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2021 Topic: **Disruptive
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Social Media

Life in the Metaverse

Facebook announced that it is all in on the metaverse, so much so that it's changing its corporate name to Meta, of which all Facebook properties will fall under, including Messenger, WhatsApp, and Instagram. As a leader in the virtual reality (VR) connectivity space, with its formerly Oculus-branded VR worlds, Facebook intends to be the host site for a metaverse of creators and developers that bring new experiences to users. Microsoft's version will see the company adapt its office products suite. Microsoft Team's chat and conference is in testing and will be available H1 2022.¹ Even dating is headed to the metaverse, starting with Tinder's parent company Match Group. The company has a vision for "Single Town," a world where users can interact through real-time audio and virtual meetups.²

Renewable Energy & Cleantech

Biden Goes to the COP26 Climate Change Summit

President Biden announced two new international commitments, one to curb methane emissions and one to end deforestation by 2030.³ Thus far, 105 countries have signed the Global Methane Pledge, which aims for a 30% reduction by 2030.⁴ Leaders of more than 100 countries vowed to end deforestation by 2030, which would encompass about 85% of the world's forests.⁵ With financial support from other industrialized nations, the Biden administration said that it expects to provide \$100 billion a year in aid to help developing countries fight and adapt to global warming.⁶ Biden said the U.S. would contribute \$3 billion annually by 2024.⁷ On the net-zero end, 450 financial firms pledged \$130 trillion in capital to finance the transition to net-zero emissions with commitments to shift 100% of their funds to net-zero emissions targets by 2050.⁸ Over 100 countries, regional governments, and auto manufacturers doubled down on their pledges to transition to 100% all-electric cars by 2040.⁹

E-commerce

Holidays Ring in Surplus Packages



Holiday e-commerce sales are projected to increase 14.4% this year, with online traffic comprising 18.4% of all spending through year-end.¹⁰ Apparel and accessories is expected to be the fastest-growing segment in the U.S. this holiday season with a 25.5% year-over-year (YoY) increase, followed by computer and consumer electronics at +12.5% and health and person care at +12.1% YoY.¹¹ In anticipation of the rush, Amazon released plans to hire 150,000 seasonal employees. To further motivate prospective employees, Amazon is offering a \$3,000 sign-on bonus and a \$3/hour wage bump in certain locations.¹² Global logistics giant UPS is shifting gears to focus on small and medium-sized businesses as they continue to show persistent growth in e-commerce package volume. The company reported positive results despite supply chain challenges.

Electric Vehicles & Lithium

OEMs Power Up Auto Electrification

Original equipment manufacturers (OEMs) continue to ramp up their commitments to electric vehicles (EV) in the U.S. Toyota has an U.S. electrified vehicles (including hybrid (HEV), plug-in hybrid (PHEV), fuel cell (FCEV) and battery electric vehicles (BEV)) sales volume of roughly 25%, which it intends to raise to about 70% by 2030.¹³ Stellantis aims for EVs and PHEVs to account for 40% of its U.S. sales volume.¹⁴ The BMW Group wants its EVs to comprise 50% of its U.S. sales volume by 2030.¹⁵ Battery technology is also a major focus. Toyota is investing \$1.29 billion to build a battery plant with Toyota Tsusho by 2025.¹⁶ Stellantis is partnering with LG Energy Solution for a plant with production capacity of 40 GWh.¹⁷ Tesla signed a three-year supply deal with China's Ganfeng Lithium starting 2022.¹⁸ And General Motors announced goals to reduce battery costs by 60%.¹⁹

Cloud Computing

Spending Reaches the Clouds

In Q3 2021, spending on cloud infrastructure services reached a new high of \$50 billion as the digital economy continues to thrive.²⁰ Spending was \$2.4 billion higher than in Q2 2021 and \$13 billion higher than in Q3 2020.²¹ The pandemic increased digitization by 59% at organizations,²² and companies continue to assimilate to an economy that includes hybrid and work-from-home set-ups. France is the latest country to announce a major cloud spending push. It has plans to invest \$2.1 billion in the industry, with \$770 million going to public financing, \$513 million to European Union financing, and \$785 million to private co-financing.²³

Cybersecurity

Security Escalates to the Federal Level

The Biden administration issued a new mandate for federal agencies to patch cybersecurity vulnerabilities in government software. This new mandate covers about 200 known security flaws, making it one of the most widespread initiatives of its kind.²⁴ Also, the House passed the Small Business Administration (SBA) Cyber Awareness Act, requiring small businesses to notify Congress of cybersecurity breaches. A second



component includes the Small Business Development Center Cyber Training Act for cybersecurity counseling certification programs.

Robotics & AI

Report: Record Robots

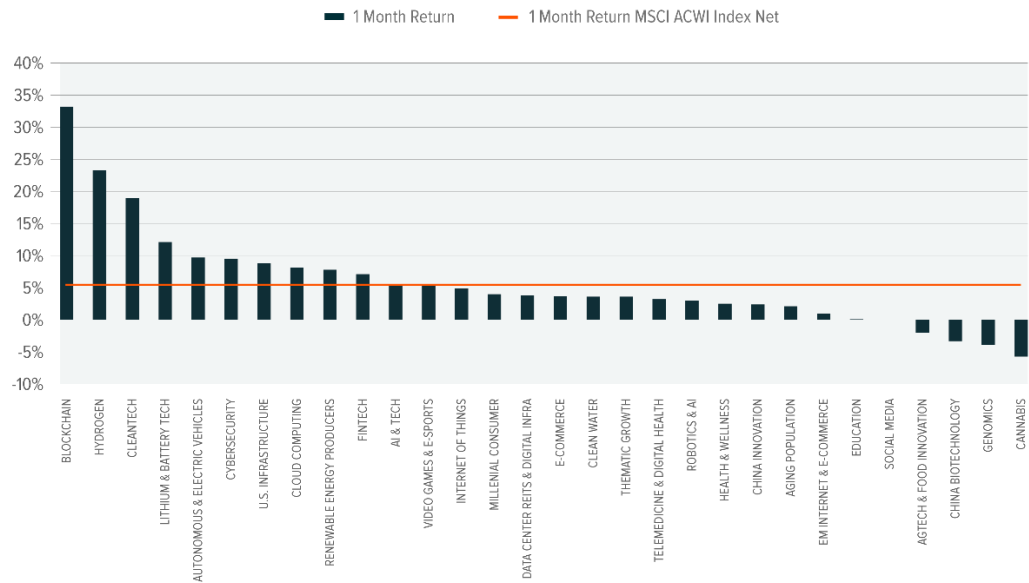
The news was positive for robot growth in the International Federation of Robotics' annual World Robotics Report. There are now 3 million operational industrial robots working in factories globally, up 10% from last year.²⁵ By year-end, it's estimated there will be 435,000 industrial robot installations, up from 384,000 last year. Asia remains the world's largest robot market, led by China with 168,400 industrial units. Japan and the U.S. are the second and third-biggest markets at 38,7000 and 30,800, respectively. Currently, the electronic, automotive, and metal/machinery industries use industrial robot applications the most. The service robots market also reached a new high of \$6.7 billion worldwide, up 12% YoY in 2020.

THE NUMBERS

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

OCTOBER 2021 THEMATIC ETF RETURNS

Source: Bloomberg, October 31, 2021, Global X ETFs.

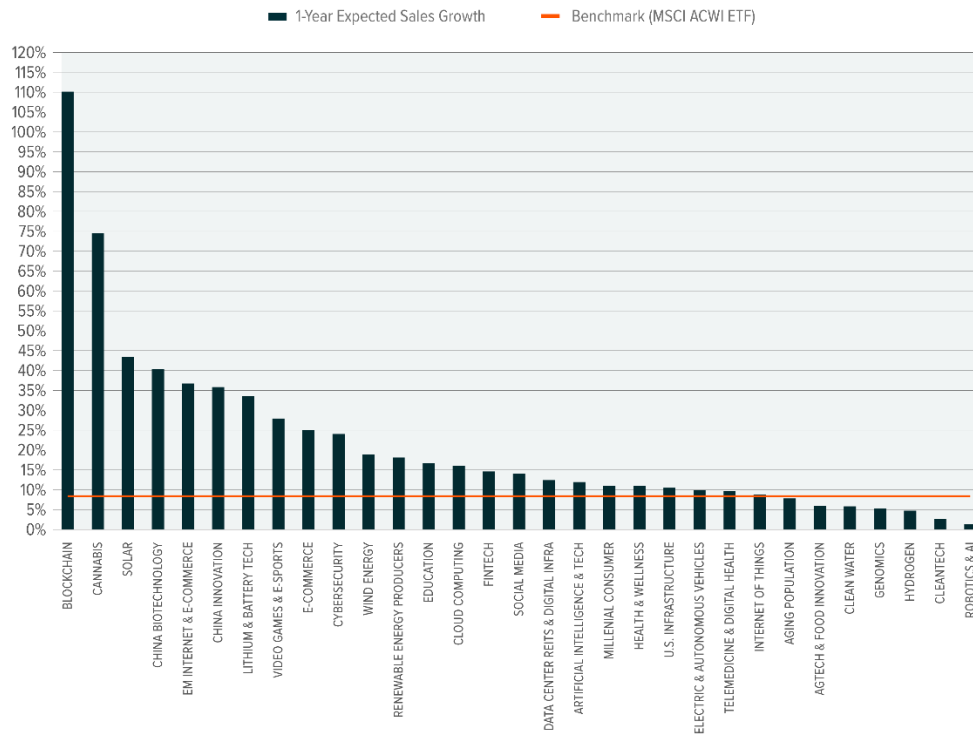


Note: The performance data quoted represents past performance and does not guarantee future results.



THEMATIC SALES GROWTH

Source: Bloomberg, October 31, 2021, Global X ETFs.



Note: Forward looking based on data and analysis from 10/31/2021.
1 year annualized forward sales growth is the consensus analyst expectations for total sales growth in the next 12 months.

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 10/31/21			Avg. Annualized % Data as of quarter end 9/30/21				
	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	0.68%	NAV	2.37%	10.67%	160.15%	32.03%	18.03%	19.98%	-	20.28%
		Market Price	3.04%	10.79%	161.13%	31.34%	17.99%	19.76%	-	20.22%
Fintech Inception Date 9/12/2016	0.68%	NAV	2.42%	10.80%	164.62%	33.05%	18.45%	20.39%	-	20.67%
		Market Price	6.49%	8.77%	240.53%	26.63%	18.77%	25.76%	-	25.88%
Internet Of Things Inception Date 9/12/2016	0.68%	NAV	6.54%	8.88%	251.72%	27.41%	19.50%	26.55%	-	26.67%
		Market Price	4.69%	2.71%	163.13%	38.75%	22.36%	19.44%	-	20.02%
Cloud Computing Inception Date 4/12/2019	0.68%	NAV	4.85%	2.89%	163.96%	38.55%	22.51%	19.31%	-	20.06%
		Market Price	4.71%	2.83%	167.66%	39.38%	22.76%	19.85%	-	20.41%
Social Media Inception Date 11/14/2011	0.65%	NAV	8.03%	10.60%	110.06%	22.57%	-	-	-	30.94%
		Market Price	8.06%	10.75%	111.04%	22.61%	-	-	-	31.17%
Artificial Intelligence & Technology Inception Date 5/11/2018	0.68%	NAV	8.08%	10.77%	113.27%	23.36%	-	-	-	31.66%
		Market Price	0.28%	-7.96%	320.99%	25.41%	24.02%	19.85%	-	15.63%
Autonomous & Electric Vehicles Inception Date 4/13/2018	0.68%	NAV	0.03%	-8.14%	319.47%	24.68%	24.10%	19.70%	-	15.62%
		Market Price	0.33%	-7.83%	344.43%	26.10%	24.72%	20.54%	-	16.25%
	0.68%	NAV	5.11%	4.11%	114.89%	29.17%	24.63%	-	-	23.51%
		Market Price	5.42%	4.04%	115.16%	28.57%	24.54%	-	-	23.45%
	0.68%	NAV	5.20%	4.26%	117.77%	29.80%	25.07%	-	-	23.93%
		Market Price	9.56%	5.19%	109.75%	63.08%	25.01%	-	-	20.62%
	0.68%	NAV	9.74%	5.32%	110.24%	62.81%	24.93%	-	-	20.65%
		Market Price	9.64%	5.37%	111.16%	63.86%	25.28%	-	-	20.80%



Lithium And Battery Tech Inception Date 7/22/2010	0.75%	NAV	10.76%	10.28%	244.07%	107.81%	38.05%	30.15%	13.37%	10.66%
		Market Price	12.14%	10.36%	246.87%	105.14%	37.81%	29.78%	13.43%	10.62%
		Index	10.91%	10.53%	262.27%	108.43%	38.08%	30.28%	13.75%	11.15%
Genomics And Biotechnology Inception Date 4/5/2019	0.50%	NAV	-3.47%	-6.51%	40.24%	24.02%	-	-	-	16.21%
		Market Price	-3.86%	-6.67%	42.86%	24.04%	-	-	-	17.27%
		Index	-3.42%	-6.39%	42.14%	24.47%	-	-	-	16.79%
Millennial Consumer Inception Date 5/4/2016	0.50%	NAV	4.21%	2.24%	206.56%	38.10%	22.36%	22.52%	-	22.09%
		Market Price	3.97%	2.17%	205.19%	38.26%	22.41%	22.53%	-	22.04%
		Index	4.25%	2.34%	214.63%	38.85%	23.00%	23.13%	-	22.65%
Aging Population Inception Date 5/10/2016	0.50%	NAV	1.27%	-2.76%	101.87%	14.19%	10.02%	13.06%	-	13.65%
		Market Price	2.07%	-2.98%	106.27%	13.41%	9.59%	12.84%	-	13.94%
		Index	1.31%	-2.72%	104.92%	14.43%	10.23%	13.35%	-	13.94%
Health And Wellness Inception Date 5/9/2016	0.50%	NAV	2.36%	-1.47%	105.19%	32.05%	14.31%	14.09%	-	13.77%
		Market Price	2.47%	-1.54%	106.52%	31.28%	14.13%	13.91%	-	13.88%
		Index	2.39%	-1.41%	109.94%	32.54%	14.72%	14.54%	-	14.23%
E-Commerce Inception Date 11/27/2018	0.50%	NAV	3.35%	-1.73%	110.05%	11.71%	-	-	-	28.35%
		Market Price	3.66%	-1.70%	109.84%	11.06%	-	-	-	28.17%
		Index	3.39%	-1.62%	112.95%	12.18%	-	-	-	28.93%
Us Infrastructure Development Inception Date 3/6/2017	0.47%	NAV	8.78%	4.42%	89.04%	51.55%	14.72%	-	-	12.86%
		Market Price	8.78%	4.38%	89.11%	51.43%	14.78%	-	-	12.87%
		Index	8.84%	4.53%	93.42%	52.45%	15.29%	-	-	13.40%
Cannabis Inception Date 9/17/2019	0.51%	NAV	-5.71%	-26.91%	-62.86%	26.00%	-	-	-	-36.71%
		Market Price	-5.70%	-26.38%	-63.71%	24.91%	-	-	-	-37.43%
		Index	-5.86%	-27.41%	-67.02%	23.28%	-	-	-	-40.23%
Video Games & Esports Inception Date 10/25/2019	0.50%	NAV	4.76%	-3.25%	98.77%	4.84%	-	-	-	39.29%
		Market Price	5.28%	-3.22%	98.56%	3.93%	-	-	-	38.85%
		Index	4.85%	-3.03%	100.96%	5.42%	-	-	-	39.98%
Cybersecurity Inception Date 10/25/2019	0.50%	NAV	9.36%	11.37%	119.99%	39.92%	-	-	-	43.57%
		Market Price	9.47%	11.52%	124.61%	40.26%	-	-	-	45.04%
		Index	9.41%	11.56%	120.15%	40.51%	-	-	-	43.55%
Thematic Growth Inception Date 10/25/2019	0.50%	NAV	2.95%	1.40%	105.20%	47.90%	-	-	-	42.88%
		Market Price	3.55%	1.52%	107.41%	47.10%	-	-	-	43.25%
		Index	2.94%	1.28%	104.14%	47.27%	-	-	-	42.47%
Education Inception Date 7/10/2020	0.50%	NAV	-0.64%	-11.06%	-27.97%	-32.44%	-	-	-	-23.13%
		Market Price	0.09%	-11.18%	-27.84%	-32.81%	-	-	-	-23.47%
		Index	-0.65%	-10.91%	-27.53%	-32.10%	-	-	-	-22.71%
Telemedicine & Digital Health Inception Date 7/29/2020	0.68%	NAV	3.33%	-0.49%	20.39%	5.82%	-	-	-	13.93%
		Market Price	3.16%	-0.87%	20.07%	5.26%	-	-	-	13.82%
		Index	3.32%	-0.40%	21.34%	6.61%	-	-	-	14.70%
China Biotech Innovation Date Inception Date 9/22/2020	0.67%	NAV	-3.52%	-10.83%	3.64%	5.81%	-	-	-	7.26%
		Market Price	-3.29%	-11.74%	3.11%	4.14%	-	-	-	6.48%
		Index	-3.49%	-10.68%	4.36%	6.50%	-	-	-	7.96%
Cleantech Inception Date 10/27/2020	0.50%	NAV	18.37%	15.06%	47.61%	-	-	-	-	-
		Market Price	18.98%	14.80%	47.34%	-	-	-	-	-
		Index	18.39%	14.74%	44.21%	-	-	-	-	-
Data Center Reits & Digital Infrastructure Inception Date 10/27/2020	0.50%	NAV	4.50%	0.93%	17.24%	-	-	-	-	-
		Market Price	3.79%	0.69%	17.77%	-	-	-	-	-
		Index	4.53%	0.95%	17.30%	-	-	-	-	-
Emerging Markets Internet & E-Commerce Inception Date 11/09/2020	0.65%	NAV	1.96%	-7.20%	-18.93%	-	-	-	-	-
		Market Price	1.02%	-7.61%	-19.61%	-	-	-	-	-
		Index	1.98%	-7.03%	-18.41%	-	-	-	-	-
Renewable Energy Producers Inception Date 05/27/2015	0.65%	NAV	7.41%	3.70%	42.79%	8.87%	12.58%	10.30%	-	4.59%
		Market Price	7.75%	3.44%	42.74%	8.44%	12.63%	10.14%	-	4.53%
		Index	7.47%	3.81%	46.38%	9.43%	13.17%	10.79%	-	4.99%
China Innovation Inception Date 02/22/2021	0.75%	NAV	2.57%	-4.39%	-23.36%	-	-	-	-	-
		Market Price	2.36%	-4.84%	-23.72%	-	-	-	-	-
		Index	2.78%	0.22%	-17.88%	-	-	-	-	-
Clean Water Inception Date 04/08/2021	0.50%	NAV	4.68%	0.78%	11.79%	-	-	-	-	-
		Market Price	3.59%	0.18%	11.66%	-	-	-	-	-
		Index	4.72%	0.90%	12.02%	-	-	-	-	-
Atech & Food Innovation ETF Inception Date 07/12/2021	0.50%	NAV	-1.79%	-9.52%	-15.59%	-	-	-	-	-
		Market Price	-1.96%	-9.18%	-15.27%	-	-	-	-	-
		Index	-1.74%	-9.41%	-15.48%	-	-	-	-	-
Hydrogen Inception Date 07/12/2021	0.50%	NAV	23.20%	12.97%	7.11%	-	-	-	-	-
		Market Price	23.26%	13.32%	7.71%	-	-	-	-	-
		Index	23.29%	13.12%	7.26%	-	-	-	-	-
Blockchain Inception Date 07/12/2021	0.50%	NAV	33.02%	27.98%	25.63%	-	-	-	-	-
		Market Price	33.19%	27.89%	25.95%	-	-	-	-	-
		Index	33.06%	28.15%	25.83%	-	-	-	-	-
Solar ETF Inception Date 09/08/2021	0.50%	NAV	18.78%	-	15.30%	-	-	-	-	-
		Market Price	18.78%	-	15.83%	-	-	-	-	-
		Index	18.82%	-	15.39%	-	-	-	-	-
Wind Energy ETF Inception Date 09/08/2021	0.50%	NAV	5.79%	-	6.04%	-	-	-	-	-
		Market Price	6.13%	-	6.65%	-	-	-	-	-
		Index	5.84%	-	6.13%	-	-	-	-	-



P/S AND EV/S

Source: Bloomberg, data is as of 10/31/21 and 9/30/21, Global X ETFs.

Ticker	Name	P/S		EV/S	
		10/31/21	9/30/21	10/31/21	9/30/21
BKCH	Global X Blockchain ETF	19.75	16.70	27.46	21.05
GNOM	Global X Genomics & Biotechnology ETF	11.44	11.14	10.95	10.67
CLOU	Global X Cloud Computing ETF	11.38	10.28	11.78	10.72
HYDR	Global X Hydrogen ETF	9.56	0.75	10.60	183.56
BUG	Global X Cybersecurity ETF	9.19	8.78	9.48	9.05
FINX	Global X FinTech ETF	7.91	7.47	9.12	8.61
CHB	Global X China Biotech Innovation ETF	7.33	7.45	6.88	7.59
YPN	Global X Data Center REITs & Digital Infrastructure ETF	6.47	7.09	7.50	9.70
SOCL	Global X Social Media ETF	6.21	6.51	6.12	6.38
KEJI	Global X China Innovation ETF	5.19	5.25	4.50	4.43
AGNG	Global X Aging Population ETF	4.82	4.77	5.57	5.49
EDOC	Global X Telemedicine & Digital Health ETF	4.71	4.56	5.04	4.87
BOTZ	Global X Robotics & Artificial Intelligence ETF	4.37	4.36	4.36	4.31
POTX	Global X Cannabis ETF	4.30	5.02	9.44	10.99
HERO	Global X Video Games & Esports ETF	4.26	4.06	4.20	3.93
AIO	Global X Artificial Intelligence & Technology ETF	4.10	3.92	4.25	4.08
RNRG	Global X Renewable Energy Producers ETF	3.85	3.60	6.16	5.86
RAY5	Global X Solar ETF	3.51	3.05	4.60	4.26
MILN	Global X Millennial Consumer ETF	3.49	3.47	3.92	3.91
LIT	Global X Lithium and Battery Tech ETF	3.36	3.11	3.76	3.40
EWEB	Global X Emerging Markets Internet & E-commerce ETF	3.22	3.17	3.14	3.08
SNSR	Global X Internet of Things ETF	3.15	3.05	3.69	3.62
SPX	S&P 500 Index	3.11	2.97	3.41	3.29
AQWA	Global X Clean Water ETF	2.85	2.76	3.83	3.75
EDUT	Global X Education ETF	2.39	2.41	2.49	2.50
ACWI	ACWI Index	2.24	2.16	2.60	2.55
EBIZ	Global X E-commerce ETF	2.16	2.15	2.32	2.30
CTEC	Global X Cleantech ETF	2.04	1.67	2.34	1.96
WNDY	Global X Wind Energy ETF	1.88	1.75	2.68	2.56
PAVE	Global X U.S. Infrastructure Development ETF	1.72	1.65	2.03	1.97
BFIT	Global X Health & Wellness ETF	1.71	1.68	1.90	1.88
KROP	Global X AgTech & Food Innovation ETF	1.60	1.64	2.03	2.10
DRIV	Global X Autonomous & Electric Vehicles ETF	1.33	1.20	1.49	1.35

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 10/31/21 and 9/30/21, Global X ETFs.

Ticker	Name	F12M Sales (%)		PSG		EVSG	
		10/31/21	9/30/21	10/31/21	9/30/21	10/31/21	9/30/21
BKCH	Global X Blockchain ETF	110.1%	96.1%	0.18	0.17	0.25	0.22
POTX	Global X Cannabis ETF	74.5%	87.0%	0.06	0.06	0.13	0.13
RAY5	Global X Solar ETF	43.4%	54.5%	0.08	0.06	0.11	0.08
CHB	Global X China Biotech Innovation ETF	40.3%	42.0%	0.18	0.18	0.17	0.18
EWEB	Global X Emerging Markets Internet & E-commerce ETF	36.7%	34.9%	0.09	0.09	0.09	0.09
KEJI	Global X China Innovation ETF	35.8%	34.5%	0.15	0.15	0.13	0.13
LIT	Global X Lithium and Battery Tech ETF	33.5%	35.9%	0.10	0.09	0.11	0.09
HERO	Global X Video Games & Esports ETF	27.9%	25.5%	0.15	0.16	0.15	0.15
EBIZ	Global X E-commerce ETF	25.0%	30.3%	0.09	0.07	0.09	0.08
BUG	Global X Cybersecurity ETF	24.0%	22.9%	0.38	0.38	0.39	0.40
WNDY	Global X Wind Energy ETF	18.9%	12.6%	0.10	0.14	0.14	0.20
RNRG	Global X Renewable Energy Producers ETF	18.1%	18.0%	0.21	0.20	0.34	0.33
EDUT	Global X Education ETF	16.7%	16.7%	0.14	0.14	0.15	0.15
CLOU	Global X Cloud Computing ETF	16.0%	19.6%	0.71	0.52	0.74	0.55
FINX	Global X FinTech ETF	14.6%	12.5%	0.54	0.60	0.63	0.69
SOCL	Global X Social Media ETF	14.0%	20.9%	0.44	0.31	0.44	0.30
YPN	Global X Data Center REITs & Digital Infrastructure ETF	12.4%	12.7%	0.52	0.56	0.61	0.76
AIO	Global X Artificial Intelligence & Technology ETF	11.9%	15.0%	0.34	0.26	0.36	0.27
MILN	Global X Millennial Consumer ETF	10.9%	13.5%	0.32	0.26	0.36	0.29
BFIT	Global X Health & Wellness ETF	10.9%	11.5%	0.16	0.15	0.18	0.16
PAVE	Global X U.S. Infrastructure Development ETF	10.5%	13.7%	0.16	0.12	0.19	0.14
DRIV	Global X Autonomous & Electric Vehicles ETF	9.9%	10.7%	0.13	0.11	0.15	0.13
EDOC	Global X Telemedicine & Digital Health ETF	9.6%	10.7%	0.49	0.43	0.52	0.46
SNSR	Global X Internet of Things ETF	8.8%	10.1%	0.36	0.30	0.42	0.36
ACWI	ACWI Index	8.4%	11.0%	0.27	0.20	0.31	0.23
SPX	S&P 500 Index	8.0%	11.2%	0.39	0.26	0.42	0.29
AGNG	Global X Aging Population ETF	7.8%	8.6%	0.62	0.55	0.71	0.64
KROP	Global X AgTech & Food Innovation ETF	6.0%	4.5%	0.27	0.36	0.34	0.46
AQWA	Global X Clean Water ETF	5.8%	6.7%	0.49	0.41	0.66	0.56
GNOM	Global X Genomics & Biotechnology ETF	5.3%	3.4%	2.16	3.28	2.07	3.14
HYDR	Global X Hydrogen ETF	4.7%	10.8%	2.04	0.07	2.27	17.07
CTEC	Global X Cleantech ETF	2.7%	-4.0%	0.76	-0.42	0.87	-0.49
BOTZ	Global X Robotics & Artificial Intelligence ETF	1.3%	3.2%	3.31	1.36	3.30	1.34

Note: F12 Sales Growth refers to the consensus analyst expectations for total sales growth in the next 12 months. PSG and EVSG refer to Price-to-Sales over F12 Sales Growth and Enterprise Value over F12 Sales Growth, respectively. N/A's reflect a negative growth number in the



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- **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 \(WNDY\)](#)
- **Multi-Theme:** [Thematic Growth ETF \(GXTG\)](#), [China Innovation ETF \(KEJI\)](#)

1. Bloomberg, "Microsoft's Own Metaverse Is Coming, and It Will Have PowerPoint", Nov. 2, 2021.
2. Match Group, "Letter to Shareholders Q3 2021", Nov. 2, 2021.
3. New York Times, "What Happened on Day 2 of the COP26 Climate Change Summit", Nov. 4, 2021.



4. Ibid.
5. Ibid.
6. Ibid.
7. Ibid.
8. eMarketer, "Holiday ecommerce sales will see double-digit growth, as shopping begins earlier in the season", Oct. 22, 2021.
9. Wall Street Journal, "'Net Zero' Will Make Wall Street Richer at Main Street's Expense", Nov. 11, 2021.
10. Electrek, "Countries and automakers agree to go all-electric by 2040 in weak new goal set at COP26", Nov. 10, 2021.
11. Ibid.
12. CNBC, "Amazon plans to hire 150,000 seasonal staff for the holidays", Oct. 18, 2021.
13. Repair Driven News, "Toyota, Stellantis make increased commitments to U.S. EV initiatives", Oct. 20, 2021.
14. Ibid.
15. CNBC, "BMW's fully electric car sales on track to double this year, but still way short of Tesla", Nov. 3, 2021.
16. Ibid(xiii).
17. Ibid(xiii).
18. Inside EVs, "Tesla Signs Three-Year Supply Deal With China's Ganfeng Lithium", Nov. 1, 2021.
19. General Motors, "INVESTOR EVENT OCTOBER 2021: FROM AUTOMAKER TO PLATFORM INNOVATOR", Oct. 6, 2021.
20. ZDNet, "Cloud computing spending is at a record high. But the global chip shortage could create some problems ahead", Nov. 3, 2021.
21. Ibid.
22. Ibid.
23. KFGO, "France plans 1.8 billion euro support for cloud computing industry", Nov. 2, 2021.
24. The Wall Street Journal, "Biden Administration Orders Federal Agencies to Fix Hundreds of Cyber Flaws", Nov. 3, 2021.
25. IFR, "IFR presents World Robotics 2021 reports", Oct. 28, 2021.

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