

# S&P Kensho New Economies Quarterly Commentary

*The S&P Kensho New Economy Indices seek to track the industries and innovation of the Fourth Industrial Revolution*

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U.S. equities posted positive returns across the market cap spectrum in Q1 2023, with the [S&P Composite 1500<sup>®</sup>](#) up 7.2%. The rise, however, was bumpy as investors navigated the banking-related crunch and its aftermath, with the biggest U.S. bank default since 2008, which also briefly spread to Europe. A pattern of reversals from last year was well underway during the first two months of the quarter, when Communication Services and Consumer Discretionary were the top performers within the [S&P 500<sup>®</sup>](#), while the Energy and Health Care sectors were the laggards. After the U.S. banking hiccup in March, the Financials sector (-5.6%) became the biggest quarterly underperformer, while Information Technology (up 22%) and Communication Services (up 20.5%) took the top spots. Recent returns of the Financials sector have diverged materially from their pattern of moving closely with the 10-year Treasury yields. Weakness in U.S. regional banks also flowed through into the underperformance of the U.S. small-cap space, reflected in the sharp fall in the S&P SmallCap 600 versus S&P 500 Information Technology performance in March. Secular growth outperformance and defensive sectors' underperformance was in line with the performance of S&P 500 factors—high beta and growth took the top spots, while high dividend, pure value and low volatility were near the bottom of the table. Of the 25 Kensho subsectors, 22 were higher this quarter, the first time since the highs posted in Q1 2021. Most non-U.S. equity markets were also up this quarter—eurozone equities (up 10.5%) markedly outperformed U.S. equities, while emerging market equities posted relatively modest gains (up 2.3%).

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The U.S. Fed's tightening path was well anticipated by the markets at the beginning of the year, with expectations for the terminal overnight rate at one point hitting nearly 5.7%. Continued pressure from sustained inflation and overall labor market strength were weighing on the Fed, until the crisis from Silicon Valley Bank (SVB) erupted. As the contagion spread, the rates market immediately repriced the Fed rate hike path lower for the year. U.S. Treasuries attracted significant inflows this quarter and posted one of the best quarterly returns (3%) in nearly three years. However, tighter financial conditions in the aftermath of the SVB collapse have seen high yield, and other higher risk segments of the debt markets show weakness. The U.K. and European Central Banks stayed on course with the U.S. in terms of rate hikes during Q1. The U.S. dollar, nonetheless, weakened across most of its heavily traded crosses this quarter, as expectations around a pause in the Fed's rate hikes increased. Gold also benefited from the rate repricing and bank credit concerns, surging above USD 2,000 to near-historic levels. Oil prices stabilized this quarter after a downtrend over the previous two quarters, but it started to move higher after OPEC announced surprise oil cuts at the start of April. Elevated U.S. sovereign CDS spreads continue to reflect the market unease around a potential deal before hitting the U.S. government debt ceiling X date sometime in the second half of the year.

## Top Three from across the New Economies

**Distributed Ledger (66.7%)**: KLEDGER posted its best quarterly performance since its inception in late 2018, climbing back up to September 2022 levels. Unsurprisingly, this quarter's gains closely tracked the rise in the price of Bitcoin (up 71%). The U.S. regional banking crisis around mid-March prompted renewed interest in currency alternatives like crypto and gold assets. Almost all of the index constituents posted positive quarterly returns with the exceptions of Turkish firm Turkcell (-10%) and Financials firm ING Groep (-2%). 5 of the 12 constituents, primarily involved with the crypto mining space, posted triple-digit quarterly returns, with the top spots taken by Riot Platforms (up 195%) and Marathon Digital (up 156%). The index continues to be dominated by the Application Software sub-industry (up 55%), followed by Financials sector firms (up 30%). It also remains the most volatile across the Kensho subsectors due to a high beta to the crypto markets from its exposure to crypto mining companies.

**Virtual Reality (27.2%)**: KVR's best quarterly performance in two years was supported by positive contributions from nearly all of its constituents (17 out of 19). The Semiconductors industry played an integral part in KVR's recovery this quarter as the index neared its one-year peak. NVIDIA was the top performer within the index (up 90%), doubling its price over the six-month period and becoming the best YTD performer among the S&P 500 constituents. Investor sentiment toward NVIDIA likely took a hit from the downturn in crypto assets in 2022, but there has been widespread optimism around the company's recent push toward creating

products geared toward AI applications. Meta, the second-best YTD performer (up 76%) within the S&P 500, was another top contributor to KVR's performance. Meta has also been on a comeback track, returning closer to its one-year peak on the back of strong Q4 2022 earnings reports and a focus on further incorporating AI-powered tools within their apps. Faro was the notable underperformer (-16%) within KVR, as it slid close to its lowest level in over five years. This imaging devices and computer-aided measurement firm posted lackluster Q2 2022 results and has been on a downward trend since reaching its peak in early 2021.

**Autonomous Vehicles (21.4%)**: KCARS turned a corner, posting its first positive quarterly performance after four quarters of losses in 2022. The index level has been fairly stable after a significant drawdown during late 2021 and the first half of 2022. The Semiconductors industry again played a pivotal role in the index's performance, as the top five positive contributors were from this industry. Velodyne Lidar, the top index contributor, completed its merger this quarter with Ouster, another firm within KCARS. However, Ouster was the leading negative contributor to the index's performance, as it was down due to its stock dilution in the aftermath of an all-stock deal. Ambarella was the only underperformer (-6%) within the Semiconductors space, taking a hit after its Q2 2022 earnings release pointed to falling margins and a weaker forward outlook than expected. Of note was the mediocre contribution of the Automobiles sector within KCARS, barring Tesla (up 68%).

**Exhibit 1: S&P Kensho New Economies Performance Dashboard**

Composite Index		QTD	12-Month
New Economies Composite (KNEX)		8.5%	-16.9%
New Economies Select (KNESLX)		5.8%	-15.5%
S&P Composite 1500®		7.2%	-7.6%
Sector Index		QTD	12-Month
Advanced Manufacturing (KMAKE)		20.7%	-3.3%
Democratized Banking (KFIN)		16.8%	-23.4%
Future Communication (KCONNECT)		15.8%	-18.2%
Smart Transportation (KMOVE)		8.0%	-31.4%
Future Security (KSECURE)		8.0%	-11.4%
Intelligent Infrastructure (KINFRA)		6.3%	-14.4%
Clean Power (KPOWER)		6.0%	-1.8%
Final Frontiers (KEXPLORE)		4.1%	0.1%
Sustainable Staples (KSTAPLE)		1.0%	-20.2%
Human Evolution (KEVOLVE)		-4.3%	-24.6%
Subsector Index		YTD	12-Month
Distributed Ledger (KLEDGER)		66.6%	-39.4%
Virtual Reality (KVR)		27.2%	-14.6%
Autonomous Vehicles (KCARS)		21.4%	-29.6%
3D Printing (KDDDP)		20.3%	-21.9%
Smart Factories (KFACT)		19.0%	-0.4%
Digital Communities (KSOCIAL)		15.4%	-9.9%
Smart Borders (KDMZ)		15.2%	4.7%
Wearables (KBORG)		13.7%	-10.4%
Cleantech (KCLEAN)		11.9%	-3.5%
Future Payments (KPAY)		10.6%	-16.5%
Enterprise Collaboration (KTEAM)		10.1%	-33.8%
Digital Health (KDOC)		9.9%	-24.1%
Cyber Security (KCYBER)		9.6%	-17.1%
Smart Grids (KGRIDS)		7.8%	-13.6%
Alternative Finance (KALTFIN)		6.4%	-36.6%
Drones (KDRONE)		5.3%	-8.2%
Robotics (KBOTS)		5.2%	-6.3%
Space (KMARS)		4.3%	0.2%
Advanced Transport Systems (KATS)		4.2%	-28.5%
Smart Buildings (KHOME)		3.8%	-16.9%
Electric Vehicles (KEV)		3.1%	-34.1%
Sustainable Farming (KFARM)		1.6%	-23.5%
Clean Energy (KENERGY)		-3.5%	-8.6%
Nanotechnology (KNANO)		-3.5%	-27.6%
Genetic Engineering (KDNA)		-6.4%	-27.0%

Source: S&P Dow Jones Indices LLC. Data as of March 31, 2023. Index performance based on total return in USD. Index tickers shown in parentheses. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

## Bottom Three from across the New Economies

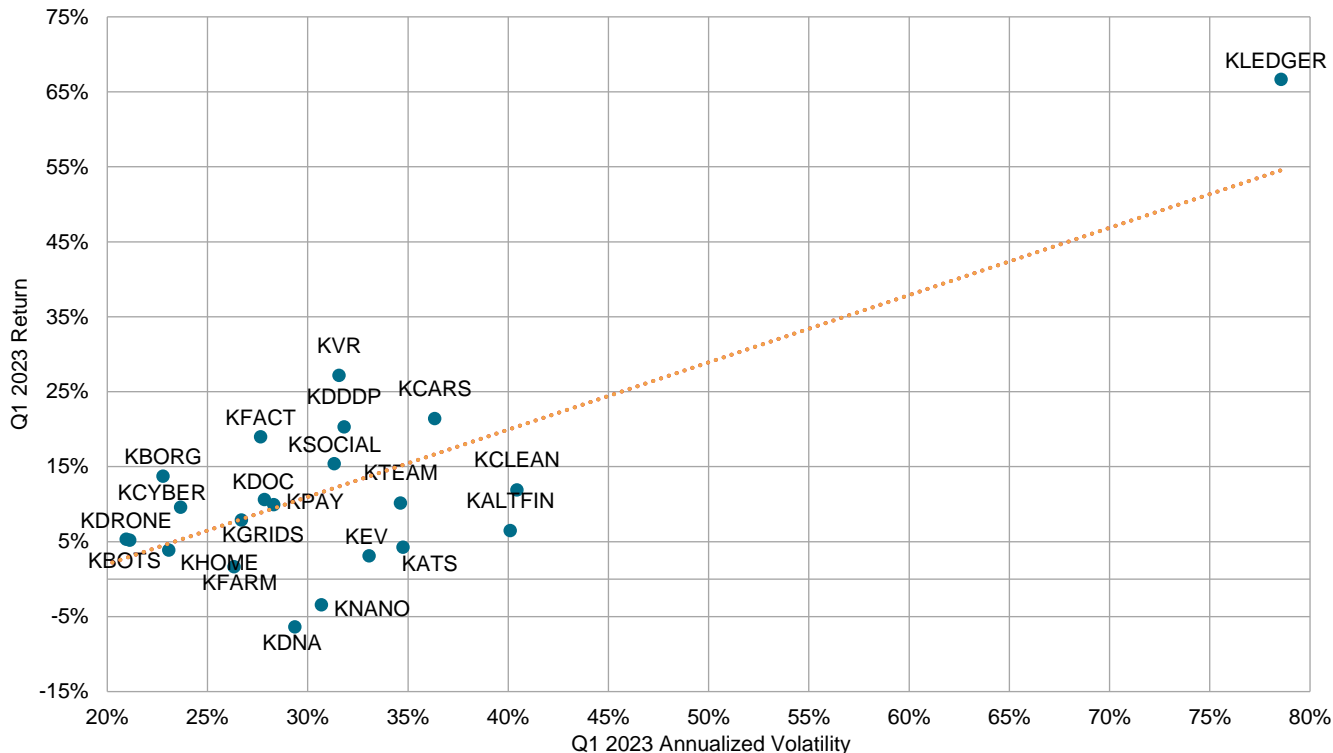
**Genetic Engineering (-6.4%)**: KDNA registered another quarter of negative returns, continuing its downtrend since reaching a peak at the end of 2020. 40 of the 63 stocks negatively contributed to this quarter's index returns. Roughly 75% of the index is in Biotechnology stocks, a sub-industry with relatively higher exposure to stock-specific news. The bottom -performers were: Avidity Biosciences (-31%)—an oligonucleotide-based therapeutics firm that retraced much of its December 2022 jump ([link](#)) after positive news of a clinical trial to treat a genetic muscle disorder was dialed down in March of this year; Bluebird Bio (-54%)—which was down due to weak financial results and delays in a new drug application with the FDA; and Arrowhead Pharma (-37%)—despite some positive news, its price has been range bound since June 2022 and analysts trimmed their price targets this quarter. Bridge Pharma was the top positive supporter of the index, as it reached a one-year peak on the back of positive news from its phase 2 trials of its achondroplasia treatment. Pharmaceutical company Catalent was another notable positive contributor, as news of its possible acquisition have been reported.

**Nanotechnology (-3.5%)**: KNANO remained within the range set at the beginning of Q4 2022. The index moved in line with the overall market, posting gains in January but retreating during the rest of the quarter. Nearly 50% of the index is exposed to the Health Care sector, which underperformed within the U.S. large-cap category this quarter. Underperformance within the 15-stock basket was skewed, with nine of the constituents posting positive quarterly performance, but the index was dragged lower by an outsized negative contribution from Meta Materials (-66%). Micro-cap firm Meta Materials' weak Q4 financial results led it to historic lows, as it gave up the brief upswing it saw in Q4 2022 (helped by news of the Next Bridge spin-off). Industrials firm View was another micro-cap underperformer (-48%) that fell to an all-time low after lackluster earnings and analyst downgrades. Notable positive contributors were the Israeli firm Nano Dimension (up 25%), as its revenue beat expectations and reflected a growth trend, as well as Life Sciences firm Brucker BioSciences (15%), which maintained its previous quarter's uptrend while closing in on its 2021 peak.

**Clean Energy (-3.5%)**: KENERGY's quarterly returns were the weakest since Q2 2022. The downtrend that started in mid-January 2023 brought the index to the lower end of its two-year price range. The index faced sectoral headwinds, as the two largest sector exposures, Utilities and Energy, were among the top underperformers in the U.S. large-cap space. 12 of the 18 index constituents posted negative quarterly returns, with two notable contributors: Montauk Renewables and Algonquin Power. Montauk Renewables, involved in the recovery and use of biogas, was the biggest underperformer, losing nearly 55% in the past two quarters. LNG and oil prices fell over the quarter, and Montauk Renewables' earnings were disappointing and are expected to see some pressure this year, especially if rising rates persist. Algonquin Power was a positive counterbalance with its strong quarterly performance (up 30%), recuperating

from its heavy losses during Q4 2022, when its dividend was cut by a more prudent management.

**Exhibit 2: S&P Kensho New Economies Subsectors Performance Profiles**



Source: S&P Dow Jones Indices LLC. Data as of March 31, 2023. Index performance based on total return in USD. Past performance is no guarantee of future results. Chart is provided for illustrative purposes.

# Commentary from across the New Economies

## Advanced Transport Systems

Ohio State University has been awarded a contract by the U.S. Department of Transportation to conduct research on navigation and GPS technology for autonomous vehicles. This research is aimed to reduce fatalities by improving how autonomous vehicles receive information in real-time and adjusting to current road situations reducing the risk to the driver and other passenger vehicles around them ([link](#)). Cubic Transportation Systems (CTS) and McMaster University have a five-year partnership to explore new technologies around traffic prediction and a heightened understanding of vulnerable road users. The project, known as the Center of Excellence for Artificial Intelligence and Smart Mobility, will use AI and machine learning to develop new technologies for traffic management that will be able to predict congestion and offer mitigation solutions ([link](#)). ZF is partnering with BEEP to bring to market a robo-shuttle which will incorporate each firm’s technologies—ZF’s autonomous transportation system with BEEP’s mobility services and service management platform ([link](#)).

## CleanTech

The Inflation Reduction Act has created even more demand for technology that can mitigate climate change. The U.S. installed almost as much battery storage in 2022 as in the previous two years combined. The U.S. energy storage sector installed 4.8GW in 2022, almost equal to the total amount installed in 2020 and 2021. As installation costs have lowered, residential energy storage continues to grow, with about 171MW installed in Q4 2022—up from 151MW the previous quarter—and annual installations for home batteries are expected to exceed 2.7GW by 2027 ([link](#)). The ability to expand energy storage capacity will determine whether this defining transitional decade is a success. According to the International Energy Agency (IEA), for the global decarbonization of electricity, the world's energy storage capacity must increase to a total of 700GW by 2030, or around 25% of global electricity usage ([link](#)). Surprisingly, 41% of the U.S. electricity mix in 2022 was sourced from zero-carbon sources. That includes power from nuclear plants, hydroelectric dams, solar and wind energy. The majority of the increase has come from solar and wind power, whose costs have decreased immensely in the past two decades ([link](#)).

## Alternative Finance

The increase in recent use of the Buy Now, Pay Later (BNPL) method has created a perception that regulation is needed sooner rather than later to protect the consumer. One-third of BNPL users in the U.K. cannot maintain their current payments with these types of alternative lenders. It is possible that the U.K. will develop some regulation around this industry by mid-2023 ([link](#)). Tandem Bank recently acquired Loop Money as part of their strategy for greener banking ([link](#)). Open banking payments more than doubled in 2022, increasing from GBP 25 million in 2021 to almost GBP 70 million in 2022 ([link](#)). The trend across all types of alternative finance should remain at a growth rate of approximately 7% until at least 2030 ([link](#)).

## Autonomous Vehicles

Autonomous vehicle technology continues to garner investment from large auto manufacturers through either partnership or creating new divisions within corporations. Ford recently created Latitude AI to develop technology for use across all brands and keep the technology in house ([link](#)). GM and others are taking another approach by partnering with companies to create their technology for automated driving ([link](#)). The Biden administration also committed to more investment for electric and autonomous vehicles by announcing the EV Acceleration Challenge, which aims to provide new investments for affordable electric vehicles, including the technology that will power them. Waymo is committing to deploy the all-electric Jaguar I-PACE across its ride-hailing service this spring and retire its previous generation ([link](#)). A key aspect of technology that will continue to grow in demand is semiconductors specific to

autonomous vehicles, with a recent report expecting the demand to increase by 29% over the next 10 years ([link](#)). With the growing demand for energy storage, the U.K. recently launched Europe's largest energy storage facility ([link](#)).

## Sustainable Farming

Climate-smart and regenerative agriculture was in the spotlight during the 27th annual Conference of the Parties (COP27) held in Egypt in November 2022, placing significant global attention on the industry ([link](#)). Many governments worldwide have since launched or expanded initiatives to promote sustainable agriculture, offering financial incentives and technical support to farmers adopting such practices.

For example, the Department for Environment, Food and Rural Affairs (Defra) recently introduced six additional standards to the Sustainable Farming Incentive, allowing farmers to receive payments for activities involving hedgerows, grassland, arable and horticultural land, pest management and nutrient management ([link](#)).

According to recent estimates, the global sustainable agriculture market is expected to grow at a CAGR of 9.9% between 2022 and 2030 and exceed USD 28.53 billion by 2030 ([link](#)). Agricultural development and food insecurity will continue to be widely discussed in the coming years, with an anticipated 345.2 million individuals projected to be food insecure, more than double the number in 2020 ([link](#)).

U.S.-based manufacturer John Deere recently introduced new technology reducing the amount of starter fertilizer needed during planting by more than 60%. The technology uses sensors and robotics to place starter fertilizer precisely onto seeds as they are planted in the soil ([link](#)).

## Genetic Engineering

Hundreds of scientists, doctors, bioethicists, patients and other stakeholders gathered in London in March for the Third International Summit on Human Genome Editing. The sessions highlighted the remarkable progress made in somatic human genome editing, which involves targeted alteration of genes in non-reproductive cells of the body. However, the current costs of somatic gene therapies were deemed high and unsustainable. As a result, there were calls for a global commitment to ensure equitable and financially appropriate access for patients and healthcare systems. Additionally, heritable human genome editing remains off limits for clinical application due to inadequate safety and efficacy standards, as well as the continued policy debate around ethics ([link](#)).

China recently updated its regulations to close the loopholes that enabled Dr. He Jiankui to evade regulations and claim to have created the world's first gene-edited babies in 2018. The new laws, which have since received pushback for a lack of rigor, now cover all research



institutions and all policies related to human beings, including work on tissues, organs and embryonic cells ([link](#)).

Genetic engineering activity has also been at the forefront of agricultural technology developments, with pushes to use Clustered Regularly Interspaced Short Palindromic Repeats (CRISPR) to enhance biological carbon sequestration and limit the build-up of CO<sub>2</sub> in the atmosphere. However, current attempts using CRISPR to edit plants have proven challenging given their complex genetics ([link](#)).

## Smart Grids

The global smart grid market, estimated to be worth USD 46.75 billion in 2022 in terms of revenue, is predicted to reach USD 148.39 billion by 2029, growing at a CAGR of 19.1% ([link](#)).

The International Energy Agency (IEA) projects a significant rise in transmission lines and distribution networks globally by 2030. The length of transmission lines is expected to increase by almost 2.5 million km, while distribution networks are projected to grow by over 16 million km. Emerging markets and developing economies are expected to account for around 80% of the total gross grid additions by 2050. Smart meters are crucial for developing smart grids, and about 1.1 billion smart meters have already been installed worldwide, representing around 40% of all residential meters ([link](#)). In the U.K. alone, 2.4 million smart meter installations were recorded in 2022 ([link](#)). The installation of 5G smart metering in public buildings in Wavre, Belgium, with the assistance of a EUR 3.9 million (USD 4.3 million) grant from the EU's Connecting Europe Facility Digital Fund, is set to be completed within the next 36 months ([link](#)).

## Nanotechnology

In the U.S., President Biden's 2023 budget proposal requests almost USD 2 billion for the National Nanotechnology Initiative (NNI), bringing the cumulative total funded since 2001 to USD 40.7 billion. The NNI aligns with Biden's five national science and technology priorities, including pandemic preparedness, climate change and promoting the U.S. as a leading player in the future technologies domain ([link](#)).

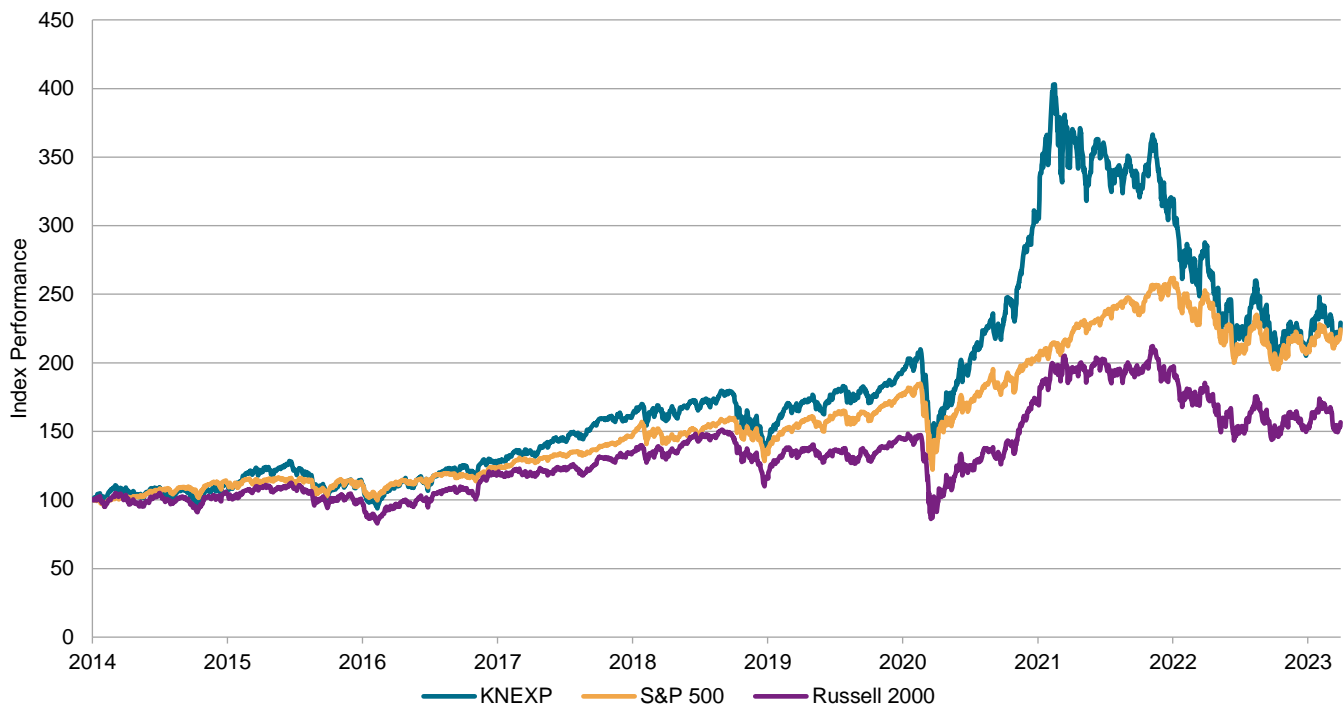
Scientists at the University of Central Florida have created a lightweight pigment-free paint using aluminum nanoparticles that reflects certain wavelengths of light to produce colors in a phenomenon known as structural resonance. Only 1.3 kg of this paint is needed to cover a Boeing 747, compared to 500 kg of regular paint ([link](#)). Researchers at the University of Melbourne have developed new inks using nanoparticles that can adjust the amount of radiation that passes through them based on the surrounding environment. This technology enables passive heating and cooling for buildings, making existing buildings more energy efficient, better for the environment and futureproof ([link](#)).

Packaging producer Amcor is partnering with Nfinite Nanotechnology on a study to test the latter's nanocoating technology on Amcor's recyclable and compostable packaging material. The coating aims to improve oxygen barrier performance for these materials. Once validated, the next stage of development will optimize the products for Amcor's manufacturing processes and analyze additional substrates like bio-based materials for more sustainable applications ([link](#)).

## Relative Performance of the S&P Kensho New Economies Composite Index

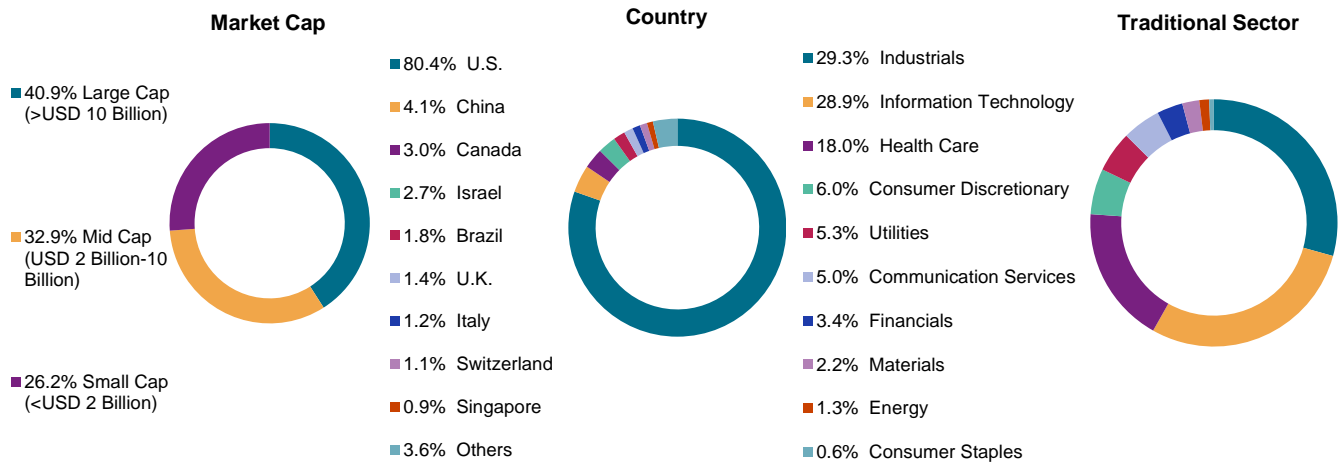
The [S&P Kensho New Economies Composite Index](#) (KNEX) is made up of all qualifying New Economy subsectors, the industries driving the Fourth Industrial Revolution, with each weighted according to an algorithmic proxy for industry maturity.

### Exhibit 3: Relative Performance of the S&P Kensho New Economies Composite Index



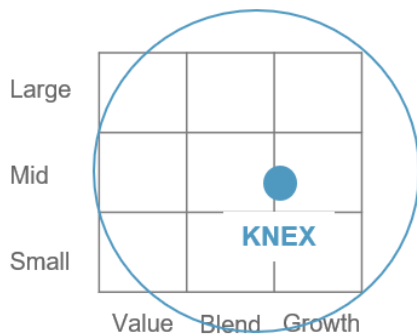
Source: S&P Dow Jones Indices LLC, FactSet. Data from Jan. 2, 2014, to March 31, 2023. Index performance based on price return in USD. The S&P Kensho New Economies Composite Index was launched Feb. 6, 2017. All data prior to index launch date is back-tested hypothetical data. Past performance is no guarantee of future results. Chart is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

### Exhibit 4: Breakdown of the S&P Kensho New Economies Composite Index



Source: S&P Dow Jones Indices LLC. Data as of March 31, 2023. Charts are provided for illustrative purposes.

### Exhibit 5: Style, Fundamentals and Differentiation



Fundamentals	KNEX	S&P 500	KNEX Versus	Active Share (%)
Trailing 12-Month Price to Earnings	21.5	20.7	S&P 500	84.0
Forward 12-Month Price to Earnings	20.5	18.7	Russell 2000	87.1
Price-to-Book Ratio	2.4	3.8	Nasdaq 100	90.1
Price / Cash Flow	12.1	13.1	Morningstar Exp. Tech.	85.0
Estimated 3-5 Year Earnings Per Share Growth (%)	12.7	15.6	S&P 1500	83.6
Historical 3-Year Sales Growth (%)	7.1	5.2	S&P 500 Growth	89.4

Source: S&P Dow Jones Indices LLC, FactSet. Data as of March 31, 2023. Past performance is no guarantee of future results. Charts and table are provided for illustrative purposes.

## Performance Disclosure/Back-Tested Data

The S&P Kensho New Economies Composite Index was launched February 6, 2017. The S&P Kensho Digital Health Index was launched June 21, 2021. The S&P Kensho Smart Factories Index and S&P Kensho Advanced Manufacturing Index were launched September 16, 2021. All information presented prior to an index's Launch Date is hypothetical (back-tested), not actual performance, and is based on the index methodology in effect on the index launch date. However, when creating back-tested history for periods of market anomalies or other periods that do not reflect the general current market environment, index methodology rules may be relaxed to capture a large enough universe of securities to simulate the target market the index is designed to measure or strategy the index is designed to capture. For example, market capitalization and liquidity thresholds may be reduced. In addition, forks have not been factored into the back-test data with respect to the S&P Cryptocurrency Indices. For the S&P Cryptocurrency Top 5 & 10 Equal Weight Indices, the custody element of the methodology was not considered; the back-test history is based on the index constituents that meet the custody element as of the Launch Date. Complete index methodology details are available at [www.spglobal.com/spdji](http://www.spglobal.com/spdji). Back-tested performance reflects application of an index methodology and selection of index constituents with the benefit of hindsight and knowledge of factors that may have positively affected its performance, cannot account for all financial risk that may affect results and may be considered to reflect survivor/look ahead bias. Actual returns may differ significantly from, and be lower than, back-tested returns. Past performance is not an indication or guarantee of future results.

Please refer to the methodology for the Index for more details about the index, including the manner in which it is rebalanced, the timing of such rebalancing, criteria for additions and deletions, as well as all index calculations. Back-tested performance is for use with institutions only; not for use with retail investors.

S&P Dow Jones Indices defines various dates to assist our clients in providing transparency. The First Value Date is the first day for which there is a calculated value (either live or back-tested) for a given index. The Base Date is the date at which the index is set to a fixed value for calculation purposes. The Launch Date designates the date when the values of an index are first considered live: index values provided for any date or time period prior to the index's Launch Date are considered back-tested. S&P Dow Jones Indices defines the Launch Date as the date by which the values of an index are known to have been released to the public, for example via the company's public website or its data feed to external parties. For Dow Jones-branded indices introduced prior to May 31, 2013, the Launch Date (which prior to May 31, 2013, was termed "Date of introduction") is set at a date upon which no further changes were permitted to be made to the index methodology, but that may have been prior to the Index's public release date.

Typically, when S&P DJI creates back-tested index data, S&P DJI uses actual historical constituent-level data (e.g., historical price, market capitalization, and corporate action data) in its calculations. As ESG investing is still in early stages of development, certain datapoints used to calculate S&P DJI's ESG indices may not be available for the entire desired period of back-tested history. The same data availability issue could be true for other indices as well. In cases when actual data is not available for all relevant historical periods, S&P DJI may employ a process of using "Backward Data Assumption" (or pulling back) of ESG data for the calculation of back-tested historical performance. "Backward Data Assumption" is a process that applies the earliest actual live data point available for an index constituent company to all prior historical instances in the index performance. For example, Backward Data Assumption inherently assumes that companies currently not involved in a specific business activity (also known as "product involvement") were never involved historically and similarly also assumes that companies currently involved in a specific business activity were involved historically too. The Backward Data Assumption allows the hypothetical back-test to be extended over more historical years than would be feasible using only actual data. For more information on "Backward Data Assumption" please refer to the [FAQ](#). The methodology and factsheets of any index that employs backward assumption in the back-tested history will explicitly state so. The methodology will include an Appendix with a table setting forth the specific data points and relevant time period for which backward projected data was used.

Index returns shown do not represent the results of actual trading of investable assets/securities. S&P Dow Jones Indices maintains the index and calculates the index levels and performance shown or discussed but does not manage actual assets. Index returns do not reflect payment of any sales charges or fees an investor may pay to purchase the securities underlying the Index or investment funds that are intended to track the performance of the Index. The imposition of these fees and charges would cause actual and back-tested performance of the securities/fund to be lower than the Index performance shown. As a simple example, if an index returned 10% on a US \$100,000 investment for a 12-month period (or US \$10,000) and an actual asset-based fee of 1.5% was imposed at the end of the period on the investment plus accrued interest (or US \$1,650), the net return would be 8.35% (or US \$8,350) for the year. Over a three-year period, an annual 1.5% fee taken at year end with an assumed 10% return per year would result in a cumulative gross return of 33.10%, a total fee of US \$5,375, and a cumulative net return of 27.2% (or US \$27,200).

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