

**COMMENTARY**

- The S&P Kensho New Economies Composite had a challenging final quarter, but managed to end the year with a gain. The S&P Kensho New Economies Select fared worse, ending the year down 8%.
- Future Security continued its relative strength from the prior quarter and was the best performing sector in Q4 and for the year. Democratized Banking lagged, as a result of its exposure to Distributed Ledger, Alternative Finance, and Future Payments.
- Virtual Reality was the top performing subsector, followed by Autonomous Vehicles and Cyber Security. Laggards included Digital Communities, along with Alternative Finance and Distributed Ledger.
- S&P Kensho Moonshots ended 2021 on a weak note, down 15%, driven by poor performance within the Biotech space.

**BACKGROUND**

The S&P Kensho New Economies are a family of indices describing the industries and innovations of the Fourth Industrial Revolution. Rapid developments in artificial intelligence and robotics, coupled with exponential processing power and ubiquitous connectivity, are driving structural changes in the global economy, disrupting existing industries and forging new ones.

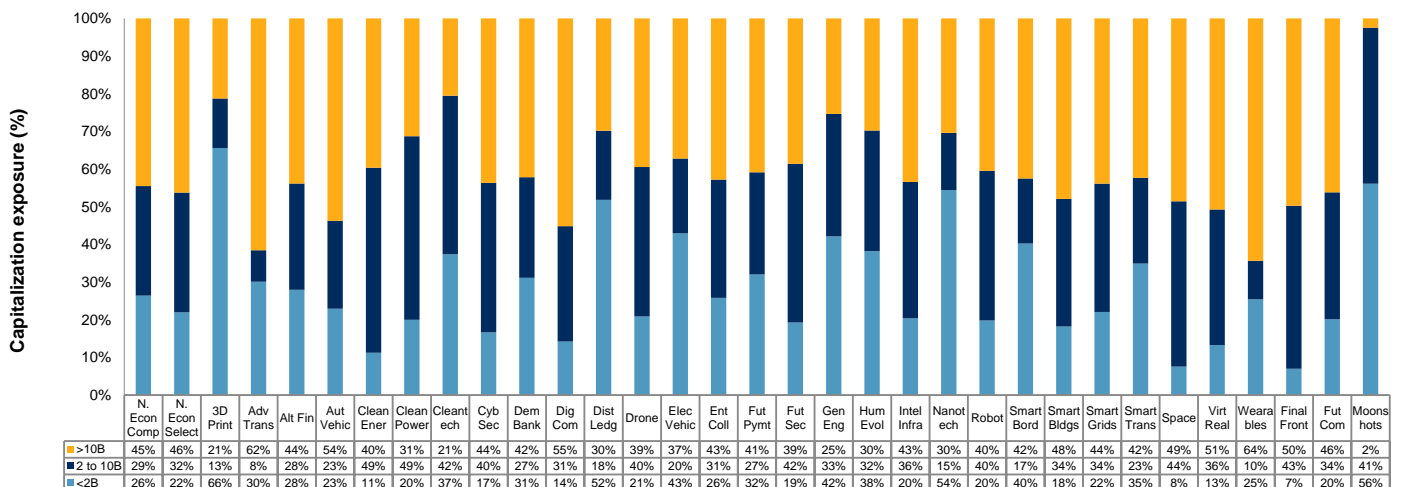
The S&P Kensho New Economies Composite Index is designed to measure the performance of companies involved in the New Economies 21st Century Sectors, including a dynamically adjusted list of companies drawn from all of the S&P Kensho Subsector Indices. The S&P Kensho New Economies Select Index measures a subset of the five best-performing subsector indices.

The S&P Kensho Moonshots Index is designed to measure the performance of 50 U.S.-listed companies with the highest Early-Stage Composite Innovation Score, subject to market capitalization and liquidity criteria, that produce the products and services shaping our future.

**QUARTERLY PERFORMANCE SUMMARY**

Composite Indices				Subsectors			
INDEX	QTD	YTD	12M	INDEX	QTD	YTD	12M
New Economies Composite	-2.60%	3.39%	3.39%	Virtual Reality	10.79%	64.76%	64.76%
New Economies Select	-5.70%	-7.99%	-7.99%	Autonomous Vehicles	8.16%	17.84%	17.84%
Moonshots*	-15.12%	-14.62%	-14.62%	Cyber Security	8.04%	21.98%	21.98%
S&P Composite 1500®	10.71%	28.45%	28.45%	Robotics	7.51%	23.18%	23.18%
<b>Sectors</b>				Smart Buildings	3.98%	4.17%	4.17%
INDEX	QTD	YTD	12M	Clean Energy	2.95%	-6.23%	-6.23%
Future Security	4.51%	14.99%	14.99%	Wearables	1.76%	15.50%	15.50%
Intelligent Infrastructure	4.47%	9.24%	9.24%	Smart Grids	0.86%	5.06%	5.06%
Smart Transportation	1.33%	1.69%	1.69%	Advanced Transport Systems	0.58%	22.99%	22.99%
Final Frontiers	0.69%	5.21%	5.21%	Space	0.19%	3.98%	3.98%
Clean Power	-3.27%	-15.49%	-15.49%	Smart Borders	-1.25%	22.96%	22.96%
Future Communication	-5.82%	5.56%	5.56%	Electric Vehicles	-2.24%	-1.83%	-1.83%
Human Evolution	-7.73%	-14.35%	-14.35%	Enterprise Collaboration	-2.44%	20.53%	20.53%
Democratized Banking	-13.65%	-6.45%	-6.45%	Nanotechnology	-5.51%	8.38%	8.38%
				Drones	-6.25%	-4.95%	-4.95%
				Cleantech	-6.50%	-22.64%	-22.64%
				Genetic Engineering	-9.05%	-17.96%	-17.96%
				Future Payments	-12.10%	-14.25%	-14.25%
				3D Printing	-13.42%	-2.80%	-2.80%
				Digital Communities	-14.89%	-20.11%	-20.11%
				Alternative Finance	-16.57%	10.24%	10.24%
				Distributed Ledger	-16.60%	-7.94%	-7.94%

**PORTFOLIO EXPOSURE ACROSS CAP SPECTRUM**



\*S&P Kensho Moonshots is not part of the S&P Kensho New Economies  
 Source: S&P Dow Jones Indices LLC and/or its affiliates. Data as of December 31, 2021.

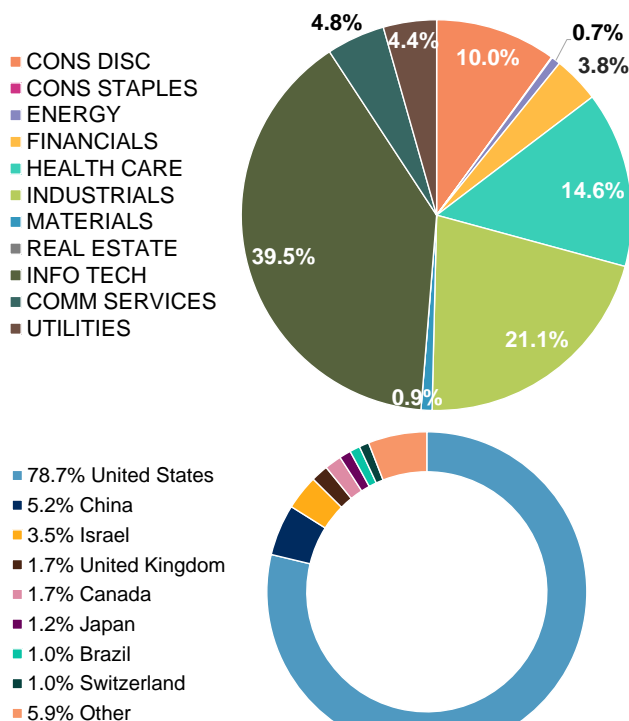
**GICS® SECTOR EXPOSURE SUMMARY**

INDEX	CONS DISC	CONS STAPLES	ENERGY	FINANCIALS	HEALTH CARE	INDUSTRIALS	MATERIALS	REAL ESTATE	INFO TECH	COMM SERVICES	UTILITIES
New Economies Composite	10.02%	0.06%	0.75%	3.84%	14.57%	21.14%	0.91%	0.00%	39.48%	4.84%	4.40%
New Economies Select	11.21%	0.00%	0.00%	0.00%	0.94%	17.08%	0.43%	0.00%	64.31%	4.80%	1.25%
Moonshots*	7.73%	0.00%	0.00%	1.70%	22.02%	21.84%	0.00%	0.00%	44.55%	2.17%	0.00%
Clean Power	2.88%	0.00%	2.96%	0.00%	0.00%	32.71%	2.06%	0.00%	21.87%	0.00%	37.53%
Democratized Banking	5.70%	0.00%	1.04%	36.14%	1.29%	0.88%	0.00%	0.00%	49.96%	4.98%	0.00%
Final Frontiers	0.00%	0.00%	2.24%	0.00%	0.00%	75.04%	2.56%	0.00%	16.32%	3.83%	0.00%
Future Communication	6.53%	0.00%	0.00%	0.00%	1.46%	0.00%	0.00%	0.00%	47.60%	44.41%	0.00%
Future Security	0.00%	0.00%	0.00%	0.00%	3.26%	40.41%	0.00%	0.00%	54.77%	1.55%	0.00%
Human Evolution	0.00%	0.00%	0.00%	0.00%	95.55%	0.00%	0.00%	0.00%	4.45%	0.00%	0.00%
Intelligent Infrastructure	8.58%	0.00%	2.96%	0.00%	0.00%	52.34%	0.00%	0.00%	27.51%	4.52%	4.10%
Smart Transportation	37.29%	0.00%	1.28%	0.57%	0.00%	32.20%	1.16%	0.00%	24.02%	3.47%	0.00%

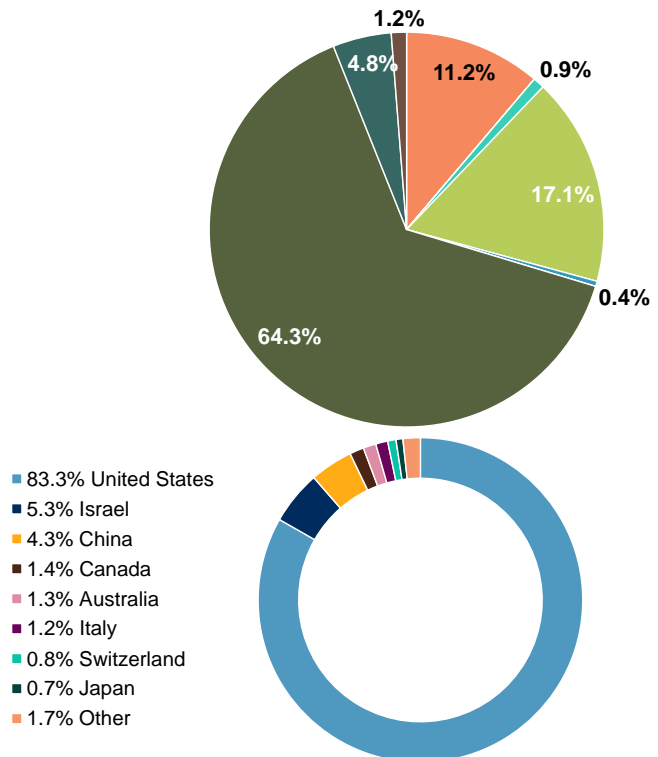
INDEX	CONS DISC	CONS STAPLES	ENERGY	FINANCIALS	HEALTH CARE	INDUSTRIALS	MATERIALS	REAL ESTATE	INFO TECH	COMM SERVICES	UTILITIES
3D Printing	0.00%	0.00%	0.00%	0.00%	6.74%	19.99%	19.10%	0.00%	54.16%	0.00%	0.00%
Advanced Transport Systems	17.83%	0.00%	0.00%	5.06%	0.00%	41.67%	0.00%	0.00%	23.12%	12.31%	0.00%
Alternative Finance	0.00%	0.00%	0.00%	77.50%	2.54%	0.00%	0.00%	0.00%	19.96%	0.00%	0.00%
Autonomous Vehicles	46.21%	0.00%	0.00%	0.00%	0.00%	3.52%	0.00%	0.00%	45.84%	4.43%	0.00%
Clean Energy	0.00%	0.00%	6.33%	0.00%	0.00%	4.94%	0.00%	0.00%	0.00%	0.00%	88.73%
Cleantech	4.06%	0.00%	0.00%	0.00%	0.00%	53.99%	3.41%	0.00%	28.60%	0.00%	9.94%
Cyber Security	0.00%	0.00%	0.00%	0.00%	0.00%	23.00%	0.00%	0.00%	77.00%	0.00%	0.00%
Digital Communities	6.35%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.62%	90.03%	0.00%
Distributed Ledger	11.88%	0.00%	0.00%	22.69%	0.00%	5.62%	0.00%	0.00%	52.16%	7.65%	0.00%
Drones	4.59%	0.00%	3.84%	0.00%	0.00%	74.48%	0.00%	0.00%	12.76%	4.34%	0.00%
Electric Vehicles	51.57%	0.00%	2.44%	0.00%	0.00%	39.07%	1.79%	0.00%	5.13%	0.00%	0.00%
Enterprise Collaboration	0.00%	0.00%	0.00%	0.00%	3.96%	0.00%	0.00%	0.00%	80.72%	15.32%	0.00%
Future Payments	5.38%	0.00%	3.30%	17.04%	0.00%	0.00%	0.00%	0.00%	65.80%	8.49%	0.00%
Genetic Engineering	0.00%	1.65%	0.00%	0.00%	95.84%	0.00%	1.51%	0.00%	1.01%	0.00%	0.00%
Nanotechnology	3.90%	0.00%	0.00%	0.00%	65.94%	0.00%	5.75%	0.00%	24.41%	0.00%	0.00%
Robotics	4.81%	0.00%	2.17%	0.00%	48.86%	27.39%	0.00%	0.00%	16.77%	0.00%	0.00%
Smart Borders	0.00%	0.00%	0.00%	0.00%	27.39%	36.16%	0.00%	0.00%	36.45%	0.00%	0.00%
Smart Buildings	13.29%	0.00%	0.00%	0.00%	0.00%	46.25%	0.00%	0.00%	32.65%	7.81%	0.00%
Smart Grids	9.37%	0.00%	4.34%	0.00%	0.00%	56.42%	0.00%	0.00%	20.62%	2.06%	7.19%
Space	0.00%	0.00%	0.00%	0.00%	0.00%	78.17%	2.55%	0.00%	15.57%	3.71%	0.00%
Virtual Reality	10.35%	0.00%	0.00%	0.00%	4.38%	4.53%	0.00%	0.00%	70.62%	10.12%	0.00%
Wearables	20.79%	0.00%	0.00%	0.00%	63.44%	0.00%	0.00%	0.00%	15.77%	0.00%	0.00%

**BREAKDOWN OF INDEX WEIGHT BY TRADITIONAL SECTOR AND COUNTRY**

**S&P Kensho New Economies Composite**



**S&P Kensho New Economies Select**

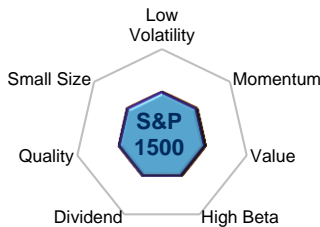


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Source: S&P Dow Jones Indices LLC and/or its affiliates. Data as of December 31, 2021.

### KEY TO FACTOR SCORINGS FOR INDICES

#### Factor Definitions

Each constituent of the S&P 1500 index is provided with a factor "score" for each of Beta, Volatility, Momentum, Dividend, Size, Value and Quality.



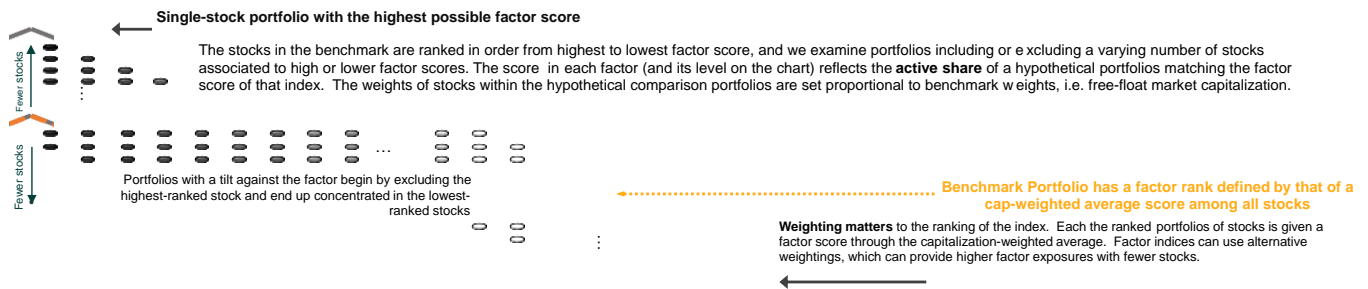
Factor	Measurement at single-stock level
<b>Volatility</b>	Trailing 12-month daily return volatility
<b>Momentum</b>	Twelve-month price change as of one month ago ("13 minus 1 momentum"), divided by the daily volatility during the twelve-month period that ended one month ago. For more details, see the S&P Momentum methodology
<b>Value</b>	The average of (normalized) earnings to price ratio, book to price ratio and sales to price ratio. For more details, see the S&P Value methodology.
<b>Beta</b>	Trailing 1 year beta of stock daily returns to the benchmark's return.
<b>Dividend</b>	Trailing 12-month dividend
<b>Quality</b>	The average of the (normalized) return on equity, the negative of the accruals ratio and the negative of the financial leverage ratio. For more details, see the S&P Quality methodology.
<b>Size</b>	Free-float market capitalization

#### Index Factor Ranking and Factor Diagram Scaling

##### Index Scores

Each index is provided a score in each factor from -100% to +100% based on how much of the total capitalization of the benchmark must be excluded in order to provide a portfolio of stocks with similar exposure to that factor. This is done by examining a ranked series of hypothetical cap-weighted portfolios, including or excluding an increasing number of the stocks with the highest or lowest scores. An illustration of the process may be found at this link.

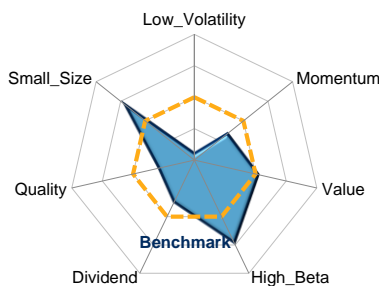
##### Factor Diagram Axis



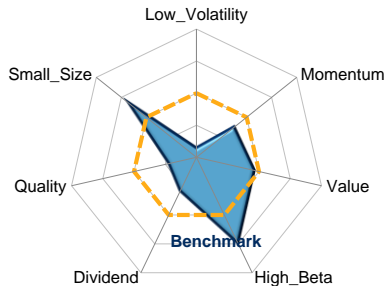
#### FACTOR EXPOSURE SUMMARY RELATIVE TO S&P 1500

- The diagrams below illustrate factor exposures relative to the S&P 1500 across Kensho sectors.

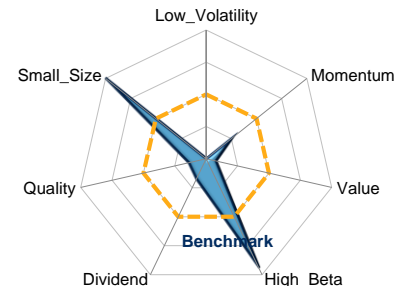
##### S&P Kensho New Economies Composite



##### S&P Kensho New Economies Select



##### S&P Kensho Moonshots



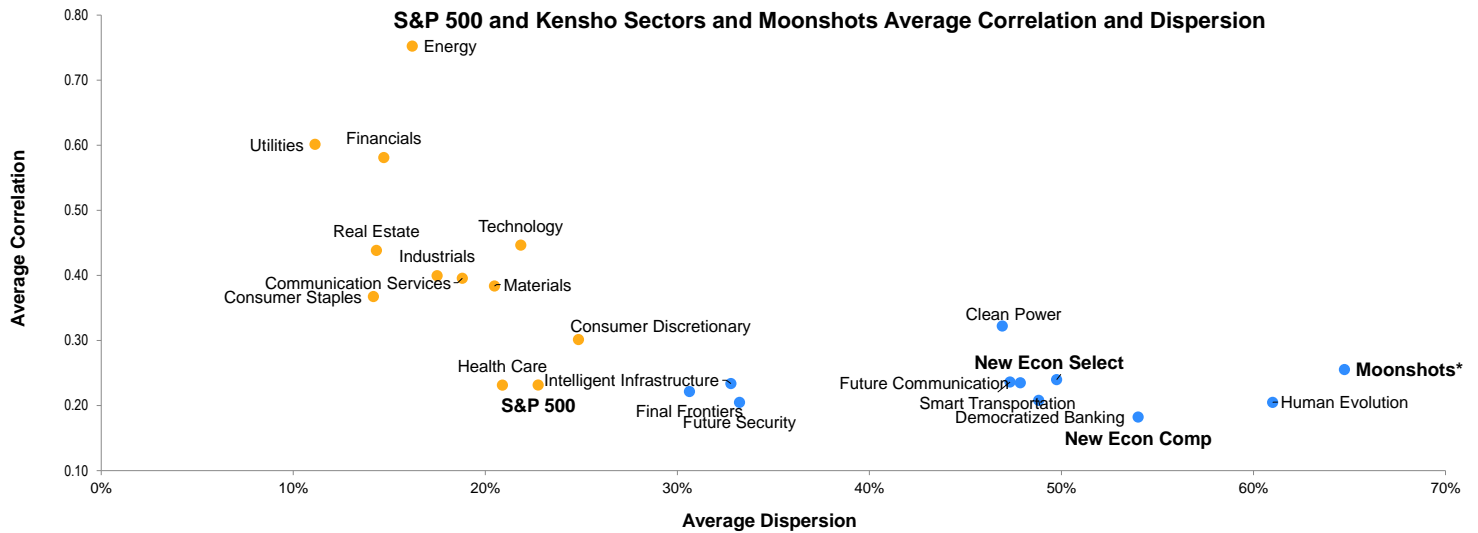
INDEX	LOW VOLATILITY	MOMENTUM	VALUE	HIGH BETA	DIVIDEND	QUALITY	SMALL SIZE
<b>S&amp;P Composite 1500®</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>
New Economies Composite	-89.9%	-33.3%	3.2%	45.0%	-26.2%	-42.7%	39.8%
New Economies Select	-86.0%	-25.1%	-7.8%	48.2%	-41.8%	-56.0%	35.1%
Moonshots*	-100.0%	-50.6%	-85.2%	84.4%	-65.1%	-72.0%	96.8%
Clean Power	-93.8%	-59.8%	42.0%	66.8%	14.7%	-42.7%	55.6%
Democratized Banking	-92.1%	-64.0%	50.9%	66.0%	-22.4%	-35.5%	42.6%
Final Frontiers	-62.1%	-52.0%	28.3%	3.5%	-17.8%	-13.3%	64.1%
Future Communication	-90.7%	-42.1%	-6.7%	54.2%	-38.6%	-63.2%	27.0%
Future Security	-68.2%	-24.1%	-1.3%	14.7%	-33.3%	-29.9%	69.7%
Human Evolution	-99.2%	-56.7%	-87.8%	15.8%	-48.4%	-56.8%	69.8%
Intelligent Infrastructure	-85.6%	-28.6%	-0.6%	53.1%	-15.7%	-32.7%	72.4%
Smart Transportation	-96.2%	-47.3%	34.5%	66.0%	-34.8%	-45.6%	58.7%

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Source: S&P Dow Jones Indices LLC and/or its affiliates. Data as of December 31, 2021.

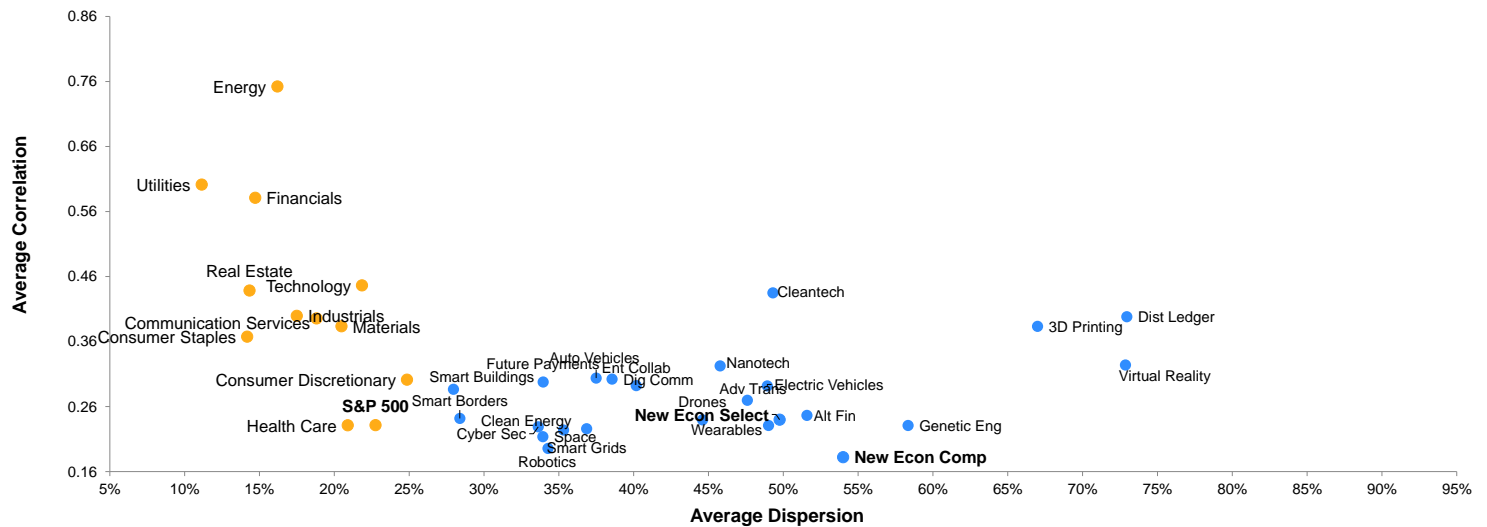
COMMENTARY

- Dispersion increased across most Kensho sectors and subsectors, with large increases for Virtual Reality and 3D Printing.
- Correlations increased across most Kensho sectors and subsectors, particularly in Wearables and Final Frontiers.

DISPERSION AND CORRELATION



S&P 500 GICS Sectors and Kensho Subsector Average Correlation and Dispersion



#	Kensho Subsector	1Yr Risk	#	Kensho Subsector	1Yr Risk
1	Alt Fin	31.3%	12	Drones	32.8%
2	Dig Comm	29.9%	13	Genetic Eng	34.1%
3	Dist Ledger	65.2%	14	Nanotech	39.6%
4	Ent Collab	25.5%	15	Robotics	19.6%
5	Electric Vehicles	34.7%	16	Smart Borders	18.1%
6	3D Printing	53.5%	17	Smart Grids	24.4%
7	Adv Trans	31.7%	18	Smart Buildings	21.7%
8	Auto Vehicles	27.5%	19	Space	18.3%
9	Clean Energy	24.7%	20	Virtual Reality	53.3%
10	Cleantech	50.9%	21	Wearables	37.2%
11	Cyber Sec	18.4%	22	Future Payments	25.6%

NOTES

- The charts above decomposed volatility into its two main components: dispersion and correlation. The dispersion and correlation data points are each sector's average monthly value over the trailing 12 months. Trailing 1yr volatility is included below, using the annualized standard deviation of daily total returns. Index dispersions shown based on calendar month stock-level index-weighted dispersion. Index correlation based on single stock daily total returns during each calendar month. See "Implications of Sector Dispersion" for more information.
- See "At the Intersection of Diversification, Volatility and Correlation" for details on the relationship between correlation and dispersion.
- See "Dispersion: Measuring Market Opportunity" for the definition of index dispersion and more information on the uses of dispersion.

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Source: S&P Dow Jones Indices LLC and/or its affiliates. Data as of December 31st, 2021. Index performance based on total return (USD). Charts and graphs are provided for illustrative purposes. Past performance is no guarantee of future results.

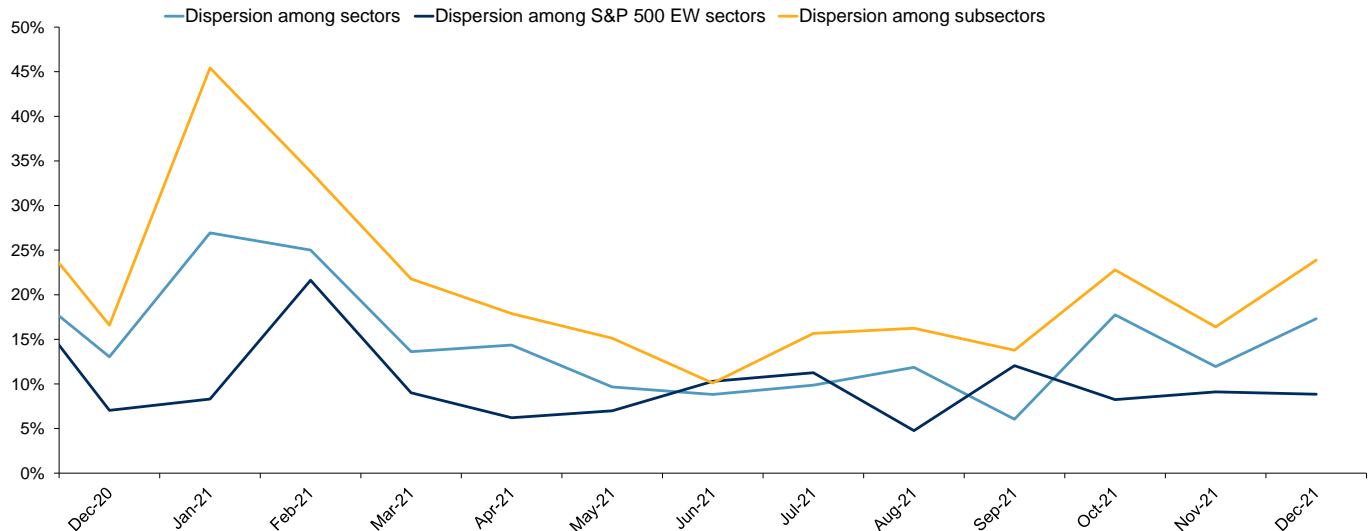
RELATIVE EXCESS RETURN CORRELATIONS - KENSHO SECTORS AND SUBSECTORS

INDEX	Sectors Relative to S&P Composite 1500										Sectors Relative to S&P 500®									
	New Economies Composite	New Economies Select	Democratized Banking	Human Evolution	Clean Power	Final Frontiers	Future Communication	Future Security	Intelligent Infrastructure	Smart Transportation	New Economies Composite	New Economies Select	Democratized Banking	Human Evolution	Clean Power	Final Frontiers	Future Communication	Future Security	Intelligent Infrastructure	Smart Transportation
New Economies Composite	1.00	0.90	0.73	0.55	0.51	0.34	0.72	0.58	0.63	0.80	1.00	0.90	0.74	0.56	0.52	0.38	0.72	0.61	0.66	0.81
New Economies Select	0.90	1.00	0.67	0.49	0.45	0.18	0.62	0.52	0.54	0.71	0.90	1.00	0.68	0.50	0.46	0.23	0.62	0.55	0.57	0.73
Democratized Banking	0.73	0.67	1.00	0.33	0.52	0.19	0.61	0.45	0.47	0.58	0.74	0.68	1.00	0.34	0.53	0.24	0.62	0.48	0.51	0.60
Human Evolution	0.55	0.49	0.33	1.00	0.32	0.06	0.47	0.36	0.23	0.33	0.56	0.50	0.34	1.00	0.32	0.09	0.48	0.38	0.25	0.35
Clean Power	0.51	0.45	0.52	0.32	1.00	-0.14	0.85	0.22	0.05	0.28	0.52	0.46	0.53	0.32	1.00	-0.11	0.85	0.23	0.08	0.30
Final Frontiers	0.34	0.18	0.19	0.06	-0.14	1.00	-0.01	0.58	0.49	0.35	0.38	0.23	0.24	0.09	-0.11	1.00	0.03	0.62	0.53	0.39
Future Communication	0.72	0.62	0.61	0.47	0.85	-0.01	1.00	0.41	0.18	0.42	0.72	0.62	0.62	0.48	0.85	0.03	1.00	0.42	0.21	0.44
Future Security	0.58	0.52	0.45	0.36	0.22	0.58	0.41	1.00	0.45	0.40	0.61	0.55	0.48	0.38	0.23	0.62	0.42	1.00	0.51	0.45
Intelligent Infrastructure	0.63	0.54	0.47	0.23	0.05	0.49	0.18	0.45	1.00	0.76	0.66	0.57	0.51	0.25	0.08	0.53	0.21	0.51	1.00	0.78
Smart Transportation	0.80	0.71	0.58	0.33	0.28	0.35	0.42	0.40	0.76	1.00	0.81	0.73	0.60	0.35	0.30	0.39	0.44	0.45	0.78	1.00

INDEX	Subsectors Relative to S&P Composite 1500																					
	Digital Communities	Distributed Ledger	Electric Vehicles	Ent. Collaboration	Future Payments	3D Printing	Advanced Transport	Alt Finance	Autonomous Vehicles	Clean Energy	Cleantech	Cyber Security	Drones	Genetic Engineering	Nanotechnology	Robotics	Smart Borders	Smart Buildings	Smart Grids	Space	Virtual Reality	Wearables
Digital Communities	1.00	0.38	0.26	0.46	0.50	0.25	0.12	0.28	0.34	0.13	0.32	0.33	0.21	0.30	0.36	0.13	-0.02	0.11	0.07	-0.11	0.49	0.45
Distributed Ledger	0.38	1.00	0.38	0.25	0.40	0.42	0.29	0.48	0.38	0.18	0.40	0.31	0.35	0.26	0.49	0.30	0.16	0.38	0.33	0.13	0.54	0.37
Electric Vehicles	0.26	0.38	1.00	0.10	0.40	0.59	0.59	0.52	0.79	0.32	0.72	0.28	0.61	0.28	0.38	0.51	0.18	0.50	0.70	0.30	0.51	0.33
Ent. Collaboration	0.46	0.25	0.10	1.00	0.46	0.16	0.03	0.10	0.14	0.19	0.32	0.58	0.19	0.42	0.24	0.14	-0.01	0.02	0.06	0.00	0.28	0.25
Future Payments	0.50	0.25	0.40	0.46	1.00	0.40	0.33	0.37	0.37	0.21	0.44	0.34	0.43	0.24	0.34	0.30	0.24	0.32	0.35	0.23	0.48	0.35
3D Printing	0.25	0.42	0.59	0.16	0.40	1.00	0.55	0.53	0.50	0.50	0.60	0.34	0.66	0.37	0.62	0.57	0.31	0.40	0.64	0.40	0.73	0.40
Advanced Transport	0.12	0.29	0.59	0.03	0.33	0.55	1.00	0.53	0.56	0.18	0.38	0.24	0.51	0.18	0.33	0.65	0.42	0.50	0.60	0.51	0.45	0.26
Alt Finance	0.28	0.48	0.52	0.10	0.37	0.53	0.53	1.00	0.45	0.17	0.37	0.25	0.49	0.13	0.40	0.41	0.33	0.35	0.56	0.43	0.46	0.30
Autonomous Vehicles	0.34	0.38	0.79	0.14	0.37	0.50	0.56	0.45	1.00	0.19	0.56	0.18	0.44	0.18	0.40	0.44	0.11	0.46	0.52	0.20	0.53	0.31
Clean Energy	0.13	0.18	0.32	0.19	0.21	0.50	0.18	0.17	0.19	1.00	0.61	0.22	0.50	0.26	0.43	0.25	0.21	0.20	0.40	0.18	0.38	0.18
Cleantech	0.32	0.40	0.72	0.32	0.44	0.60	0.38	0.37	0.56	0.61	1.00	0.33	0.56	0.37	0.50	0.42	0.12	0.35	0.62	0.17	0.55	0.34
Cyber Security	0.33	0.31	0.28	0.58	0.34	0.34	0.24	0.25	0.18	0.22	0.33	1.00	0.42	0.37	0.34	0.36	0.34	0.18	0.32	0.21	0.37	0.24
Drones	0.21	0.35	0.61	0.19	0.43	0.66	0.51	0.49	0.44	0.50	0.56	0.42	1.00	0.25	0.56	0.59	0.49	0.32	0.65	0.64	0.57	0.39
Genetic Engineering	0.30	0.26	0.28	0.42	0.24	0.37	0.18	0.13	0.18	0.26	0.37	0.37	0.25	1.00	0.35	0.28	0.04	0.15	0.25	0.04	0.34	0.32
Nanotechnology	0.36	0.49	0.38	0.24	0.34	0.62	0.33	0.40	0.40	0.43	0.50	0.34	0.56	0.35	1.00	0.47	0.23	0.37	0.46	0.26	0.72	0.65
Robotics	0.13	0.30	0.51	0.14	0.30	0.57	0.65	0.41	0.44	0.25	0.42	0.36	0.59	0.28	0.47	1.00	0.53	0.51	0.71	0.54	0.44	0.27
Smart Borders	-0.02	0.16	0.18	-0.01	0.24	0.31	0.42	0.33	0.11	0.21	0.12	0.34	0.49	0.04	0.23	0.53	1.00	0.25	0.49	0.69	0.21	0.12
Smart Buildings	0.11	0.38	0.50	0.02	0.32	0.40	0.50	0.35	0.46	0.20	0.35	0.18	0.32	0.15	0.37	0.51	0.25	1.00	0.48	0.26	0.32	0.24
Smart Grids	0.07	0.33	0.70	0.06	0.35	0.64	0.60	0.56	0.52	0.40	0.62	0.32	0.65	0.25	0.46	0.71	0.49	0.48	1.00	0.55	0.52	0.32
Space	-0.11	0.13	0.30	0.00	0.23	0.40	0.51	0.43	0.20	0.18	0.17	0.21	0.64	0.04	0.26	0.54	0.69	0.26	0.55	1.00	0.20	0.17
Virtual Reality	0.49	0.54	0.51	0.28	0.48	0.73	0.45	0.46	0.53	0.38	0.55	0.37	0.57	0.34	0.72	0.44	0.21	0.32	0.52	0.20	1.00	0.63
Wearables	0.45	0.37	0.33	0.25	0.35	0.40	0.26	0.30	0.31	0.18	0.34	0.24	0.39	0.32	0.65	0.27	0.12	0.24	0.32	0.17	0.63	1.00

Correlation of weekly excess returns of each index relative to the S&P Composite 1500 (for both sectors and subsectors) and relative to the S&P 500 (sectors), three years to December 31, 2021.

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