The Nasdaq CTA Cybersecurity Index™: (NQCYBR™): Strong fundamentals in a challenging macroeconomic environment

Today, cybersecurity is not merely a technology risk but a business risk. When a risk to business continuity emerges, it ascends the hierarchy of business needs and often spurs additional investment in sophisticated solutions. In recent months, industry experts and technology vendors have been regularly commenting on the resilient nature of cybersecurity spending. Surveys by leading firms such as Gartner lend credence to the story that cybersecurity is now a business essential, unlikely to be cut even in a recessionary environment. According to a CIO Survey done by Morgan Stanley[1], security software is pegged as least likely to be cut should the economy worsen in 2022. Whereas in the past, security was considered critical following a breach, the focus has now shifted towards shoring up security even before a breach occurs. The pandemic made digital transformation front and center of business decisions, with this trend expected to gain further momentum. The survey further revealed that even in a slowing market, CIOs expect to increase spending in areas of IT, most notably in cloud computing and security software.

Enterprises, governments, and consumers are facing cyberthreats that have increased in velocity, variety, and complexity, prompting a steady procession of new regulations in the US and Europe. Additionally, the rise of artificial intelligence has created unique challenges for CIOs who must now wrestle with the rise of automated cyberattacks. These CIOs increasingly find themselves in a position of deploying AI to mitigate threats, necessitating a sea change in strategy and leadership approaches. Thus, it comes as no surprise that spending on cybersecurity is expected to increase going forward. Gartner predicts that security spending will reach $187 billion in 2023, an increase of 11 percent from 2022[2]. Job openings further validate the growing demand for cybersecurity with an estimated 600,000 open security positions throughout the US.[3]

Two developments acting as major tailwinds for cybersecurity spending include the recent shift to remote work and the ongoing migration of legacy IT environments to the cloud. More customers now adopt solutions from public cloud providers such as Microsoft, Google and Amazon, which are enhancing IT productivity but are also more complex to secure. Cybersecurity challenges in a cloud-first world are essentially very different from traditional on-premise security[4]. In the cloud-first world, customers do not have full control over their environments and security, necessitating new solutions and opportunities for newer participants to disrupt incumbents whose solutions were tailored towards on-premise environments. The shift to remote work in recent years has undoubtedly accelerated the adoption of cybersecurity solutions. Companies have had to upgrade legacy systems and secure their distributed workforces from the increased incidence of cyber-attacks.

Relatedly, the model of 'zero trust' has been widely adopted over the past decade. Essentially, 'zero trust' centers around the philosophy that no user or application should be trusted by default. As more organizations implement

[1] https://www.techrepublic.com/article/recession-cios-cut-increase-spending/
[2] https://www.gartner.com/en/newsroom/press-releases/2022-06-07-gartner-highlights-three-ways-security-leaders-can-prepare-for-the-evolution-of-cybersecurity-strategy-roles-and-technology
[3] https://www.bloomberg.com/news/articles/2022-03-30/hackers-path-is-eased-as-600-000-cybersecurity-jobs-sit-empty
[4] https://www.weforum.org/agenda/2022/07/cloud-computing-cybersecurity/

SaaS and cloud storage offerings, cybersecurity solutions have had to evolve to adhere to the principles of 'zero trust'. The implementation of 'zero trust' is likely to shape end-user behavior as well as the nature of cybersecurity offerings.

The Nasdaq CTA Cybersecurity Index™ (NQCYBR™) is designed to track public companies that are actively involved in providing cyber security technology and services. The constituents that make up the index have shown significant strength in their financial fundamentals as the year has progressed. With two quarters of earnings data complete, approximately 65% and 72% of the index (by weight, and by count of constituents) is on track for full-year earnings growth in 2022 (non-GAAP basis). Approximately 94% and 89% of the index (by weight, and by count of constituents) is forecasted to grow revenues in 2022, pointing to strong underlying demand for cybersecurity solutions. A sizable percentage of the end-user base is renewing their subscriptions even in a challenging macroeconomic environment, as evinced by the y-o-y increases in annual recurring revenue in the most recent quarter.

While economic concerns weighed heavily across tech companies during the second-quarter earnings season, cybersecurity held up strongly. This was reflected in the relative outperformance of the NQCYBR index versus the Nasdaq-100® in the year-to-date period thus far. As of September 30, 2022, NQCYBR was outperforming the Nasdaq-100 by approximately 600 bps, with a YTD total return of -26.4% vs. -32.4% for the latter.

Key takeaways from earnings

The second quarter of 2022 saw a healthy percentage of companies that make up the index beat revenue and earnings expectations. To get a sense of the current strength of the industry, it is useful to look at the percentage of companies that beat/missed estimates for the quarter. Constituents that beat revenue estimates comprise 96% of index weight, while companies that beat earnings estimates comprise 86% of index weight. Companies that missed revenue estimates comprise only 3.8% of index weight while those that missed earnings estimates comprise 9.6% of index weight. Companies that reported revenues above consensus estimates beat by 2.6%, on average, while among the three that missed, two did so by less than 1%. On the earnings front, companies that beat estimates did so by 49.5%, on average, while those that missed, did so by only 10.0%, on average. While the index contains a handful of companies that report semiannually and/or did not receive estimates from the equity analyst community, the overall takeaway from the most recent earnings season was broadly positive. Many more of the index constituents beat on both their top and bottom lines, while the magnitude of beats was greater, on an absolute value basis, than the magnitude of misses.

Growth drivers varied across companies. For example, Palo Alto Networks reported stronger than expected results, largely crediting the ongoing shift to the cloud. CyberArk Software saw increased demand for its privileged access management software due to the heightened threat landscape. Cloudflare saw large deal momentum and win rates, noting that direct competitors are now using Cloudflare for DDoS mitigation. Check Point Software initiated price increases. While the earnings story was largely positive, a small percentage of companies missed revenue and earnings expectations. Overall, companies acknowledged the tough macroeconomic environment they were operating in, while remaining cautiously optimistic about the second half of 2022.

Revenue and correlation to performance

YTD % Price Performance by FY'22 Revenue Bucket
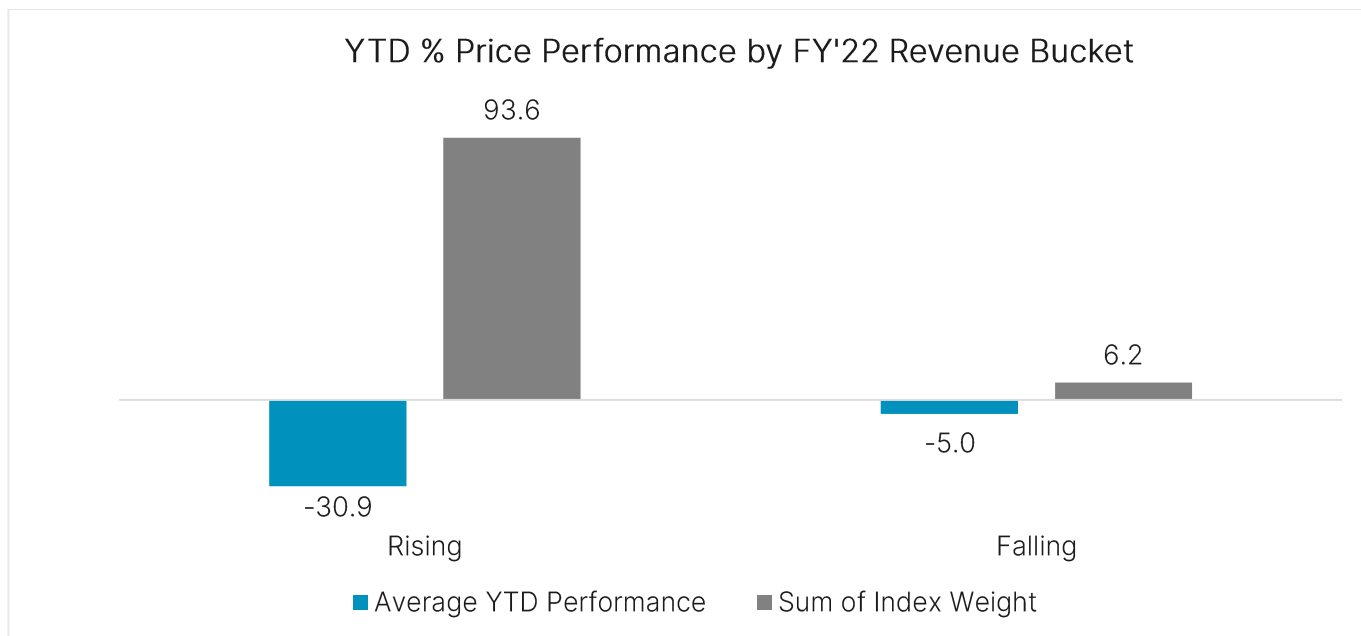
Source: Factset as of September 30, 2022

Companies such as CrowdStrike, Cloudflare, Okta, KnowBe4 and Zscaler are forecasted to report stellar year-over-year revenue growth in the range of 30%-60% on average, significantly above their more mature counterparts such as Akamai Technologies, VeriSign, Juniper Networks, NetScout Systems and Check Point Software, which are expected to clock healthy single-digit year-over-year growth. These newer companies are benefitting from the shift to the cloud, solid win rates, and large deal momentum. They also appear poised to sustain their double-digit revenue growth in the near-to-medium term, which is likely to be a positive read-across for the entire cybersecurity space.

In the most recent quarter Q22022, 30 out of 38 companies tracked by the index grew their revenues by 8.4% on average q-o-q largely due to the growing importance of cybersecurity in ensuring business continuity. Many companies cited a spike in demand for their products due to frequent and debilitating data breaches. For example, revenues for Crowdstrike were up 59% y-o-y and 9.7% q-o-q, beating consensus estimates. It was a record quarter for the company in terms of net new ARR (Annual Recurring Revenue) making Crowdstrike the second fastest software company to surpass the $2 billion ARR threshold. Guidance for revenue was also raised, an incremental positive given the tough macro backdrop. Darktrace, which marked its first year as a public company, reported strong revenue growth of 46% year-over-year citing strong reception among early adopters of their new product. They are deploying Self-Learning AI to mitigate cyber threats, suggesting that the market opportunity for cutting-edge solutions is substantial.

For full-year 2022, revenues of 33 of the 37 index constituents (representing 93.6% of index weight) are projected to grow overall, with revenues of 20 companies (representing 60.2% of index weight) projected to grow by double digits. Only three companies have revenues projected to decline in 2022, representing approximately 6% of index weight[5]. For the rest of the year and into 2023, the outlook for revenue growth is largely positive, as companies scale to meet the growing demand for niche and more sophisticated cybersecurity solutions. While concerns remain about potentially longer sales cycles, pressure on budgets and FX-related headwinds in the near-term, the impact is likely to be muted. Leading incumbents such as Cisco, for one, are taking measures to

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[5] Ahnlab does not have consensus revenues estimated for 2022, as per FactSet

reduce the impact of the global supply chain crisis. Several constituents that make up the index are optimistic in weathering the challenges of the second half of 2022 and 2023 due to visibility into a strong pipeline.

In terms of fundamentals leading performance, companies with revenues projected to grow in 2022 have thus far underperformed companies with revenues projected to decline, by an average of about 26 percentage points year-to-date as of September 30, 2022.

Earnings and correlation to performance
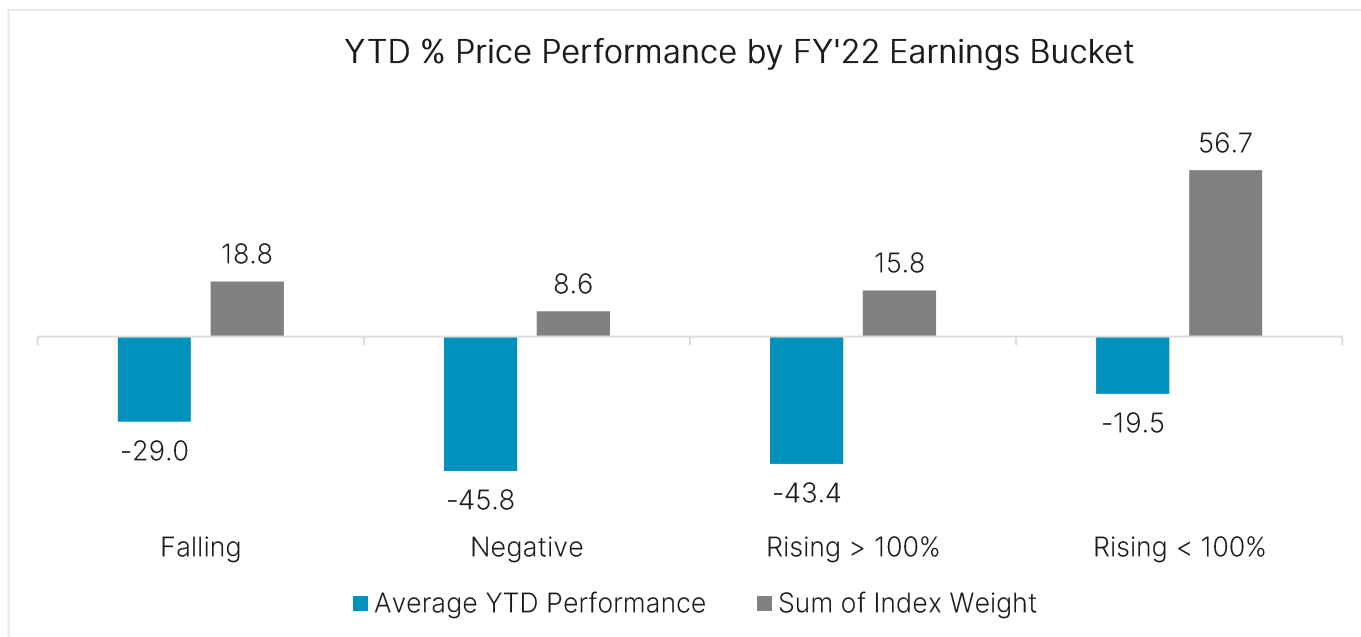
For full-year 2022, 24 of 37 index constituents (72% of index weight) have earnings forecast to grow, with 14 companies (40% of index weight) forecast to grow by double-digits. Investors are likely to be encouraged by the sizable number of index constituents that have earnings forecast to grow in 2022. Ten companies are expected to see earnings decline in 2022, with nine companies remaining profitable overall. Three companies are forecast to post losses for the year 2022[6]. Despite tracking a relatively young industry with one-fourth of its constituents conducting their IPOs within the past five years, the NQCYBR Index is already substantially tilted towards profitable companies. With an ongoing shift by several constituents to a subscription-based business model, there is good reason to expect an acceleration in bottom-line growth in the coming years.

Given the recent earnings commentary, factors that might lead to a weaker than expected outlook for earnings include continuation of supply chain headwinds leading to contraction of margins, delays in cloud migrations, and increased impact from FX-related headwinds. Additionally, newer companies with less differentiated offerings might face more challenges in securing new client wins in an environment of tight budgets.

In terms of fundamentals leading performance, there is an obvious disconnect when comparing the performance of NQCYBR constituents with full-year 2022 earnings growing at the fastest pace (>100%) vs. companies with weaker earnings trajectories. On average, these names were down 43.4% YTD as of September 30, 2022. Companies with earnings growing at a slower rate in 2022 (<100%) were down only 19.5%, on average, while companies with an expected drop in earnings were down 29.0%, on average. This disconnect suggests that investors have perhaps been too pessimistic about some of the higher growth names.

[6] Ahnlab does not have consensus earnings estimated for 2022, as per FactSet

Free cash flow and correlation to performance

YTD % Price Performance by FY'22 Free Cash Flow Bucket

86.8

8.6

-26.4

-49.3

Positive   Negative

■ Average YTD Performance   ■ Sum of Index Weight
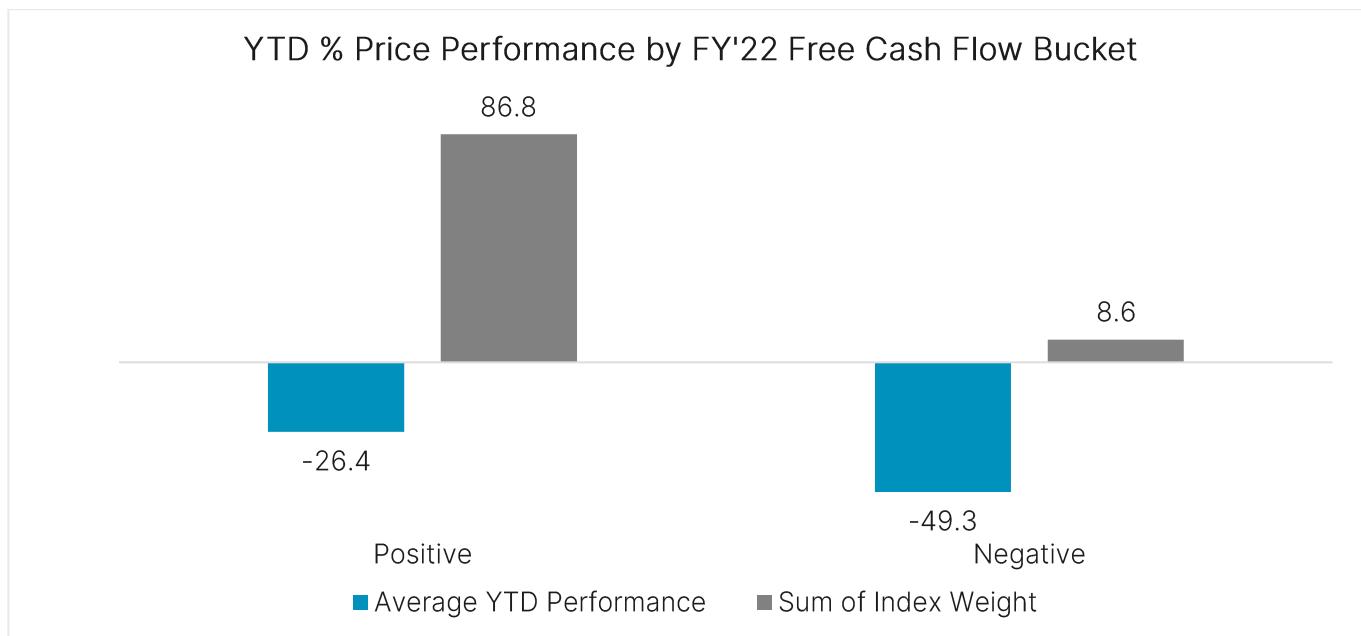
Most companies that make up the index (31 out of 37 companies) are forecast to be free cash flow (FCF) positive for the year 2022. 24 companies have been free cash flow positive since 2019, suggesting that a healthy percentage of companies have been able to sustain a positive trend over the recent years.

In the most recent quarter Q22022, 19 companies (57.5% of index weight) generated positive free cash flow while 10 companies (27% of index weight) generated negative free cash flow. Broadcom and Cisco Systems were outliers generating $4.3 billion and $3.5 billion in FCF; Cisco's FCF declined year-over-year due to ongoing investments in inventories weighing on working capital. Palo Alto Networks, Fortinet, Akamai Technologies, Check Point Software, Infosys, and NortonLifeLock generated healthy free cash flows in the range of $200-$650 million. SentinelOne, Cloudflare, Okta, Rapid7, CyberArk Software, Varonis Systems, Booz Allen Hamilton, Broadcom, Juniper Networks, and NetScout Systems generated negative FCF.

Companies that are forecast to be FCF positive for full-year 2022 make up about 87% of the index weight. As a group, they are down 26.4% on average YTD, outperforming companies that are forecasted to be FCF negative, which are down 49.3% YTD, on average. Given investors' acute focus on cash flow generation in today's macroeconomic environment, it is certainly reassuring to observe the vast majority of the index is on track to meet the hurdle this year, despite the prevalence of many younger, still fast-growing constituents.

Gross margin and correlation to performance

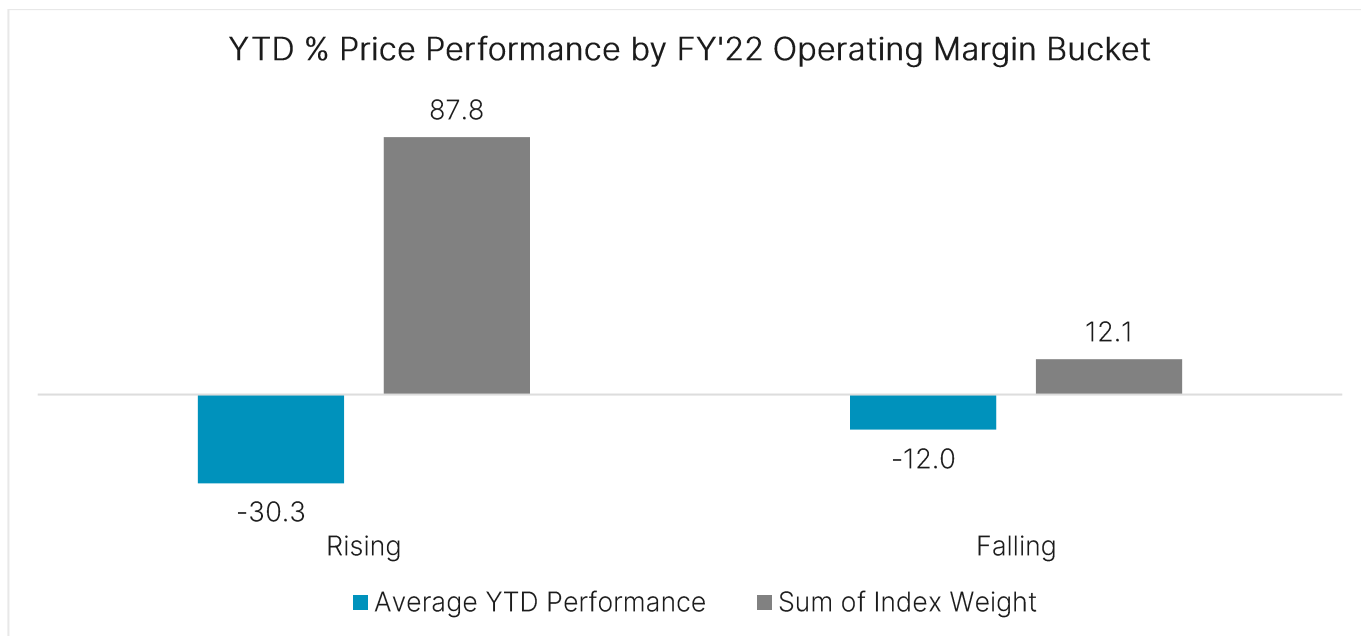**YTD % Price Performance by FY'22 Gross Margin Bucket**
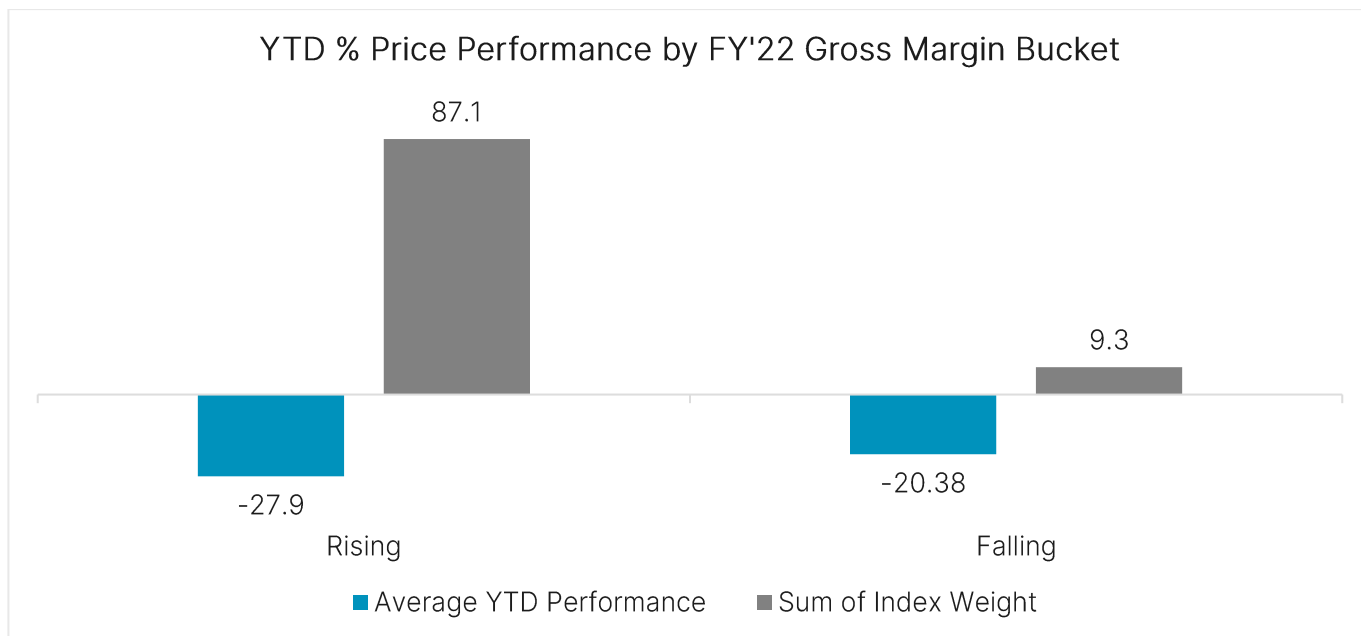
The strong trends observed in revenues, earnings and free cash flow largely extend to key measures of profitability across the income statements of NQCYBR constituents. Gross margins of most of the index (31 out of 37 companies) are forecasted to grow in full-year 2022, while gross margins of only 3 companies are forecasted to decline. This suggests that topline growth -- via new bookings as well as pricing power -- is strong enough across most of the index to offset inflationary pressures from rising input costs.

For the most recent quarter Q22022, a sizable percentage of companies reported gross margins that were above expectations and consensus. Companies such as A10 Networks, Check Point Software, and Cloudflare reported higher gross margins than their competitors, of 80%, 88%, and 79%, respectively. This was particularly noteworthy given significant headwinds. A10 Networks reported strong gross margins of 80% largely due to a strong product mix and successful navigation of short-term input cost pressures. Check Point Software's margin profile was impressive, considering higher material costs and higher shipping costs. Other companies were less successful in mitigating supply chain headwinds and inflationary cost pressures. For example, Telos' gross margin declined to 39% and the company guided to a lower gross margin of 34%-36% due to a less favorable mix versus competitors. Cisco Systems, which has a weight of 5.9% in the index, reported strong gross margins, albeit below guidance, as the company was weighed down by supply chain headwinds and inflationary cost pressures. Going forward, the margin profile for a majority of the index may remain favorable, given the recent commentary from a number of companies on their commitment to cost discipline, shifts in product mix to higher margin products, and early signs that inflation is peaking.

Companies with gross margins forecasted to grow in 2022 make up about 87% of the index weight. As a group, they are down 27.9% YTD on average. Companies with gross margins forecasted to decline are down 20.3% YTD on average and make up only 9.3% of index weight.

Operating margin and correlation to performance

YTD % Price Performance by FY'22 Operating Margin Bucket

Legend: ■ Average YTD Performance ■ Sum of Index Weight

Values shown: Rising — 87.8 (Sum of Index Weight), -30.3 (Average YTD Performance); Falling — 12.1 (Sum of Index Weight), -12.0 (Average YTD Performance)

Operating margins of most of the index (33 of 37 companies) are forecast to grow in 2022 with 31 companies forecast to grow by double digits. Operating margins of only 2 companies are forecast to decline.

Operating margins of companies that are forecast to grow in 2022 make up about 88% of index weight. As a group, they are down 30.3% YTD on average, underperforming companies with operating margins expected to decline, which are down 12.0% YTD on average and make up 12.1% of index weight. The index is heavily concentrated towards companies with rising operating margins in 2022. This reinforces the idea that the cash-generating ability of the index, in aggregate, will remain strong and potentially improve.

During the most recent quarter, there was a variation in results with 17 companies reporting positive operating margins in 2Q2022, making up about 51% of index weight, and 13 companies reporting negative operating margins, making up 36.3% of index weight[7]. On one end of the spectrum, companies such as Cloudflare approached operating margin breakeven in the most recent quarter, while other companies such as Cisco Systems and Checkpoint Software reported operating margins in the range of 30%-40%, edging ahead of analyst estimates. A sizable percentage of companies beat consensus estimates despite headwinds. Some of the notable companies that beat operating margin consensus estimates include Booz Allen Hamilton, Zscaler, Sentinel One, Splunk and Fortinet. Margins for Booz Allen Hamilton beat estimates largely due to strong profitable contract level performance and product mix. A few hardware-related companies including Cisco Systems and Check Point Software saw some pressure on otherwise healthy operating margins due to higher material costs and lower than expected gross margins. Going forward, operating margins may surprise to the upside as more companies adopt the rule of 40[8], transition to a subscription-based model, and manage headcount related expenses and investment opportunities.

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[7] Companies that do not have quarterly reporting available after December 2021, or the financial report for September available make up about 12.5% of index weight
[8] The rule of 40 states that, at scale, a company's revenue growth plus profitability margin should be equal to or greater than 40%
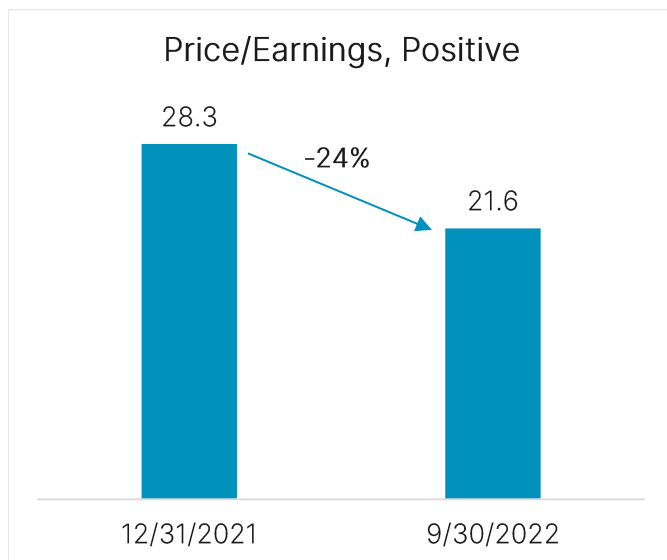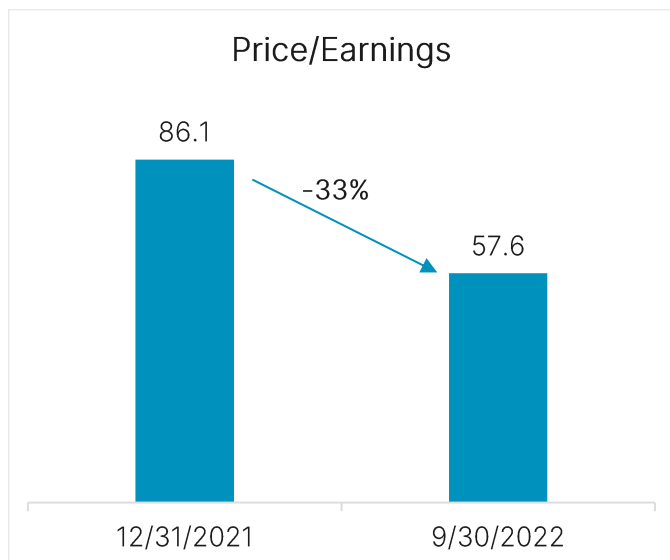
Net margin and correlation to performance

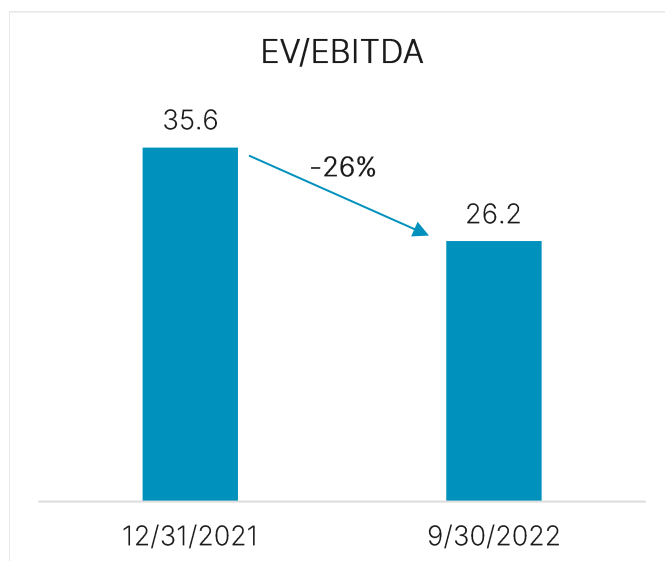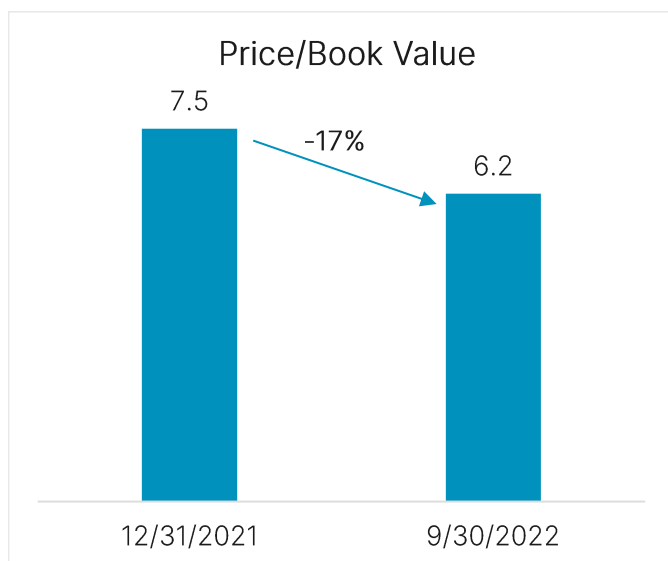### YTD % Price Performance by FY'22 Net Margin Bucket
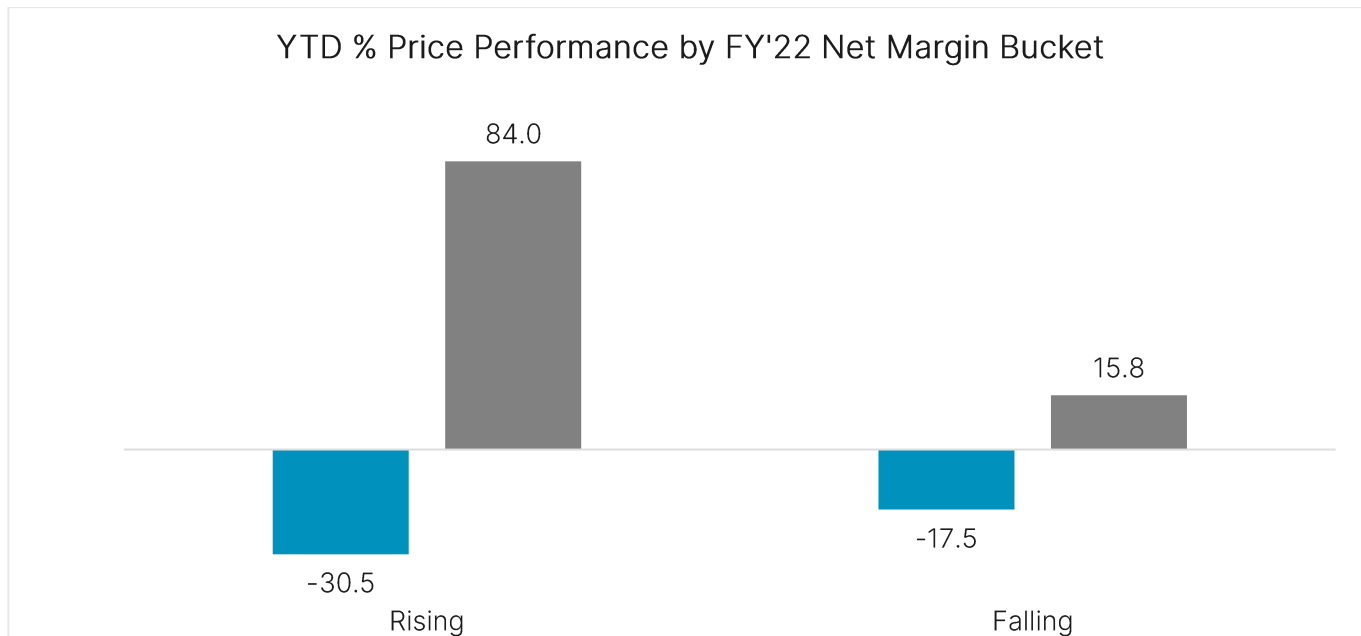
Net margins of most of the index (31 of 37 companies) are forecast to grow in 2022, with 25 companies forecast to grow by double digits. Net margins of only five companies are forecast to decline in 2022.

Net margins of companies that are forecast to grow in 2022 make up about 84% of index weight. As a group, they are down 30.5% YTD on average, and are underperforming companies with net margins forecasted to decline, suggesting some disconnect between performance and fundamentals. Companies with net margins forecasted to decline in 2022 make up about 16% of index weight and are down 17.5% YTD, on average.

NQCYBR Valuation

Price/Book Value

7.5

-17%

6.2

12/31/2021   9/30/2022

EV/EBITDA

35.6

-26%

26.2

12/31/2021   9/30/2022

Source: Bloomberg as of September 30, 2022

Over the course of 2022, the Nasdaq CTA Cybersecurity (NQCYBR) Index has become significantly cheaper on a wide variety of index-weighted valuation metrics, including price-to-earnings (P/E), price-to-book (P/B) and enterprise value-to-EBITDA (EV/EBITDA). Concerns around the macroeconomic environment, company-specific headwinds, and negative sentiment towards high-growth technology stocks in general have weighed heavily on multiples this year. What is worth noting is that the P/E of the index for the period ending 9/30/2022 was 57.6, a meaningful compression from the beginning of the year, but at levels that are disproportionately elevated by a few outliers with negative earnings. P/E for those companies with positive earnings was 21.6, which is quite reasonable and in-line with other broad-based benchmarks.

Given that some of the newer companies in the high-growth stage have more room to run in terms of growth and profitability, they are likely to command elevated P/E ratios in the near-term vs. their more mature counterparts. Looking beyond next year into 2023, the latest consensus estimates anticipate the entire index to normalize to a P/E in the low 20s.

Conclusion

Companies that make up the Nasdaq CTA Cybersecurity Index have weathered the challenges in the macroeconomic environment while continuing to show strength in fundamentals. Most index constituents posted impressive results in the latest quarter, beating consensus revenue and earnings estimates while committing to margin expansion and free cash flow generation. Management teams have indicated that demand for cybersecurity products appear to be robust, with an ongoing transition to a subscription-based model that is likely to boost top-line and bottom-line performance. It is also quite clear to participants in the ecosystem that data breaches are very costly. Regulators are upping the ante when it comes to what private sector leaders need to do to strengthen their cybersecurity frameworks. The shift to cloud and remote work are also significant tailwinds that are likely to create accelerated demand for cybersecurity solutions. The fundamentally strong underpinnings of the NQCYBR Index -- combined with an overall growing and defensive industry backdrop -- may warrant cautious optimism in the face of global headwinds.

Investors looking to gain exposure to companies that provide cybersecurity solutions can invest in products tracking the Nasdaq CTA Cybersecurity Index, including the First Trust Nasdaq Cybersecurity ETF (Nasdaq: CIBR), the First Trust Nasdaq Cybersecurity UCITS ETF (London: CIBR), the ProShares Ultra Nasdaq

Cybersecurity ETF (Nasdaq: UCYB), the BetaShares Global Cybersecurity ETF (ASE: HACK) and the First Trust Nasdaq Cybersecurity ETF (Toronto: CIBR).