AXA VENTURE PARTNERS

AVP Perspectives 2023

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2022 was a challenging year for investors and entrepreneurs, still living the aftermath of COVID and of course Ukraine war, which has resulted in supply chain disruption around the world, interest rates rising at the highest levels in 40 years, and lastly the collapse of cryptocurrency.

This is a real crisis for the start-up ecosystem and the VC world, but let's remember that just like during the Dot-Com bubble, disruptive players like Google, Amazon and Cisco were born. We can expect this 2021 "everything bubble" year to bring unique competitors to the market.

At AXA Venture Partners we are proud to say that, despite such a bleak picture, we have managed to stay resilient, very disciplined in terms of price paid, and cautious about new investments.

We welcomed seven new joiners to the AVP family during 2022: Tracktor, Tive, Offor, Florence, Geomiq, Arta and Mytraffic, and had two successful exits: Tanker and Happytal. We also grew the team with 16 new members across our global offices.

We are proud of our milestones of the past year and can't wait to see what 2023 will bring. This is why we have asked the Investment Partners at AVP to share their predictions and views for this year in terms of market trends, macroeconomics, valuations, digital healthcare, enterprise software, and more.

Valuation in 2023: Back to reality

François Robinet

Managing Partner

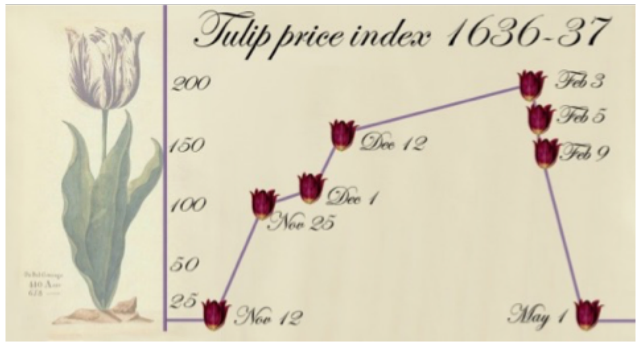
(list of investments)

AxonIQ, FUTURAE, GEOMIO, happytal, INCEPTO, InsideBoard, SecurityScorecard, simundia, Tanker, tracktor.fr, unlatch

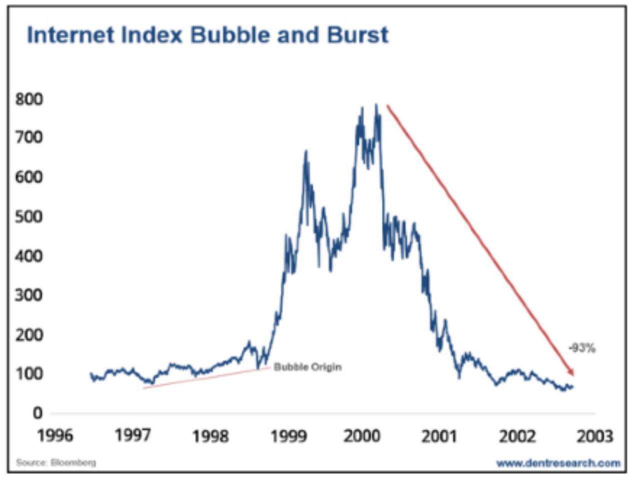
2021-2022 were bad years for investors but also for founders (except for those who managed to fool some investors through large secondary transactions and created massive misalignment of interest), because the financing journey of a fast-growing company is not just a one-off transaction, but a long-term trajectory that has to be carefully managed.

So let's be clear: 2021 was an anomaly, a bubble, similar to the Internet Bubble in 2000 or to the Tulip bubble in the 17th century.

From the 17th Century tulip bubble



To the 2000's Dot-Com bubble



To the 2021 Tech bubble

NASDAQ 100 Technology Sector Index

Source- Google Finance

Source: © Bloomerg

So, following this chaotic 2021, one big question for 2023 will of course be around the valuation level for tech companies. After the levels reached in many asset classes in 2021, and the correction, sometimes severe, seen in 2022, what can we expect next?

The answer is simple: watch the interest rates! Valuation multiples will just continue to evolve inversely to interest rates. This is unavoidable. This is the law of gravity in finance: asset prices and interest rates are inversely correlated! Of course, I am talking about the market as a whole. There may always be outliers and we will see companies that still raise at very high level, either because they have a unique position in the market, an exceptional founding team or… the hype is still a little bit here… But overall, valuation for VC-backed companies will be determined by the level of interest rates.

The reason is straightforward: multiples that are paid for tech companies (revenue multiple in general, rather than earnings multiples) are no more than a summary number of a discounted cash-flow model: the higher the interest rates, the lower the multiples because future cash-flows are worth less, that's it! That is finance 101…

Suppose a company with the following assumptions:

- €1m in revenues (but you can make the same model with €10m of initial revenue, just multiply everything by 10)
- The traditional (very) ambitious expected growth that the VC world likes: growth of 200% for 2 years , then 100 % for 2 years, then 75% for 2 years, 50% years for 2 years, and then 10% less every year until we reach 5%, and finally a perpetuity at x% (x between 0 and 10%)
- Gross Margin at 80%
- Fixed cost of €4m initially (meaning a burn rate of 250 K€ a month, consistent with a growth of 200%), growing at 100%, then 90%, then 80%, then 70%… then 10% after 10 years and then growing at perpetuity at inflation rate at 2%
- Discount rate at risk-free rate +25% (really what should be expected given the risk)

Revenue multiples (based on 2023E mid-year revenue of €2m)

		Perpetuity growth rate					
		0%	2%	4%	6%	8%	10%
Risk free rate	0%	13.8x	13.9x	14.0x	14.2x	14.3x	14.6x
	1%	11.3x	11.4x	11.5x	11.6x	11.7x	11.9x
	2%	9.1x	9.2x	9.3x	9.3x	9.4x	9.5x
	3%	7.2x	7.3x	7.3x	7.4x	7.4x	7.5x
	4%	5.5x	5.5x	5.6x	5.6x	5.7x	5.7x
	5%	4.0x	4.0x	4.1x	4.1x	4.1x	4.2x

So, what do we see? We see that, even for a fast-growing company, an 8-9 x multiple is not cheap in a 3% interest rate world. If rate goes higher, 4-5x multiple may be the long-term norm. Of course, each situation is different: the uniqueness and quality of the technology, the experience and the quality of the founding team, the potential size of the market, and I would argue, in today's market, the capital efficiency and the quality of the unit economics… All these will impact the multiple paid and may justify a premium. Of course, also, there will be a handful of exceptional companies that may have a higher growth, for longer, either initially (which impact meaningfully the valuation) or in the end (which impact less meaningfully the valuation given the discount rate). But on average, this is where we are… In a world where the global economy grows at 2-3% a year, growing at 100 % for 5 years and 50 % on average for 10 years is hugely challenging.

These are exceptional growth rates and only a handful of companies will be able to do so.
It will require a huge market, perfect execution, little competition and…as we mention later in this paper, no disruption in the technology… So from an investor standpoint, either you believe for sure that you will be able to pick these super-winners and therefore, you can afford to pay more but only for the ones that will be super winners – don't get it wrong - or you apply valuation discipline in order to deliver on average, on a portfolio level, the expected return.

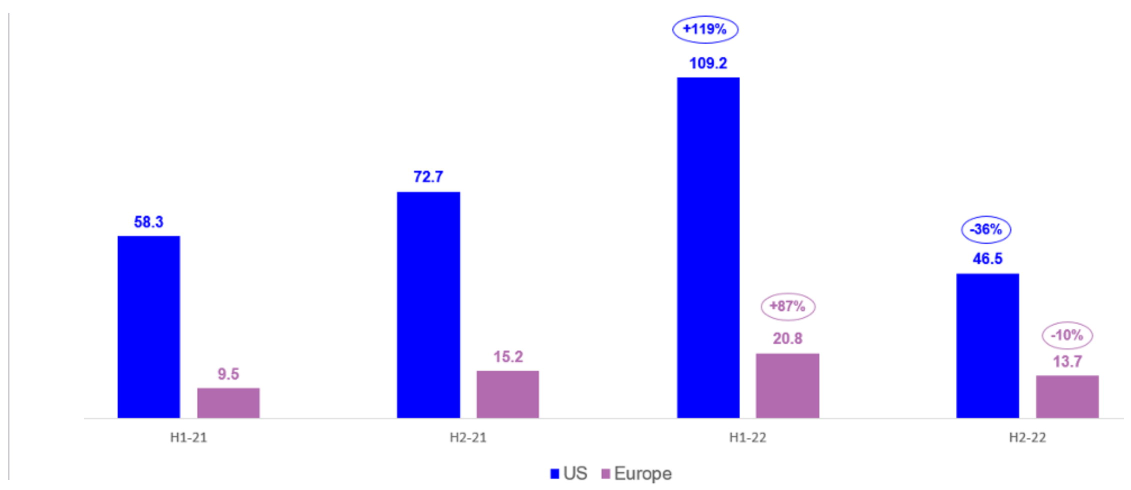
As said before, it is all about prediction for interest rate evolution for 2023 and beyond. Everyone may have their own expectations about what Central Bank will do, between fighting against inflation and avoiding recession, all that under the constraints of massive debt everywhere, and a particularly growing public budget deficit… But this also means that, unless you believe that rates will go back to 0, there is no point for entrepreneurs for their next funding round to wait for a "2021 like environment": it will not happen! Nor for some funds to hope for the valuation to come-back so that they will not have to take write-downs: This will not happen!
By the way, what does the market say?

Interest rate curves (USD and EUR) - Current and one year forward

Source: © Bloomerg

The market says that essentially rates will stabilize around current level.
It may even be the case that multiples go below current levels. In the end, it is a question of supply and demand. And if institutional investors, because of an unintended denominator effect, liquidity constraint, or just a higher risk aversion, may give less money to VC and growth funds: the scarcity of money will drive multiples down. It is true that the amount of funding available was huge in the end of 2022… But this is slowly disappearing… And some of the funds raised are used to support portfolio companies (and to avoids down-rounds…) that cannot raise in good conditions in this market.

Funds raised by VCs ($bn) in the US and in Europe each semester with YoY growth %



Source: © Dealroom.co

Finally, I'd like to mention another factor that may impact valuation in a paradoxical way and that may start to emerge in 2023: the fact that it will be difficult with some technologies for VC to achieve their target return, not because the technology is bad or because there is no market, but because of the increasing pace of technology innovation that makes it challenging to finance innovation in some cases. If a technology is obsolete because the next, better, one arrives only a few years later, there is not enough time to allow for the previous one to pay back and the investor to achieve their necessary target return. ChatGPT illustrates well the phenomenon: it is almost certain that it will disrupt several existing technologies that emerged just a few years ago and make some companies obsolete.

Indeed, the pace of technological innovation does not only disrupt traditional industries but also themost recent, sophisticated Tech ones. A few examples:

- AI, ChatGPT
- 4G / 5G / 6G / Constellations of satellites
- NextGen software development tools

In those cases, there is uncertainty about the lifetime of the technology and therefore, uncertainty to reach the return target, especially given the investment required.

So overall, prediction for 2023 is that multiples will go down, or at least not go up… Coming from a VC investor, many will say it is self-serving… Fair enough… Two answers to that: first, it is a prediction that cannot be made every year… So, bear with me until next year… Second, this will be easily verifiable… Here again, bear with me for a year…

The Journey of Technology

Dominic Maier

Partner – Head of Fund Investing

How do we make sense of 2022

When it comes to venture capital, describing 2022 as anything short of a rollercoaster would be brave. Although, perhaps a rollercoaster isn't that accurate as the year mainly consisted of downs, rather than ups and downs. It would have been extremely difficult to predict where, how, and when these downs would culminate during 2022 given how pervasive and devastating they ultimately were (we need look no further than FTX as an example of this). What can't be denied, however, is that technological advances continued to prosper and impress. This can be seen in advances in AI with GPT-3, in no-code tools empowering knowledge workers, and through innovation in sustainable energy generation.

My conclusion from all of this is that whilst there will be bumps on the road when it comes to the journey of technology, the future continues to be bright and positive. And it is precisely this secular growth in technology as a sector in its entirety that predicates the need for diversification when it comes to investing in technology. That could be diversification across geographies, across business models, across sectors or even across different types of founders. And whilst diversification normallyreduces return expectations, the uniqueness of the asymmetric upside potential of early stage venture capital means that combining these two generates attractive expected returns, in our view.
I would also be remiss in highlighting that diversification has made sleeping in 2022 a little easier.

What should we expect from 2023?

So what does all of this mean for 2023? From a sector perspective, technology will continue to evolve. As an investor, unpredictable winds means there won't be smooth sailing. Our approach to this is to continue to commit to the best managers globally. Those who understand the transformational power of technology and those that are able to articulate why they will be the ones to convince the best founders globally to work with them. In a Fund of Funds business, managers need to convince us they are the right partners for us by answering 'Why us? Why now? Why here?'

And, finally, given the great VC reset in 2022, we are excited about the prospects of the post-2022 vintages as evidenced by strong historical returns of post-down turn vintages. Post-GFC vintages saw a retreat of capital combined with a new interface (smartphones) drive phenomenal VC returns for the best funds globally. I think we are in a similar place today in terms of a supply/demand balance of capital and potentially an even more exciting place when it comes to transformational technological potential.

But maybe I am just wearing rose-tinted glasses...

What will we see more of in 2023?

Imran Akram

General Partner (list of investments)

cognism | Florence | FORCEMANAGER | sendcloud | ZENJOB

For at least a decade low inflation, low interest rates and a benign macroeconomic environment have fuelled a bull market in everything as investors searched for yield. Private and especially technology markets particularly benefited as investing in future growth and returns became more attractive on a discounted cash flow basis. In 2022 the successive blows of the COVID plague, the war in Ukraine and the re-appearance of inflation finally put an end to the party. With rising interest rates and an increasingly complicated geopolitical environment what might we expect in 2023?

First, expect more bad news in 2023 as the macroeconomic impacts of the changes in the last year are still working their way through the system. Consumers are still adjusting to rising inflation and higher interest rates and they will be feeling increasingly stretched this year. Households in many markets were flush with savings after the pandemic but soon job losses and a rising cost of living are going to have an impact on spending. Corporates are already starting to cut their spending and focus on areas with the highest impact, as evidenced by the rising tide of announced layoffs.

In the public equity markets technology valuations rapidly adjusted by 30% in 2022 but the ripples are still working their way through the private markets. In 2022 many companies avoiding raising new capital and that allowed many funds to avoid marking their portfolio to market. That will no longer be possible in 2023 and eventually reality will have to catch up to holding values.
There is a lot of capital out there to prop companies up and postpone the reckoning but it will come and we will also see more high profile company failures in 2023 and beyond - FTX will not be the last one.

What will we see more of? Companies will be focused on ROI, it's time to dust off those calculations and show near term payback from what you are selling. Capital efficiency and a focus on margins over growth will cycle back into favour as it does every time the market turns down. Don't expect investment money to subsidise your grocery deliveries anymore! Instead expect to see a resurgence of solutions helping consumers, corporates and governments to save money and increase their efficiency.

As always, technology will continue to be a key driver of productivity gains and I expect it to remain a key focus area for investment and purchasing. In all markets, faster, more efficient ways of solving problems are going to be in demand. Even in recruiting and talent management we have seen portfolio companies such as Hackajob continue to see strong sales as they are a more effective and efficient way to recruit, develop and retain technical talent. Helping companies save money and do more with less will be the winning sales pitch in 2023.

In 2003 when I started work at the tail end of the dotcom bust there were many great startups and scaleups that struggled to get the capital to grow. Looked at from two decades further on it was a great time to be investing with many startups having developed lean, laser focused sales motions honed in a period where all spend was scrutinised for effectiveness. Focus this year on what really matters for your business to survive and grow efficiently and I'm sure in ten years time you will be looking back positively at the changes you made now.

Enterprise Software Trends for 2023

Alex Scherbakovsky

General Partner (list of investments)

Contrast Security · GRAVIE · jobble · Lessonly · phenom · tive · vida

Economic uncertainty has put pressure on IT budgets, and I believe companies will continue to exercise caution on IT spending in 2023. As a result, enterprise software vendors will need to convince their customers why their solution is a "must have" and not a "nice to have".

Successful SaaS vendors will be able to show customers clear ROI, including how their solution enables customers to achieve tangible cost reductions. There will be a continued *focus on unit economics.*
2022 ushered in renewed focus on business fundamentals such as sales efficiency, revenue retention and cash burn. I believe investors will continue focus on these metrics, and successful SaaS companies will demonstrate not just strong growth but profitable growth. Metrics such as magic number, rule of 40 and cash burn multiple will take precedence over pure revenue growth.

Fundraising environment will pick up. After an exuberant several years, 2022 marked a considerable slowdown in VC funding for enterprise software companies as many investors focused on their portfolios and many entrepreneurs grappled with dramatic change in valuation multiples.
With funds sitting on significant dry powder, and with entrepreneurs having had time to adjust their valuation expectations, I believe that fundraising environment in 2023 will be more active. Valuation multiples will rise, but not to 2021 levels. Valuations for SaaS companies in 2022 fell from an all-time highs of 2021 to well below historical averages.

Artificial intelligence will rise in prominence. Many enterprise software companies have already been incorporating AI in their offerings for the past several years. With advancements in AI and with recent success of ChatGPT, customers will have higher expectations that software solutions they purchase leverage AI.

Lastly, ESG initiatives will gain more traction. As governments, investors and customers place greater emphasis on the ESG matters, enterprise software companies will elevate their focus on initiatives such as diversity and inclusion, as well as environmental impact of their business activities.

2023 will be an amazing Vintage for Tech investment

Benoit Fosseprez

General Partner

mytraffic VIRTUO

(list of investments)

2022 has ended and most tech entrepreneurs and investors will not regret it.

In 2022 IPOs have disappeared and interest rates have jumped like rarely before, which increased cost of financing of any leveraged acquisition. So long for easy exits and increasing DPI.

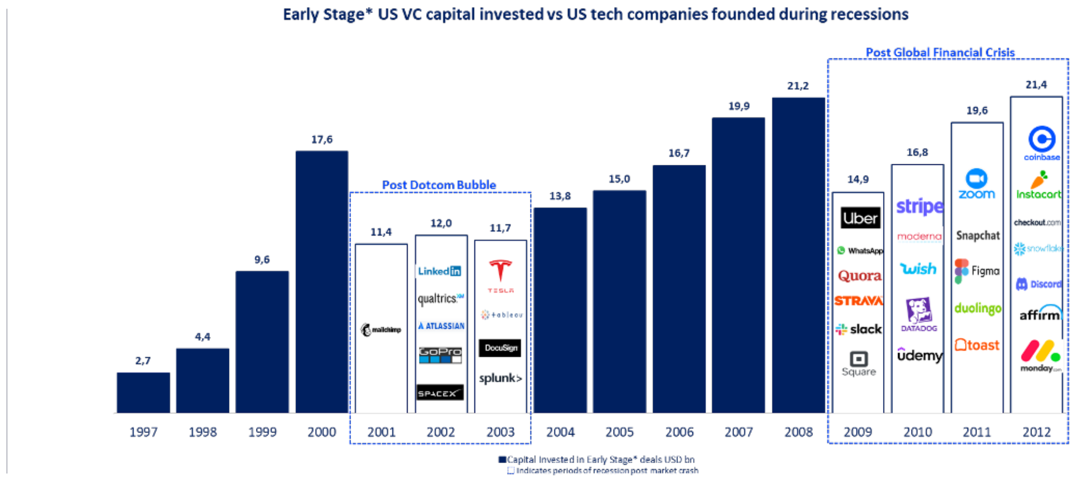
Portfolio companies faced unexpected headwinds to close their 2022 funding rounds : the absence in Europe of most American funds who fed the valuation peak in 2021 did not help, and VC suddenly asked proof points of path to profitability and of cash-burn reduction, still needing attractive growth rates. On top of this, the mix of recession and inflation since mid-2022 led CFOs of large corporates to build conservative expense budgets for 2023, notably in IT where audits of the SaaS spendings have been launched in many companies, which will probably increase client churn rate for B2B SaaS companies. In tech, even a few unicorns who made amazing multi-hundred-million financing rounds in 2021 have started to lay-off staff in Q4 2022!

Eventually, most institutional investors were hit by the denominator effect: overexposure to PE came from the drop in valuation of listed equities and fixed income that occurred since the beginning of the Ukraine war. ManyGPs experienced challenging closings since then as many LPs stopped new PE allocations for 2023.

So, why at AVP are we remaining very excited by our asset classes for 2023?

First, tech is anything but a cyclical industry. Digitization of processes of all underlying industries has not stopped because of a stock market adjustment, which was more than legitimate by the way. We even see many CFOs who call for productivity gains and cost reduction via higher automation, more precise data management, taxonomy and architecture to make operational decisions based on data, with less risk and higher return. And on the B2C side, see how Chat GPT, the most powerful generative AI tool publicly available met popular success on a global basis! Tech means excitement, tech means performance, again.

Secondly, history demonstrated that the best VC vintages occurred during recessions. Both after the .com bubble collapsing in 2001 and the GFC in 2008, amounts of financing rounds decreased, but amazing companies were created.



Source: © Bloomerg

Those periods of correction in VC are so selective that only the very best entrepreneurs succeed in raising funds to feed their growth in this period. There will be less deals, but it does not mean less return, quite the opposite. At AVP, we made not a single deal in Growth investment from April 2021 to March 2022 when valuations were at their peak, and only two in Venture investment, both at very conservative entry multiples. But we closed 7 deals after Ukraine crisis in 2022, at much more attractive multiples. We are convinced that 2022 vintage will be better than 2021, and that this will continue in 2023 as it happened after the 2000 and 2008 crisis. We believe that recipe for success does not change for start-ups because there is a financial correction in stock exchange markets : in 2023 like before, we will continue to back companies that focus on best-in-class execution, attract best talents to build solutions benefiting from proven product-market-fit and attractive, repeatable unit economics, in very large TAM. There are many in North America, Europe and Israël where we invest, and we are excited about the amazing entrepreneurs we will meet this year again, to build a promising vintage for our LPs!

Digital Healthcare trends for 2023

Manish Agarwal

General Partner

(list of investments)

ARTA · Blockstream · CENTGUARD · D-ID · dayforward · DOCAUTHORITY · hackajob · hint · HUB · IDELIC · K4CONNECT · LYRIC · mindoula · NEURA · OFFOR HEALTH · Policygenius · qloo · Thimble · Troy Medicare · ValeraHealth · wellth

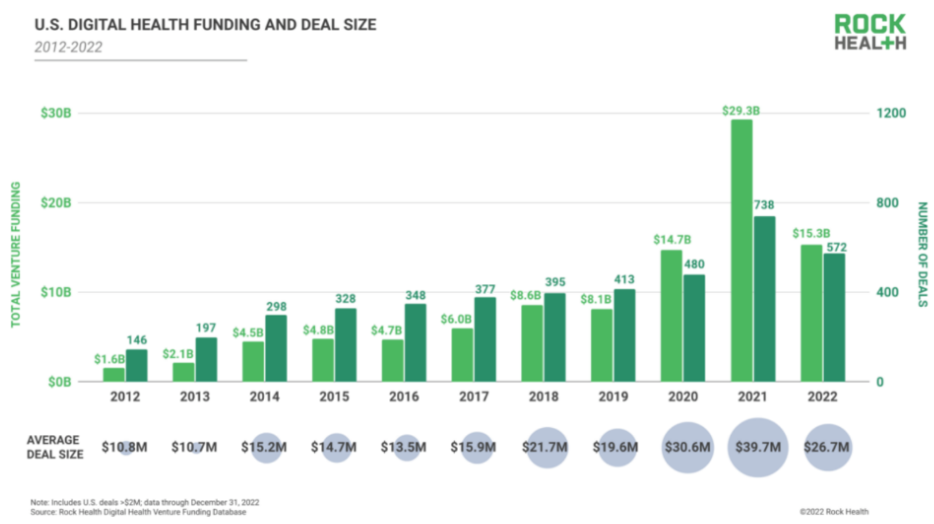
Early-Stage investing has not been immune to the market environment. At the start of the market turmoil, there was hope that companies at the Seed / Series A / Series B stage will escape the down draft.

While, it is certainly true that the impact of the downturn has been much less pronounced at the earlier stages, it would be wrong, in our opinion, to suggest that there has been no effect. Valuations have come down somewhat, but more importantly, companies with questionable metrics / business models are not being funded. Our view is that 2023 will bring more of the same.

Companies that can demonstrate strong product / market fit with good unit economics will see strong demand from investors at valuations comparable to those in the past.

On the other hand, businesses with unproven business models and / or weak teams will just not get funded no matter the price. We feel that the sense of FOMO that drove the market in 2021 has all but disappeared and in unlikely to return in 2023.

Healthcare as a sector, in our view, is relatively resilient to the market environment because it is less cyclical. However startup funding even within healthcare took a dive in 2022 as the chart below from Rock health illustrates.



Source: © Bloomerg

We continue to believe, however, that companies that show strong clinical validation of outcomes and somewhat decent gross margins (or, at least, a demonstrable path to one) will generate investor interest. On the other hand, there will be demand for companies with just “a story” and no proof points.

More broadly, and generalizing to some extent, we feel that the big lesson from 2021 and 2022 is that the strength of a company’s offering and business model matter. While momentum and fear of missing out drove VC funds to, at times, put capital into companies based on just a promise of future success, we feel (particularly at the earlier stages where revenue is, by definition, small) that the market will get more discriminating in 2023 and look for clear evidence of the fact that the company is “working”. And those companies should be able to raise the necessary capital with relatively little trouble.

2022 OVERVIEW

AVP: a transatlantic tech investment platform

AXA VENTURE PARTNERS

NEW JOINERS IN THE AVP FAMILY

FEB.	APR.	APR.	MAY.	JUL.	OCT.	NOV.
tracktor.fr	tive	OFFOR HEALTH	Florence	GEOMIO	ARTA	mytraffic
EARLY FRANCE	GROWTH US	EARLY US	GROWTH UK	EARLY UK	EARLY US	GROWTH FRANCE

€70m+

Committed in 11 funds and 2 co-investments

AVP COMPANIES THAT RAISED FUNDS IN 2022

D-ID, INCEPTO, qloo, ZENJOB, ValeraHealth, Policygenius, GRAVIE

EXITS

Tanker
EARLY

happytal
GROWTH

NEW HIRES

PARIS

- Raghav Agarwal — Business Development Officer
- Daphné Aissi — Associate Finance
- Guillaume Ambar — Senior Associate Investor Relations
- Arthur Brasseur — Associate Early
- Camille Dubaille — Office Manager
- Marine de Fages — Senior Associate Investor Relations
- Camille Périssère — Associate Early
- Jeremy Pointard — Senior Associate Finance
- Hagera Sendabad — Executive Assistant
- Justine Tellier — HR Manager
- Mariana Webb — Marketing Senior Associate

NYC

- Jessica Hayes — Senior Associate Early
- Jennifer Kalbourji — Office Manager
- Gregory Krisberg — Associate Early
- Eric Li — Senior Associate Growth
- Ethan Volk — Associate Growth

40+ TEAM SIZE 10+ nationalities

Transatlantic Investments & Teams

Multi-Strategy Tech Platform

AVP AXA VENTURE PARTNERS

Business Development backed by AXA

$ 1.2BN ASSETS UNDER MANAGEMENT

$800M DIRECT INVESTMENT	**$400M** FUND INVESTING
60+ COMPANIES FUNDED	**35+** FUNDS

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AVP Day 2022 - Hôtel de la Marine
October 27th 2022

OUR COMMITMENT TO SOCIETY

- Investment Exclusions
- Reporting ESG measures within our portfolio
- Strategic advisor to AVP with a strong focus on ESG topics
- CENTRE DES MONUMENTS NATIONAUX — Dedicated partnership to facilitate access to culture for the most vulnerable

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