

GLOBAL X ETFs RESEARCH



The Next Big Theme: September 2023



Authored by:

Mayuranki De
Research Analyst

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Topic: Disruptive
Technology, Physical
Environment, People &
Demographics



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Internet of Things

Competition for Semiconductors Heats Up

Semiconductors remain crucial to major industries and national economies. U.S. semiconductor giant Qualcomm has partnered with luxury automakers Mercedes and BMW to supply chips for in-car infotainment systems. Qualcomm, known for smartphone chip dominance, is expanding into the automotive sector after a 13% growth in automotive revenue last quarter, despite smartphone challenges.¹ The company is servicing BMW with enhanced voice command functionality in vehicles and supplying chips for the upcoming Mercedes E class models in the U.S. by 2024.² Though Qualcomm is shifting focus from smartphones, Huawei, a Chinese telecommunications leader, just released the Mate 60 Pro powered by Semiconductor Manufacturing International Corp. (SMIC)'s new Kirin 9000s chip, demonstrating China's semiconductor industry resilience despite U.S. chip sanctions.³ Competition within the semiconductor landscape continues to intensify internationally, as British design firm Arm completed a Nasdaq IPO at \$51 a share, valuing the company at nearly \$60 billion.⁴

In the foundry space, Intel Foundry Services (IFS) and Tower Semiconductor announced an agreement for Intel to provide Tower foundry services and manufacturing capacity. Tower plans to invest up to \$300 million in equipment for Intel's New Mexico facility, as Tower needs to boost capacity to meet customer demand for advanced analog processing.⁵

Video Games & Esports

Gaming's Resurgence Levels Up

After a turbulent period following the pandemic-induced boost and consumer behaviors normalizing, new hardware has the gaming industry making waves again. Following the reveal of the long-awaited Apple Vision Pro, Meta is reportedly working with LG to improve future versions of Meta's Quest Pro headset.⁶ In the past 12 months, hardware accounted for \$7 billion of the \$57 billion spent in the U.S. video game market, a 19% year-over-year (YoY) increase.⁷ The release of blockbuster games and new player engagement patterns complemented the positive hardware trend. A key driver of gaming's resurgence is growth in digital premium full game downloads, which helped counterbalance declines in mobile gaming and a minor decrease in spending on digital add-on content.⁸ The growth even extends to industry frontrunners like Nvidia, which in Q2 2023 reported double-digit increases quarter-over-quarter (QoQ) (+11%) and YoY (+22%).⁹

Cloud Computing & Artificial Intelligence

Cloud Computing's AI Transformation



As artificial intelligence (AI) competition heats up, Big Tech is prominently showcasing its AI prowess through a wave of exciting new product launches. At Google's annual Cloud Next 2023 conference, the company unveiled the Cloud Tensor Processing Unit (TPU) v5e, featuring a more compact 256-chip configuration per TPU pod. The latest version is tailored for modern neural network architectures based on the transformer architecture.¹⁰ Google Cloud is establishing itself as a leading platform for generative AI model training, deployment, and refinement. Diverging from conventional graphics processing units (GPUs), Google's TPUs are finely tuned for advanced generative AI model execution. Google Cloud offers a range of foundational models, including Google's proprietary, third-party commercial, and open source models. The cloud platform's foundational models, including PaLM, Imagen, Codey, and Chirp, underpin core Google products like Search and Translate, enabling swift model adaptation based on usage and feedback. Despite being within the AI space for many years, Google took a backseat to other names when it came to the recent AI wave. This development underscores Google's current drive to surge ahead in the generative AI competition.

Meanwhile, Zoom and other niche providers are adjusting to generative AI as well. To compete in the videoconferencing market, Zoom is revamping its generative AI assistant, AI Companion, which combines the company's in-house generative AI with models from Meta, OpenAI, and Anthropic. Notably, Zoom will implement a ChatGPT-like bot in Spring 2024 that allows users to interact directly and inquire about past meetings and chats, among other actions.¹¹

Cybersecurity

Government Entities Prioritize Digital Defense

New Securities and Exchange Commission (SEC) regulations include rigorous cybersecurity disclosure requirements for public companies, potentially boosting the cybersecurity theme in the long run. Cybersecurity incidents must be reported within four business days and include comprehensive details on the nature, scope, timing, and potential impact of incidents.¹² Companies must also outline their processes for handling cybersecurity threats and elaborate on the board of directors' oversight and management's role in handling these risks. Enforced starting December 2023, these rules extend beyond public companies and U.S. borders.¹³ Entities not previously required to prioritize cybersecurity due to regulatory gaps in their jurisdictions also must comply.

The Biden Administration continues to prioritize cybersecurity, and it is evident through recent initiatives such as the AI Cyber Challenge. The challenge offers nearly \$20 million in prizes to encourage innovation at the intersection of AI and cybersecurity to forge new cybersecurity tools.¹⁴ Leading AI companies such as Anthropic, Google, Microsoft, and OpenAI are contributing their technology to assist participants. Also, the White House has a new initiative aimed at safeguarding schools, to which Amazon Web Services will grant \$20 million to K-12 schools.¹⁵ The funding will provide security training and support to school districts facing cyber threats.

Lithium & Electric Vehicles

The Rush for Lithium Continues as EV Demand Soars

Specialty chemical manufacturer Albemarle is pursuing a \$4.3 billion acquisition of Australian lithium miner Liontown Resources to boost its lithium supply for electric vehicles.¹⁶ The deal, pending shareholder approval and formalization, also includes Liontown's existing agreement to supply lithium to Ford and Tesla until 2030, potentially requiring Albemarle to construct processing facilities for Liontown mines.¹⁷ Tesla had previously signed an agreement with Albemarle as well.¹⁸ With Liontown's Western Australia mine addition, Albemarle aims to meet its goal of 500,000 to 600,000 metric tons of lithium production by 2030.¹⁹

Chinese automaker BYD recently celebrated the production of its five-millionth new energy vehicle, producing the last two million vehicles in just 18 months, compared to 13 years for the first million.²⁰ In the



five years to 2022, BYD increased its annual electric passenger vehicle sales from 200,000 to 1.86 million units while phasing out gasoline-powered cars.²¹ In the first quarter of 2023, BYD became China's top car brand, surpassing Volkswagen, and in 2023 it may reach 3 million in total vehicle sales, primarily electric.²²

Cannabis

Cannabis Market Gets Federal Support

The Department of Health and Human Services (HHS) recommends reclassifying cannabis from its current Schedule I classification, which means no acknowledged medical utility and a high potential for abuse, to a Schedule III substance under the Controlled Substances Act.²³ While not tantamount to full federal legalization, this shift would position cannabis as a less hazardous substance that can be legally obtained with a prescription, akin to other Schedule III drugs. Also, this reclassification could lead to reduced taxes for cannabis businesses. The HHS' assessment follows new measures aimed at alleviating penalties associated with cannabis use that the Biden Administration introduced in October 2022.²⁴ The measures include the pardoning of all prior federal offenses related to simple possession and an appeal to state governors to consider similar actions. As part of that initiative, President Biden tasked the HHS Secretary and the U.S. Attorney General with reevaluating cannabis' scheduling based on its medical profile.

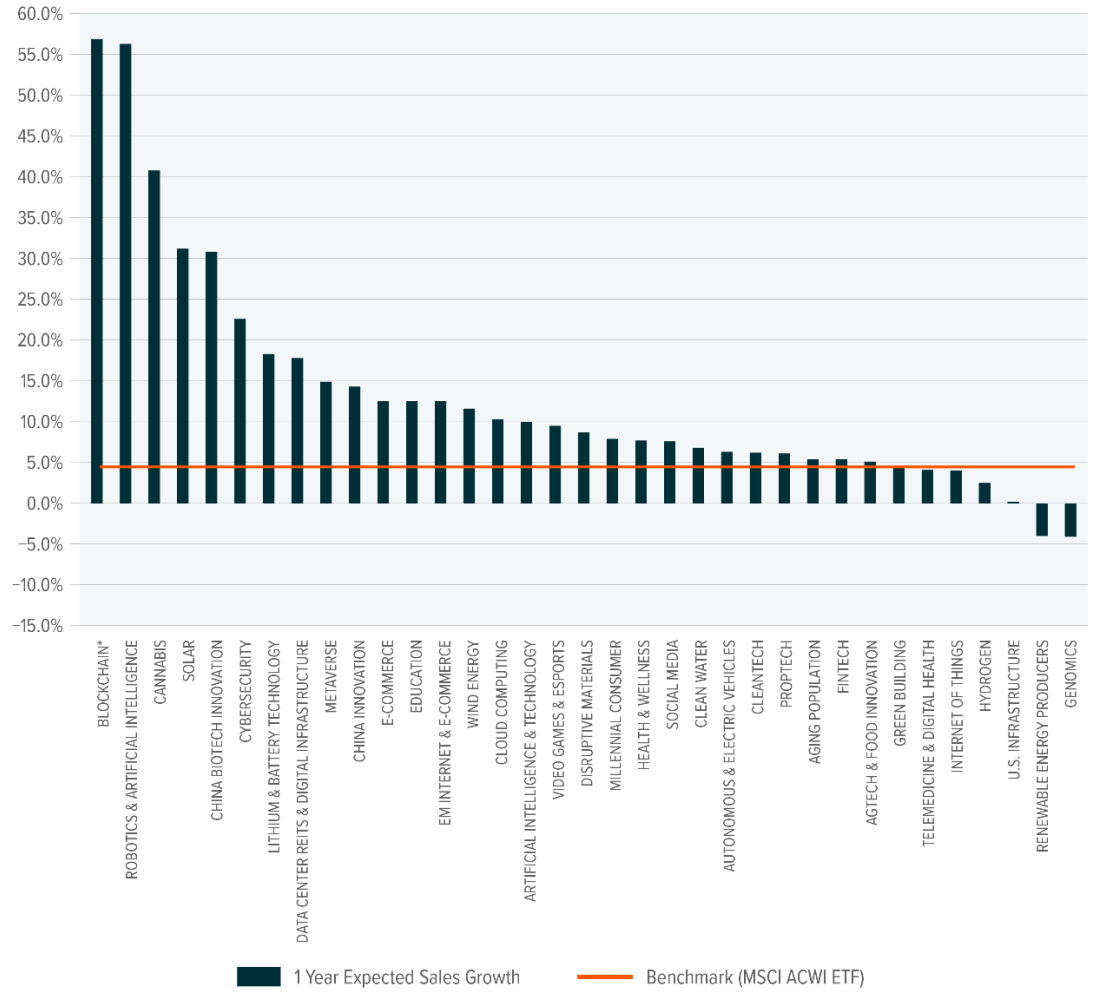


THE NUMBERS

The following charts examine returns and sales growth expectations by theme, based on their corresponding ETFs.

THEMATIC EXPECTED SALES GROWTH

Source: Bloomberg, August 31, 2023, Global X ETFs.

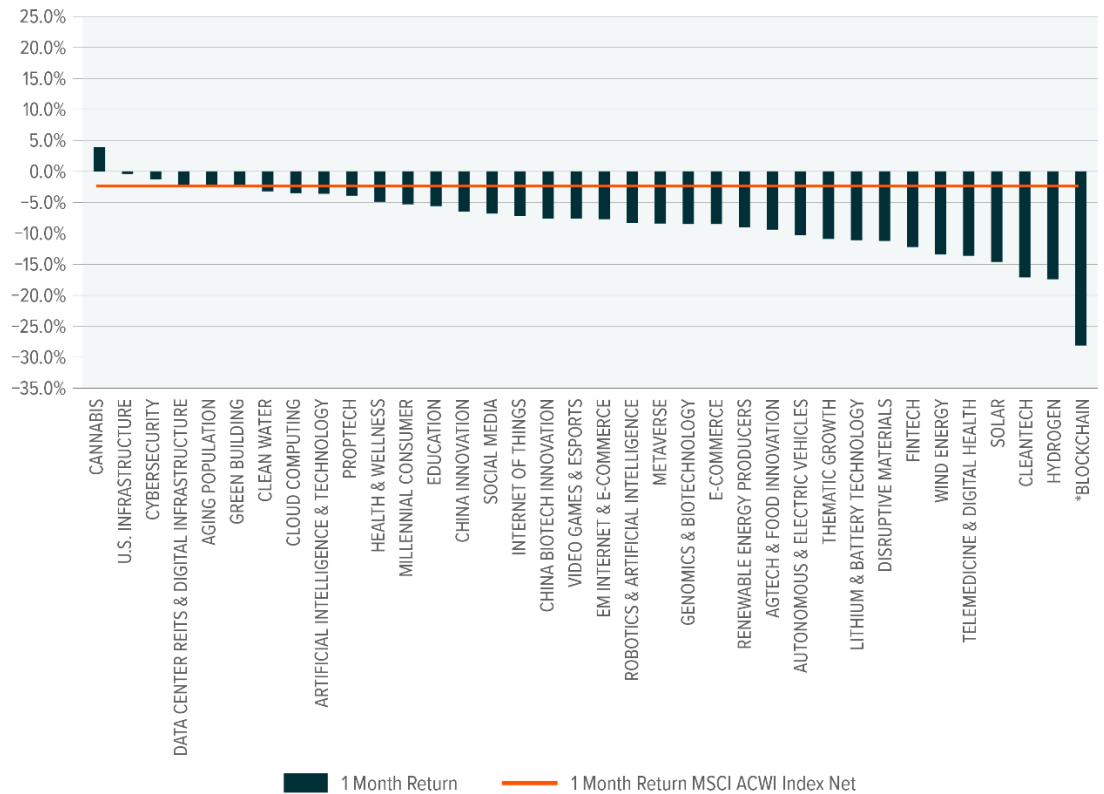


Note: Forward looking based on data and analysis from 8/31/2023.
1 year annualized forward sales growth is the consensus analyst expectations for total sales growth in the next 12 months.
*Blockchain reflects figures according to BKCH ETF



AUGUST 2023 THEMATIC ETF RETURNS

Source: Bloomberg, August 31, 2023, Global X ETFs.



Note: The performance data quoted represents past performance and does not guarantee future results.
*Blockchain reflects figures according to BKCH ETF

Performance data quoted represents past performance and does not guarantee future results. Investment return and principal value of an investment will fluctuate so that an investors' shares, when sold or redeemed, may be worth more or less than their original cost. Current performance may be higher or lower than the performance quoted. High short-term performance of the fund is unusual and investors should not expect such performance to be repeated. For performance data current to the most recent month end, please call 1-888-493-8631 or visit www.globalxetfs.com.

Standard Performance			Cumulative % Data as of month end (08/31/23)			Avg. Annualized % Data as of quarter end (06/30/23)				
	Expense Ratio		1 Month	3 Month	Since Inception	1 Year	3 Year	5 Year	10 Year	Since Inception
Robotics & Artificial Intelligence Inception Date 9/12/2016	0.69%	NAV	-8.29%	-1.87%	86.21%	41.12%	6.43%	6.00%	-	10.68%
		Market Price	-8.27%	-1.83%	86.01%	41.70%	6.59%	6.15%	-	10.73%
		Index	-8.28%	-1.83%	90.90%	41.61%	7.05%	6.40%	-	11.08%
Fintech Inception Date 9/12/2016	0.68%	NAV	-12.12%	5.31%	53.20%	3.86%	-10.97%	-2.05%	-	6.70%
		Market Price	-12.18%	4.87%	52.83%	3.86%	-11.07%	-2.11%	-	6.69%
		Index	-12.10%	5.43%	58.81%	4.00%	-10.65%	-1.59%	-	7.25%
Internet Of Things Inception Date 9/12/2016	0.68%	NAV	-7.33%	1.52%	128.67%	35.11%	13.20%	13.12%	-	13.93%
		Market Price	-7.16%	1.14%	128.18%	35.73%	13.27%	13.16%	-	13.97%
		Index	-7.28%	1.69%	133.92%	35.47%	13.60%	13.48%	-	14.29%
Cloud Computing Inception Date 4/12/2019	0.68%	NAV	-3.39%	10.91%	38.83%	20.32%	-1.99%	-	-	7.20%
		Market Price	-3.48%	10.57%	39.18%	20.32%	-2.01%	-	-	7.30%
		Index	-3.33%	11.08%	42.70%	21.06%	-1.35%	-	-	7.87%



Social Media Inception Date 11/14/2011	0.65%	NAV	-5.94%	9.29%	164.30%	11.16%	-4.79%	0.76%	9.68%	8.35%
		Market Price	-6.80%	8.99%	163.13%	10.95%	-4.89%	0.73%	9.72%	8.33%
		Index	-5.89%	9.51%	181.23%	11.81%	-4.34%	1.27%	10.22%	8.92%
Artificial Intelligence & Technology Inception Date 5/11/2018	0.68%	NAV	-3.35%	9.75%	95.27%	34.35%	10.87%	13.87%	-	13.37%
		Market Price	-3.58%	9.46%	95.20%	34.81%	11.00%	13.87%	-	13.42%
		Index	-3.27%	10.01%	99.69%	34.98%	11.41%	14.34%	-	13.83%
Autonomous & Electric Vehicles Inception Date 4/13/2018	0.68%	NAV	-10.15%	7.17%	77.93%	22.87%	22.34%	13.95%	-	12.57%
		Market Price	-10.27%	7.14%	77.58%	22.97%	22.34%	13.91%	-	12.59%
		Index	-10.18%	7.12%	79.36%	22.96%	22.68%	14.15%	-	12.76%
Lithium and Battery Tech Inception Date 7/22/2010	0.75%	NAV	-10.80%	-2.25%	127.94%	-9.69%	27.64%	16.13%	12.66%	7.26%
		Market Price	-11.11%	-2.28%	126.93%	-9.39%	27.85%	16.35%	12.61%	7.30%
		Index	-10.86%	-2.21%	142.28%	-9.21%	28.17%	16.39%	12.98%	7.76%
Genomics and Biotechnology Inception Date 4/5/2019	0.50%	NAV	-8.41%	-8.03%	-26.45%	-1.22%	-11.61%	-	-	-5.32%
		Market Price	-8.48%	-8.10%	-25.01%	-0.82%	-11.56%	-	-	-4.87%
		Index	-8.28%	-7.77%	-25.01%	-1.05%	-11.31%	-	-	-4.92%
Millennial Consumer Inception Date 5/4/2016	0.50%	NAV	-5.34%	9.50%	120.52%	22.72%	5.18%	7.83%	-	11.59%
		Market Price	-5.33%	9.64%	119.99%	22.85%	5.17%	7.78%	-	11.52%
		Index	-5.29%	9.65%	128.22%	23.28%	5.70%	8.37%	-	12.11%
Aging Population Inception Date 5/09/2016	0.50%	NAV	-2.46%	1.07%	89.63%	10.97%	5.11%	6.92%	-	9.64%
		Market Price	-2.29%	1.03%	93.06%	10.62%	5.09%	6.85%	-	9.95%
		Index	-2.42%	1.19%	93.23%	11.24%	5.32%	7.13%	-	9.91%
Health and Wellness Inception Date 5/9/2016	0.50%	NAV	-4.73%	5.35%	57.19%	11.63%	5.21%	4.46%	-	6.81%
		Market Price	-4.92%	4.63%	57.60%	11.46%	5.35%	4.43%	-	6.95%
		Index	-4.74%	5.41%	61.73%	11.97%	5.56%	4.83%	-	7.23%
E-Commerce Inception Date 11/27/2018	0.50%	NAV	-8.26%	15.61%	29.54%	10.10%	-7.30%	-	-	5.04%
		Market Price	-8.49%	15.37%	29.27%	10.36%	-7.37%	-	-	5.04%
		Index	-8.23%	15.75%	32.28%	10.59%	-6.96%	-	-	5.50%
Us Infrastructure Development Inception Date 3/6/2017	0.47%	NAV	-0.37%	18.56%	124.02%	39.19%	28.08%	14.92%	-	13.14%
		Market Price	-0.37%	18.60%	124.09%	39.12%	28.01%	14.90%	-	13.14%
		Index	-0.34%	18.75%	131.52%	39.86%	28.79%	15.51%	-	13.71%
Cannabis Inception Date 9/17/2019	0.51%	NAV	3.64%	5.52%	-94.08%	-58.26%	-51.42%	-	-	-54.60%
		Market Price	3.90%	5.59%	-94.19%	-58.59%	-51.27%	-	-	-54.74%
		Index	3.08%	4.48%	-95.08%	-59.69%	-53.01%	-	-	-56.68%
Video Games & Esports Inception Date 10/25/2019	0.50%	NAV	-7.83%	0.80%	34.67%	-2.38%	-3.35%	-	-	9.33%
		Market Price	-7.56%	1.31%	34.84%	-1.85%	-3.32%	-	-	9.44%
		Index	-7.84%	0.90%	37.06%	-1.94%	-2.89%	-	-	9.84%
Cybersecurity Inception Date 10/25/2019	0.51%	NAV	-1.38%	3.00%	69.37%	-1.45%	8.09%	-	-	14.36%
		Market Price	-1.26%	3.08%	72.47%	-1.45%	8.02%	-	-	14.90%
		Index	-1.35%	3.10%	72.21%	-0.85%	8.54%	-	-	14.86%
Thematic Growth Inception Date 10/25/2019	0.50%	NAV	-11.48%	1.92%	5.81%	-6.77%	-3.82%	-	-	2.66%
		Market Price	-10.92%	2.24%	7.12%	-6.34%	-3.90%	-	-	2.92%
		Index	-11.47%	1.91%	4.87%	-6.80%	-4.07%	-	-	2.41%
Education Inception Date 7/10/2020	0.50%	NAV	-6.04%	10.98%	-51.80%	4.15%	-	-	-	-23.92%
		Market Price	-5.63%	11.03%	-51.78%	4.09%	-	-	-	-23.90%
		Index	-5.97%	11.16%	-50.97%	4.70%	-	-	-	-23.51%
Telemedicine & Digital Health Inception Date 7/29/2020	0.68%	NAV	-13.97%	-7.09%	-32.02%	1.04%	-	-	-	-8.73%
		Market Price	-13.59%	-6.67%	-31.95%	0.95%	-	-	-	-8.81%
		Index	-13.92%	-6.96%	-31.11%	1.19%	-	-	-	-8.35%
China Biotech Innovation Inception Date 9/22/2020	0.65%	NAV	-8.78%	-10.91%	-51.50%	-31.15%	-	-	-	-21.52%
		Market Price	-7.55%	-9.71%	-50.96%	-31.82%	-	-	-	-21.45%
		Index	-8.64%	-10.78%	-50.50%	-30.72%	-	-	-	-20.99%
Cleantech Inception Date 10/27/2020	0.50%	NAV	-16.99%	-13.22%	-17.11%	8.58%	-	-	-	-0.61%
		Market Price	-17.08%	-13.35%	-17.65%	8.04%	-	-	-	-0.68%
		Index	-17.07%	-13.22%	-18.39%	9.10%	-	-	-	-1.18%
Data Center Reits & Digital Infrastructure Inception Date 10/27/2020	0.50%	NAV	-2.45%	4.99%	-5.36%	-6.31%	-	-	-	-2.01%
		Market Price	-2.24%	5.72%	-5.14%	-5.81%	-	-	-	-1.85%
		Index	-2.35%	5.01%	-5.44%	-6.56%	-	-	-	-2.10%
Emerging Markets Internet & E-Commerce Inception Date 11/09/2020	0.65%	NAV	-7.50%	11.77%	-49.39%	-6.26%	-	-	-	-24.12%
		Market Price	-7.72%	11.90%	-49.02%	-5.41%	-	-	-	-24.01%
		Index	-7.47%	11.96%	-48.53%	-5.44%	-	-	-	-23.66%
Renewable Energy Producers Inception Date 05/27/2015	0.66%	NAV	-9.28%	-5.25%	-4.10%	-13.89%	-2.89%	2.89%	-	0.53%
		Market Price	-8.99%	-5.49%	-4.28%	-14.36%	-3.08%	2.94%	-	0.48%
		Index	-9.18%	-5.14%	-1.05%	-13.22%	-2.49%	3.33%	-	0.91%
China Innovation Inception Date 02/22/2021	0.75%	NAV	-6.15%	3.59%	-53.82%	-23.66%	-	-	-	-28.09%
		Market Price	-6.47%	3.89%	-53.94%	-24.56%	-	-	-	-28.17%
		Index	-	-	-	-	-	-	-	-
Clean Water Inception Date 04/08/2021	0.50%	NAV	-3.66%	5.75%	5.20%	19.85%	-	-	-	2.78%
		Market Price	-3.15%	6.37%	5.89%	19.14%	-	-	-	2.72%
		Index	-3.65%	5.81%	5.91%	20.16%	-	-	-	3.07%
Agtech and Food Innovation ETF Inception Date 07/12/2021	0.50%	NAV	-10.58%	-4.21%	-54.13%	-20.55%	-	-	-	-29.83%
		Market Price	-9.40%	-3.02%	-53.49%	-20.95%	-	-	-	-29.84%
		Index	-10.60%	-4.14%	-53.81%	-20.33%	-	-	-	-29.61%



Hydrogen Inception Date 07/12/2021	0.50%	NAV	-18.10%	-1.50%	-65.83%	-23.77%	-	-	-	-40.17%
		Market Price	-17.42%	-0.92%	-65.52%	-23.59%	-	-	-	-39.87%
		Index	-18.08%	-0.77%	-65.43%	-23.03%	-	-	-	-39.85%
Blockchain Inception Date 07/12/2021	0.50%	NAV	-27.85%	8.34%	-70.73%	52.73%	-	-	-	-43.61%
		Market Price	-28.14%	8.49%	-70.82%	53.97%	-	-	-	-43.44%
		Index	-27.87%	8.20%	-71.71%	48.80%	-	-	-	-44.57%
Solar Inception Date 09/08/2021	0.51%	NAV	-15.31%	-17.07%	-38.72%	-15.48%	-	-	-	-13.90%
		Market Price	-14.63%	-16.58%	-38.23%	-16.16%	-	-	-	-13.72%
		Index	-15.32%	-16.98%	-38.03%	-14.98%	-	-	-	-13.39%
Wind Energy Inception Date 09/08/2021	0.50%	NAV	-13.19%	-15.57%	-44.08%	-17.12%	-	-	-	-20.90%
		Market Price	-13.40%	-15.67%	-44.28%	-18.22%	-	-	-	-21.04%
		Index	-13.19%	-15.53%	-43.60%	-16.77%	-	-	-	-20.54%
Disruptive Materials Inception Date 01/24/22	0.59%	NAV	-11.67%	-3.68%	-26.87%	-8.22%	-	-	-	-15.74%
		Market Price	-11.22%	-3.71%	-26.31%	-7.86%	-	-	-	-15.12%
		Index	-11.69%	-3.70%	-26.42%	-7.90%	-	-	-	-15.42%
Green Building Inception Date 04/11/22	0.45%	NAV	-2.45%	13.01%	-10.09%	0.17%	-	-	-	-12.05%
		Market Price	-2.49%	12.96%	-10.08%	-0.41%	-	-	-	-11.87%
		Index	-2.47%	13.14%	-9.95%	0.71%	-	-	-	-11.98%
Metaverse Inception Date 04/26/22	0.50%	NAV	-8.28%	4.53%	4.63%	25.07%	-	-	-	6.28%
		Market Price	-8.43%	4.78%	4.66%	25.27%	-	-	-	6.64%
		Index	-8.23%	4.66%	5.19%	25.66%	-	-	-	6.70%
Proptech Inception Date 04/11/23	0.50%	NAV	-3.87%	12.78%	13.85%	-	-	-	-	-
		Market Price	-3.86%	12.74%	14.13%	-	-	-	-	-
		Index	-3.83%	12.75%	13.92%	-	-	-	-	-
Carbon Credits Strategy Inception Date 05/24/23	0.39%	NAV	-1.04%	5.00%	1.41%	-	-	-	-	-
		Market Price	-0.53%	5.77%	2.07%	-	-	-	-	-
		Index	-1.04%	5.00%	3.68%	-	-	-	-	-



P/S AND EV/S

Source: Bloomberg, data is as of 8/31/23 and 7/31/23, Global X ETFs.

Ticker	Name	P/S		EV/S	
		8/31/23	7/31/23	8/31/23	7/31/23
GNOM	Global X Genomics & Biotechnology ETF	5.98	6.29	5.42	5.66
BUG	Global X Cybersecurity ETF	5.77	5.92	5.47	5.63
VR	Global X Metaverse ETF	4.46	4.85	4.52	4.73
VPN	Global X Data Center REITs & Digital Infrastructure ETF	4.33	4.93	6.87	7.71
CHB	Global X China Biotech Innovation ETF	4.24	4.48	3.98	4.18
CLOU	Global X Cloud Computing ETF	4.21	4.42	4.46	4.66
BOTZ	Global X Robotics & Artificial Intelligence ETF	4.12	4.48	4.65	5.14
BKCH	Global X Blockchain ETF	3.92	6.78	4.67	8.06
AGNG	Global X Aging Population ETF	3.40	3.50	4.07	4.12
HYDR	Global X Hydrogen ETF	3.38	4.26	3.32	3.92
AIQ	Global X Artificial Intelligence & Technology ETF	3.30	3.75	3.44	3.89
SOCL	Global X Social Media ETF	3.12	3.32	3.04	3.27
HERO	Global X Video Games & Esports ETF	3.06	3.36	3.14	3.37
FINX	Global X FinTech ETF	3.04	3.51	3.81	3.98
SNSR	Global X Internet of Things ETF	2.65	2.86	2.95	3.18
EDOC	Global X Telemedicine & Digital Health ETF	2.52	2.92	2.57	2.95
SPY	S&P 500 ETF	2.48	2.55	2.81	2.88
AQWA	Global X Clean Water ETF	2.41	2.53	3.43	3.54
EWEB	Global X Emerging Markets Internet & E-commerce ETF	2.33	2.50	2.31	2.59
GRNR	Global X Green Building ETF	2.32	2.40	4.16	4.16
RNRG	Global X Renewable Energy Producers ETF	2.12	2.27	4.48	4.42
MILN	Global X Millennial Consumer ETF	1.97	2.09	2.31	2.45
KEJI	Global X China Innovation ETF	1.89	2.28	1.67	1.98
EDUT	Global X Education ETF	1.82	1.97	1.88	2.07
ACWI	MSCI ACWI ETF	1.81	1.88	2.15	2.21
LIT	Global X Lithium and Battery Tech ETF	1.76	2.00	1.86	2.13
RAYX	Global X Solar ETF	1.69	2.07	2.25	2.72
PTEC	Global X PropTech ETF	1.64	1.95	3.17	3.17
PAVE	Global X U.S. Infrastructure ETF	1.56	1.56	1.84	1.85
POTX	Global X Cannabis ETF	1.55	1.61	1.78	2.21
DMAT	Global X Disruptive Materials ETF	1.49	1.64	1.81	1.96
WNDY	Global X Wind Energy ETF	1.44	1.63	2.84	3.23
BFIT	Global X Health & Wellness ETF	1.28	1.34	1.47	1.53
EBIZ	Global X E-commerce ETF	1.04	1.24	0.91	1.37
KROP	Global X AgTech & Food Innovation ETF	0.96	1.03	1.32	1.45
CTEC	Global X Cleantech ETF	0.95	1.16	1.34	1.54
DRIV	Global X Autonomous & Electric Vehicles ETF	0.86	1.03	0.99	1.17

Note: P/S and EV/S refer to price-to-sales and enterprise value-to-sales, respectively.



F12M SALES GROWTH, PSG, AND EVSG

Source: Bloomberg, data is as of 8/31/23 and 7/31/23, Global X ETFs.

Ticker	Name	F12M Sales (%)		PSG		EVSG	
		8/31/23	7/31/23	8/31/23	7/31/23	8/31/23	7/31/23
BKCH	Global X Blockchain ETF	56.9%	50.4%	0.07	0.13	0.08	0.16
BOTZ	Global X Robotics & Artificial Intelligence ETF	56.3%	42.8%	0.07	0.10	0.08	0.12
POTX	Global X Cannabis ETF	40.8%	30.5%	0.04	0.05	0.04	0.07
RAYS	Global X Solar ETF	31.2%	40.4%	0.05	0.05	0.07	0.07
CHB	Global X China Biotech Innovation ETF	30.8%	35.5%	0.14	0.13	0.13	0.12
BUG	Global X Cybersecurity ETF	22.6%	28.2%	0.26	0.21	0.24	0.20
LIT	Global X Lithium and Battery Tech ETF	18.3%	21.8%	0.10	0.09	0.10	0.10
VPN	Global X Data Center REITs & Digital Infrastructure ETF	17.8%	19.3%	0.24	0.25	0.39	0.40
VR	Global X Metaverse ETF	14.9%	13.3%	0.30	0.36	0.30	0.36
KEJI	Global X China Innovation ETF	14.3%	18.2%	0.13	0.13	0.12	0.11
EBIZ	Global X E-commerce ETF	12.5%	13.3%	0.08	0.09	0.07	0.10
EDUT	Global X Education ETF	12.5%	13.9%	0.15	0.14	0.15	0.15
EWEB	Global X Emerging Markets Internet & E-commerce ETF	12.5%	13.2%	0.19	0.19	0.18	0.20
WNDY	Global X Wind Energy ETF	11.6%	11.8%	0.12	0.14	0.24	0.27
CLOU	Global X Cloud Computing ETF	10.3%	10.1%	0.41	0.44	0.43	0.46
AIQ	Global X Artificial Intelligence & Technology ETF	10.0%	11.1%	0.33	0.34	0.34	0.35
HERO	Global X Video Games & Esports ETF	9.5%	12.6%	0.32	0.27	0.33	0.27
DMAT	Global X Disruptive Materials ETF	8.7%	9.4%	0.17	0.17	0.21	0.21
MILN	Global X Millennial Consumer ETF	7.9%	7.5%	0.25	0.28	0.29	0.32
BFIT	Global X Health & Wellness ETF	7.7%	8.2%	0.17	0.16	0.19	0.19
SOCL	Global X Social Media ETF	7.6%	8.1%	0.41	0.41	0.40	0.40
AQWA	Global X Clean Water ETF	6.8%	6.4%	0.35	0.40	0.50	0.56
DRIV	Global X Autonomous & Electric Vehicles ETF	6.3%	9.2%	0.14	0.11	0.16	0.13
CTEC	Global X Cleantech ETF	6.2%	9.5%	0.15	0.12	0.22	0.16
PTEC	Global X PropTech ETF	6.1%	5.7%	0.27	0.34	0.52	0.56
AGNG	Global X Aging Population ETF	5.4%	8.0%	0.63	0.44	0.75	0.52
FINX	Global X FinTech ETF	5.4%	1.1%	0.56	3.07	0.71	3.48
KROP	Global X AgTech & Food Innovation ETF	5.1%	4.1%	0.19	0.25	0.26	0.35
SPY	S&P 500 ETF	4.7%	5.3%	0.53	0.48	0.60	0.54
GRNR	Global X Green Building ETF	4.5%	5.4%	0.52	0.44	0.93	0.77
EDOC	Global X Telemedicine & Digital Health ETF	4.1%	11.3%	0.61	0.26	0.63	0.26
SNSR	Global X Internet of Things ETF	4.0%	4.8%	0.65	0.60	0.73	0.66
ACWI	MSCI ACWI ETF	4.0%	4.5%	0.45	0.42	0.53	0.49
HYDR	Global X Hydrogen ETF	2.5%	6.6%	1.35	0.65	1.33	0.60
PAVE	Global X U.S. Infrastructure Development ETF	0.2%	0.5%	7.59	3.21	8.98	3.81
RNRG	Global X Renewable Energy Producers ETF	-4.0%	-1.9%	-0.53	-1.16	-1.13	-2.27
GNOM	Global X Genomics & Biotechnology ETF	-4.1%	-9.4%	-1.45	-0.67	-1.31	-0.60

Note: F12M Growth is calculated using consensus analyst expectations for total sales in the next 12 months and weighted average trailing 12 month revenue.

Please note that substantial month-over-month variations in F12M Sales may be the result of Bloomberg coverage and estimates of underlying securities.

PSG and EVSG refer to Price-to-Sales over F12 Sales Growth and Enterprise Value over F12 Sales Growth, respectively.



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- **People and Demographics:** [Cannabis ETF \(POTX\)](#), [Millennial Consumer ETF \(MILN\)](#), [Health & Wellness ETF \(BFIT\)](#), [E-Commerce ETF \(EBIZ\)](#), [Genomics & Biotechnology ETF \(GNOM\)](#), [Aging Population ETF \(AGNG\)](#), [Telemedicine & Digital Health ETF \(EDOC\)](#), [Education ETF \(EDUT\)](#)
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- **Multi-Theme:** [Thematic Growth ETF \(GXTG\)](#), [China Innovation ETF \(KEJI\)](#)



Footnotes

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Investing involves risk, including the possible loss of principal. International investments may involve risk of capital loss from unfavorable fluctuation in currency values, from differences in generally accepted accounting principles or from economic or political instability in other nations. Emerging markets involve heightened risks related to the same factors as well as increased volatility and lower trading volume. Narrowly focused investments may be subject to higher volatility. The funds are non-diversified.

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