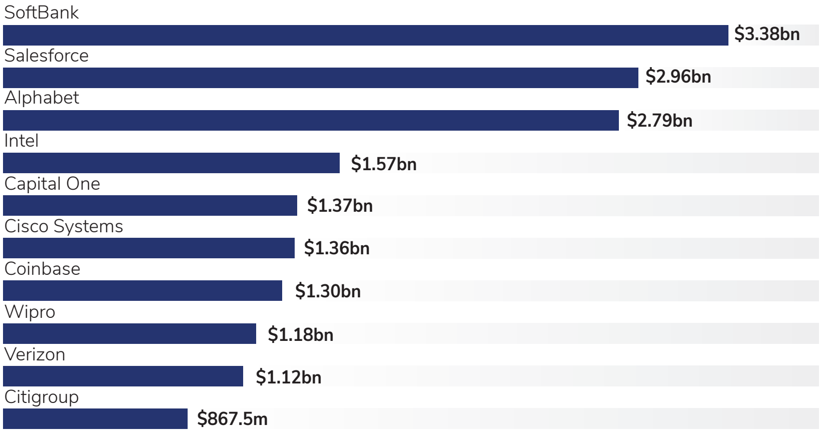
TOP INVESTORS IN IT SECTOR (VOLUME)



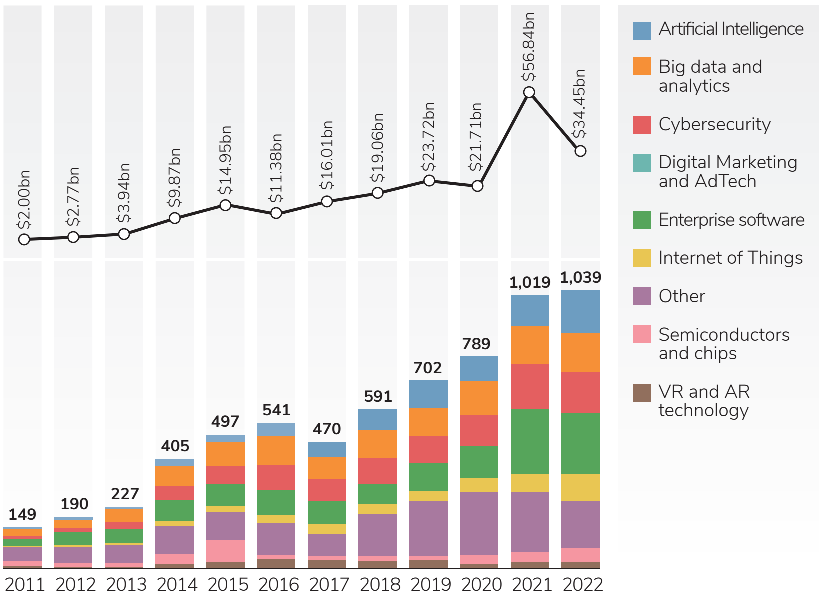
DEALS IN IT STARTUPS BY CORPORATE BACKERS



TOP INVESTORS IN IT SECTOR (VALUE)

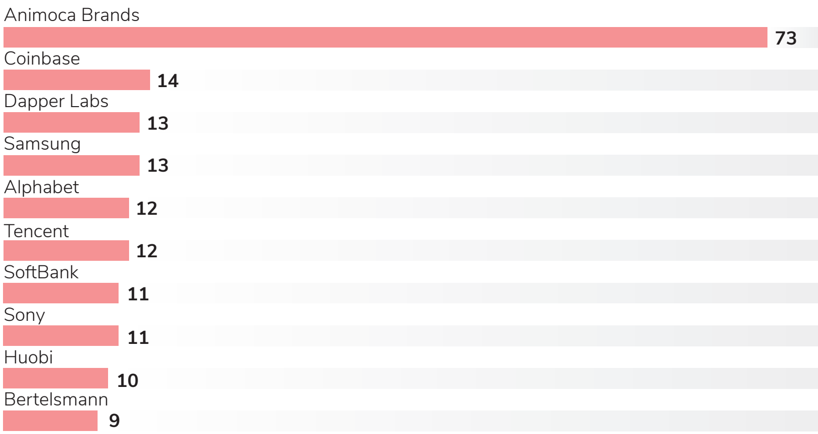


CORPORATE-BACKED ROUNDS IN IT STARTUPS BY SUBSECTOR

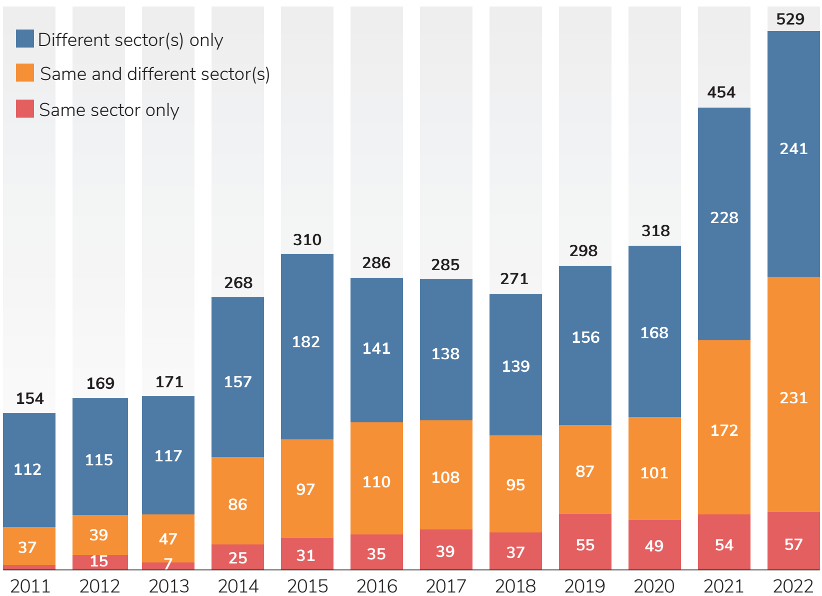


Media

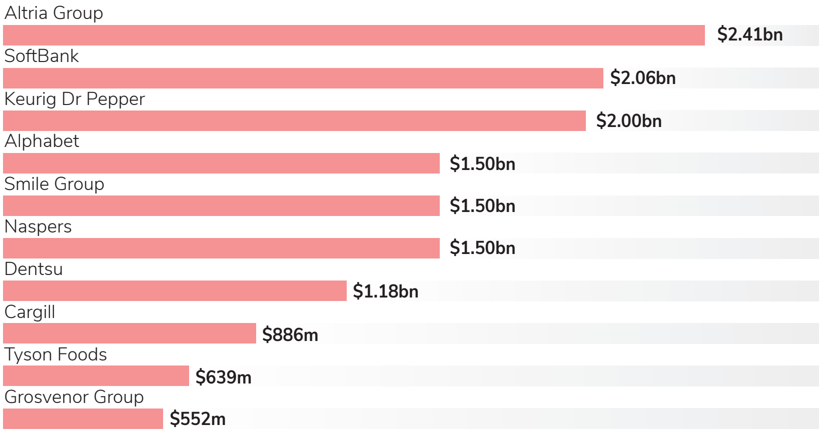
TOP INVESTORS IN MEDIA SECTOR (VOLUME)



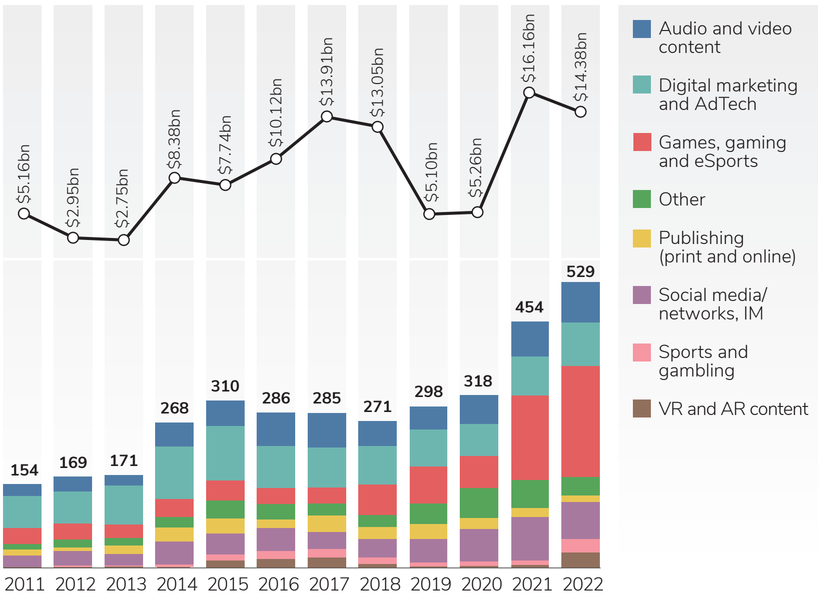
DEALS IN MEDIA STARTUPS BY CORPORATE BACKERS



TOP INVESTORS IN MEDIA SECTOR (VALUE)

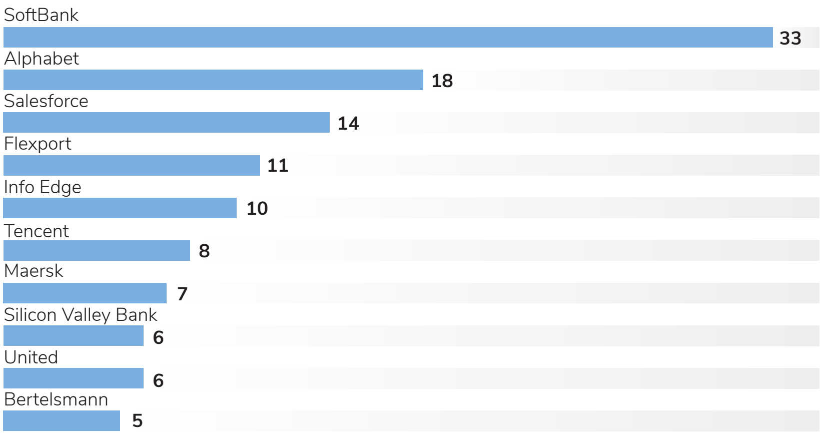


CORPORATE-BACKED ROUNDS IN MEDIA STARTUPS BY SUB-SECTOR

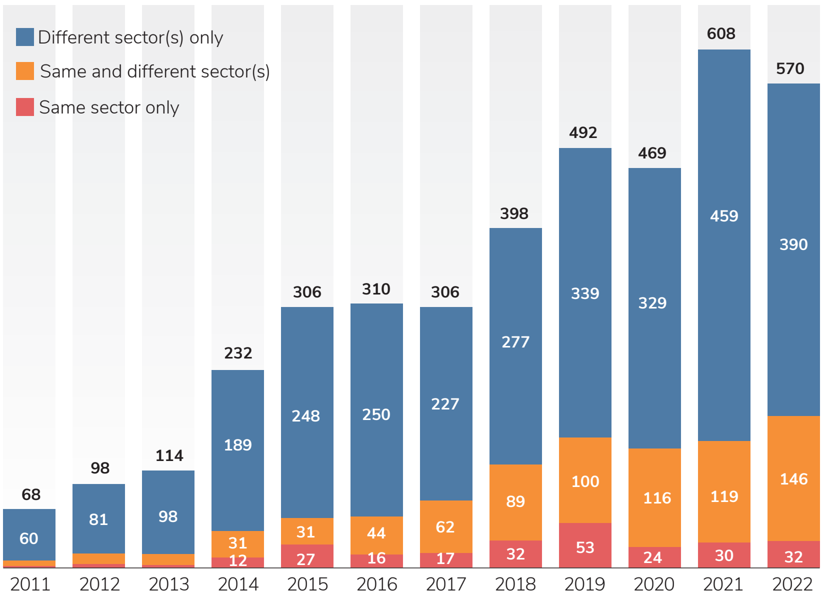


Services

TOP INVESTORS IN SERVICES SECTOR (VOLUME)



DEALS IN SERVICES STARTUPS BY CORPORATE BACKERS



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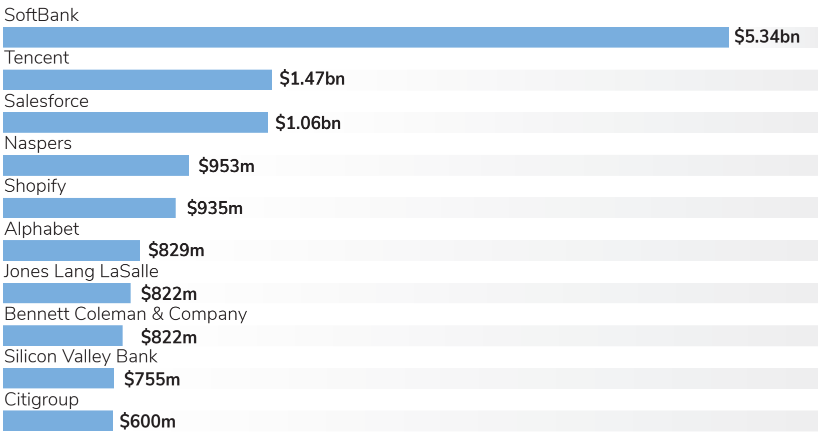
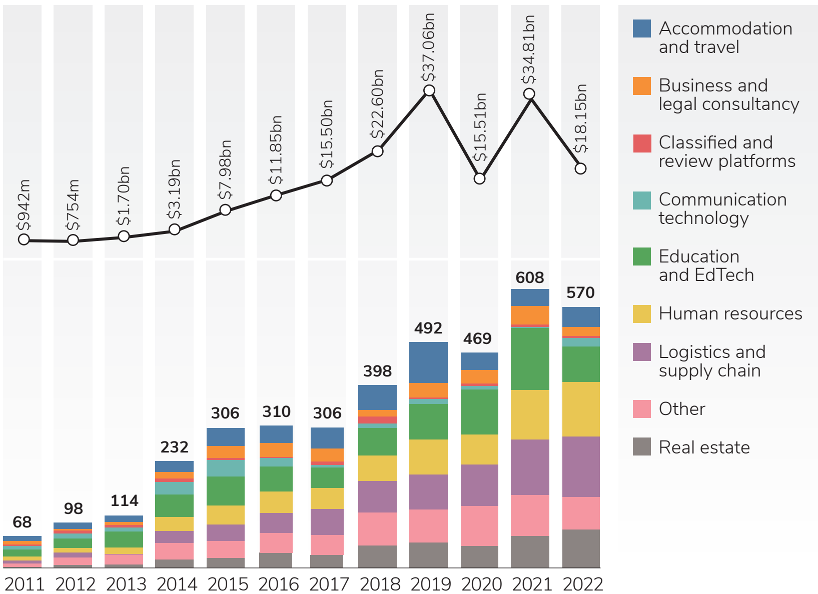
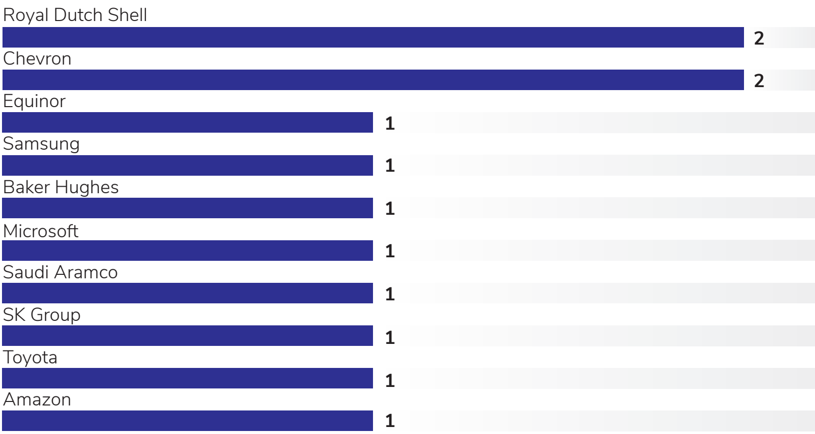


CORPORATE-BACKED ROUNDS IN SERVICES STARTUPS BY SUB-SECTOR

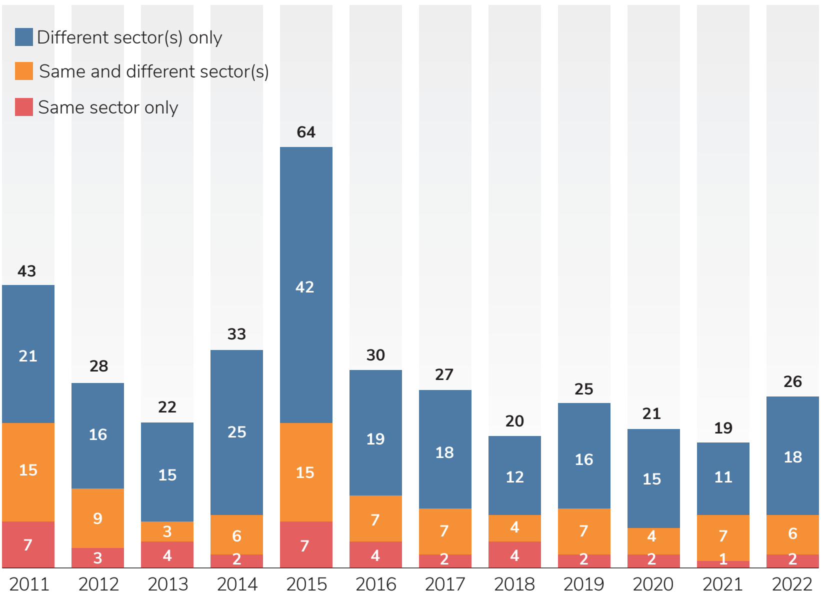


Telecommunications

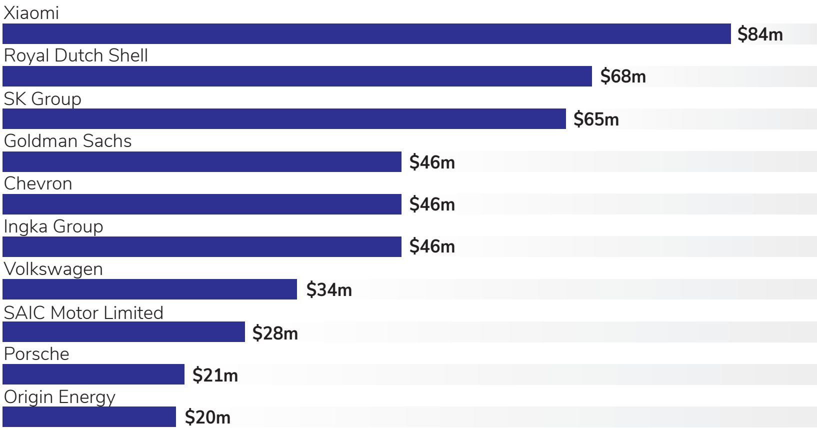
TOP INVESTORS IN TELECOMMUNICATIONS SECTOR (VOLUME)



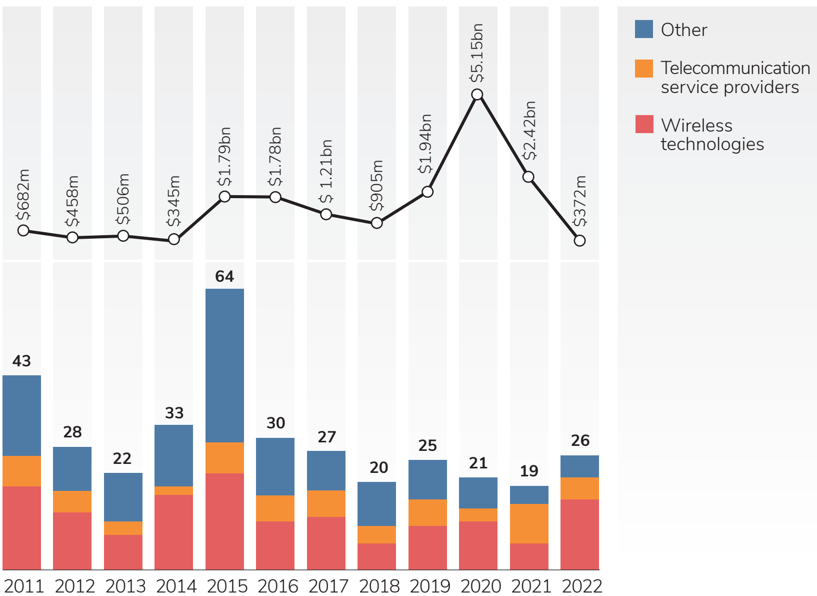
DEALS IN TELECOMMUNICATIONS STARTUPS BY CORPORATE BACKERS



TOP INVESTORS IN TELECOMMUNICATIONS SECTOR (VALUE)

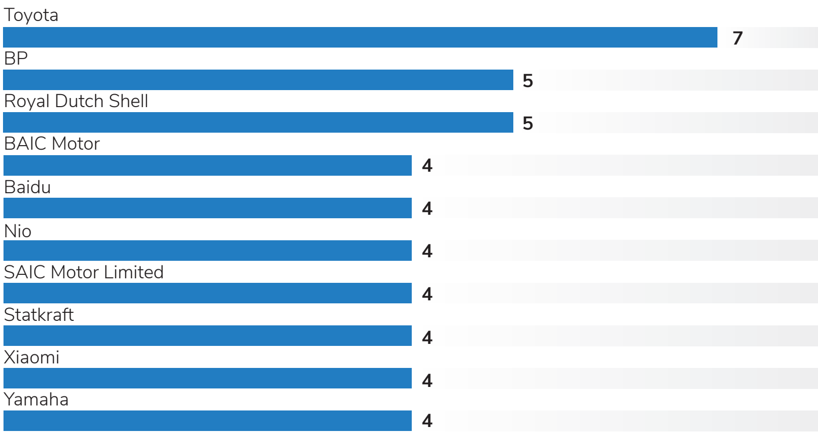


CORPORATE-BACKED ROUNDS IN TELECOMMUNICATIONS STARTUPS BY SUBSECTOR

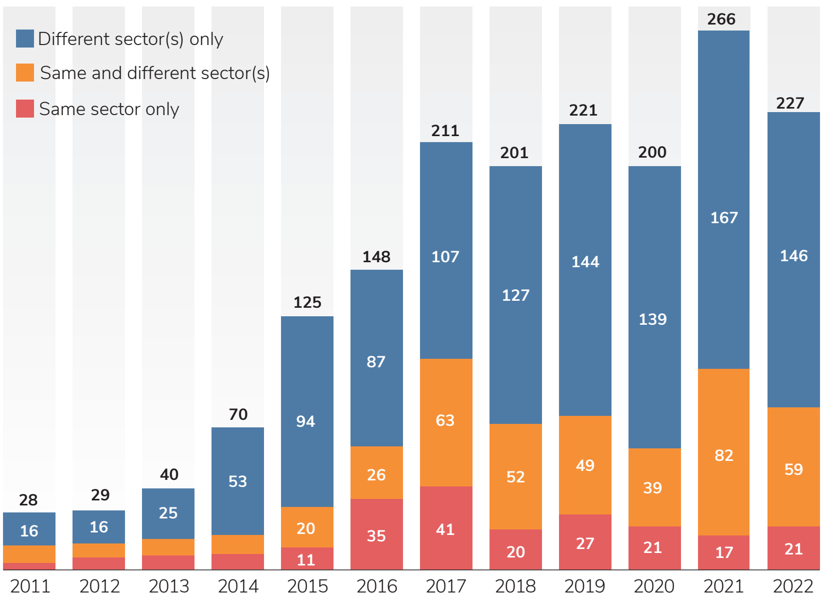


Transport and logistics

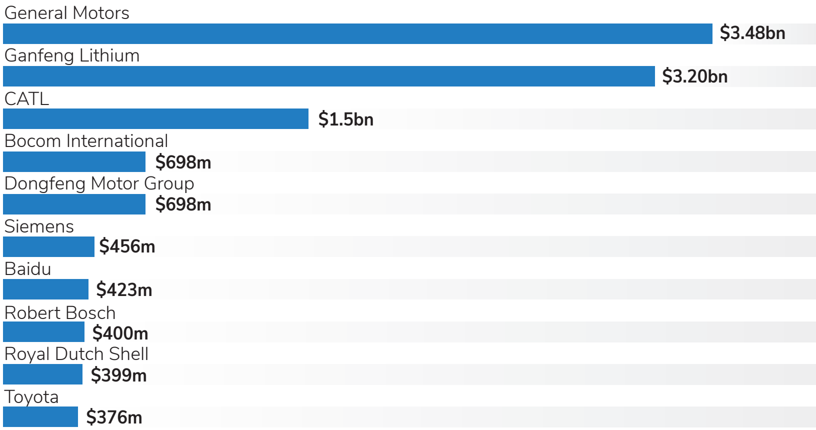
TOP INVESTORS IN TRANSPORT AND LOGISTICS SECTOR (VOLUME)



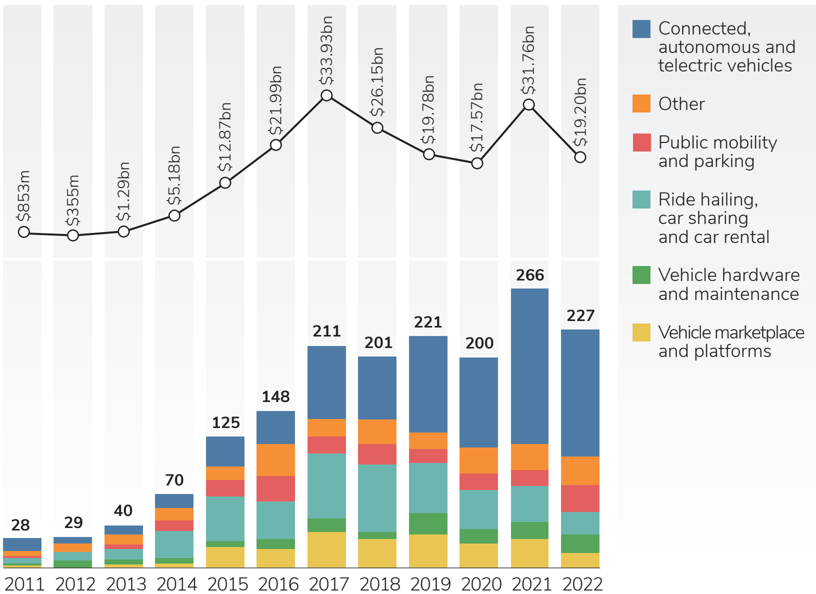
DEALS IN TRANSPORT STARTUPS BY CORPORATE BACKERS



TOP INVESTORS IN TRANSPORT AND LOGISTICS SECTOR (VALUE)



CORPORATE-BACKED ROUNDS IN TRANSPORT STARTUPS BY SUBSECTOR



Generative AI startups get investors thinking

Rob Lavine Features editor

The potential scope of generative AI and its increasing reach into our everday lives is catching the eyes of investors

OpenAI's intelligent chatbot tool ChatGPT surprised everyone with its capabilities. Not only can it match traditional bots in conversation, but it can also improvise, remember and create in ways that had previously been beyond their reach. This has thrown a spotlight on how artificial intelligence will be able to take over complex tasks on the creative industries, ones where the "human touch" was previously thought to be essential.

While OpenAI has bagged most of the headlines, along with a $10bn funding pledge from Microsoft, which has already invested a reported $3bn, it is one of several generative AI startups that have caught investors' interest. Here are the areas where they are breaking through.

WRITING

Chat GPT's presence is already being felt: New York has banned its use in public schools and Australian exam boards have vowed to go back to pen and paper. It is still prone to basic errors, but represents a big step forward for AI-assisted writing.

Texas-based Jasper has also created a generative AI tool that can write social media and other marketing copy, and it secured $125m in series A funding from investors, including marketing software provider Hubspot in October at a $1.5bn valuation

ART

OpenAI's Dall-E tool is capable of creating images using specific prompts for content and style. The quality can still vary, but the latest version, Dall-E 2, >

released in April 2022, can produce diverse imagery. Australia's Nightcafe allows users to make detailed art and apply specific art styles to existing images, but has recently run into issues with moderation standards. Lensa, a tool from San Francisco-based Prisma Labs, went viral towards the end of 2022 with an app that uses AI to create stylised avatars based on selfies, and dozens of other apps have emerged to enhance photographs and to create NFT-based digital art.

VIDEO AND AUDIO

Deepfake technology is opening new possibilities for video creation. Toronto-based Wombo's app enables people to make videos of celebrities lip syncing to popular songs, while Deep Voodoo, the startup launched by South Park creators Trey Parker and Matt Stone, raised $20m from the Creative Artists Agency-backed Connect Ventures in December 2022.

Synthesia is the creator of a digital platform that lets users create their own videos, choosing artificially

>

generated avatars as hosts and inputting text that can be spoken in a range of styles and accents, while adding music and onscreen visuals.

The company received $50m in a late 2021 series B round featuring GV (AKA Google Ventures). The software is intended for corporate training or marketing videos, but the model is also being applied to audio broadcasts.

Alforithmic has built a similar product tailored specifically to audio adverts or podcasts. Crowd Media paid $1.3m for a 10% stake at the start of 2021.

MUSIC

Berlin-based Endel is developing a neuroscience-influenced tool that creates personalised electronic 'soundscapes' to help users concentrate, relax or sleep, reminiscent of the white noise playlists which have been so successful on streaming platforms such as Spotify.

Luxembourg-headquartered Aiva's music creation app, meanwhile, helps users compose soundtracks for media such as games. California-based Boomy runs a community where members can use its AI tools to create original music and be paid for it by streaming services, while Utah's Moises enables disparate parts of tracks to be isolated and changed.

Most of these startups are getting corporate interest. Amazon's Alexa Fund took part in Endel's 2020 series A round and its total funding stands at more than $22m. Aiva picked up $1.7m from Netease, an internet group with interests in audio streaming and gaming, the same year, while Boomy reportedly counts Warner Music Group among its backers.

GAMES

Generative AI also has the potential to take on some of the heavy lifting in the games industry. OpenAI released its own 3D modelling tool, Point-E, at the end of 2022, and Norwegian startup Sloyd has an app that uses AI to automate the process, letting artists take big shortcuts in making and rendering models for games or online platforms. Online gaming platform Overwolf helped Sloyd pull in $670,000 in funding a year ago.

$1.3m

Crowd Media paid $1.3m for a 10% stake at the start of 2021

$22m

Total funding for Endel stands at around, having attracted funding from Amazon's Alexa Fund

>

FASHION, THERAPY AND LAW

Generative AI is also moving into other areas that typically needed human creative input.

New York-based fashion startup Cala has an AI-assisted app where users can create their own fashion designs and then have them made and shipped. It received $3m in a 2020 seed round co-led by Maersk Growth, part of shipping group Maersk. California's Styleriser is yet to get substantial funding but it is the creator of a virtual stylist which makes fashion recommendations based on a user's skin tones.

The aptly named Woebot raised $9.5m from pharmaceutical group Bayer's Leaps by Bayer unit in March last year to support the expansion of its AI-based behavioural health app. The company, which has secured more than $123m altogether, combines AI with natural language processing and traditional therapy approaches to help patients with tools to manage anxiety, remembering past conversations to inform later suggestions.

Bloomberg Beta was among the investors in a September seed round for JusticeText, the operator of a content analysis app tailored for legal practices. It is capable of going through large volumes of audio and video evidence and transcribing speech to save time on research in an overburdened legal system.

WHAT'S NEXT?

Although AI is still at a relatively early stage in the creative industries, its capabilities are growing and the technology looks ready to begin working with humans in areas such as generating advertising copy, analysing media or creating simple music.

Combined with other emerging technologies, it could go even further. Pair generative AI with a robotic arm or 3D printer and you can create original sculptures. Feed in large volumes of architectural data and see what type of building the programme can devise. Voice technology could potentially help generate natural-sounding vocals to go along with instrumental music.

The pace at which this happens depends on generative AI's ability to overcome the uncanny valley that makes a human brain recoil, and whether these projects can find sustainable business cases. ■

Pair generative AI with a robotic arm or 3D printer and you can create original sculptures

$123m

Woebot has secured more than $123m of funding to support the expansion of its AI-based behavioural health app


BRENDON KIM
SAMSUNG
TDK

Photo: © Michael Afonso on unsplash.com

Investors set sights on defence tech

Fernando Moncada Rivera Senior reporter

Geopolitics and bear markets are making national security technology look attractive, but startups and investors must navigate the obstacles in the market

It has been a year since war returned to Europe, and countries globally have been pumping their defence budgets to prepare for an uncertain future. Investors around the world have taken note.

Investing in the military has not often been in vogue, at least not openly. Increasingly, however, investors are more comfortable putting their money behind national defence, and even if they avoid the more controversial "active" defence technologies like weapon systems, "passive" technologies that also have applications outside the military are enormously attractive.

"When you are talking about the back end of the army – trying just to optimise logistics, efficiency, and so on – I do not see why any VC or investor could not fund it," says Alexandre de Martino, an associate at >

AXA Venture Partners who recently put together a white paper on defence tech in Europe.

Indeed, defence is turning into an alternative revenue stream for software technology, following the cooling of recent bull markets for tech.

GETTING THROUGH THE 'VALLEY OF DEATH'

The defence sector has built-in hurdles that other sectors do not have. Unless there is a dual-use and commercial function to the technology, there is a limited number of government-owned end users with very complex procurement processes.

"It is not easy to transition technology from a startup into the Department of Defense [DoD], and that is this so-called 'Valley of Death'. There are a number of programmes available to get initial funding for startups. How many of them really get the programme of record or the large scalable production contract at the end of the rainbow? That is a big issue in this space," says Dan Ateya, head of Raytheon Technologies' CVC unit RTX Ventures, speaking on a recent episode of the *Global Venturing Review* podcast.

Even after securing a contact, it is far from smooth sailing. In the US, you could spend more than a year – time that a startup typically does not have spare – in compliance mode, a process of accreditation to attain authority to operate (ATO) on government systems.

Tyler Rowe, principal at Boeing's AEI HorizonX unit, says some of the startups making the transition into defence-related work could be in for a shock.

"They will win these awards, but then they have to sit in a compliance mode for the better part of 16-18 months to get their authority to operate. Those 18 months do not exist for a startup," he says.

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Dan Ateya, Raytheon Technologies

One of AEI HorizonX's portfolio companies, Second Front Systems, is trying to solve this problem for startups by creating a secured platform where DoD can source software from a number of startups, without each of them individually having to go through the compliance hurdles.

Government contracts can be extremely lucrative, however, and that can give startups some options for surviving this limbo. Capturing even a small share of a particular sub-market is a business opportunity worth hundreds of millions of dollars, and startups can raise funding against that prospect. It helps that some of the customer churn and lack of visibility that many startups struggle with, are not there.

"There are ways to navigate the first several years without going into production on a programme of record. Through various programmes and grant structures, you can definitely navigate it and get to a point where your system is robust enough to ultimately be deployed in production. I do not believe that it is binary and win-or-you are-done in that sense. There is very much some way to grow and to go about it in a more traditional sense now," says Boeing's Rowe.

EUROPE'S GROWING DEFENCE TECH MARKET

The US's $800bn+ defence budget is the largest in the world by some margin. But European countries are now making hefty increases to defence budgets. France recently announced it would be virtually doubling its defence budget by 2030 compared with 2017, while Germany has also committed to meeting its benchmark of 2% of GDP.

The European market is more focused on early-stage companies, partly because there are not as many late-

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> There are ways to navigate the first several years without going into production on a programme of record. You can definitely navigate it and get to a point where your system is robust enough to ultimately be deployed in production
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> **Tyler Rowe,** Boeing AEI HorizonX

stage defence tech businesses yet, and partly because of worries that late-stage companies will struggle to attract investors, says de Martino.

"We are seeing a couple of projects in seed and series A that are being funded now by more generalist VCs, but those investors are still concerned that there will not be series B investors in one or two years...There have been very few [exit] transactions in Europe," says de Martino.

Each European market has its own defence procurement processes and companies need to understand them individually.

"You need both a top-down and bottom-up type of approach. You have to go in all the centres – you will enter via the Air Force for your solution, and then you go to the Marines and then to the Army. And at the same time, you still need to get budget approval by the Ministry of Defence. So it has to be pretty coordinated, it's time consuming," says AXA's de Martino.

GETTING AROUND THE DUE DILIGENCE PROBLEM

Defence technology is difficult for investors to assess, as it often works with, or is based on, sensitive or secret data. But there are ways to get around this – for example, founders can use less precise or outdated data for demonstrations.

Members of the defence industry and organs of the state are also getting increasingly willing to get on calls and help investors understand the value that a particular proposition may have, says de Martino. They understand that even with promising technologies, young companies remain at risk of running cash-dry and it is in the ecosystem's best interest that they remain properly funded.

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Alexandre de Martino, AXA Venture Partners

Photo: © Kevin Schmid on unsplash.com

MORE EXITS AHEAD

One of the key differences between the US and Europe, from an investor's point of view, is the exit opportunities. In the US, where the market is much larger and less centralised, there are more avenues for M&A transactions or even initial public offerings. In Europe, by contrast, there are fewer players available that are willing and able to write big cheques in the space.

De Martino says that this is likely to change, however. "My conviction is that private equity will be released as this intermediary step from late-stage VC to M&A with a more legacy-type of player in defence. There is a huge amount of dry powder in private equity and that needs to be deployed, and they can now invest again in defence. So they will be able at that stage to consolidate the European opportunities," he says.

Exits by way of public markets are even more rare. The 2020 initial offering of Germany-based Hensoldt was the only defence IPO in the past two decades, according to research by AXA Venture Partners, though others have listed on minor markets such as in the case of Italy-based Defence Tech going public on the SME-focused Euronext Growth Milan in late 2021. The US has had better luck – Palantir went public in 2020 at $16.5bn based on the initial pricing, satellite imagery company Planet went public in late 2021, and an Anduril IPO is in the planning. ■

Nuclear fusion a hot ticket for investors

Kim Moore Deputy editor

A recent technological breakthrough for fusion energy has energised investors to back this limitless carbon-free source of energy

News of the breakthrough reverberated around the world, with US Department of Energy Secretary Jennifer Granholm calling it "one of the most impressive scientific feats of the 21st century." In the realms of technological progress, scientists at the government-run Lawrence Livermore National Laboratory in California had achieved something groundbreaking: producing more energy from a fusion experiment than they put in.

It was hailed as a watershed moment. Scientists have worked for decades on producing energy from nuclear fusion – the same reaction that powers the sun and stars. The net energy gain from the experiment is important proof that fusion can be replicated in a lab and adds impetus to the investor community's backing of the technology.

CLEAN POTENTIAL

The concept of fusion energy – creating a huge burst of energy by combining two atoms into a heavier one – has been around since the 1950s. Fusion holds a promise of abundant, clean energy with less of the nuclear radiation risk that accompanies nuclear fission commonly used in power plants.

But it is only in the past few years that the technology is finally maturing to the point where scientists can say that soon – 2030s is a commonly cited timeframe – fusion energy can be turned into electricity for the grid.

Downstream energy company Delek US is the latest corporation to announce funding for a nuclear fusion startup. In February 2022 it announced its lead on a >

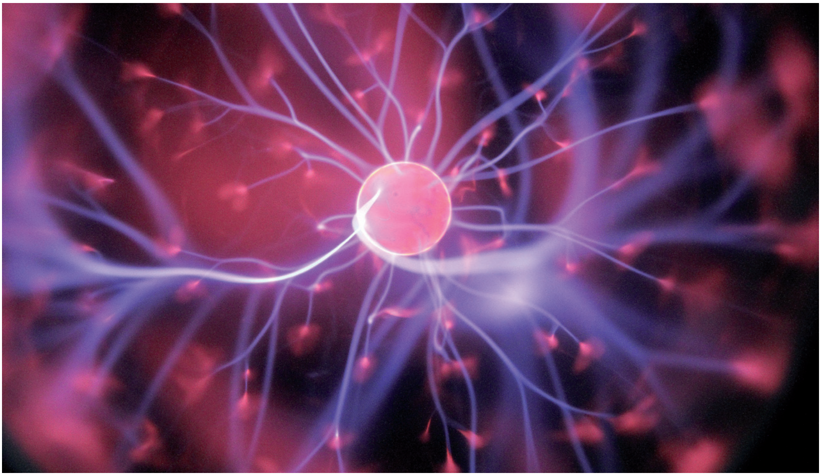

Photo: © Hal Gatewood on unsplash.com

$22m series A round for NT-Tao, an Israeli nuclear fusion company. The startup is developing a compact fusion reactor that uses ultra-fast heating technology to achieve fusion reaction.

The funding round includes Honda Xcelerator, the open innovation subsidiary of the Japanese carmaker, venture capital firms Next Gear Ventures and OurCrowd.

Delek US venture partner Taha Syed Hussain says technological breakthroughs that have happened in the past three years changed his belief that fusion is nearer to 10 years out than 20.

The Lawrence Livermore National Laboratory breakthrough helped to sway the company's board members who were uncertain about the technology, says Hussain. "If these breakthroughs keep coming, this could be a significant change in the industry," says Hussain.

Oil major Chevron is a large backer of fusion startups. Chevron Technology Ventures, the oil company's corporate venturing arm, invested in Zap Energy in 2020 for an undisclosed sum, the first investment made by an oil major in a fusion energy company.

Chevron cemented its commitment to fusion energy with its most recent investment in US startup TAE Technologies in July 2022. It invested alongside Google

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and Sumitomo Corporation of Japan in a $250m fundraising round for the latest iteration of TAE's California fusion reactor.

Private fusion companies raised at least $2.8bn in 2022, bringing total private sector investment to $4.8bn, according to a recent report by trade body Fusion Industry Association. This is a 139% funding increase since 2021.

SPOILT FOR CHOICE

What makes the investment landscape compelling for corporates is the variety of fusion energy startups globally, which all have different approaches to developing the technology. The dozen or so corporate-backed startups around the world are pursuing their own unique paths towards commercialisation.

"It is a nice way to de-risk the chance of success because there is a portfolio of companies," says Ryan Umstattd, vice-president of product for Zap Energy. "We are starting to see that strategic investors are thinking that one fusion investment may not be enough. They might want to diversify and make a few fusion investments. That is a positive sign for the industry as a whole."

Launched in 2018, Zap Energy, which includes Shell as a corporate investor, differentiates itself from other startups through its so-called z-pinch technology. Most other startups use large magnets or large lasers to confine and heat plasma – a hot, charged gas where nuclear fusion reactions take place. The z-pinch sends a large electrical current through plasma. The current generates a magnetic field that compresses and heats the gas. The energy from this reaction is what will eventually generate electricity.

The process is carbon free, but it does produce low

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$2.8bn

Amount raised by private fusion companies in 2022, bringing total private sector investment to $4.8bn

Source: Fusion Industry Association

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> **Ryan Umstattd,** Zap Energy

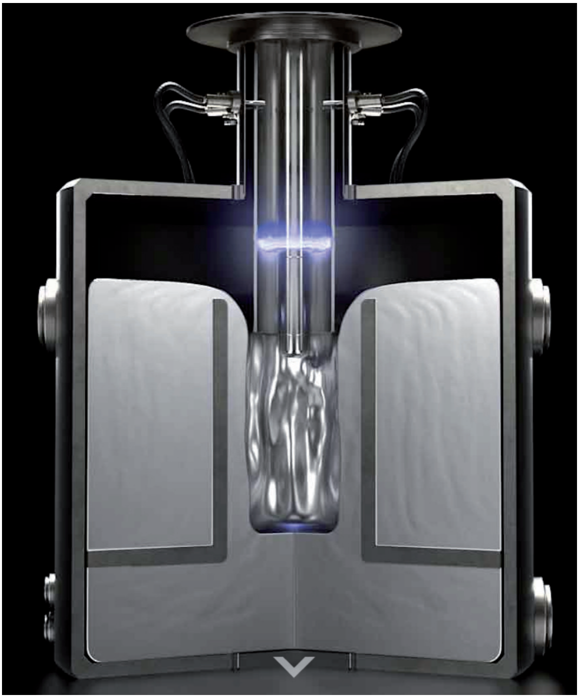

Photo: Courtesy of Zap Energy

< Zap Energy plans to have a pilot nuclear fusion plant up and running by the early 2030s

levels of radioactive waste. This comes from tritium, a hydrogen isotope, which is produced inside the fusion chamber. The radioactive waste takes months or years to decay compared with centuries that it takes for waste to decay from traditional nuclear fission plants.

TECHNOLOGICAL ADVANCES

The production of radioactive waste contrasts with TAE Technologies' fusion process – the other technology Chevron recently invested in – which fuses a hydrogen proton with boron, which is not radioactive.

Despite the concept of nuclear fusion originating 70 years ago, it is only recently that advances in electronics – the capacitors, switches and semiconductors that provide energy to plasma – and advances in super-computing, which have made progress towards commercialisation possible.

Artificial intelligence and machine learning, for example, have allowed physicists to assess large

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amounts of data needed to understand how plasma should perform for fusion reactions to take place.

Zap Energy is targeting 50MW of energy output from each of its power plant modules, which could serve about 30,000 households. This is modest compared with traditional nuclear fission plants, which typically produce 1GW. The company's small, compact modules are designed to be installed in small groups of three and four. They are ideal replacements for retiring coal or natural gas plants, says Umstattd.

The breakthrough at the Lawrence Livermore National Laboratory has generated more interest from investors, as well as new stakeholders, says Umstattd.

The drive to meet climate goals has motivated startups to research their own technologies and bypass the ITER project, a collaboration of 35 countries that are building the world's largest tokamak, a 500MW magnetic fusion device designed to prove the feasibility of fusion as a large-scale and carbon-free source of energy.

The ITER project has been beset by delays because of technical challenges and the covid-19 pandemic. The machine is scheduled to be powered on for the first time in December 2025, following decades of planning.

PRIVATE AMBITIONS

The delays have motivated private companies to launch their own fusion technologies to speed up commercialisation. One such company is Helical Fusion, a Japanese startup launched in 2021. The founders were motivated to start their own company, following 25 years of fusion study, after seeing several startups launch around the world.

The startup is unique among its peers in that it researches helical reactors rather than the more traditional tokamaks. The main difference is that helical fusion reactors maintain the high temperature of plasma through external magnetic coils, whereas an electrical current, as well as magnetic coils maintain high temperatures in tokamaks.

For a technology once considered more like science fiction than reality, nuclear fusion looks increasingly part of the future carbon-free energy mix.

With technological advances accelerating, corporations are increasingly willing to invest in the sector. ■


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