

GLOBAL X ETFs RESEARCH

The Next Big Theme: May 2022



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Topic: **Disruptive Technology, Physical Environment, People & Demographics**



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Metaverse

The Virtual Dimension Starts to Take Shape

Consumer engagement with the metaverse is increasing. Nvidia's Omniverse now has over 50,000 individual creators since its beta release in December 2020.¹ Meta Platforms announced that it will open a physical storefront in California where shoppers can try out and purchase hardware, such as the company's Quest 2 VR headset, video calling device Portal, and smart glasses. Also, new metaverse demographics and sectors are emerging. For example, Epic Games is working with LEGO to create a metaverse for kids, where they promise safety and wellbeing will be primary considerations.

Cybersecurity & U.S. Infrastructure

Cyber Threats on Critical Infrastructure Prompt Warnings

The Cybersecurity and Infrastructure Security Agency (CISA), Federal Bureau of Investigation (FBI), and the National Security Agency (NSA), released a joint Cybersecurity Advisory highlighting Russia state-sponsored and criminal cyber threats to U.S. infrastructure. The advisory recommends immediate protections such as patching exploited vulnerability, multifactor authentication, monitor remote desktop protocol, and end-user awareness with training. The Department of Energy (DOE) recently announced a \$12 million investment to enhance cybersecurity measures in U.S. energy systems. These measures are essential to ensure grid resilience as we add renewable energy capacity. Updating the grid's outdated infrastructure for reliable renewable capacity is necessary to achieve President Biden's goal of a 100% clean electrical grid by 2035 and net-zero carbon emissions by 2050.²

Electric Vehicles

U.S. Electric Vehicle Sales at Record Levels in Q1

U.S. consumers bought roughly 208,000 electric vehicles (including plug-in hybrids) in Q1 2022, with California consumers accounting for 40% of those sales.³ Seventy-eight percent of the 67,118 battery electric vehicles sold in California were from Tesla.⁴ In Shanghai, COVID-19 restrictions are easing and Tesla's Shanghai Gigafactory, the largest EV production facility in the world, is back up to 80% of its output



capacity as of April 19, 2022.⁵ Tesla released plans to double its production capacity in Shanghai by building a new factory on the same site, adding a possible 450,000 vehicles to the plant's output.⁶ Along similar lines, a collaboration between General Motors and LG Energy Solution, called Ultium Cells, plans to open at least four new plants for the sole purpose of manufacturing EV batteries.⁷ Production is expected to begin as soon as August.

Genomics

Alzheimer's Discovery Fast-Tracks New Medicine

A study of genetic risk for Alzheimer's connected an additional 42 genes to the likelihood of developing the disease.⁸ Genetics account for 60–80% of the risk.⁹ The study also found that the immune system is one of the several suspected yet unconfirmed pathways for the disease to develop. These discoveries should help scientists better understand Alzheimer's and facilitate medicinal development. Eli Lilly is on track to launch five new medicines within the next year and a half, including its Alzheimer's prospect, Donanemab. Donanemab is an antibody that targets a modified form of deposited amyloid- β peptide—prevalent in Alzheimer's patients—to treat early onset Alzheimer's.

AgTech & Food Innovation

Food Insecurity Fears Loom Amid Peak Fertilizer Prices

The war between Russia and Ukraine continues to drive fertilizer prices through the roof. Fertilizer prices have more than tripled this year because of supply constraints, as Russia is one of the world's largest exporters.¹⁰ As a result, U.S. farmers are turning to alternative crop fertilizer techniques, such as harnessing microbes or plant-based products to provide crops with necessary nutrients. In time, techniques like these could potentially replace traditional fertilizers.

With food insecurity increasingly acute, in September, the Biden Administration will host the White House Conference on Food, Nutrition, and Health. This conference, which was last held in 1969, could help direct the United States' food policy. The announcement of the conference comes as inflation and supply chain issues drive food prices higher, which will likely exacerbate many of the country's pre-existing food and nutrition issues.

Lithium & Battery Tech

The Future of Battery Production Finds Opportunity in Lithium

As part of the Bipartisan Infrastructure Law, the U.S. Department of Energy (DOE) directed \$3.16 billion towards the United States' supply of lithium-ion batteries.¹¹ These batteries are critical to the electric vehicle industry's development and the clean energy transition, as evident by the significant funding dedicated to strengthening the battery supply chain in the infrastructure package.¹² The law earmarks \$7.5 billion for EV chargers, \$5 billion for electric transit buses, and \$5 billion for clean and electric school buses.¹³

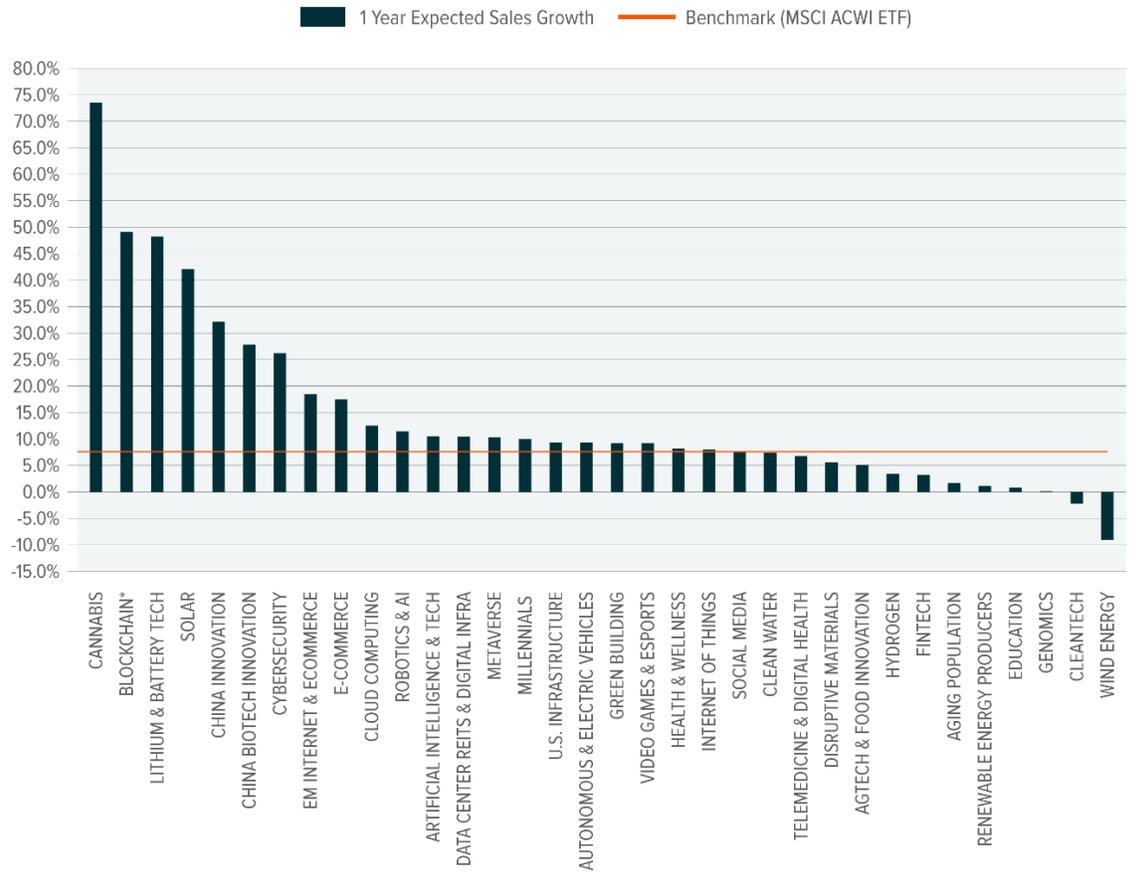


THE NUMBERS

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

THEMATIC SALES GROWTH

Source: Bloomberg, April 30, 2022, Global X ETFs.



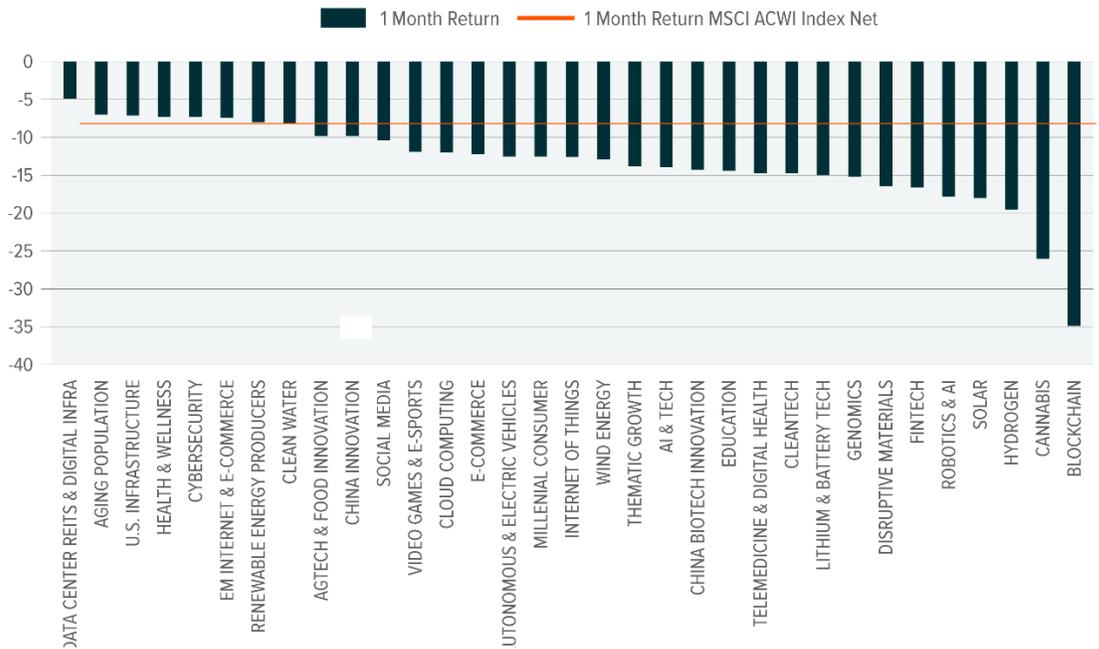
Note: Forward looking based on data and analysis from 4/30/2022.

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

APRIL 2022 THEMATIC ETF RETURNS

Source: Bloomberg, April 30, 2022, Global X ETFs.



Note: The performance data quoted represents past performance and does not guarantee future results.

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 04/30/22			Avg. Annualized % Data as of quarter end 03/31/22				
	Gross 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	NAV	-17.95%	-18.51%	66.32%	-11.19%	13.97%	11.73%	-	13.58%
	Market Price	-17.79%	-19.70%	65.29%	-12.32%	13.54%	11.43%	-	13.41%
	Index	-17.98%	-18.45%	69.74%	-10.33%	14.62%	12.14%	-	14.00%
Fintech Inception Date 9/12/2016	NAV	-16.42%	-20.58%	87.93%	-23.18%	6.89%	15.96%	-	15.72%
	Market Price	-16.61%	-21.31%	87.08%	-23.56%	6.80%	15.87%	-	15.67%
	Index	-16.39%	-20.69%	94.36%	-22.88%	7.50%	16.67%	-	16.41%
Internet Of Things Inception Date 9/12/2016	NAV	-12.17%	-15.78%	103.81%	0.83%	22.89%	14.27%	-	16.38%
	Market Price	-12.59%	-16.58%	102.28%	0.26%	22.73%	14.15%	-	16.32%
	Index	-12.14%	-15.73%	107.65%	1.22%	23.30%	14.66%	-	16.76%
Cloud Computing Inception Date 4/12/2019	NAV	-11.87%	-16.97%	30.92%	-13.12%	-	-	-	14.27%
	Market Price	-11.96%	-17.05%	31.38%	-13.08%	-	-	-	14.45%
	Index	-11.81%	-16.86%	33.36%	-12.58%	-	-	-	14.94%
Social Media Inception Date 11/14/2011	NAV	-10.35%	-22.25%	163.57%	-35.54%	10.19%	11.89%	11.11%	10.95%
	Market Price	-10.40%	-23.33%	161.51%	-36.31%	9.98%	11.67%	10.98%	10.87%
	Index	-9.95%	-22.39%	178.17%	-35.66%	10.58%	12.35%	11.62%	11.47%
Artificial Intelligence & Technology Inception Date 5/11/2018	NAV	-13.46%	-18.35%	58.84%	-4.37%	20.31%	-	-	16.91%
	Market Price	-13.85%	-19.15%	57.96%	-4.95%	20.27%	-	-	16.88%
	Index	-13.44%	-18.25%	61.30%	-3.88%	20.86%	-	-	17.35%
Autonomous & Electric Vehicles Inception Date 4/13/2018	NAV	-12.48%	-14.16%	69.25%	4.81%	28.79%	-	-	18.10%
	Market Price	-12.45%	-14.55%	68.83%	4.19%	28.54%	-	-	18.02%
	Index	-12.37%	-14.20%	70.50%	5.09%	29.08%	-	-	18.27%



Lithium and Battery Tech Inception Date 7/22/2010	0.75%	NAV	-14.08%	-13.57%	151.19%	34.39%	40.94%	24.64%	10.31%	9.61%
		Market Price	-14.96%	-16.37%	147.48%	31.97%	40.85%	24.42%	10.28%	9.57%
		Index	-14.02%	-13.45%	165.49%	35.50%	41.13%	24.63%	10.71%	10.12%
Genomics and Biotechnology Inception Date 4/5/2019	0.50%	NAV	-15.05%	-21.14%	-16.35%	-32.95%	-	-	-	-0.52%
		Market Price	-15.24%	-21.07%	-14.93%	-33.12%	-	-	-	0.12%
		Index	-15.08%	-21.09%	-15.12%	-32.69%	-	-	-	-0.02%
Millennial Consumer Inception Date 5/4/2016	0.50%	NAV	-12.59%	-16.52%	117.91%	-9.16%	15.64%	17.61%	-	16.73%
		Market Price	-12.47%	-16.88%	117.25%	-9.31%	15.60%	17.54%	-	16.64%
		Index	-12.59%	-16.45%	124.15%	-8.69%	16.27%	18.20%	-	17.27%
Aging Population Inception Date 5/09/2016	0.50%	NAV	-7.05%	0.08%	82.90%	4.32%	10.88%	12.10%	-	12.17%
		Market Price	-6.98%	-0.04%	86.90%	4.02%	10.69%	11.95%	-	12.57%
		Index	-7.04%	0.08%	85.72%	4.46%	11.09%	12.34%	-	12.45%
Health and Wellness Inception Date 5/9/2016	0.50%	NAV	-7.12%	-13.49%	56.08%	-8.26%	7.60%	10.91%	-	9.21%
		Market Price	-7.30%	-14.74%	55.79%	-9.64%	7.15%	10.66%	-	9.21%
		Index	-7.06%	-13.42%	59.92%	-7.99%	7.98%	11.32%	-	9.64%
E-Commerce Inception Date 11/27/2018	0.50%	NAV	-12.03%	-22.78%	32.20%	-34.62%	8.62%	-	-	12.96%
		Market Price	-12.17%	-22.96%	31.99%	-34.79%	8.54%	-	-	12.96%
		Index	-12.00%	-22.71%	34.19%	-34.38%	9.09%	-	-	13.46%
Us Infrastructure Development Inception Date 3/6/2017	0.47%	NAV	-6.90%	-0.11%	80.64%	13.56%	22.45%	14.62%	-	13.97%
		Market Price	-7.07%	-0.11%	80.43%	13.42%	22.45%	14.56%	-	13.99%
		Index	-6.90%	0.04%	85.42%	14.24%	23.13%	15.21%	-	14.55%
Cannabis Inception Date 9/17/2019	0.50%	NAV	-26.15%	-21.53%	-81.85%	-64.78%	-	-	-	-42.50%
		Market Price	-26.01%	-20.63%	-82.15%	-64.85%	-	-	-	-42.92%
		Index	-26.32%	-22.15%	-84.13%	-65.69%	-	-	-	-45.40%
Video Games & Esports Inception Date 10/25/2019	0.50%	NAV	-11.72%	-15.54%	50.77%	-18.85%	-	-	-	24.61%
		Market Price	-11.91%	-16.53%	49.85%	-19.50%	-	-	-	24.41%
		Index	-11.69%	-15.51%	52.63%	-18.47%	-	-	-	25.22%
Cybersecurity Inception Date 10/25/2019	0.50%	NAV	-7.38%	1.92%	93.70%	26.88%	-	-	-	35.43%
		Market Price	-7.32%	1.75%	97.11%	26.25%	-	-	-	36.37%
		Index	-7.36%	2.01%	95.47%	27.08%	-	-	-	35.92%
Thematic Growth Inception Date 10/25/2019	0.50%	NAV	-14.50%	-17.92%	28.92%	-21.11%	-	-	-	18.39%
		Market Price	-13.80%	-17.33%	30.63%	-21.58%	-	-	-	18.63%
		Index	-14.56%	-18.00%	27.97%	-21.44%	-	-	-	18.06%
Education Inception Date 7/10/2020	0.50%	NAV	-13.51%	-13.29%	-54.04%	-51.10%	-	-	-	-30.71%
		Market Price	-14.39%	-13.75%	-54.56%	-51.37%	-	-	-	-30.76%
		Index	-13.40%	-13.19%	-53.63%	-50.87%	-	-	-	-30.40%
Telemedicine & Digital Health Inception Date 7/29/2020	0.68%	NAV	-14.24%	-14.12%	-18.09%	-23.87%	-	-	-	-2.72%
		Market Price	-14.65%	-14.71%	-18.49%	-23.95%	-	-	-	-2.72%
		Index	-14.25%	-14.06%	-17.30%	-23.39%	-	-	-	-2.15%
China Biotech Innovation Inception Date 9/22/2020	0.65%	NAV	-14.48%	-16.49%	-33.86%	-27.65%	-	-	-	-15.54%
		Market Price	-14.30%	-17.79%	-34.46%	-28.90%	-	-	-	-16.15%
		Index	-14.49%	-16.37%	-33.21%	-27.15%	-	-	-	-15.00%
Cleantech Inception Date 10/27/2020	0.50%	NAV	-14.85%	-3.27%	-5.26%	-23.35%	-	-	-	7.76%
		Market Price	-14.70%	-4.13%	-5.67%	-24.64%	-	-	-	7.31%
		Index	-14.86%	-3.20%	-7.25%	-25.04%	-	-	-	6.19%
Data Center Reits & Digital Infrastructure Inception Date 10/27/2020	0.50%	NAV	-5.00%	-4.13%	5.68%	6.57%	-	-	-	7.75%
		Market Price	-4.89%	-4.13%	5.60%	6.03%	-	-	-	7.61%
		Index	-5.00%	-4.08%	5.76%	6.67%	-	-	-	7.82%
Emerging Markets Internet & E-Commerce Inception Date 11/09/2020	0.65%	NAV	-6.89%	-24.66%	-50.64%	-50.10%	-	-	-	-36.62%
		Market Price	-7.35%	-26.71%	-51.39%	-51.04%	-	-	-	-37.09%
		Index	-6.47%	-24.78%	-50.33%	-50.14%	-	-	-	-36.60%
Renewable Energy Producers Inception Date 05/27/2015	0.65%	NAV	-7.76%	5.27%	27.74%	3.50%	10.73%	10.82%	-	4.87%
		Market Price	-7.99%	4.13%	26.61%	2.73%	10.34%	10.63%	-	4.77%
		Index	-7.65%	5.00%	30.73%	3.53%	10.95%	11.23%	-	5.20%
China Innovation Inception Date 02/22/2021	0.75%	NAV	-9.72%	-19.34%	-47.96%	-27.48%	-	-	-	-39.37%
		Market Price	-9.82%	-22.15%	-48.96%	-29.57%	-	-	-	-40.36%
		Index	-6.27%	-15.12%	-37.41%	-24.20%	-	-	-	-30.70%
Clean Water Inception Date 04/08/2021	0.50%	NAV	-8.08%	-10.49%	-5.84%	-	-	-	-	-
		Market Price	-8.07%	-10.65%	-5.70%	-	-	-	-	-
		Index	-8.08%	-10.46%	-5.52%	-	-	-	-	-
Agtech and Food Innovation ETF Inception Date 07/12/2021	0.50%	NAV	-9.54%	-0.66%	-28.76%	-	-	-	-	-
		Market Price	-9.82%	-1.05%	-28.84%	-	-	-	-	-
		Index	-9.52%	-0.61%	-28.59%	-	-	-	-	-
Hydrogen Inception Date 07/12/2021	0.50%	NAV	-19.02%	-2.10%	-38.42%	-	-	-	-	-
		Market Price	-19.52%	-2.90%	-38.38%	-	-	-	-	-
		Index	-18.97%	-1.95%	-38.20%	-	-	-	-	-



Blockchain Inception Date 07/12/2021	0.50%	NAV	-34.69%	-30.88%	-52.63%	-	-	-	-	-
		Market Price	-34.88%	-31.25%	-52.73%	-	-	-	-	-
		Index	-34.78%	-30.99%	-52.91%	-	-	-	-	-
Solar Inception Date 09/08/2021	0.50%	NAV	-17.62%	-9.75%	-27.31%	-	-	-	-	-
		Market Price	-17.98%	-11.99%	-27.76%	-	-	-	-	-
		Index	-17.60%	-9.63%	-27.07%	-	-	-	-	-
Wind Energy Inception Date 09/08/2021	0.50%	NAV	-12.30%	-8.88%	-23.85%	-	-	-	-	-
		Market Price	-12.87%	-11.63%	-24.66%	-	-	-	-	-
		Index	-12.30%	-8.78%	-23.63%	-	-	-	-	-
Disruptive Materials Inception Date 01/24/22	0.59%	NAV	-15.34%	-2.37%	-4.76%	-	-	-	-	-
		Index	-16.36%	-4.62%	-5.26%	-	-	-	-	-
		Index	-15.33%	-2.29%	-4.66%	-	-	-	-	-
Green Building Inception Date 04/11/22	0.45%	NAV	-	-	-4.65%	-	-	-	-	-
		Index	-	-	-4.97%	-	-	-	-	-
		Index	-6.59%	-	-	-	-	-	-	-
Metaverse Inception Date 04/26/22	0.50%	NAV	-	-	-0.58%	-	-	-	-	-
		Index	-	-	0.79%	-	-	-	-	-
		Index	-	-	-	-	-	-	-	-



P/S AND EV/S

Source: Bloomberg, data is as of 4/30/22 and 3/31/22, Global X ETFs.

Ticker	Name	P/S		EV/S	
		4/30/2022	3/31/2022	4/30/2022	3/31/2022
BUG	Global X Cybersecurity ETF	8.94	9.72	8.55	9.36
CLOU	Global X Cloud Computing ETF	5.99	6.83	6.42	7.21
GNOM	Global X Genomics & Biotechnology ETF	5.65	6.68	4.93	6.00
HYDR	Global X Hydrogen ETF	5.02	6.18	4.68	5.83
VPN	Global X Data Center REITs & Digital Infrastructure ETF	4.86	5.18	8.03	8.33
CHB	Global X China Biotech Innovation ETF	4.59	5.66	4.35	5.52
VR	Global X Metaverse ETF	4.11	-	4.00	-
FINX	Global X FinTech ETF	3.82	4.48	4.55	5.24
AGNG	Global X Aging Population ETF	3.76	4.53	4.48	5.18
SOCL	Global X Social Media ETF	3.63	3.86	3.39	3.66
KEJI	Global X China Innovation ETF	3.57	3.95	2.82	3.08
HERO	Global X Video Games & Esports ETF	3.47	3.87	3.21	3.63
RNRG	Global X Renewable Energy Producers ETF	3.26	3.57	5.08	5.48
BOTZ	Global X Robotics & Artificial Intelligence ETF	3.21	3.89	3.17	3.76
BKCH	Global X Blockchain ETF	3.15	5.77	3.87	7.60
POTX	Global X Cannabis ETF	2.95	3.38	3.33	8.09
EDOC	Global X Telemedicine & Digital Health ETF	2.92	3.46	3.24	3.81
AQWA	Global X Clean Water ETF	2.72	2.97	3.88	4.13
SPX	S&P 500 Index	2.58	2.90	2.89	3.19
AIQ	Global X Artificial Intelligence & Technology ETF	2.56	2.97	3.26	3.76
SNSR	Global X Internet of Things ETF	2.51	2.91	2.85	3.21
GRNR	Global X Green Building ETF	2.41	-	4.31	-
MILN	Global X Millennial Consumer ETF	2.38	2.61	2.70	3.00
RAYS	Global X Solar ETF	2.09	2.83	2.91	3.51
EWEB	Global X Emerging Markets Internet & E-commerce ETF	2.00	2.11	1.88	2.01
LIT	Global X Lithium and Battery Tech ETF	1.97	2.40	2.18	2.62
ACWI	MSCI ACWI Index	1.88	2.07	2.14	2.34
DMAT	Global X Disruptive Materials ETF	1.77	2.23	2.09	2.55
KROP	Global X AgTech & Food Innovation ETF	1.54	1.69	1.71	1.87
WNDY	Global X Wind Energy ETF	1.51	1.82	2.61	3.07
EDUT	Global X Education ETF	1.47	1.73	1.18	1.53
PAVE	Global X U.S. Infrastructure Development ETF	1.42	1.57	1.71	1.87
CTEC	Global X Cleantech ETF	1.31	1.58	1.61	1.85
BFIT	Global X Health & Wellness ETF	1.29	1.37	1.50	1.53
EBIZ	Global X E-commerce ETF	1.17	1.33	1.12	1.27
DRIV	Global X Autonomous & Electric Vehicles ETF	0.97	1.13	1.10	1.24

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



F12 MONTH SALES GROWTH, PSG, AND EVSG

Source: Bloomberg, data is as of 4/30/22 and 3/31/22, Global X ETFs.

Ticker	Name	F12M Sales (%)		PSG		EVSG	
		4/30/2022	3/31/22	4/30/2022	3/31/22	4/30/2022	3/31/22
POTX	Global X Cannabis ETF	73.5%	93.4%	0.04	0.04	0.05	0.09
BKCH	Global X Blockchain ETF	49.1%	51.0%	0.06	0.11	0.08	0.15
LIT	Global X Lithium and Battery Tech ETF	48.2%	46.7%	0.04	0.05	0.05	0.06
RAYS	Global X Solar ETF	42.1%	65.7%	0.05	0.04	0.07	0.05
KEJI	Global X China Innovation ETF	32.1%	33.4%	0.11	0.12	0.09	0.09
CHB	Global X China Biotech Innovation ETF	27.8%	43.7%	0.17	0.13	0.16	0.13
BUG	Global X Cybersecurity ETF	26.2%	25.9%	0.34	0.37	0.33	0.36
EWEB	Global X Emerging Markets Internet & E-commerce ETF	18.4%	22.2%	0.11	0.09	0.10	0.09
EBIZ	Global X E-commerce ETF	17.5%	21.3%	0.07	0.06	0.06	0.06
CLOU	Global X Cloud Computing ETF	12.5%	15.8%	0.48	0.43	0.52	0.46
BOTZ	Global X Robotics & Artificial Intelligence ETF	11.4%	12.4%	0.28	0.31	0.28	0.30
AIQ	Global X Artificial Intelligence & Technology ETF	10.5%	13.7%	0.24	0.22	0.31	0.27
VPN	Global X Data Center REITs & Digital Infrastructure ETF	10.4%	12.5%	0.47	0.41	0.77	0.67
VR	Global X Metaverse ETF	10.3%	-	0.40	-	0.39	-
MILN	Global X Robotics & Artificial Intelligence ETF	10.0%	12.4%	0.24	0.31	0.27	0.30
PAVE	Global X U.S. Infrastructure Development ETF	9.3%	10.3%	0.15	0.15	0.18	0.18
DRIV	Global X Autonomous & Electric Vehicles ETF	9.3%	13.3%	0.10	0.08	0.12	0.09
GRNR	Global X Green Building ETF	9.2%	-	0.26	-	0.47	-
HERO	Global X Video Games & Esports ETF	9.2%	10.3%	0.38	0.38	0.35	0.35
BFIT	Global X Health & Wellness ETF	8.2%	11.2%	0.16	0.12	0.18	0.14
SNSR	Global X Internet of Things ETF	8.0%	9.1%	0.31	0.32	0.36	0.35
SPX	S&P 500 Index	7.6%	10.3%	0.34	0.28	0.38	0.31
ACWI	MSCI ACWI Index	7.5%	9.9%	0.25	0.21	0.28	0.24
SOCL	Global X Social Media ETF	7.5%	11.5%	0.48	0.34	0.45	0.32
AQWA	Global X Clean Water ETF	7.4%	8.0%	0.37	0.37	0.53	0.52
EDOC	Global X Telemedicine & Digital Health ETF	6.8%	13.1%	0.43	0.26	0.48	0.29
DMAT	Global X Disruptive Materials ETF	5.6%	11.3%	0.32	0.20	0.38	0.23
KROP	Global X AgTech & Food Innovation ETF	5.1%	3.2%	0.30	0.53	0.34	0.58
HYDR	Global X Hydrogen ETF	3.4%	7.1%	1.47	0.87	1.37	0.82
FINX	Global X FinTech ETF	3.2%	3.7%	1.19	1.20	1.41	1.40
AGNG	Global X Aging Population ETF	1.7%	4.4%	2.22	1.04	2.65	1.18
RNRG	Global X Renewable Energy Producers ETF	1.1%	4.7%	3.01	0.76	4.70	1.16
EDUT	Global X Education ETF	0.8%	3.0%	1.79	0.58	1.43	0.51
GNOM	Global X Genomics & Biotechnology ETF	0.1%	0.7%	76.42	9.48	66.63	8.52
CTEC	Global X Cleantech ETF	-2.2%	3.6%	-0.60	0.44	-0.74	0.51
WNDY	Global X Wind Energy ETF	-9.0%	-1.5%	-0.17	-1.23	-0.29	-2.08

Note: F12 Sales Growth refers to the consensus analyst expectations for total sales growth in the next 12 months. PSG and EVSG refer to



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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 \(EDUT\)](#)
- **Physical Environment:** [U.S. Infrastructure Development ETF \(PAVE\)](#), [CleanTech ETF \(CTEC\)](#), [Renewable Energy Producers \(RNRG\)](#), [Clean Water ETF \(AQWA\)](#), [Hydrogen ETF \(HYDR\)](#), [Solar ETF \(RAYS\)](#), [Wind Energy ETF \(WNDY\)](#), [Disruptive Materials ETF \(DMAT\)](#), [Green Building ETF \(GRNR\)](#)
- **Multi-Theme:** [Thematic Growth ETF \(GXTG\)](#), [China Innovation ETF \(KEJI\)](#)



Footnotes

1. Spilka, D. (2022, April 16). The metaverse space race will be visible from Wall Street. *Venture Beat*. <https://venturebeat.com/2022/04/16/the-metaverse-space-race-will-be-visible-from-wall-street/>
2. Department of Energy. (2022, April 21). *DOE announces \$12 million to enhance cybersecurity of America's energy systems* [Press release]. <https://www.energy.gov/articles/doe-announces-12-million-enhance-cybersecurity-americas-energy-systems>
3. Ibid.
4. Halvorson, B. (2022, May 1). US plug-in vehicle sales hit a record high in Q1, led by Tesla and California. *Green Car Reports*. https://www.greencarreports.com/news/1135731_us-plug-in-vehicle-sales-hit-record-high-q1-tesla-and-california
5. Mihalascu, D. (2022, May 4). New Tesla plant to make Shanghai "world's largest vehicle export hub". *Inside EVs*. <https://insideevs.com/news/583769/new-tesla-plant-make-shanghai-world-largest-vehicle-export-hub/>
6. Ibid.
7. Werschkul, B. (2022, May 4). GM has 4 new plants coming to 'have control over battery cell manufacture': Mary Barra. *Yahoo! Finance*. <https://finance.yahoo.com/news/gm-has-4-new-plants-coming-mary-barra-130652246.html>
8. LaMotte, S. (2022, April 5). 42 previously unknown genes discovered for Alzheimer's disease. *CNN*. <https://www.cnn.com/2022/04/05/health/new-alzheimers-genes-wellness>
9. Ibid.
10. Thomas, P., & Ramkumar, A. (2022, April 30). Record fertilizer prices drive investors, farmers to microbes. *The Wall Street Journal*. <https://www.wsj.com/articles/record-fertilizer-prices-drive-investors-farmers-to-microbes-11651311182>
11. Klein, B. (2022, May 2). Biden administration making \$3 billion investment in lithium ion battery production. *CNN*. <https://www.cnn.com/2022/05/02/politics/biden-administration-lithium-batteries/index.html>
12. Ibid.
13. Ibid.

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