# The Private Shares Fund

# Sector Focus: Cybersecurity

Over the last few years, there has been an acceleration in both the pace and scale of cybercrime. According to Cybercrime Magazine, the cost of global cybercrime is expected to reach over $10 trillion by 2025.[1] Motivated by massive paydays, highly skilled hackers continue to penetrate the systems of both public and private organizations despite the best prevention efforts of the global cybersecurity apparatus.

According to the US National Institute of Standards and Technology (NIST), there are five core functions that underpin a successful and holistic cybersecurity program: identify, protect, detect, respond, and recover.[2] This categorization provides a useful framework for investors as they navigate the complex ecosystem of security companies.

| Identify | Protect | Detect | Respond | Recover |
|---|---|---|---|---|
| **Focus** | | | | |
| Organizational self-assessment that encompasses every aspect of the enterprise and provides an understanding of the entire enterprise estate | Maintaining the functionality of critical infrastructure in the event of a breach, as well as minimizing the impact of attacks | Monitoring assets and information in real-time, ensuring that all anomalies and events are detected quickly, and maintaining detection systems | Responding to any breaches as quickly as possible and outlining actions to be taken depending on the type and severity of the breach | Getting back any data that might have been lost and restoring services to critical systems that may have been damaged |
| **Methods** | | | | |
| Inventorying assets and vulnerabilities, measuring attack surfaces, baselining normal behavior, threat modeling and risk assessment | Patching, containing, isolating, managing access, vulnerability mitigation | Event discovery, triggering alerts on anomalous behavior, intrusion hunting, security analytics | Response planning, post-mortem response analysis, documenting lessons learned. | Recovery planning, post-incident communication, service restoration, documenting lessons learned |
| **Relevant PSF Holdings** | | | | |
| tenable*, Contrast Security, snyk | Lookout, tenable*, code42, rubrik | Arctic Wolf, exabeam, Darktrace*, *, Tanium, cybereason | Arctic Wolf, cybereason, Tanium | Arctic Wolf, rubrik |

**Exited investment*

Before diving into recent sector activity, it is important to mention a few key elements of cybersecurity that differentiate it from other software verticals. We believe the following to be some of the most important characteristics for understanding the cybersecurity sector:

1. Companies do not set the pace of innovation alone. Adversaries play a huge role in dictating where and how fast the industry moves.
2. Innovation is more often acquired than built in-house.
3. There is a massive shortage of qualified cybersecurity professionals.

The world today is full of nefarious actors looking to exploit any vulnerability for their own advantage. These vulnerabilities are usually unknown to the targets, and thus cannot be protected against until they become visible (often after a breach occurs). As a result, these adversaries often dictate what new products the industry needs and how quickly these products are developed.

1 https://cybersecurityventures.com/hackerpocalypse-cybercrime-report-2016/#:~:text=Cybersecurity%20Ventures%20expects%20global%20cybercrime,%243%20trillion%20USD%20in%202015
2 https://www.nist.gov/cyberframework/online-learning/five-functions

A downstream effect of this atypical product development cycle is that most leading security companies tend to be serial acquirers, bolstering their product portfolios through mergers and acquisitions (M&A) instead of relying entirely on internal development. Once a startup has identified a problem, built a solution, and attracted customers, larger incumbents are often more willing to step in and acquire proven technology and talent.

However, the best solutions are only as valuable as the individuals tasked with implementing them. Despite the efforts of industry leaders and government organizations to drive more awareness around the importance of cybersecurity, there remains a major shortage of qualified professionals around the world. According to the 2022 (ISC) Cybersecurity Workforce Study, the global cybersecurity workforce gap currently hovers around 3.4 million people.[3] Closing this gap will take continued effort from both governments and private enterprises.

## PRIVATE MARKET ACTIVITY

Like other sectors and the private market in aggregate, the pace of venture funding for cybersecurity companies has slowed dramatically from the pace set in prior years due to various macro shifts over the past year. According to Pitchbook, cybersecurity companies have raised $4.2 billion so far in 2023, putting the sector on pace for an annual total of $8.5 billion. At this rate, 2023 would mark the second consecutive year of declining security funding, with 2022's $18.5 billion well below 2021's high-water mark of $30 billion, according to data from industry group Momentum Cyber.[4]

Digging in further, the data suggest that the decline in 2023 is due to the relative absence of the so-called mega rounds ($100 million or more raised) that became commonplace in 2020 and 2021. Of the 383 cybersecurity deals captured by Pitchbook this year, only seven met or exceeded this threshold. **While the opportunity set for primary investments in growth-stage rounds has contracted from its peak, the pace of activity in the earlier stages is indicative of a robust pipeline of growth-stage opportunities over the coming years.**

M&A volumes in the sector have remained strong as both strategic and financial buyers look to take advantage of a favorable pricing environment. As of May 2023, there have been 104 M&A deals announced with total disclosed deal volume of $8.5 billion.[5,6,7] With their buyouts of Sumo Logic (announced) and KnowBe4 (closed), respectively, Francisco Partners and Vista Equity Partners have continued the Private Equity (PE) buying spree that took off as the markets slid in 2022. However, given the significant run-up in public equities during the first half of 2023, we would not be surprised to see both strategic and financial buyers shift their focus to the private markets.

## PORTFOLIO HIGHLIGHTS

The Private Shares Fund has a history of successful investments in the cybersecurity space, such as AlienVault, Tenable Network Security, and Darktrace.

**AlienVault**, a 2014 vintage investment with follow-ons in 2015 and 2018, was a provider of security information and event management (SIEM) solutions. Their Unified Security Management platform aimed to help organizations detect and respond to security threats by consolidating and correlating security data from various sources into a unified view. Prior to AT&T acquiring the company in 2018, AlienVault had raised $118 million in venture capital and achieved a peak valuation of $429.6 million.

**Tenable Network Security**, a member of the 2017 vintage, focuses on providing vulnerability management solutions. Their Tenable.io platform offers continuous visibility into an organization's network, systems, and applications, while also providing various features to help businesses assess remediate vulnerabilities effectively. The company debuted on the NASDAQ in July 2018 with an enterprise value of $3 billion and was valued at over $5 billion as of June 30, 2023. Prior to its IPO, Tenable raised $350 million in venture capital and achieved a peak valuation of $550 million.

**Darktrace**, part of the 2020 vintage with one follow-on investment in 2021, specializes in artificial intelligence and machine-learning based threat detection and response. Their innovative approach relies on AI algorithms to facilitate a self-learning system that can detect and mitigate potential threats in real time. The company debuted on the London Stock Exchange in April 2021 at an enterprise value of $2.4 billion. Prior to its IPO, Darktrace raised $230.5 million in venture capital and reached a peak valuation of $1.61 billion.

---

3 https://www.isc2.org/Research/Workforce-Study
4 https://momentumcyber.com/cybersecurity-almanac-2023/
5 https://momentumcyber.com/cybersecurity-market-review-q1-2023/
6 https://momentumcyber.com/cybersecurity-snapshot-april-2023/
7 https://momentumcyber.com/cybersecurity-snapshot-may-2023/

Over the last few years, the investment team for the Private Shares Fund has continued to add leading cybersecurity companies to the portfolio. Three such companies are Arctic Wolf, Contrast Security, and Lookout.

**Arctic Wolf** is a leading company in security operations. Since its inception in 2012, the company has been developing the industry's first cloud-native security operations platform that acts as the last line of defense for thousands of organizations worldwide. Arctic Wolf's managed security service, complete with 24/7 concierge support, helps to fill the talent gap facing SMB and mid-market companies. Rather than hire an in-house security team, these companies turn to Arctic Wolf to function as an outsourced security team, providing excellent results and best-in-class service. The company was recently named to the CNBC Disruptor 50 List for the second consecutive year, as well as the Forbes Cloud 100 List.[8,9,10]

**Contrast Security** provides the industry's most modern and comprehensive Application Security Platform, removing security roadblock inefficiencies and empowering enterprises to write and release secure application code faster. The company was positioned as a Visionary in the 2023 Gartner Magic Quadrant for Application Security Testing, which evaluates companies based on their completeness of vision and ability to execute10. Further, Contrast recently launched its Managed Security Services Program which will bring its comprehensive suite of code security solutions to a broader audience beyond their core enterprise customer base.[11]

**Lookout** is the endpoint-to-cloud cybersecurity company that delivers zero-trust security by reducing risk and protecting data without boundaries or limits. The company's unified, cloud-native platform safeguards digital information across devices, apps, networks, and cloud environments. Lookout recently announced the successful sale of its legacy consumer mobile security business, allowing the company to focus on expanding the core enterprise business built around the Lookout Cloud Security Platform.[12] Further, Lookout was recognized amongst the highest three scoring vendors across all use cases in the 2023 Gartner Critical Capabilities for Security Service Edge Report.[13]

The Private Shares Fund continues to source, research, and invest in leading private companies. We do this while remaining engaged with both companies and investors throughout the ecosystem to ensure we are aware of what is happening across all fast-moving sectors of the economy. In the next sector series, we will discuss the burgeoning space economy and its long-term investment opportunities.

8 https://www.cnbc.com/2023/05/09/these-are-the-2023-cnbc-disruptor-50-companies.html
9 https://www.forbes.com/lists/cloud100/
10 https://www.contrastsecurity.com/press/contrast-security-positioned-as-a-visionary-in-the-2023-gartner-magic-quadrant
11 https://www.contrastsecurity.com/press/contrast-new-mssp-program
12 https://www.lookout.com/news-release/lookout-announces-the-successful-divestiture-of-its-consumer-mobile-security-business-segment
13 https://www.lookout.com/news-release/lookout-recognized-amongst-highest-three-scoring-vendors-across-all-use-cases-in-2023-gartner-critical-capabilities-for-sse-report

## The Private Shares Fund - Top Ten Holdings* as of 6/30/23

The Private Shares Fund, a closed-end interval fund, provides investors with access to the private growth asset class. READ MORE

*Represents 29.74% of Fund holdings as of June 30, 2023. Holdings are subject to change. Not a recommendation to buy, sell, or hold any particular security. To view the Fund's complete holdings, visit privatesharesfund.com/portfolio.

## RISKS AND DISCLOSURES

***As of December 9, 2020, Liberty Street Advisors, Inc. became the adviser to the Fund. The Fund's portfolio managers did not change. Effective April 30, 2021, the Fund changed its name from the "SharesPost 100 Fund" to "The Private Shares Fund." Effective July 7, 2021, the Fund made changes to its investment strategy. In addition to directly investing in private companies, the Fund may also invest in private investments in public equity ("PIPEs") where the issuer is a special purpose acquisition company ("SPAC"), and profit sharing agreements. The Fund's investment thesis has not changed.***

**Investors should consider the investment objectives, risks, charges and expenses carefully before investing. For a prospectus with this and other information about The Private Shares Fund (the "Fund"), please download here, visit the Fund's website at PrivateSharesFund.com or call 1-855-551-5510. Read the prospectus carefully before investing.**

Investment in the Fund involves substantial risk. The Fund is not suitable for investors who cannot bear the risk of loss of all or part of their investment. The Fund is appropriate only for investors who can tolerate a high degree of risk and do not require a liquid investment. The Fund has no history of public trading and investors should not expect to sell shares other than through the Fund's repurchase policy regardless of how the Fund performs. The Fund does not intend to list its shares on any exchange and does not expect a secondary market to develop.

All investing involves risk including the possible loss of principal. Shares in the Fund are highly illiquid, and can be sold by shareholders only in the quarterly repurchase program of the Fund which allows for up to 5% of the Fund's outstanding shares at NAV to be redeemed each quarter. Due to transfer restrictions and the illiquid nature of the Fund's investments, you may not be able to sell your shores when, or in the amount that, you desire. The Fund intends to primarily invest in securities of private, late-stage, venture-backed growth companies. There are significant potential risks relating to investing in such securities. Because most of the securities in which the Fund invests are not publicly traded, the Fund's investments will be valued by Liberty Street Advisors, Inc. (the "Investment Adviser") pursuant to fair valuation procedures and methodologies adopted by the Board of Trustees. While the Fund and the Investment Adviser will use good faith efforts to determine the fair value of the Fund's securities, value will be based on the parameters set forth by the prospectus. As a consequence, the value of the securities, and therefore the Fund's Net Asset Value (NAV), may vary.

There are significant potential risks associated with investing in venture capital and private equity¬backed companies with complex capitol structures. The Fund focuses its investments in a limited number of securities, which could subject it to greater risk than that of a larger, more varied portfolio. There is a greater focus in technology securities that could adversely affect the Fund's performance. The Fund's quarterly repurchase policy may require the Fund to liquidate portfolio holdings earlier than the Investment Adviser would otherwise do so and may also result in on increase in the Fund's expense ratio. Portfolio holdings of private companies that become publicly traded likely will be subject to more volatile market fluctuations than when private, and the Fund may not be able to sell shares at favorable prices, such companies frequently impose lock-ups that would prohibit the Fund from selling shores for of period of time offer on initial public offering (IPO). Market prices of public securities held by the Fund may decline substantially before the Investment Adviser is able to sell the securities.

The Fund may invest in private securities utilizing special purpose vehicles ("SPV"s), private investments in public equity ("PIPE") transactions where the issuer is a special purpose acquisition company ("SPAC"), and profit sharing agreements. The Fund will bear its pro-rata portion of expenses on investments in SPVs or similar investment structures and will have no direct claim against underlying portfolio companies. PIPE transactions involve price risk, market risk, expense risk, and the Fund may not be able to sell the securities due to lock-ups or restrictions. Profit sharing agreements may expose the Fund to certain risks, including that the agreements could reduce the gain the Fund otherwise would have achieved on its investment, may be difficult to value and may result in contractual disputes. Certain conflicts of interest involving the Fund and its affiliates could impact the Fund's investment returns and limit the flexibility of its investment policies. This is not a complete enumeration of the Fund's risks. Please read the Fund prospectus for other risk factors related to the Fund.

The Fund may not be suitable for all investors. Investors are encouraged to consult with appropriate financial professionals before considering an investment in the Fund.

Companies that may be referenced on this website are privately-held companies. Shares of these privately-held companies do not trade on any national securities exchange, and there is no guarantee that the shares of these companies will ever be traded on any national securities exchange.

The Fund is distributed by FORESIDE FUND SERVICES, LLC