

# PLAYER: A Beginner's Guide to the Nasdaq CTA Global Video Games & Esports Index™

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Since 2012, the video game industry has increased in value in eight of the last 10 years. In fact, with a current global valuation of more than \$300 billion, the gaming industry is now worth more than 3x what it was in 2012. (Source: Accenture Research). Technological advancements such as 3D-driven gesture control, facial recognition, and augmented/virtual reality integration have created smarter, more interactive games, enhancing the overall user experience, which has attracted a wider audience. Shifts in consumer behavior driven by the COVID-19 pandemic have also fueled the growth of the video game industry. During the global lockdowns in early 2020, video games provided a way for people to connect and play games with friends and strangers alike, all while staying safe at home. This attracted a new audience of gamers who might not have been interested in video games otherwise. Post-pandemic, people are expected to spend more time outside of their homes, setting the mobile gaming market up for future success. Today, the mobile gaming market already accounts for roughly half of the global gaming market revenue, exceeding both console and PC gaming, as gamers have taken advantage of being able to play from virtually anywhere in the world. (Source: CTA)

In the mid-2010s, live-streaming technology changed the trajectory of the video games industry forever when it made the concept of esports (electronic sports) a reality. Today, there are individual esports players, teams, and organized leagues that compete in professional gaming competitions such as the League of Legends World Championship. Some of these events even take place in large arenas, drawing thousands of fans to watch players battle for prize pools that have exceeded \$30 million, creating an entirely new avenue for corporate advertising and sponsorships (Source: [esportsearnings.com](http://esportsearnings.com)). Additionally, spectators who can't attend competitions in person are able to tune in online from around the world thanks to popular streaming platforms such as Twitch, and some are even streamed on television. It is estimated that the global esports industry will generate approximately \$1.62 billion in 2024, and the audience is expected to exceed 500 million at that time (Source: Statista). From revenue numbers to prize numbers, this is a space that is expected to grow significantly.

Beyond gamers, there are many other "players" to consider when breaking down the business of video games and esports, including hardware companies, developers/publishers, mobile/portable device producers/distributors, and various digital online platforms that host games and tournaments. Consolidation has accelerated since 2021 among gaming developers and publishers as firms continue to work to strengthen gaming portfolios and align with ever-changing industry trends such as cloud-based delivery and increased mobile gaming. In 2021, there were a record 1,159 M&A transactions totaling \$85 billion across the gaming industry, according to investment bank Drake Star Partners. Collectively, the deals announced in the first quarter of 2022 have exceeded the value of all industry M&A activity from 2021. One of the first major acquisition announcements in 2022 came from Microsoft when the tech giant revealed a \$68.7 billion all-cash deal to acquire Call of Duty developer Activision Blizzard. Other notable transactions in 2022 have included Tencent's acquisition of Sumo

Group for \$1.2 billion and Take-Two Interactive's deal for mobile-gaming developer Zynga for \$12.7 billion. (Source: CTA)

In addition to consolidation, there has been a new focus on the metaverse within the video games and esports industry. While the metaverse remains largely conceptual, game creation platform Roblox has expanded its popular role-playing and simulator genres to include other online environments including concerts and sports. Morgan Stanley published research quantifying the metaverse opportunity as potentially an \$8.3 trillion consumer expenditure TAM in the United States alone. Metaverse gaming incorporates technologies like VR, haptics, and multi-player software to transport gamers into a new world that is immersive visually and physically. Gaming companies including Japan's Bandai Namco and South Korea's Kakao Games have announced metaverse development plans. In China, Tencent recently acquired Black Shark to reportedly develop an AR/VR headset while the company leverages its WeChat messaging platform user base to develop its own metaverse. Gaming developers are also embracing the emerging trends in the decentralization of the internet and the advent of Web 3.0 through blockchain, crypto-gaming, non-fungible tokens (NFTs), and virtual currencies. NFTs and cryptocurrency have the potential to generate supplemental revenue opportunities and, more importantly, increase user engagement and user promotion. (Source: CTA)

The video games and esports market has gained substantial momentum over the last few years and is only expected to grow. With this in mind, the Nasdaq CTA Global Video Games & Esports Index™ (PLAYER) was launched on November 9, 2021. PLAYER is designed to track the performance of a selection of companies engaged in the global Video Games and Esports industry. More specifically, the companies are selected based on a classification by Consumer Technology Association (CTA). It is modified market capitalization-weighted, with semiannual reconstitutions and quarterly rebalances.

## PLAYER Constituent Eligibility Criteria

A security issuer must be classified by CTA as a Video Games & Esports related business, including the following sectors and subsectors:

### Video Games & Esports Sectors

- *Developer/Publisher*: Game developer refers to the company or organization that designs and executes the creation of video games. Game publisher refers to the company or organization that finances the development and distribution of video games. Games can be developed internally by a publisher or externally by a game developer.
- *Esports*: Refers to the company or organization that owns, operates, or develops professional/competitive video game tournaments, leagues, teams, or viewing platforms.
- *Hardware*: Refers to the company or organization that creates video game platforms (e.g., home and portable videogame consoles).

### Video Games & Esports Subsectors

- *Consoles*: Refers to non-portable gaming devices that connect to a TV or monitor.
- *Digital/Online*: Refers to platforms and services that allow for the creation and distribution or playing of amateur/non-professional games/gaming-related content online.
- *Esports Media*: Refers to platforms and services that allow for the broadcast, coverage, and distribution of esports or professional/competitive game-related content.

- *Mobile/Portable*: Refers to portable/handheld gaming devices such as smartphones, tablets, and dedicated portable gaming devices.
- *PC*: Refers to computers such as home desktops and laptops.
- *XR (AR/VR)*: Refers to virtual reality, augmented reality, or a combination of ("mixed-reality") wearable devices.

New index additions must have a minimum market cap of \$250MM and a 3-month average daily trading volume (ADTV) of \$1MM. Existing constituents must have a \$200MM minimum market cap / \$0.75MM ADTV. Furthermore, new index additions must derive at least 50% of their revenue from Video Games and Esports. However, an issuer of a security held in PLAYER as of the Reconstitution Reference Date that has 45% of its revenue from Video Games and Esports may remain in the Index.

## Constituent Selection & Weighting Criteria

Each company is ranked by its "Theme-Adjusted Market Capitalization" (market cap multiplied by the percentage of revenue from Video Games and Esports).

Up to 50 securities are selected for PLAYER based on the following steps:

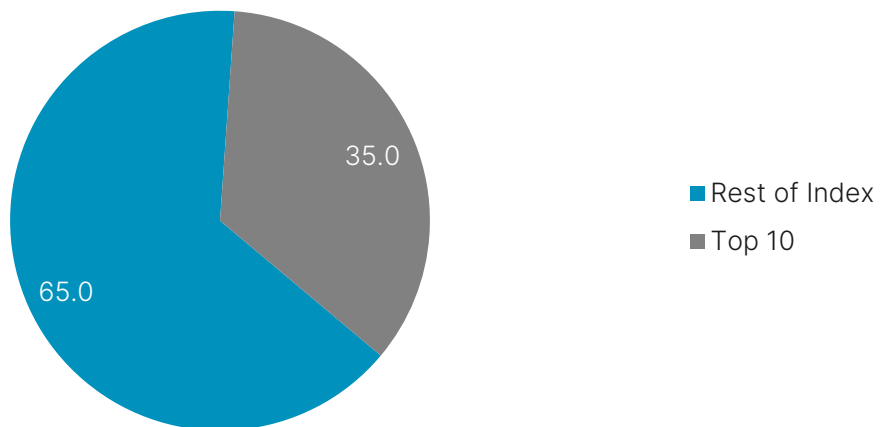
1. Ranked in the top 45: automatically selected for the Index
2. Existing constituents ranked 46th-55th are selected to target 50 total
3. Further additions are pulled from the 46th-55th ranks to target 50 total

Securities are weighted by Theme-Adjusted Market Capitalization, with a max weight of 8%. The minimum weight is 0.3%.

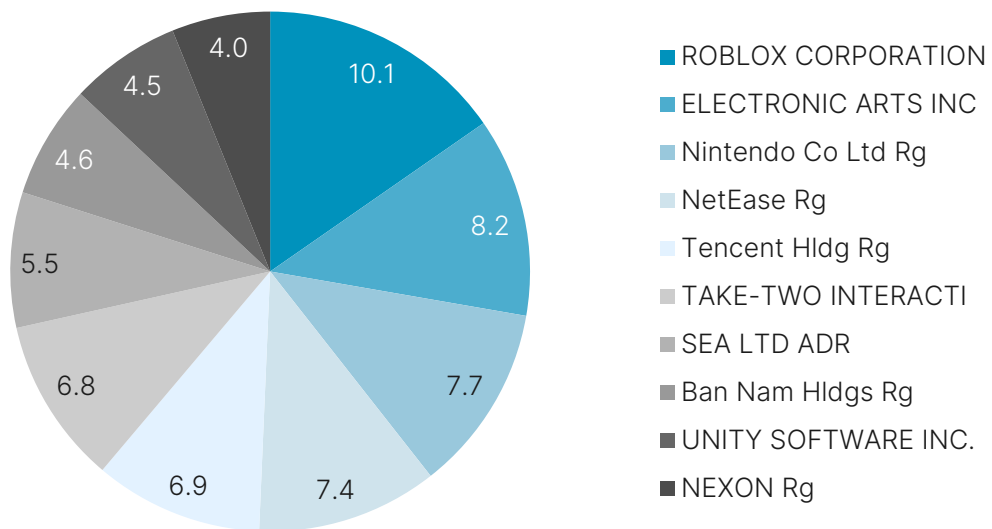
## Current Index Composition

As of August 15, 2022, PLAYER is comprised of 49 video gaming and esports-related stocks. The top 10 companies by weight make up 66% of the total index weight, with Roblox, Electronic Arts, Nintendo NetEase, and Take-Two Interactive Software rounding out the top five largest names. When broken down by geographical exposure, Asia Pacific, including Japan and China, accounts for over half of the index at 58.2% (29 stocks). Within the Asia Pacific region, Japan represents 27.5% (12 stocks), followed by China at 18.1% (4 stocks). The United States has the largest single country weighing at 32.0% (8 stocks).

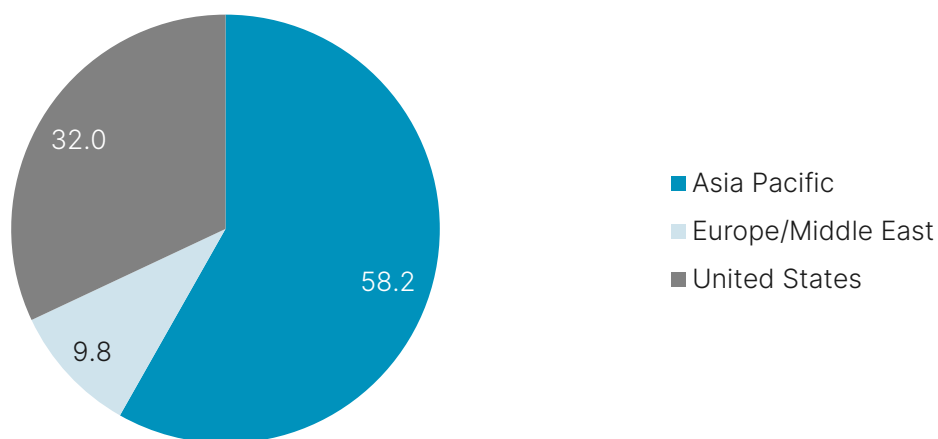
### PLAYER: Top 10 Index Weights vs Rest of the Index



### Top 10 Breakdown

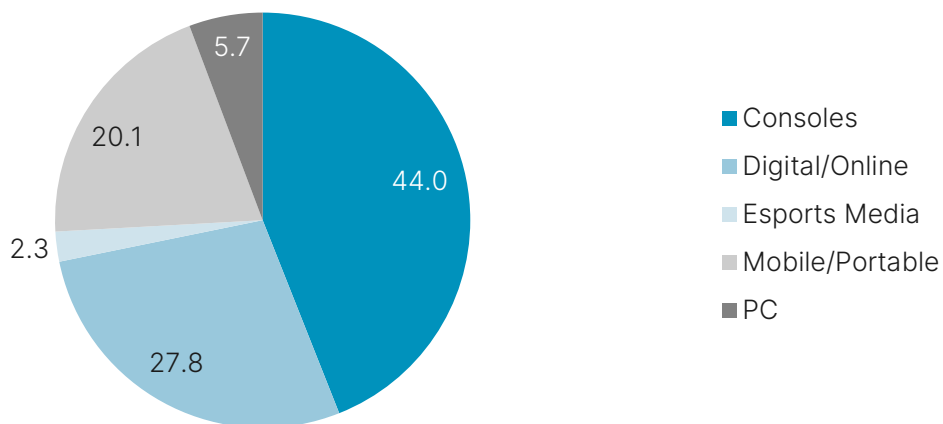


**PLAYER Region Breakdown**  
Data as of 8/15/22

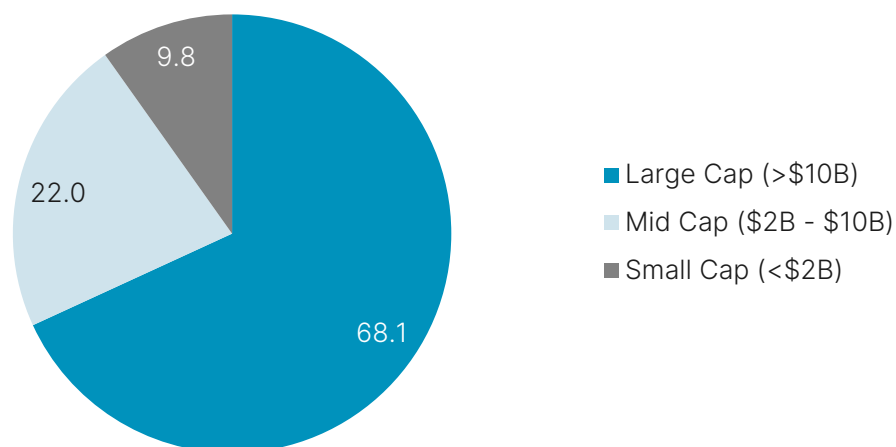


From a broader ICB Industry perspective, 76% of PLAYER consists of Consumer Discretionary stocks, and 24% are classified as Technology. When the index is broken down by CTA classification at the sector level, however, we find the largest weighting in the Developer/Publisher sector (85%), followed by Esports (7%) and Hardware (8%). On the CTA subsector level, Consoles accounts for the largest weighting at 44% while Esports Media has the lowest weighting at 2%.

**PLAYER: CTA Subsector Breakdown**  
Data as of 8/15/22

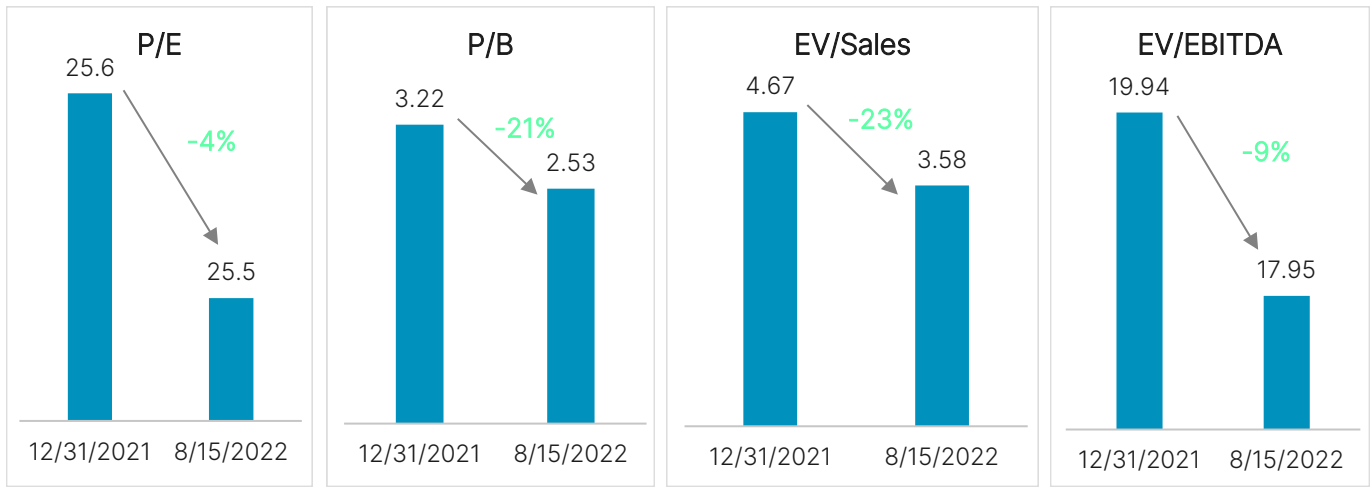


The Nasdaq CTA Global Video Games & Esports Index has a large-cap tilt with 68.1% of the total index weight coming from 10 companies with a market cap greater than \$10 billion. Out of the 49 stocks currently held in the index, 22 are newer companies that have IPO'd within the last five years that account for just under half (48.5%) of the index.

**PLAYER: Market Cap Breakdown****PLAYER Fundamentals**

When compared to other thematic/high-growth tech indexes, PLAYER was reasonably priced going into 2022. Despite that, the Nasdaq CTA Global Video Games & Esports Index has become cheaper by 4-23% year-to-date on a wide variety of index-weighted valuation metrics, including price-to-earnings (P/E), price-to-book (P/B), enterprise value-to-sales (EV/Sales), and enterprise value-to-EBITDA (EV/EBITDA), in-line with the broader market.

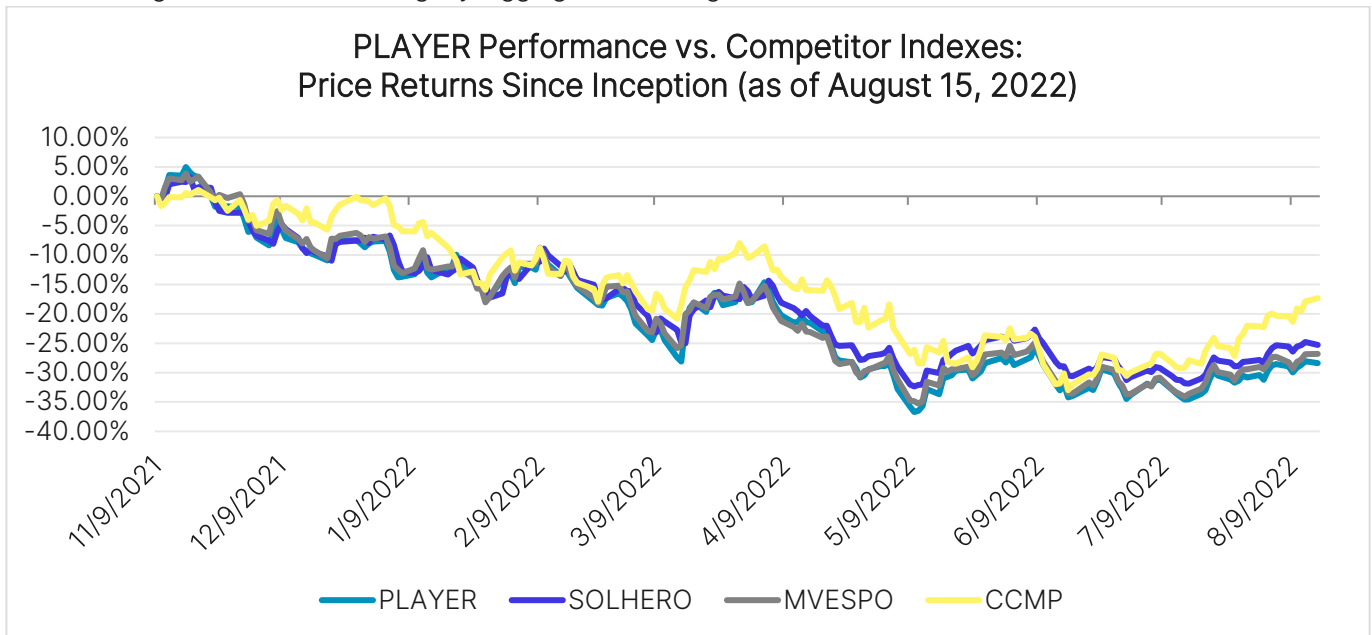
In 2020 and 2021, PLAYER experienced strong double-digit year-over-year revenue growth, rising 27% and 21%, respectively. In 2022, however, revenue growth fell to -1%. In terms of forecasted revenue growth, 54% of the index constituents are forecasted to fall, while 46% are forecasted to rise. Those stocks forecasted to rise include Embracer Group, Roblox, and Take-Two Interactive. On the other hand, the growth forecasts for names like Tencent, DouYu, and Skillz are much weaker, relatively speaking. In its recent earnings announcement, DouYu, a leading game-centric live streaming platform in China and a pioneer in the eSports value chain attributed its Q2 2022 decrease in live streaming revenue to operational adjustments made to promote the long-term development of its platform (Source: Bloomberg). Additionally, DouYu reported a decrease in advertising revenue due to continued exploration of new commercialization models which used a portion of advertising traffic that could have been directly monetized, along with the resurgence of Covid-19 in China. Going forward, DouYu maintains its focus on enriching the platform's content ecosystem and increasing investment in self-produced content. Similarly, Skillz noted in its recent earnings call that repositioning the company for profitability has come with a cost and that slow product development combined with some failed experiments have been detrimental to growth (Source: FactSet). Skillz also attributed a decline in revenue to users "cheating" its platform where bad actors are abusing the friend referral program to get financial incentives without delivering real user referrals. Skillz continues to focus on long-term opportunities in the mobile gaming market through competition for developers and gamers despite the recent setbacks. In both cases, "growing pains" and operational efficiency seem to have caused some drag on revenue and earnings, which is to be expected in any newer industry.

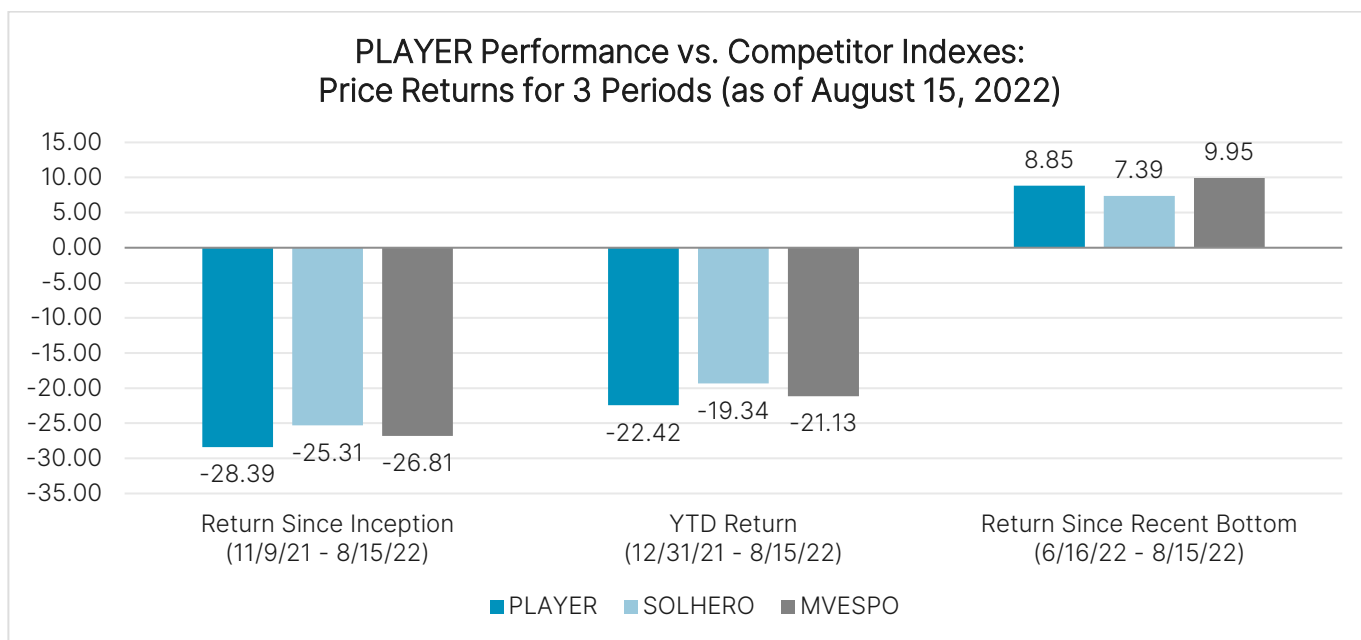


Source: Nasdaq Global Indexes, Bloomberg. Data as of 8/15/2022

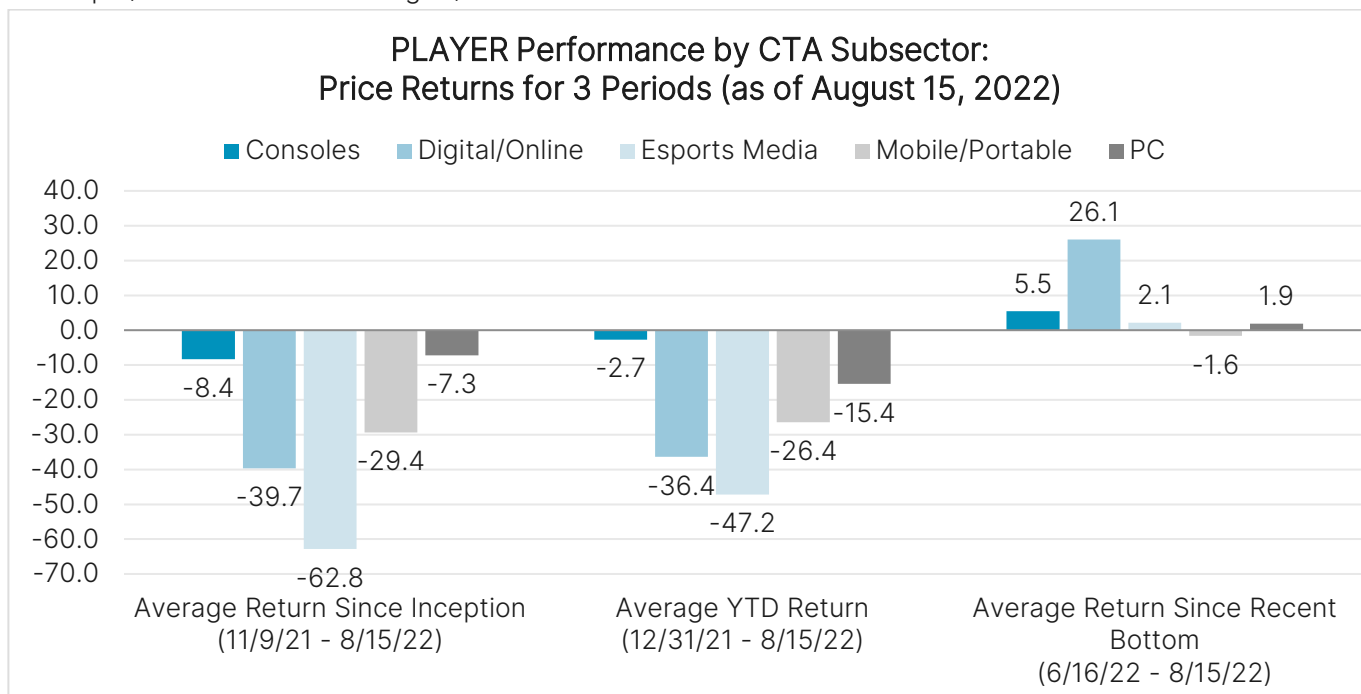
### Index Performance

Since its inception in early November 2021 through August 15, 2022, the Nasdaq CTA Global Video Games & Esports Index has fallen 28.39%. This negative performance is consistent with what we've seen across similar indexes such as the Solactive Video Games & Esports Index (SOLHERO) and the MVIS Global Video Gaming and eSports Index (MVESPO) which lost 25.31% and 26.81%, respectively, over the same timeframe. Major market indexes also struggled over the last nine months, with the tech-heavy Nasdaq Composite (COMP) falling 17.36% since November 9, 2021. Since the recent market lows on June 16, 2022, PLAYER has gained 8.85%, outpacing SOLHERO's gain of 7.39% while slightly lagging MVESPO's gain of 9.95%.



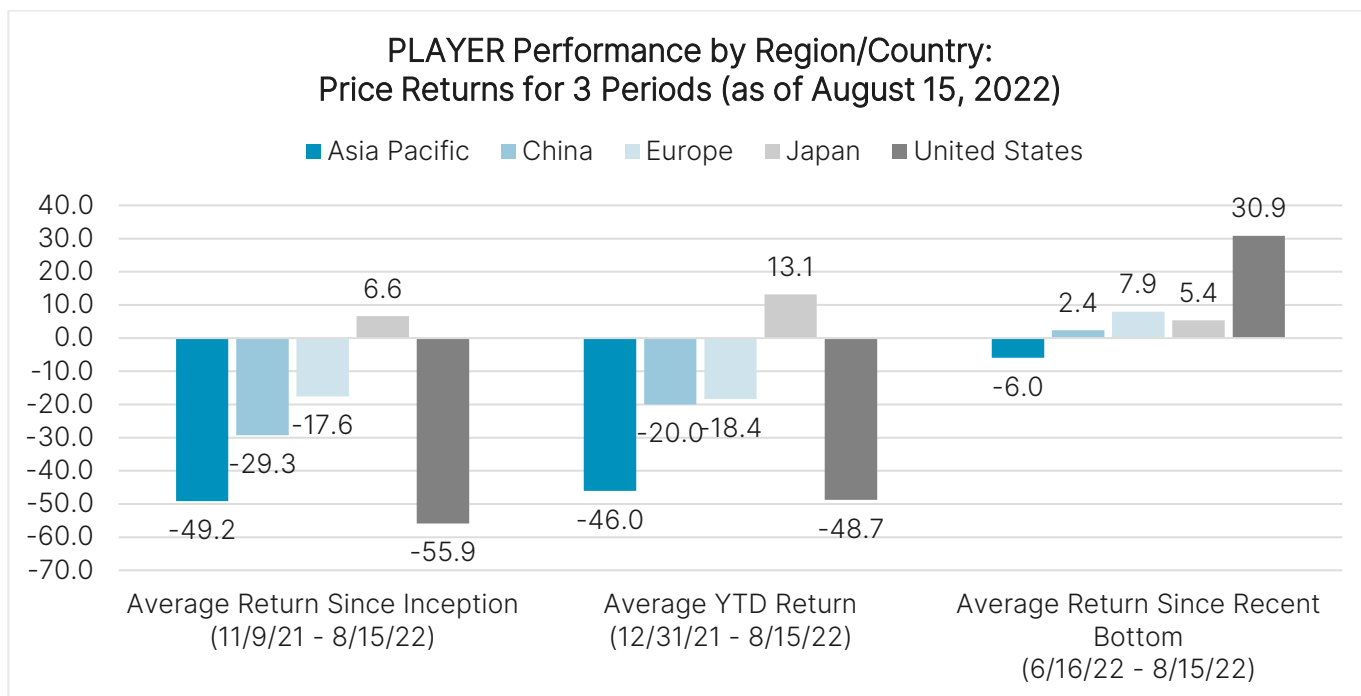


Since index inception on November 9, 2021, all four CTA subsector classifications have experienced price weakness, with Esports Media stocks taking the biggest hit, falling on average by more than 62%. Although still technically in the red since inception, the Consoles and PC subsectors have been the most resilient, falling by approximately 7-8% each, on average. Similar subsector trends can be seen on a year-to-date basis. Since the recent market bottom on June 16, 2022, however, we've seen substantial outperformance from the Digital/Online subsector, up 26% on average. Consoles have gained 5.5% on average, while PC has gained approximately 2%. Mobile/Portable has posted marginally negative average returns over the last two months. Roblox has been the top performer since June 16, 2022, gaining over 93%! Per CTA's classification system, Roblox is classified as a Developer/Publisher within the Digital/Online subsector.

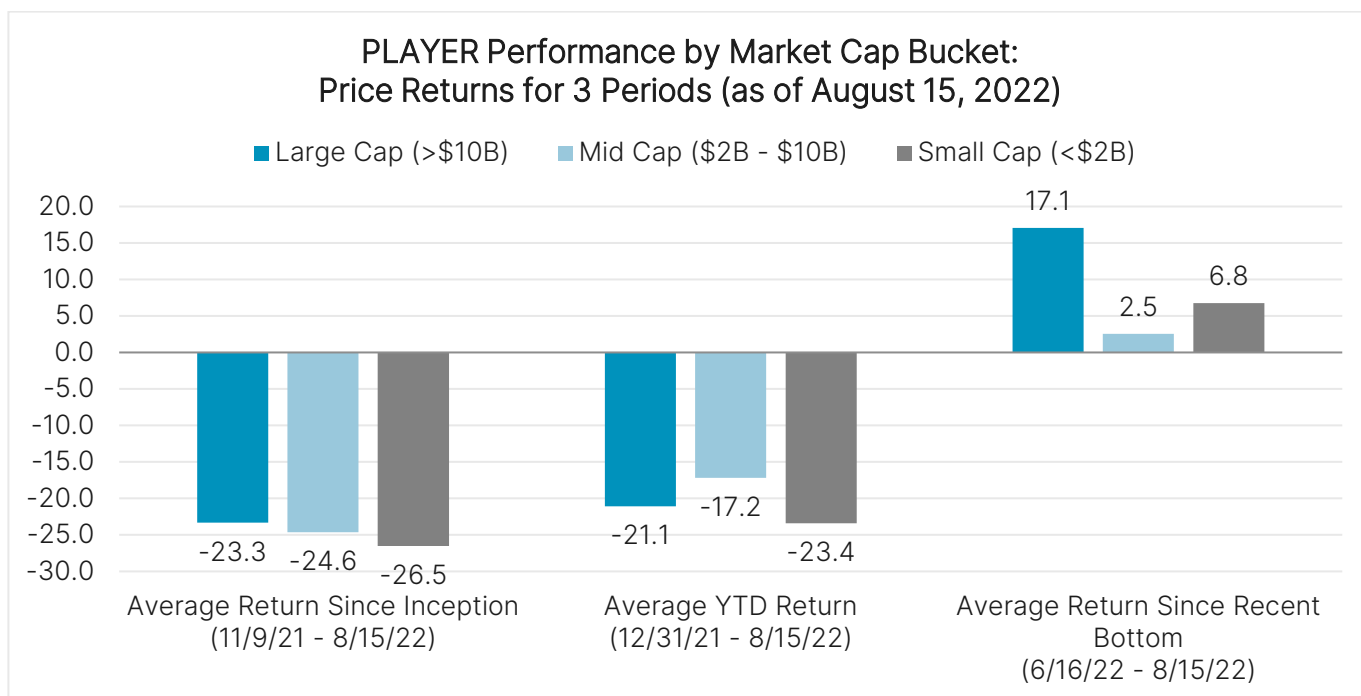




When we dissect the index performance on a country-by-country basis, we find that most are in the red since inception, with the exception of Japan whose constituents have gained 6.6%, on average. Since December 31, 2021, we've seen exceptional weakness in Asia Pacific (ex Japan and China). Japan has also been the outperformer on a year-to-date basis, gaining 13.1%. Since the recent market lows on June 16, 2022, the most significant rally, on average, has come from the United States, up over 30%, followed by Europe and Japan. All regions/countries have managed to stay in the black since June 16<sup>th</sup>, with the exception of Asia Pacific ex-China & Japan.



From a market-cap breakdown, we have seen a significant rebound in large-caps take place since mid-June, rising over 17% on average. Small-caps have gained 6.8% while mid-caps have been slower to recover, relatively speaking, with a gain of 2.5%. Despite the recent bounce, small-cap stocks continue to lag on both a year-to-date and since inception basis, falling 23.14% and 26.5%, respectively.



## Competitor Overlap Analysis

There are currently 49 stocks held in PLAYER. SOLHERO consists of 50 stocks while MVESPO holds 28. Overall, there are 14 names that overlap between the three video game and esports indexes, including popular gaming names like Roblox, Nintendo, and Electronic Arts. The majority of these names are classified as Developer/Publisher by CTA and come from a diverse mix of countries including the US, Japan, Poland, Sweden, South Korea, and France. Between just PLAYER and SOLHERO, there are 31 names in common, while MVESPO and PLAYER hold 18 of the same names. PLAYER's unique methodology results in a portfolio that sets itself apart, with only around half of the index weight overlapping with either competitor index

Name	Symbol	Country	CTA Sector	CTA Subsector	% in PLAYER	% in SOLHERO	% in MVESPO
CAPCOM CO LTD	9697	Japan	Developer/Publisher	Consoles	2.49	3.65	2.48
CD PROJEKT SA	CDR	Poland	Developer/Publisher	Consoles	0.68	1.11	0.8
ELECTRONIC ARTS INC	EA	US	Developer/Publisher	Consoles	8.16	5.8	4.85
EMBRACER GROUP AB	EMBRAC B	Sweden	Developer/Publisher	Consoles	2.49	4.19	2.47
KONAMI GROUP CORP	9766	Japan	Developer/Publisher	Consoles	2.19	4.15	2.38
NCSOFT CORP	036570	South Korea	Developer/Publisher	Digital/Online	1.89	3.86	2.19
NETMARBLE CORP	251270	South Korea	Developer/Publisher	Mobile/Portable	0.53	0.94	0.63
NEXON CO LTD	3659	Japan	Developer/Publisher	PC	4.03	4.26	4.10
NINTENDO CO LTD	7974	Japan	Hardware	Consoles	7.68	5.28	5.59
ROBLOX CORP -CLASS A	RBLX	US	Developer/Publisher	Digital/Online	10.09	6.68	6.89
SQUARE ENIX HOLDINGS CO LTD	9684	Japan	Developer/Publisher	Consoles	1.34	3.09	1.24

TAKE-TWO INTERACTIVE SOFTWARE	TTWO	US	Developer/Publisher	Consoles	6.81	5.58	4.48
UBISOFT ENTERTAINMENT	UBI	France	Developer/Publisher	Consoles	2.23	3.88	2.73
UNITY SOFTWARE INC	U	US	Developer/Publisher	Digital/Online	4.54	6.55	5.09
<b>Total Overlap Weight</b>					<b>55.15</b>	<b>59.02</b>	<b>45.92</b>

Summary: Over the last 10 years, the video game industry has more than tripled and is now valued at more than \$300 billion. With this in mind, the Nasdaq CTA Global Video Games & Esports Index (PLAYER) was launched on November 9, 2021. PLAYER is designed to track the performance of a selection of companies engaged in the global Video Games and Esports industry. More specifically, the companies are selected based on a classification by Consumer Technology Association (CTA).

The Nasdaq CTA Global Video Games & Esports Index is tracked by the BetaShares Video Games and Esports ETF (AU: GAME).

Sources: Nasdaq Global Indexes, Bloomberg, FactSet

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