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Navigating AI Investment Risks and Opportunities in Venture Capital

WHITEPAPER
NOVEMBER 2024

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The public release of ChatGPT in late 2022 spurred a substantial increase in investor interest and capital deployed into artificial intelligence ("AI") startups. The excitement surrounding AI has clearly impacted the public equity markets, with the ballooning value of chip-maker NVIDIA as the prime example. The tremendous perceived opportunity in AI has also driven a massive – and well-publicized – inflow of venture capital ("VC") funding in the private markets. Some of this deal activity has already generated outsized returns for VCs that have been investing in AI companies and are now posting material (albeit, largely unrealized) gains from rising valuations.

This paper seeks to address both the future opportunities and potential risks posed by AI within investors' VC portfolios. We initially highlight a host of areas where VC investments in existing or yet-to-be-founded startups may stand to benefit. After that, we cover the potential downsides related to VC investment in AI.

While there is a broad opportunity set that is visible to us today, it may shift over the coming months and years concurrent with the rapidly evolving AI industry. The key risks behind early AI investment harken back to the dot-com bubble of the late 1990's, with valuations and fundraising potentially getting ahead of real fundamentals (revenue, earnings, usage, etc.). While there are similarities to the tech optimism that dominated the investment landscape 25+ years ago, there are also notable differences including the imposing presence of large tech companies that have played a major role in the evolution of AI startups today.

Key takeaways

→ Much of the tangible returns from the AI boom to date have been captured by large, publicly traded companies. However, there is substantial opportunity for investing in AI startups via venture capital.

→ There is a large opportunity set available to innovative AI startups across a wide range of industries, including biotech/healthcare, robotics, cybersecurity, and services. The opportunity set visible today will likely shift over the coming years, concurrent with the rapidly evolving AI industry.

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→ The risks of AI investment are reminiscent of the dot-com bubble of the late 1990s, with valuations and fundraising potentially getting ahead of real fundamentals such as revenue, earnings, and usage. Many business models are unproven, future regulation is uncertain, and current AI adoption among consumers and businesses has been modest.

→ Like the dot-com bubble, AI may also present substantial opportunities for investors. Venture capital investment in the AI sector may hedge the disruption risk of existing exposure to incumbent industries/companies and provide substantial upside through access to nascent companies that may become the dominant tech companies of tomorrow.

The venture opportunity set in AI

In recent years, AI has become increasingly viewed as the next significant technology wave following the advent of the internet, cloud, and mobile. If AI lives up to today's high expectations, or even achieves a fraction of its perceived potential, it will drive a massive market opportunity.

Venture-backed AI companies have a chance to capitalize on the burgeoning opportunity, though there remains much uncertainty surrounding which AI startups will both survive and thrive.

Growth of AI infrastructure and applications ("apps")
The largest financial returns from the explosion of AI activity thus far have primarily accrued to semiconductor manufacturers. The most notable beneficiary from AI demand to date has been NVIDIA, which recently reported 75% gross margins on $35.0 billion in quarterly revenue for the period ended October 2024, up from the 54% margins on $5.9 billion in revenue for the period ended October 2022 (just prior to ChatGPT's release).[1] Between those two earnings releases, NVIDIA's stock price increased over 800%, and today NVIDIA is the largest company in the world by market capitalization.

[1] Source: S&P CapitalIQ.

As the AI industry matures, though, profits may be less concentrated among semiconductor manufacturers/designers. Instead, they may increasingly flow to providers of AI infrastructure/devices and AI apps primarily funded by traditional VCs as opposed to publicly traded incumbents. This path would be similar to what was seen in prior technology waves. While NVIDIA has seemingly captured the lion's share of profit from the AI boom so far, many anticipate that net income (not just revenue) will eventually be increasingly shared by infrastructure/device manufacturers and, ultimately, AI app companies.[2] It remains to be seen if the AI

[2] Source: Morgan Stanley "Mapping AI's Diffusion."

cycle plays out in this manner and how much private VC–backed startups benefit relative to established companies. As a post from a16z (a venture capital firm) put it, "the companies creating the most value – i.e. training generative AI models and applying them in new apps – haven't yet captured most of it."[3]

[3] Source: a16z "Who Owns the Generative AI Platform?"

Selling to software companies

While the best-capitalized AI firms compete to develop the top large language models ("LLMs"), startups building AI applications for specific verticals[4] might train much smaller models on high-quality industry-specific data that is not only more useful to their set of end customers[5] but also requires less computing power. As these specialized startups bring in customers/clients, they may be able to acquire proprietary data to continue improving their models.

[4] A "vertical" is a narrowly-defined industry or business line that focuses on a specialized customer audience or end market.

[5] Source: Inside Venture Capital (Jan 31, 2024).

Figure 1 below illustrates a variety of sectors where tailored AI solutions may be able to add value to business customers, both in enhancing revenues and controlling expenses.

FIGURE 1
Generative AI Applications – Examples of Enterprise Use Cases

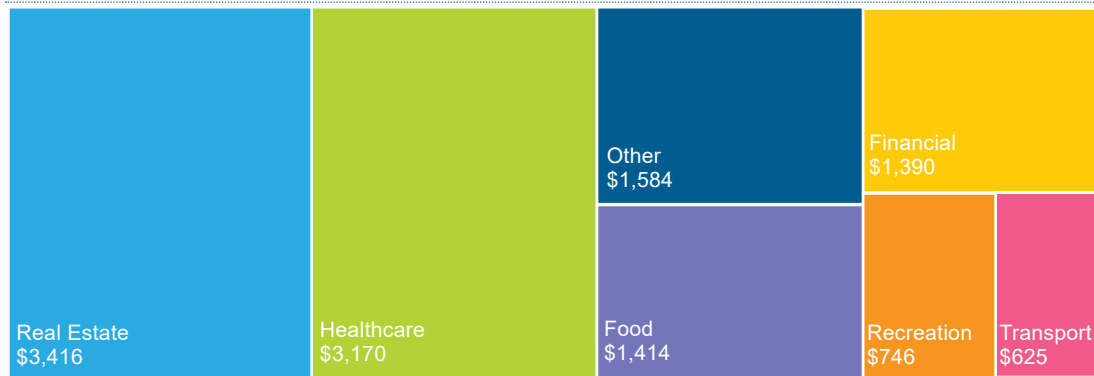Source: Inspired by Kelvin Mu, Translink Capital "Generative AI in the Enterprise." Images generated by DALL-E 3.

Disrupting service companies

Beyond offering AI-first solutions to other businesses, startups may also be able to leverage their AI solutions by becoming differentiated participants in their targeted industries (e.g., law, education, financial services). By providing tailored services and work products directly to end users instead of selling software to third party providers, AI companies may be able to take a larger share of the revenue that they help to generate. Most notably, startups leveraging proprietary AI technology stand to profit by providing services more efficiently than their competitors.[6]

[6] Source: Sarah Tavel's Newsletter "AI startups: Sell work, not software," East Wind "Investing in the Age of Generative AI."

Figure 2 below illustrates the largely untapped potential of AI startups breaking into various services industries. In aggregate, annual household services expenditures in the US accounts for over $12 trillion, which is multiples of the global software

market as of 2024. While not every services category is equally ripe for disruption from AI firms, the breadth of the services economy in the US alone should serve as an enormous potential opportunity set for AI firms.

Opportunities in biotech and healthcare

AI developments in the last couple years have helped unlock the possibility of AI startups driving breakthroughs in biological research. AI models today have already proven to be successful in predicting protein structures and generating DNA sequences that may allow for advancements in biology and medicine without the traditional cost, time, and trial-and-error of observation and experimentation.[7]

Today, only a small minority of medicines make it all the way through clinical trials to US Food and Drug Administration ("FDA") approval (see Figure 3). The uncertainty of approval contributes to the extraordinarily high cost of bringing a new drug to market.
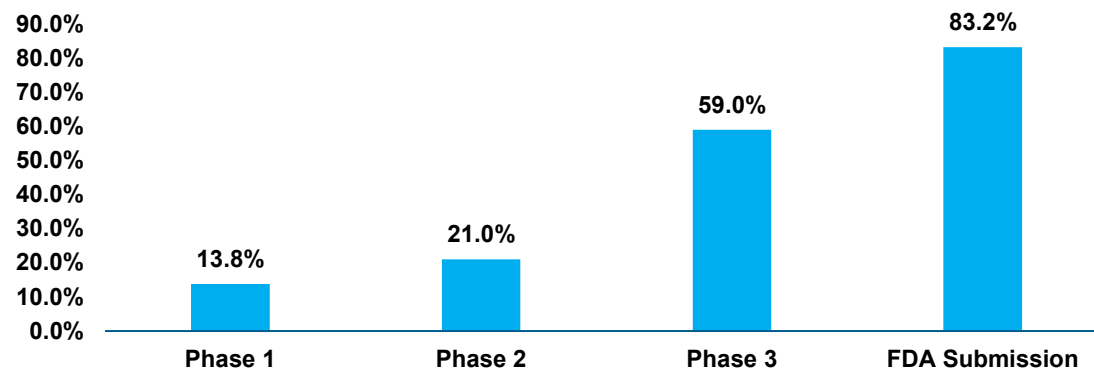
Accounting for the low initial approval rate as well as the estimated cost of capital (10.5% per annum) of the drug companies funding the effort, the average medicine costs over $1 billion in research and development expenses before generating its first dollar of revenue.[8] Companies that are able to use AI to reduce such costs or more efficiently develop medicines on their own may prove to be highly valuable. AlphaFold 3, an AI model developed by Google DeepMind and Isomorphic Labs, recently made a breakthrough[9] in this area by effectively predicting how molecules and proteins interact, which could significantly reduce experimental work needed in the drug development process.

AI agents and companions

AI "agents" operate semi-autonomously to achieve user objectives by interacting with other software. Such AI agents in science fiction/media include "Jarvis" in Ironman movies or "Cortana" in Halo videogames. These agents[10] are a possible next technological step beyond AI chatbots that provide responses to user-entered prompts and were the first AI product to gain widespread adoption.

Largely due to the anticipated adoption of AI agent technology, the market for robotic process automation ("RPA"), or software technology that enables the digital emulation of human actions, is expected to more than double to $65 billion by 2027.[11] In addition to established AI players like Alphabet and Anthropic that are developing AI agents, many early-stage startups are building RPA technology. Some forecast that small startups with just a few employees optimally leveraging AI agents could achieve a scale that previously required much larger workforces or even that highly valuable companies will be run solely by autonomous agents.[12]

Outside of AI agents focused on improving productivity, efficiency, and organization, there is significant potential in related AI "companions" focused on fulfilling social needs like friendship and consolation. For example, Character.AI, a provider of personalized AI "characters", has over three million daily active users and stronger engagement metrics than most other top AI applications today.[13] These AI companions have the potential to be at least a small part of the solution to the declared loneliness epidemic in the US and many other developed countries.[14] There is already some evidence that AI chatbots reduce loneliness.[15] Understandably, many have an aversion to the social-centric use cases of AI as they seem to be a shallow replacement for normal human interaction. As such, AI companion technology will likely undergo continued evolution in pursuit of offerings that could potentially serve as a net benefit to users.

Cybersecurity

As AI technology improves, it will likely have the unfortunate side effect of increasing the effectiveness of tactics employed by malicious actors. This has become apparent over the last couple years, with the use of "deepfake" (i.e., digitally altered) videos leading to a 700% increase in fraudulent incidents in the fintech sector during 2023 – largely attributable to the increasing use of AI.[16] The rise in AI-enabled threats, though, is expected to be countered by cybersecurity solutions utilizing cutting edge AI. As a result, the cybersecurity market, already sizeable at $223 billion, is expected to grow to over $500 billion by 2030.[17]

Robotics and autonomous vehicles

Beyond software-based AI solutions, many expect that developments in AI technology will have dramatic impacts on the physical world through robotics solutions. Jensen Huang, the CEO of NVIDIA, recently said that "the future of AI lies in physical AI systems that can understand and operate in the real world."

[10] See the Appendix for a list of potential autonomous agent use cases.

[11] Source: IDC, "Worldwide Intelligent Process Automation Software Forecast, 2023-2027"; Wired.com "Chatbots are Entering Their Stone Age."

[12] Source: Matt Schlicht's AI Newsletter "The Complete Beginners Guide to Autonomous Agents", Nathan Lands, Ben Parr.

[13] Source: Apoorv's notes "Why Meta & Google may win Consumer AI, before ChatGPT does," Altimeter.

[14] Source: US Department of Health and Human Services.

[15] Source: Freitas, Julian; Uguralp, Ahmet; Uguralp, Zeliha; Stefano, Puntoni, "AI Companions Reduce Loneliness" (working paper).

[16] Source: Sumsub, The Wall Street Journal, "Deepfakes Are Coming for the Financial Sector."

[17] Source: Grandview Research "Cyber Security Market Size & Trends."

An estimated 25% of warehouses today implement automation and just 10% use "sophisticated" automation technology,[18] leaving significant room for additional use of intelligent robotics over the coming decades.[19] Analogous to how the top LLMs today (trained on vast quantities of text) can provide highly useful text responses, AI models trained on real world navigation have proven capable of performing productive physical tasks without being programmed for those specific functions.

Autonomous vehicle ("AV") software/hardware is another area of AI that has attracted significant sums of venture capital over the last decade,[20] including startups like Cruise (acquired by GM), Aurora, and Nuro. Public companies including Tesla and Alphabet (with Waymo) have made strides in advancing AV tech in recent years.[21] As AV technology continues to develop (and costs presumably decline), there may be a substantial market opportunity in autonomous taxis and/or self-driving personal vehicles.[22]

Potential risks

Along with the large market opportunity, venture investment in the AI space also comes with several key risks and considerations as outlined in the sections that follow.

Capital intensive business models

The high cost of AI model training and inference is no secret, with AI startups sometimes spending 80% or more of capital raised in early rounds on AI compute (e.g., spending on semiconductors).[23] Sequoia Capital has estimated the AI industry spent approximately $50 billion on NVIDIA chips during 2023 to train language models while only bringing in an estimated $3 billion in revenue. Some believe that even well-funded unicorns like OpenAI and Anthropic will be unable to compete with large tech firms that have significantly more capital to invest from their highly profitable primary business lines.[24] As new entrants compete and next generation semiconductors are produced, the existing AI compute capacity that firms have spent heavily on may be vulnerable to commoditization.

Besides the major expenditures for semiconductors and cloud computing, AI startups also likely need to spend on specialized talent in the sector to remain competitive. The median annual pay for AI engineers is nearly $300,000 today, approximately 50% higher than non-AI engineering roles.[25]

The capital-intensive nature of AI startups clashes with the typical VC model. As the most successful portfolio companies achieve traction/scale, VCs may be compelled to invest capital in follow-on rounds at less attractive valuations led by mega-cap tech pricing deals with a lower return hurdle.

[18] Sophisticated automation technology refers to advanced systems and tools designed to perform complex tasks with minimal human intervention.

[19] Source: Meteor Space.

[20] Source: Crunchbase.

[21] Source: S&P "Self-Driving Cars Gain Momentum in US."

[22] Source: McKinsey "Autonomous driving's future: Convenient and connected."

[23] Source: a16z "Navigating the High Cost of AI Compute."

[24] Source: The Wall Street Journal, "The AI Revolution is Already Losing Steam."

[25] Source: The Wall Street Journal, "The Fight for AI Talent: Pay Million-Dollar Packages and Buy Whole Teams," Levels.fyi.

Constraints to growth

The lack of semiconductor supply needed for AI model training and usage has arguably been one of the most noteworthy current constraints to AI's growth. The NVIDIA semiconductors powering AI today are a scarce resource, with the top LLM developers competing for what is a relatively limited pool of supply. Goldman Sachs anticipates semiconductor supply constraints will be less of an issue in the back half of the 2020s as key players expand capacity to meet the exponential growth.[26]
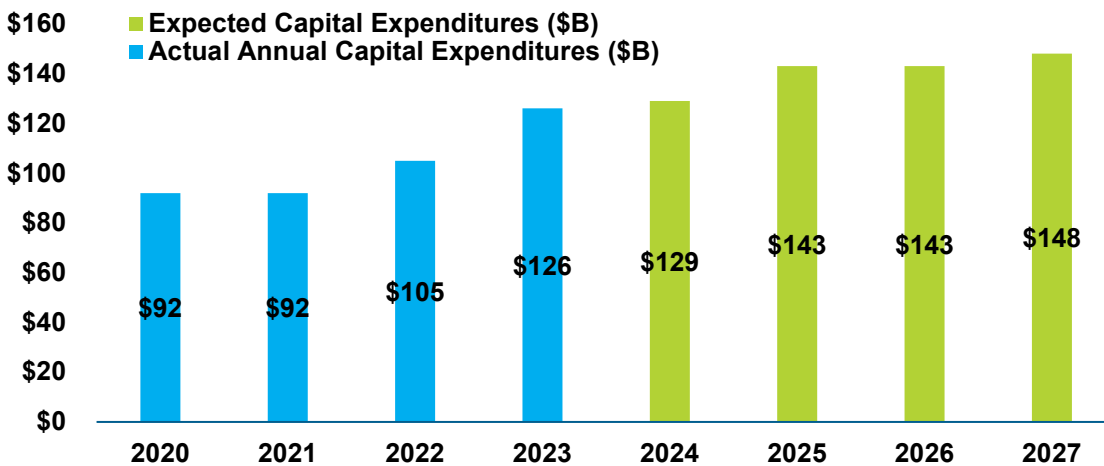
An emerging constraint is the additional energy and transmission infrastructure needed to support expanded AI capabilities. ChatGPT queries today require roughly ten times the amount of energy as traditional Google searches.[27] Goldman Sachs estimates that an incremental 47 gigawatts of capacity (enough to power 35 million to 50 million homes) is needed to serve data center-driven load growth in the US through 2030.[28] The additional power is expected to cost a total of $50 billion[29] – an expense that may be challenging for utilities to fully pass along to consumers. Additionally, many large energy projects require years of planning, development, and construction before the additional power generation comes online, making it difficult to match uncertain increases in demand from AI over shorter time frames. Figure 4 shows the increase in utility capital expenditures seen through 2023 as well as the additional amount of annual spending expected over the next few years.

FIGURE 4
Utility Annual Capital Expenditures by Year ($B)

Source: Goldman Sachs.

High valuations

The skyrocketing demand for AI exposure among VCs and deep-pocketed public companies has led to high valuations, particularly among the LLM companies. For example, OpenAI recently raised capital at a $157 billion valuation,[30] while Anthropic and xAI are reportedly both in fundraising discussions that would value each at $40 billion to $50 billion.[31] While the high absolute valuations may be justified by expectations of continued extraordinary revenue growth, many of these high profile LLMs remain deeply unprofitable,[32] with a long projected runway to breakeven.
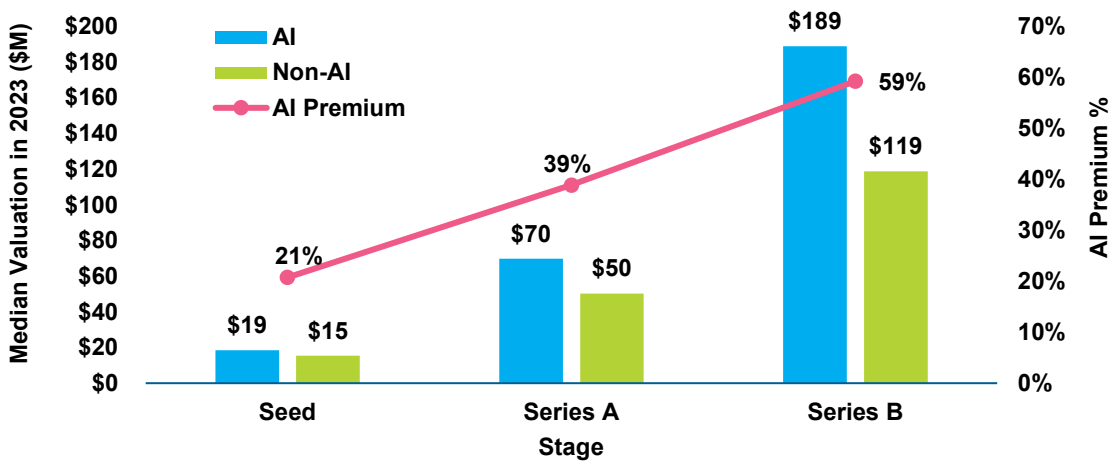
Figure 5 shows that AI deals commanded a significant premium relative to all other types of startups during 2023 that has continued into 2024.[33] The largest gap in valuations was in later stage Series B rounds, where the median AI company was valued nearly 60% higher than non-AI companies at the same stage.

Current lack of uptake

Many AI startups are facing challenges with building and scaling their customer base and use cases. Others have raised concerns related to the lack of significant adoption of AI products by consumers and businesses alike. Many of the top AI applications today are struggling to drive user engagement and retention with key usage metrics falling short of other consumer applications.[34] Figure 6 shows that use of generative AI in personal lives ranges from 23% to 35% of respondents, while only 12% to 28% have used it at work/school.
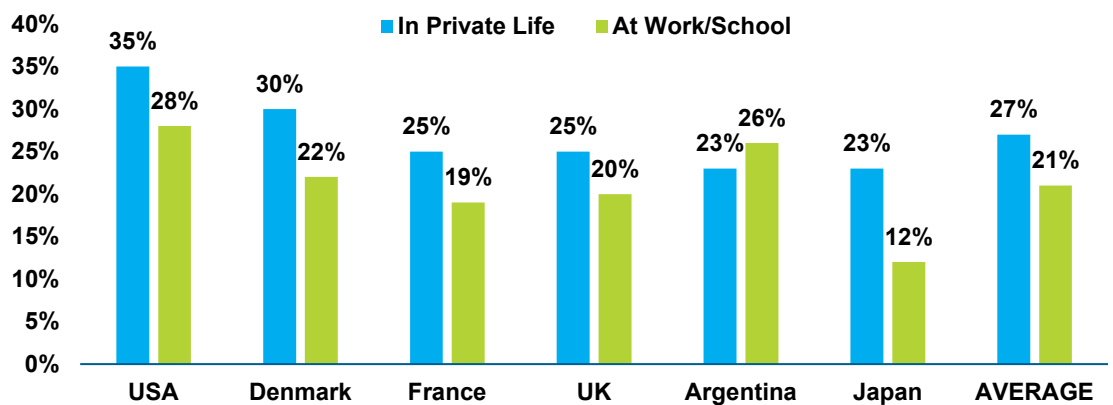
The key question is how soon (if ever) AI will lead to meaningful changes in terms of productivity, expense-reduction, and scientific discovery. The more quickly AI shows substantial improvements in these areas, the greater the uptake will likely be. AI skeptics from Elliott Management, Sequoia, and Goldman Sachs, have all expressed doubt regarding AI's current capabilities and whether the vision of more optimistic parties will ultimately come to fruition.[35]

Repeat of the dot-com bubble?

The amount of capital flooding into AI today has some worrying about a repeat of the dot-com boom and bust[36] of the late 1990s and early 2000s.[37]

One of the prime examples of the dot-com bubble period is Cisco Systems, which provided networking solutions (routers, switches, etc.) to the flourishing internet businesses of the era. Cisco's stock generated 100% annualized returns through the entire 1990's and briefly became the most valuable company in the world, reaching a market capitalization of over $550 billion by its peak in March 2000. But by April 2001, it had plummeted by over 80% in value. Although, Cisco has grown revenue and earnings meaningfully since that time, the stock remains well below its March 2000 peak.

In the private markets, annual aggregate venture capital raised roughly tripled between 1995 and 1997, then it tripled again between 1997 and 2000 (see Figure 7). The venture fundraising record set in 2000 would not be broken until 2015. By comparison, Figure 8 shows that VC fundraising activity currently looks quite unlike the frenzied dot-com era. Venture funding dropped by nearly two-thirds in 2023 relative to 2021, the lowest levels seen since 2015, and is on pace to fall again in 2024.[38]
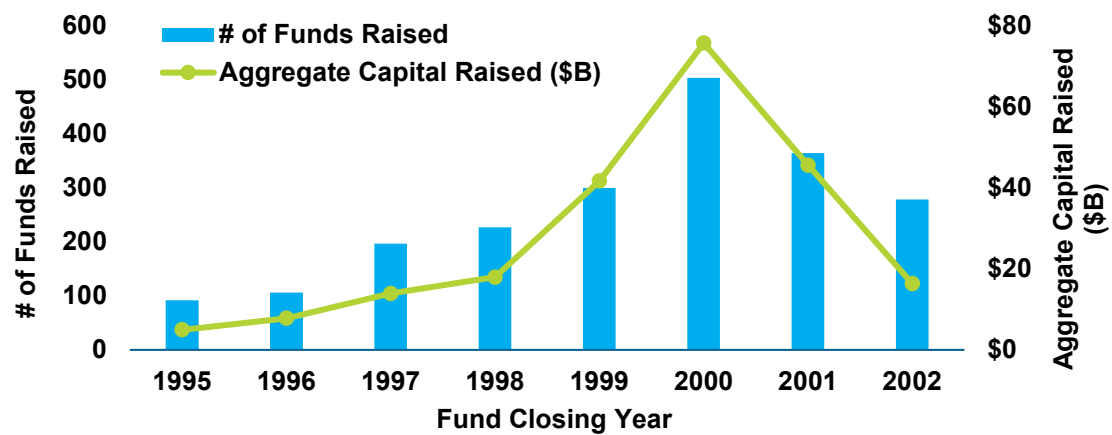
FIGURE 7
Historical Venture Capital Fundraising Activity 1995-2002

Source: Preqin, as of June 10, 2024.
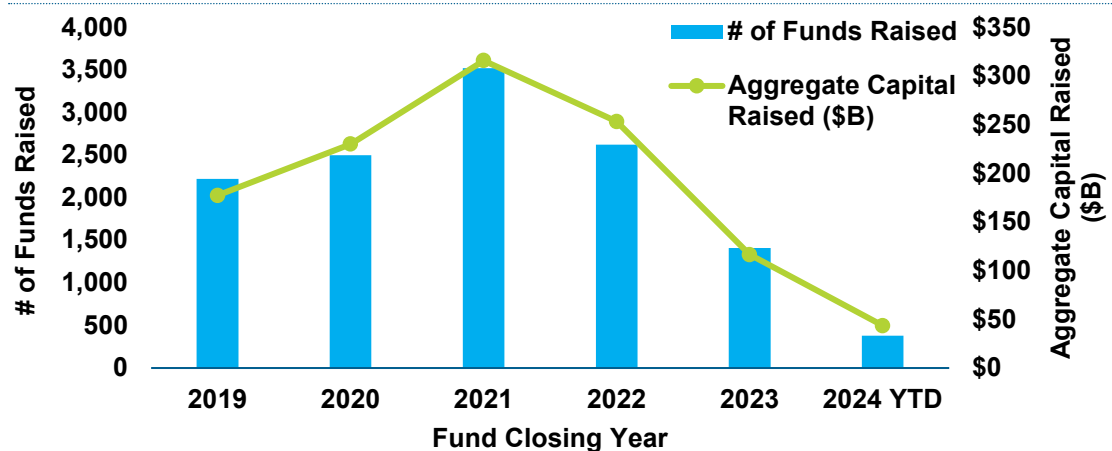
FIGURE 8
Historical Venture Capital Fundraising Activity 2019-2024

Source: Preqin, as of June 10, 2024.

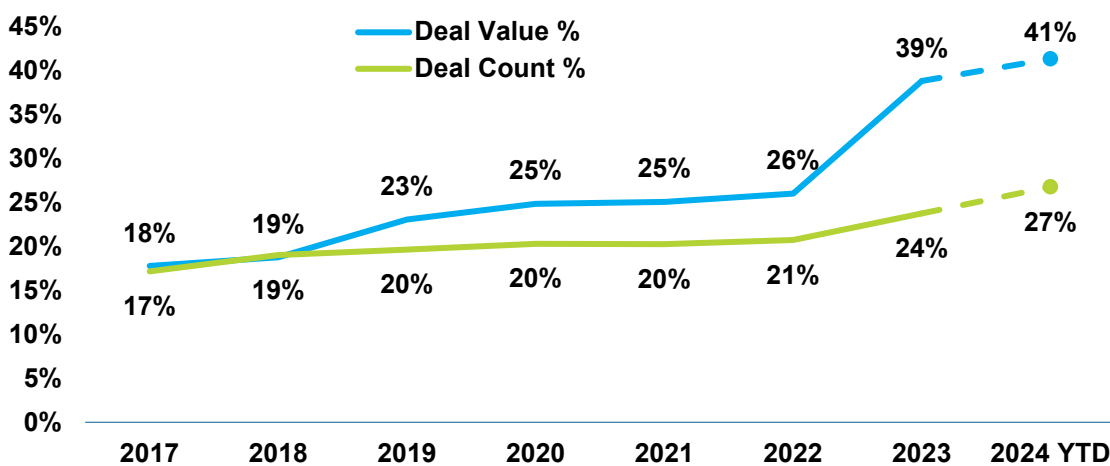While the overall VC fundraising environment does not point to an existing bubble in private markets, AI accounts for a growing proportion of VC deal activity. Figure 9 below shows a significant jump in AI's share of total venture deal value during 2023, a trend that has continued during the first half of 2024.

However, AI's share of venture capital deal count in the US, while also seeing a meaningful uptick over the last 18 months, is not as extreme. The reason behind this dispersion is that the capital is disproportionately going into a minority of early leaders like OpenAI, Anthropic, Mistral, xAI, and others.

Winner take all?

Another major concern of prospective AI investors is if the industry's dynamics result in one or a few leading companies reaping essentially all the rewards from continued adoption of AI technology. In such a scenario, VC returns in AI may be heavily dependent on having exposure to (and securing high enough ownership in) a very small subset of startups that emerge as the winners.

Alternatively, the leading public tech companies could capture most of AI profits and leave little for venture-backed firms. Given the massive user bases of the largest consumer tech companies today along with these companies' ballooning capital investments in AI, such an outcome may not be far-fetched.

Recent partnerships have lent further credence to these concerns. In March 2024, Microsoft hired the co-founders and other employees of Inflection AI, which raised $1.3 billion at a $4 billion valuation last year in a round led by Microsoft. As part of the deal, VC investors were reported to have earned a modest return through a licensing agreement with Microsoft and retained equity in Inflection AI.[39] Similar deals have also been struck between Adept and Amazon as well as Character.AI and Google. Some anticipate that many other AI companies will follow a similar

[39] Source: Axios Pro Rata March 20, 2024.

trajectory and be unable to achieve meaningful scale as standalone companies, resulting in middling investment outcomes for the VC investors that back them.[40]

There is also the risk that burdensome AI regulation could further bolster the positions of the best-funded companies and threaten many new venture-backed startups.

Mitigating factors

While investors should be cognizant of the potential pitfalls of early-stage AI investing, there are a host of "mitigating factors" to the risks presented in the previous section that are worth considering.

→ Perhaps the most pertinent consideration is that many of the concerns center around the most prominent VC-backed AI companies (e.g., OpenAI and Anthropic). There is an expansive universe of promising AI startups for which the risks related to potentially frothy valuations, capital intensity, winner-take-all dynamics, etc., are less applicable.

→ High valuations primarily stem from the largest subset of AI companies that tend to raise much of their capital from corporations that do not solely focus on a startup's return on investment and often benefit from related business partnerships as an extension of their investments. Traditional VCs are likely investing in AI deals with lower valuation premiums, on average.

→ The excitement around AI has spurred only a small fraction of the dot-com era's level of IPO activity.[41] AI startups comprise a significantly smaller proportion of venture activity than internet startups in the late 1990s, which peaked around half of all deals.[42]

→ The current AI cycle also differs from the dot-com bubble in that the primary source of revenue among many of the top AI startups are not other unprofitable startups but some of the most profitable companies in the world (e.g., Microsoft, Meta, Alphabet).

→ Moreover, many AI companies, while generally unprofitable, are generating substantial revenue. This is somewhat unlike the dot-com bubble, which saw significant capital investment going toward pre-revenue internet companies.

→ In addition, the federal government has provided considerable support and incentives via the "CHIPS" Act for spending on research and development as well as manufacturing related to semiconductors and AI.[43]

[40] Source: X/Twitter, Gavin Baker.

[41] See the Appendix for charts illustrating Tech IPO activity.

[42] Source: Crunchbase. "Internet Services & Telecommunications" deals include all companies classified within the internet services and messaging & communications groups as well as e-commerce and all other telecommunications industries not captured in previously listed groups.

[43] Source: "What The CHIPS and Science Act means for Artificial Intelligence" by Stanford University Human Centered Artificial Intelligence, August 2022.

→ Concerns about near-term AI adoption may be short-sighted, as focusing on current progress overlooks the long-term potential. AI may indeed prove to be quite similar to the internet, in that the improvements in productivity and quality may take years or decades to fully manifest.

→ While some firms may have a first-mover advantage, it is far too early to determine who the long-term winners will be from AI. For example, two of the biggest winners of the internet age, Google (Alphabet) and Facebook (Meta), were not founded until 1998 and 2004, respectively.

→ Similar to how there was not just a single winner from the internet or mobile technology waves, it seems likely that there will be many thriving businesses born in the current AI wave.

Conclusion

Artificial intelligence is widely expected to have a tremendous impact on consumers and businesses over the coming years and decades. If investors believe that AI will be the next major technology to meaningfully disrupt existing businesses, they may want to consider how best to evaluate this phenomenon.

However, it is crucial to acknowledge the potential downsides of investing in AI. The rapidly evolving nature of the AI industry means that the opportunity set we see today will likely change over time. As seen with previous technological breakthroughs (e.g., railroads, the automobile, computing, the internet), many of the early investments may fall short of expectations even if the technology itself blossoms beyond those expectations. Further, AI investments carry risks reminiscent of the dot-com bubble of the late 1990s, where valuations and fundraising efforts may outpace actual business fundamentals such as revenue, earnings, and usage.

Despite these risks, there are notable differences between the current AI investment landscape and the tech optimism of 25+ years ago. The presence of large tech companies has significantly influenced the development of AI startups today. These companies play a major role in shaping the AI ecosystem, providing both opportunities and challenges for investors.

Early-stage exposure to the AI sector may be complementary to existing investments in more established industries/companies that may be disrupted by further adoption of AI technology. Generally, a dynamic free market economy tends

to promote creative destruction with innovative upstarts ultimately displacing the winner in a given industry. AI venture exposure may hedge the disruption risk of existing positions in public companies and potentially provide substantial upside through access to nascent companies that may become the $trillion+ companies of the future.

In conclusion, while the AI investment landscape shares similarities with past tech booms, it also presents unique opportunities and risks. Investors must remain vigilant and adaptable, recognizing that the AI industry will likely continue to evolve. By carefully navigating this dynamic environment, venture capitalists may be able to capitalize on the transformative potential of AI while mitigating some of the associated risks.

Appendix A

Personal Life
→ Virtual assistants
→ Smart home automation
→ Fitness & wellness coaching
→ Personal finance management
→ Online dating & matchmaking

Manufacturing
→ Quality control
→ Predictive maintenance
→ Process optimization
→ Supply chain management
→ Robotics & automation

Real Estate
→ Property valuation
→ Market analysis
→ Virtual property tours
→ Tenant screening
→ Mortgage risk assessment

Gaming
→ Game design and testing
→ AI-driven characters
→ Procedural content generation
→ Player behavior analysis
→ eSports coaching

Agriculture
→ Precision farming
→ Crop monitoring
→ Pest detection
→ Yield prediction
→ Smart irrigation

Entertainment
→ Content recommendations
→ Virtual reality experiences
→ Personalized advertising
→ Social media monitoring
→ Automated video editing

Healthcare
→ Diagnosing diseases
→ Personalized treatment plans
→ Drug discovery
→ Medical imaging analysis
→ Virtual nursing assistants

Transportation
→ Autonomous vehicles
→ Traffic management
→ Route optimization
→ Logistics & delivery
→ Drone navigation

Education
→ Adaptive learning platforms
→ Virtual tours
→ Learning analytics
→ Plagiarism detection
→ Career guidance

Finance
→ Fraud detection
→ Algorithmic trading
→ Credit risk assessment
→ Financial advising
→ Portfolio management

Energy
→ Smart grid management
→ Demand response optimization
→ Energy consumption forecasting
→ Renewable energy integration
→ Predictive maintenance of power

Human Resources
→ Candidate screening
→ Talent acquisition
→ Performance analysis
→ Employee engagement
→ Training & development

Retail
→ Inventory management
→ Demand forecasting
→ Price optimization
→ Customer service chatbots
→ Personalized recommendations

Legal
→ Contract analysis
→ Legal document review
→ Case outcome prediction
→ Intellectual property management
→ Automated legal research

Public Safety
→ Surveillance & security
→ Disaster management
→ Emergency response
→ Crowd control
→ Crime prevention

Real Environment
→ Climate modeling
→ Pollution tracking
→ Wildlife monitoring
→ Ecosystem management
→ Natural resource optimization

Space Exploration
→ Autonomous spacecraft
→ Planetary rover navigation
→ Mission planning & optimization
→ Astronomical data analysis
→ Satellite maintenance

Art and Design
→ Generative art
→ Architectural design
→ Music composition
→ Virtual fashion design
→ Creative writing assistant

Journalism
→ Automated news writing
→ Fact checking
→ Sentiment analysis
→ Trend prediction
→ Social media analysis

Customer Support
→ Chatbots & virtual assistants
→ Sentiment analysis
→ Ticket routing & prioritization
→ Knowledge management
→ Support analytics

FIGURE 10
Autonomous Agent Use Cases

Source: Matt Schlicht, CEO of Octane AI, MattPRD.com "The Complete Beginners Guide to Autonomous Agents."

Appendix B

Setting aside the substantial differences in the broad VC fundraising between the two periods, if one were to assume that the outcomes for venture capital deployed into AI today will rhyme with the outcomes observed for VC investments in internet (and internet-adjacent) startups at the dot-com bubble peak, what might that imply?
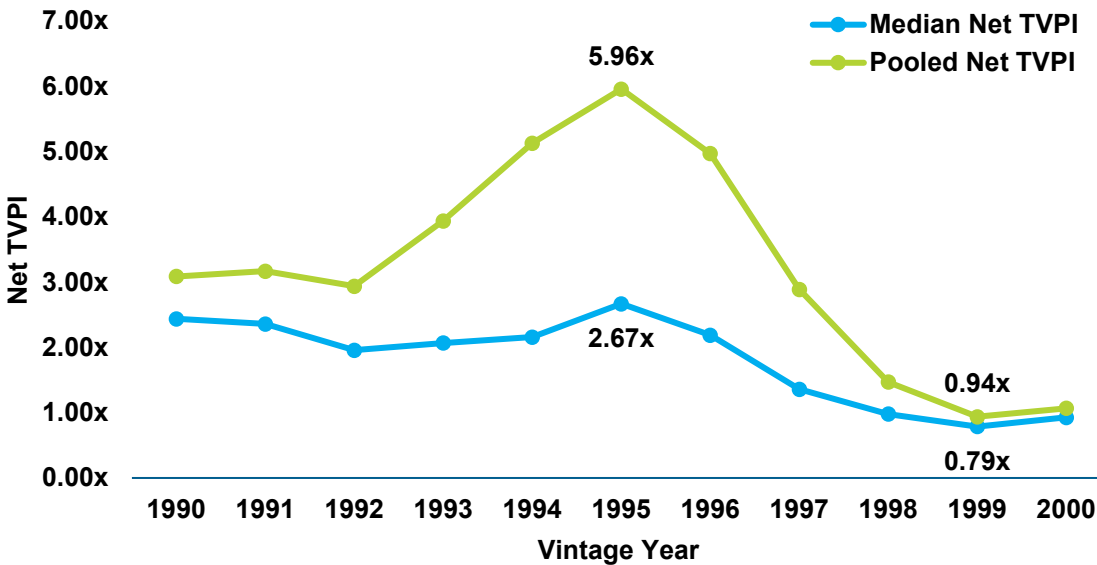
In what ended up being the early stages of the dot-com bubble, VC funds that made their first investments in 1995 have generated the strongest returns (on a net TVPI basis) relative to any vintage year before or since. However, only a few years later, 1999 has proven to be the worst performing meaningful[44] vintage year to date. The median VC fund from 1998–2000 lost money while the 1997–2005 median funds have failed to return a 1.5x net TVPI, a notable distinction from any other mature vintage year. While internet startups didn't account for all venture investments made throughout this period, they likely were the primary culprits behind both the best and the worst VC fund cohorts seen to date, in quick succession. Of course, the strongest returns were realized in 1995 when VC capital raising was only moderately above historical levels up to that point, just prior to the start of a fundraising frenzy that ultimately peaked in 2000.
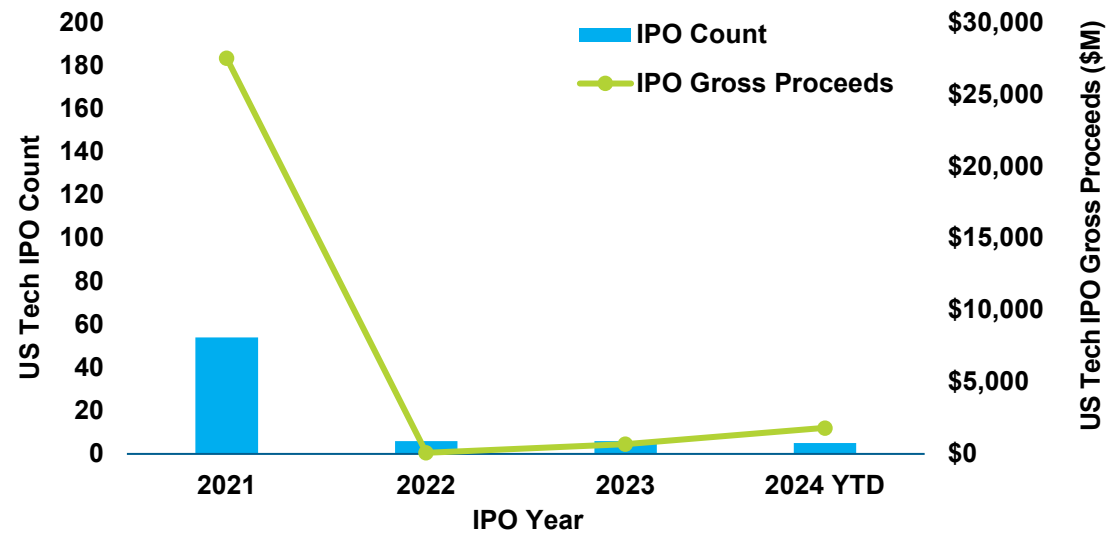
[44] Vintage years with less than two years of performance history are generally considered "not meaningful."

Appendix C
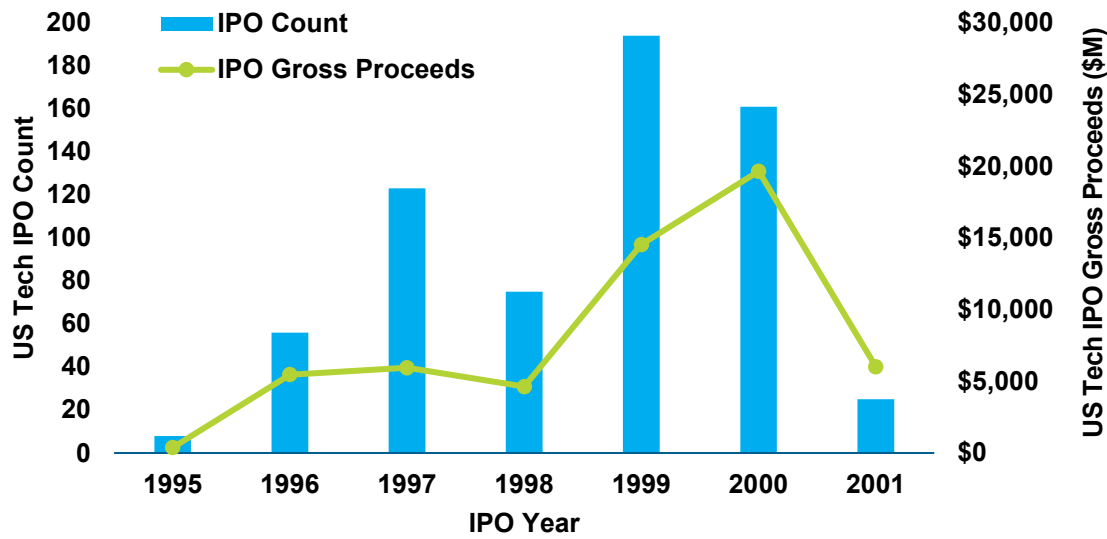
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