STOXX Thematic Indices

August 2021

Qontigo is a financial intelligence innovator, Optimizing Impact^{TM} from risk to return with our client partners.

Content

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Introduction

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Qontigo's STOXX is an Innovator and Leader in the Thematics space

	Expertise	> Dedicated thematic product developers researching new themes, allowing us to identify the recent trends ahead of the competition
	Long Term	> Solutions that are intended to span business cycles > Focus on megatrends rather than short termism
	Partnerships	> Work closely with clients from idea generation to launch > Draw from both external and internal expertise (Sustainable Think Tank)
	Customization	> Our expertise allows us to easily tweak a concept, the starting universe, and apply additional considerations e.g. ESG filters
	Open Architecture	> Partner with trusted, recognized and reliable data providers

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Thematic Solutions that Provide Exposure to Key Megatrends

Megatrends – powerful, transformative forces that could change the global economy, business and society

Future Technology
Technological advancements that are changing our daily lives

Socio-demographics
Changes in global demographics will bring significant challenges and opportunities for societies and businesses

Sustainability
Benefit from the increasing societal awareness of environmental and sustainability issues that are impacting our quality of life

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Broad Range of Themes Accessible

Qontigo Thematics

Socio - demographics

Ageing Population	Breakthrough Healthcare	Broad Infrastructure
Health and Weight Loss	Housing & Construction	Millennials
Pet Care	Sharing Economy	Silver economy
Smart City	Video Gaming & eSports	

Sustainability

Electric Vehicles	Smart City Infrastructure

Illustrative purposes, not exhaustive

Future Technology

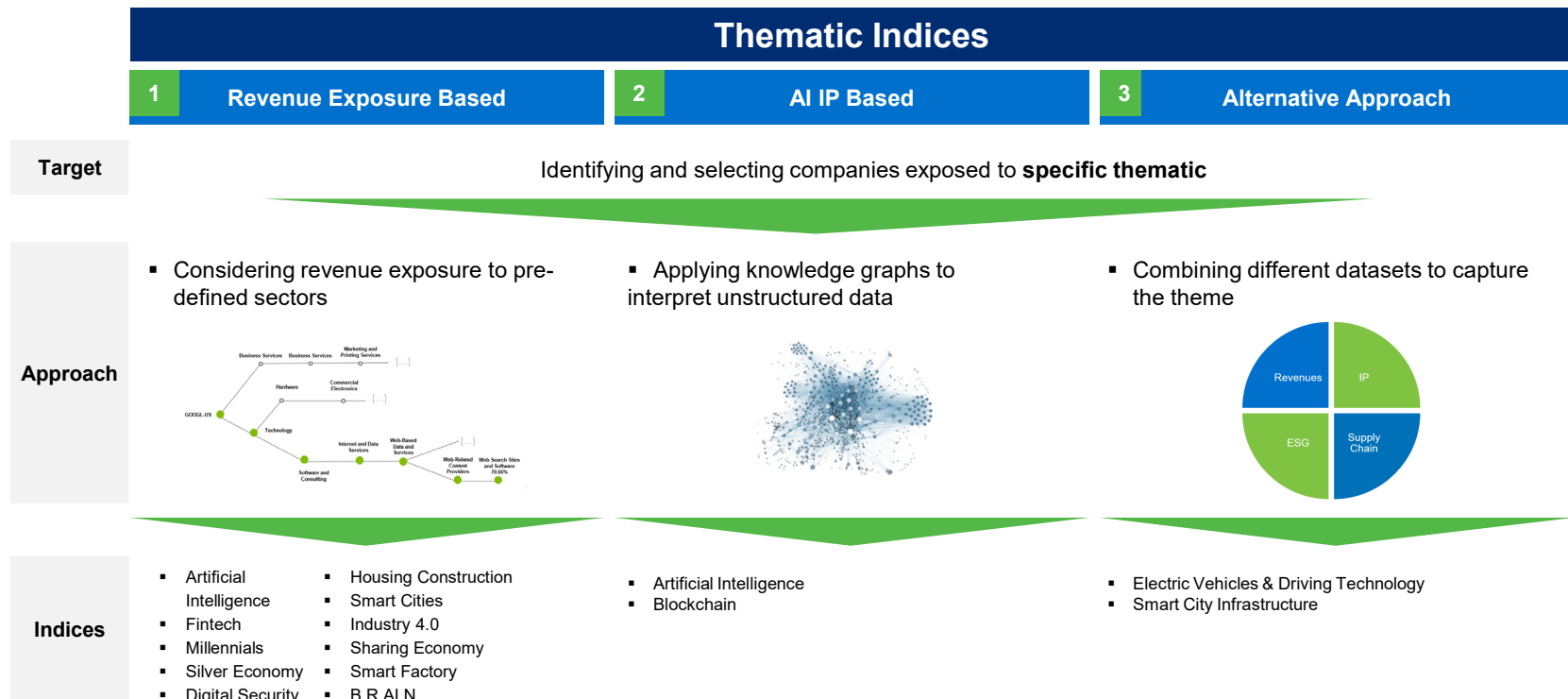|		
Artificial Intelligence	Automation & Robotics	Blockchain
B.R.AI.N	Digital Security	Digitalization
Fintech	Industry 4.0	Next Generation Telecom
Smart Factory		

Approximately **EUR 10bn[1]** in ETF AUM linked to STOXX thematic indices

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Techniques to Capture Exposure to Selected Thematics

	Thematic Indices		
Target	**1** Revenue Exposure Based / **2** AI IP Based / **3** Alternative Approach — Identifying and selecting companies exposed to **specific thematic**		

Approach

- Considering revenue exposure to pre-defined sectors
- Applying knowledge graphs to interpret unstructured data
- Combining different datasets to capture the theme

Indices

- Artificial Intelligence
- Fintech
- Millennials
- Silver Economy
- Digital Security
- Housing Construction
- Smart Cities
- Industry 4.0
- Sharing Economy
- Smart Factory
- B.R.AI.N

- Artificial Intelligence
- Blockchain

- Electric Vehicles & Driving Technology
- Smart City Infrastructure

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Revenue Exposure Based Thematic Indices

Construction

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Revenue Exposure Based Thematic Indices

Step 1: Finding the right data-source - Factset RBICS

Example: Revenue Exposure by Sector/ Industry breakdown for Google

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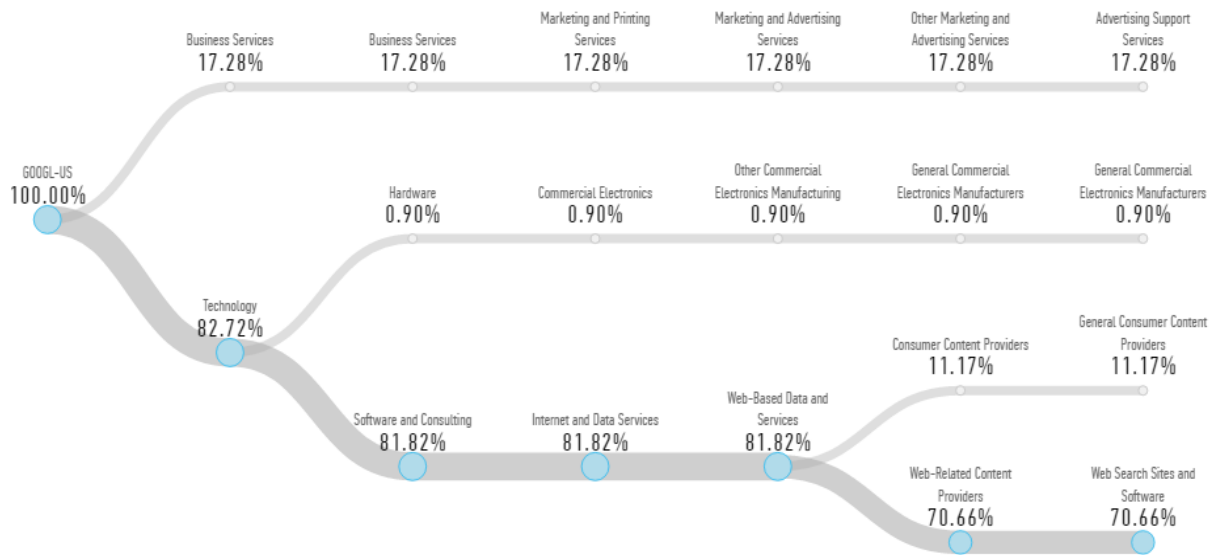
Revenue Exposure Based Thematic Indices

Step 2: Identifying the relevant sectors (e.g. Millennials)

Digitization[1]
- Career Classifieds and Directories Media and Sites
- City Guides Content Providers and Sites
- Communication and Collaboration Content Sites
- Food Delivery Services

Experiences[1]
- Budget Hotels and Motels
- Console Games Software
- Electronic Gaming/Entertainment Electronics Makers
- Events, Tickets and Mixed-Type Recreation
- Handheld and Smart Phone Games Software

Millennials

Healthy lifestyles[1]
- Activewear and Outerwear Apparel Production
- Athletic Footwear Production
- Dietary and Naturopathic Supplements
- Fitness and Exercise Equipment
- Fitness and Recreational Sports Centers
- Nutritional Supplement OEMs

Value[1]
- Internet Discount Stores
- Internet Off-Price Retail
- Off-Price Retail Stores
- Internet Warehouse / Superstore Retail

1. List of Level 6 RBICS Sectors is an indicative sample, and not meant to be exhaustive

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Revenue Exposure Based Thematic Indices

Step 3: Constructing the Index

Universe

- The index universe is the STOXX Developed and Emerging Markets TMI

Filter

- Only those companies with 3-month MDTV above EUR 1,000,000 are considered
- Companies that Sustainalytics considers as non-compliant with the United Nations Global Compact Principles or companies that Sustainalytics identifies to be involved with controversial weapons, are excluded[1]

Selection

- Companies are included in the index if they generate more than 50% of their revenues from the identified industries, related to each theme.

Weighting

- The selected index components are weighted based on free float market capitalization, adjusted for revenue exposure from the identified industries. Dual listed companies and/or multiple share classes are represented by the most liquid stock.
- Securities are capped according to 35/8/4.5 rule

1.   For applicability to each index, please refer to the detailed STOXX Index Methodology Guide

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Artificial Intelligence IP Based Thematic Indices

Construction

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Artificial Intelligence IP Based Thematic Indices

Step 1: Finding the right partner

Yewno

Yewno

- Yewno builds knowledge discovery software and services, leveraging machine learning, computational linguistics, and a vast reservoir of information from the most respected content providers in the world

- Their technology began as academic research in applied mathematics. The goal was to best understand political, economic, financial, and social data

- Yewno currently has numerous partnerships across the finance sector, top research universities, publishers and content aggregators worldwide

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Artificial Intelligence IP Based Thematic Indices

Step 2: Setting the stage – development of knowledge graphs

The use of "Knowledge Graphs" to *understand* and *identify* Blockchain

- Interpreting "**Blockchain**" as a **concept**

- *A concept* is an *abstraction of an idea*, *a thought, a theme or an expression* portrayed in various forms

- Yewno's **Knowledge Graph** is **able to recognize a concept** amongst an enormous volume of unstructured data and to project its significance into an inferential semantic space where such a concept is correlated to others so as to create a mesh of potential inferences

Identification and extraction of concepts

Analysis of correlation and construction of Inferential space

Projection of Knowledge space and elaboration of Inferences

Artificial Intelligence IP Based Thematic Indices

Step 3: Putting knowledge graphs to use

Asset Universe	Blockchain Patents	Blockchain Adopters
	Knowledge graph assists decision making process on determining Patents that are related to Blockchain	Portfolio of companies with IP in Blockchain, i.e., with granted patents that are related to Blockchain

Global universe of assets constituents of the chosen parent index.

List of International Patent Classification (IPC) Codes relevant for Blockchain

Block chain IP

US and International patents database

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Artificial Intelligence IP Based Thematic Indices

Step 4: Defining Blockchain IP exposure and Blockchain IP contribution

Blockchain IP Exposure	▪ This measure indicates the **percentage of total Blockchain patents** granted to a company vs. the total number of patents granted to that company over the same period. ▪ Indicates the significance of **Blockchain** intellectual property to the company's business activities.
Blockchain IP Contribution	▪ This measure indicates the percentage of total **Blockchain** patents granted to a company vs. the total number of **Blockchain** patents granted globally over the same period. ▪ Indicates the significance of each company in the **Blockchain** space.

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Artificial Intelligence-based Methodology

Step 5: Constructing the Index
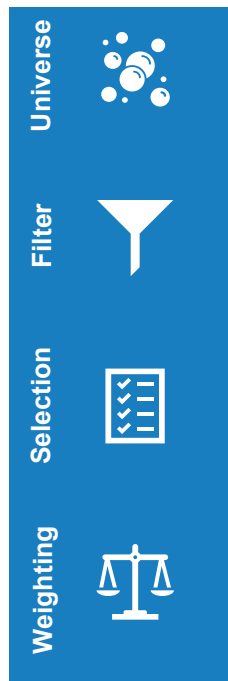
Universe

- Define emerging technology theme (e.g. AI), and starting index universe (e.g. STOXX Global Total Market Index)

Filter

- Utilize Yewno's knowledge graph to pinpoint companies that hold patents associated with respective theme
  - For each company in the starting universe the following factors are calculated: 1) pure-play (exposure) factor; 2) contribution factor

Selection

- Companies are included in the index if they own significant theme-related IP, indicated by having an:
  - IP Exposure as well as an
  - IP Contribution
  which falls into the top X% in both dimensions[1)]

Weighting

- Equally weighted, or IP factor weighted

- Reviewed quarterly

1. Top 75% in the case of the "Artificial Intelligence" index. Ranking process may differ per theme/index

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Alternative Approaches

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Alternative Approaches

Challenges in Applying one-for-all Approach

1) Theme-specific	**Electric & Autonomous Vehicles**: • revenues are a small fraction of car manufacturers • not all car manufacturers produce electric and autonomous vehicle solutions **Blockchain**: • hard to capture a meaningful number of companies generating revenues from Blockchain **Renewable Energy**: • companies generating revenues from renewable energy sources or having relevant IP, are also heavily involved in activities linked to the depletion of natural resources
2) Data limitations	**Revenues:** Despite its granularity and diligence compared to other systems, for certain themes even RBICS' 6 Levels are not enough • There are 26 different sector of Semiconductor Manufacturing products, however: • "General Analog and Mixed Signal Semiconductors" have a broad range of applications → Challenge in separating companies generating revenues from this sector, with applications in autonomous vehicle systems, from irrelevant ones **IP:** Clinical trials are not included, posing challenges in themes like Biotech
3) Theme Evolution	Every theme is constantly evolving at different rates Challenges in putting together a concrete theme definition that will apply over time

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Alternative Approaches

Working Around the Challenges
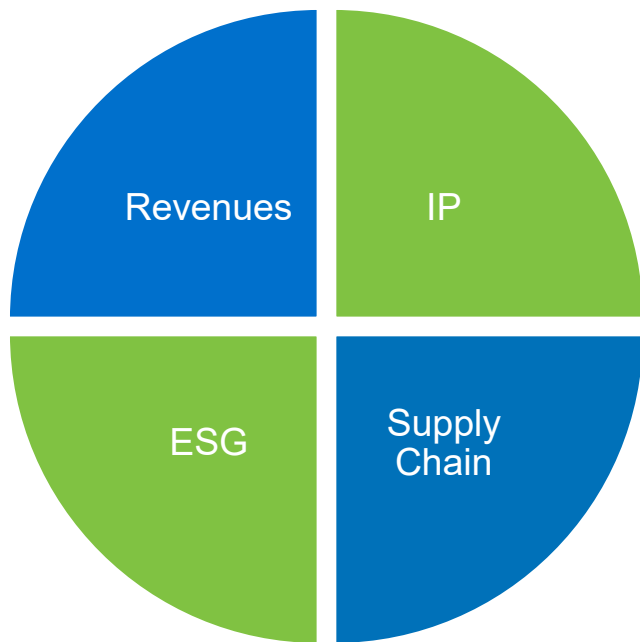
- **Switching from one dataset to another**
  - Revenues-based approach is meaningless in the case of Blockchain
  - → IP-based dataset leveraged

- **Combining datasets**
  - Revenues as stand-alone solution doesn't work in the case of electric vehicles
  - → Combination of Revenues with Supply Chain relationship dataset filters out irrelevant names
  - Similar case with Renewable Energy
  - → Combination of Revenues and/or IP with ESG dataset filters out controversies

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Alternative Approaches

**STOXX Global Electric Vehicles & Driving Technology Index:
Combining Revenues with Supply Chain Relationships**

Universe

- Based on the STOXX Global TMI

Filter

- Pre-selection process with **Revenues**:
    - a) "Potential Electric Vehicle (EV) Manufacturers": companies from the initial universe that have >50% revenue exposure to sectors related to vehicle manufacturing
    - b) "Potential EV Battery Suppliers": >50% revenue exposure to battery manufacturing
    - c) "Potential Other suppliers": >50% revenue exposure to sectors related to parts of vehicles

Selection

- **Supply chain relationship** data is used to identify the relationships between the 3 groups and select:
    1. **Pure EV manufacturers**: "potential" EV manufacturers with 1+ battery suppliers among the "potential" battery suppliers
    2. **Pure EV battery suppliers**: vice versa, "potential" battery suppliers that have 1+ "potential" EV manufacturers as customers
    3. **Pure EV other suppliers**: "potential" other suppliers that have 1+ Pure EV manufacturers as customer

Weighting

- The companies in the 3 buckets are bundled together and country, size and liquidity filters are applied
- Equal-weighted
- Reviewed annually

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Appendix

Socio-demographics

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STOXX Global Millennials Index

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Overview

Millennials

Largest generation

Millennials are now the largest living generation in the world. In the US, they are 50% more than the the GenX generation[1]. 23% more people are using peer-to-peer payments than prior to the crisis, and Gen Zers are the ones driving this[2]

Sustainable Investors

About one-third of millennials often or exclusively use investments that take ESG factors into account, compared with 19% of Gen Z, 16% of Gen X and 2% of baby boomers [3]

47%

47% of US-based Millennials have at least one smart home product within their homes. By 2027, the IoT market will yield over $520 billion in market revenue [4]

1) https://www.goldmansachs.com/insights/archive/millennials/
2) https://www.forbes.com/sites/forbesbusinesscouncil/2021/01/21/gen-z-and-the-future-of-spend-what-we-know-about-this-generation-the-pandemic-and-how-they-pay/?sh=4cb19cb521eb
3) https://www.cnbc.com/2021/05/21/millennials-spurred-growth-in-esg-investing-now-all-ages-are-on-board.html
4) https://policyadvice.net/insurance/insights/smart-home-statistics/

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Themes

Millennials

DIGITIZATION

This is the first generation of 'Digital Natives' for whom smartphones and internet is a necessity.

HEALTHY LIFESTYLE

This generation is eating healthy and living healthier than the other generations. Health and wellness has become more than a lifestyle, it's now a status symbol.

EXPERIENCES

This generation has shifted towards paying more for experiences than material goods.

VALUE

This generation was brought up during the recessions, thus they fear a looming recession or potential lack of employment, and therefore prefer to shop on as-needed basis, wherever they can find the best deal.

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STOXX Global Millennials Index
Risk and Return Overview

Risk and Return Characteristics

	STOXX Global Millennials	STOXX Developed and Emerging Markets Total Market
Perf. overall (annualized)	25.16%	12.73%
Perf. (1Y)	48.66%	42.46%
Perf. (3Y) (annualized)	21.49%	15.04%
Perf. (5Y) (annualized)	25.84%	15.08%
Vol. overall (annualized)	17.94%	13.69%
Volatility (1Y) (annualized)	19.31%	12.45%
Volatility (3Y) (annualized)	22.49%	18.47%
Volatility (5Y) (annualized)	18.87%	15.16%
Sharpe ratio (overall)	1.30	0.89
Sharpe ratio (5Y)	1.25	0.93
Tracking error (overall)	10.62%	
Tracking error (5Y)	9.91%	
Dividend yield (overall)	3.71%	5.09%
Maximum drawdown	29.95%	34.84%
Constituents	212	9821

Performance
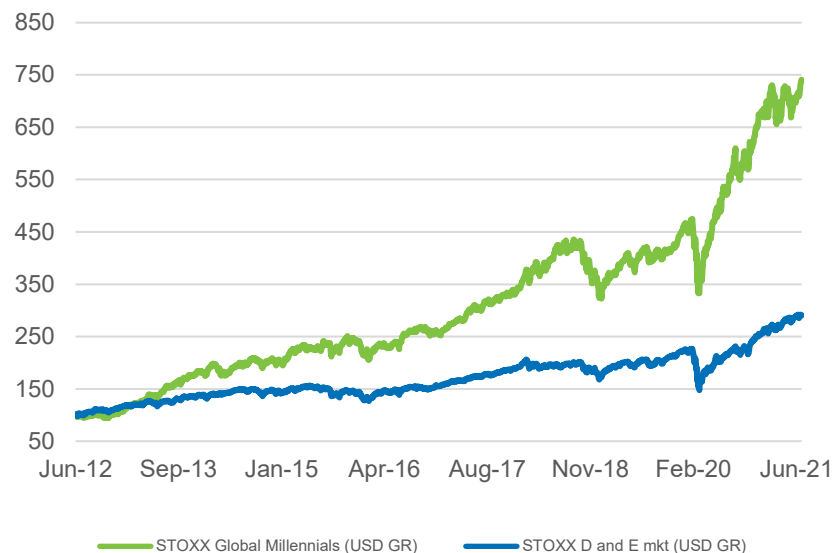
Legend: STOXX Global Millennials (USD GR) — STOXX D and E mkt (USD GR)

1) Source: Qontigo, daily data. Relative figures calculated against Benchmark
2) LIBOR used as a proxy for riskless returns
3) Qontigo Data Jun 18, 2012 – Jun 30, 2021

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STOXX Global Millennials Index
Country and Industry Allocation
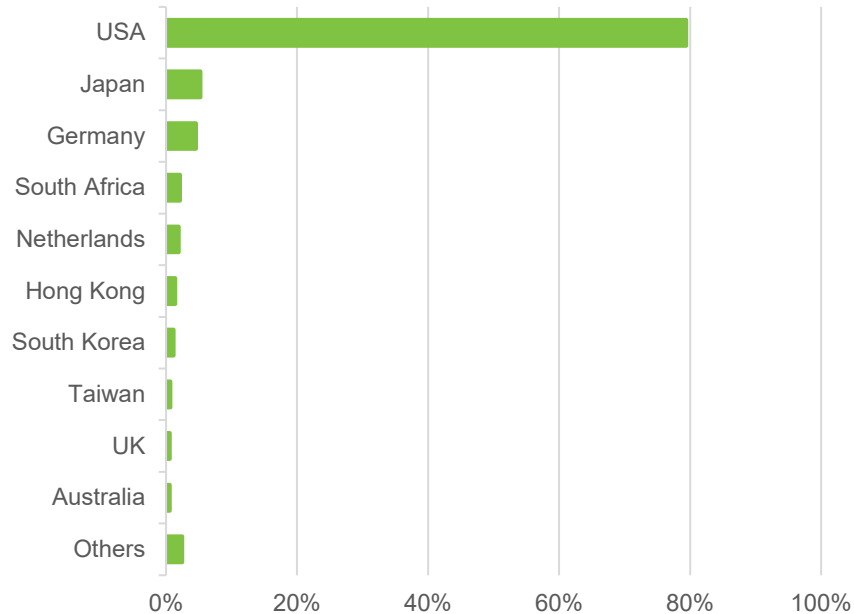
Country Allocation[1)]

USA	
Japan	
Germany	
South Africa	
Netherlands	
Hong Kong	
South Korea	
Taiwan	
UK	
Australia	
Others	

0%   20%   40%   60%   80%   100%

Industry Allocation[1)]

Consumer Discretionary	
Technology	
Telecommunications	
Consumer Staples	
Industrials	
Health Care	

0%   20%   40%   60%   80%

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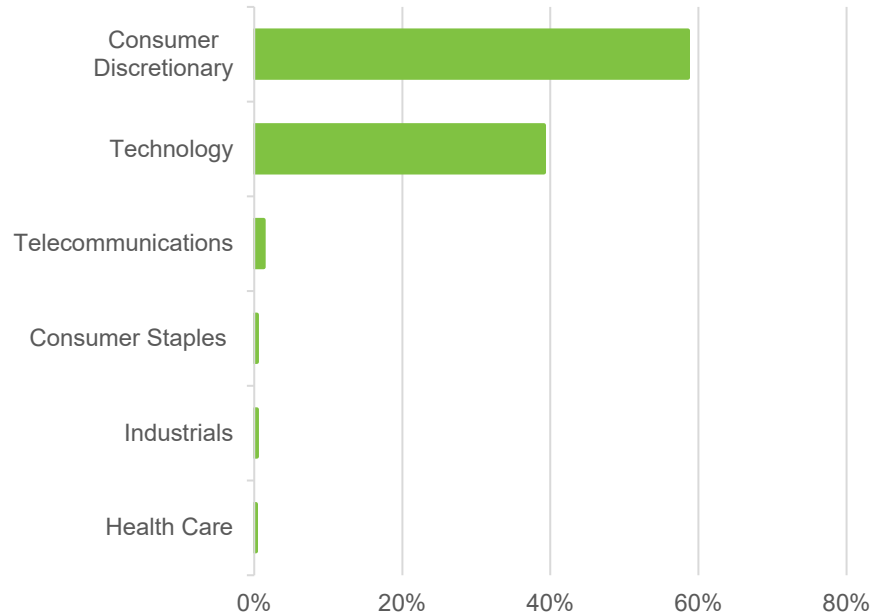
STOXX Global Millennials Index – Top 10 Constituents

Name	Supersector	Country	Weight (%)
Apple Inc.	Technology	USA	8.34
FACEBOOK CLASS A	Technology	USA	8.03
Amazon.com Inc.	Retail	USA	7.89
ALPHABET CLASS C	Technology	USA	7.63
Netflix Inc.	Media	USA	4.68
Nike Inc. Cl B	Consumer Products and Services	USA	4.43
BOOKING HOLDINGS	Travel and Leisure	USA	3.07
TJX Cos.	Retail	USA	2.78
SNAP 'A'	Technology	USA	2.74
Activision Blizzard Inc.	Consumer Products and Services	USA	2.53

1)   Source: Qontigo. Data as of Jun 30, 2021.

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STOXX Global Silver Economy Index

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Overview

Silver Economy

It is estimated that the spending power of consumers aged 60 and older will hit $15 trillion(2011/PPP) by the end of the decade, up from $8.7 trillion in 2020[1].

Organic food market is expected to witness 14.5% annual growth till 2025, largely owing to an increasing ageing population[2].

$56 bn

$8 tn

10%

Smart home market is expected to reach USD 313.95 billion by 2026 and register a CAGR of 25.3%. Smart homes include the use of panic buttons, wearable technology to monitor vital signs, telemedicine systems and robots that helps elderly[3].

1) https://www.brookings.edu/blog/future-development/2021/01/14/the-silver-economy-is-coming-of-age-a-look-at-the-growing-spending-power-of-seniors/
https://www.thebusinessresearchcompany.com/report/organic-food-global-market-report
2) https://www.mordorintelligence.com/industry-reports/global-smart-homes-market-industry

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Themes (1)

Silver Economy

Innovative Technology · Healthcare · Nutrition and Well-Being · Old Age Care · E-Commerce · Financial Services · Leisure and Tourism

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Themes (2)

Silver Economy

Innovative Technology

Innovative technology covers a range of ideas, from next generation hearing aids to door sensors that help monitor the rehabilitation of ageing population

Nutrition and Well-Being

Much of the focus in the healthy ageing market is on foods that preserve health and wellbeing as long as possible, but when age-related health problems do occur, products that help improve nutrition are vital.

E-Commerce

The aging population is bound to have a certain impact on the development of e-commerce. Baby Boomers reportedly spend more time online than millennials. 10% more than millennials.

Leisure and Tourism

The oldest consumer group spends the most particularly when it comes to international holidays, the gym and theme parks etc. They travel for recreation as well as wellness.

Healthcare

Owning to tech innovations, the health care needs of ageing populations are continuing to diversify. This trend is reflected in increasing life expectancies.

Old Age Care

This segment includes acute care, assisted living, death care and funeral services.

Financial Services

A significant number of older consumers appear to have very limited provisions for retirement such as savings, pension funds, or disposable income. This pushes the need for Pension Funds and Wealth Management services providers.

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STOXX Global Silver Economy Index
Risk and Return Overview

Risk and Return Characteristics

	STOXX Global Silver Economy	STOXX Developed and Emerging Markets Total Market
Perf. overall (annualized)	14.65%	12.73%
Perf. (1Y)	34.66%	42.46%
Perf. (3Y) (annualized)	14.50%	15.04%
Perf. (5Y) (annualized)	14.32%	15.08%
Vol. overall (annualized)	16.05%	13.69%
Volatility (1Y) (annualized)	16.26%	12.45%
Volatility (3Y) (annualized)	21.16%	18.47%
Volatility (5Y) (annualized)	17.56%	15.16%
Sharpe ratio (Overall)	0.89	0.89
Sharpe ratio (5Y)	0.79	0.93
Tracking error (Overall)	6.66%	
Tracking error (5Y)	6.46%	
Dividend yield (Overall)	4.76%	5.09%
Maximum drawdown	31.86%	34.84%
Constituents	446	9821

Performance

Legend: STOXX Global Silver Economy (USD GR) — STOXX D and E mkt (USD GR)

1) Source: Qontigo, daily data. Relative figures calculated against Benchmark
2) LIBOR used as a proxy for riskless returns
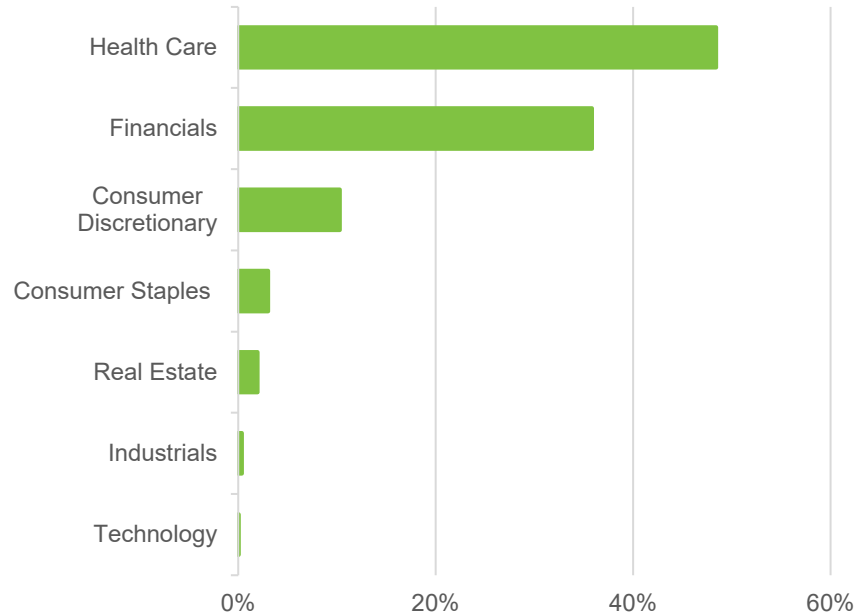3) Qontigo Data Jun 18, 2012 – Jun 30, 2021

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STOXX Global Silver Economy Index
Country and Industry Allocation

Country Allocation[1)]

USA	
UK	
Switzerland	
Japan	
South Korea	
Hong Kong	
Australia	
Germany	
Denmark	
Belgium	
Others	

0%   20%   40%   60%   80%   100%

Industry Allocation[1)]

Health Care	
Consumer Discretionary	
Technology	
Financials	
Real Estate	
Consumer Staples	
Industrials	

0%   10%   20%   30%   40%   50%

1)   Source: Qontigo. Data as of Jun 30, 2021.

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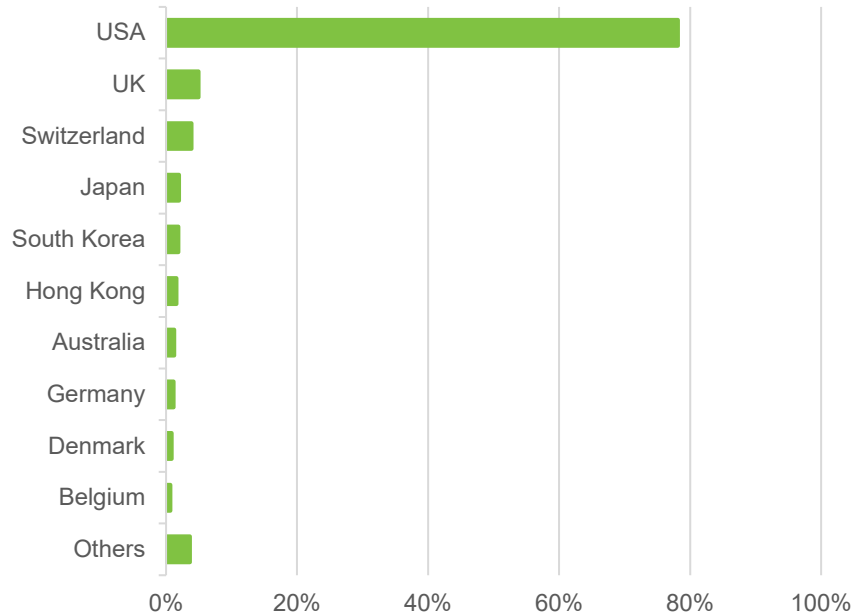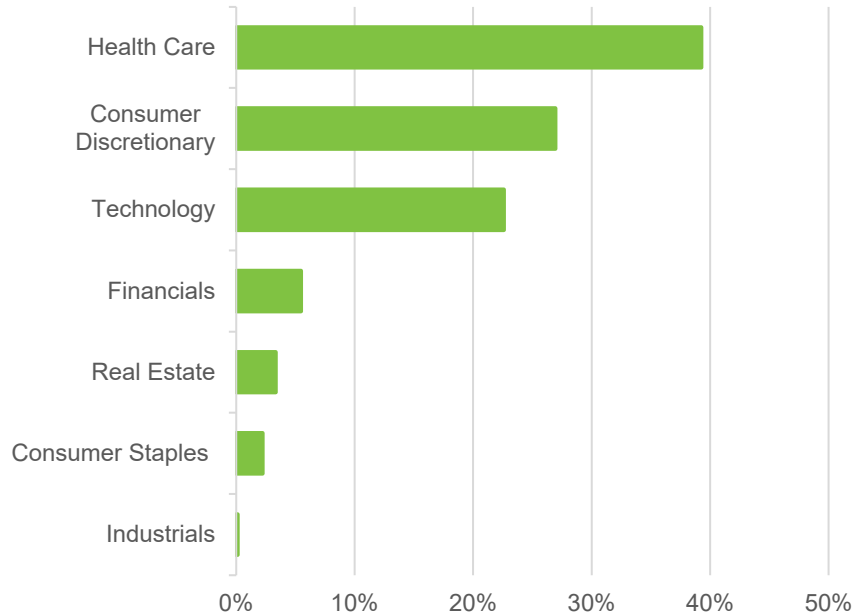
STOXX Global Silver Economy Index – Top 10 Constituents

Name	Supersector	Country	Weight (%)
Amazon.com Inc.	Retail	USA	8.19
Intel Corp.	Technology	USA	5.35
Qualcomm Inc.	Technology	USA	4.35
Texas Instruments Inc.	Technology	USA	3.61
Bristol-Myers Squibb Co.	Health Care	USA	2.96
ASTRAZENECA	Health Care	UK	2.53
BOOKING HOLDINGS	Travel and Leisure	USA	2.43
Micron Technology Inc.	Technology	USA	2.12
Edwards Lifesciences Corp.	Health Care	USA	1.74
HCA HEALTHCARE	Health Care	USA	1.50

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STOXX Global Ageing Population

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STOXX Global Ageing Population Index
Risk and Return Overview

Risk and Return Characteristics

	STOXX Global Ageing Population	STOXX Developed and Emerging Markets Total Market
Perf. overall (annualized)	11.09%	10.43%
Perf. (1Y)	42.13%	42.46%
Perf. (3Y) (annualized)	10.64%	15.04%
Perf. (5Y) (annualized)	11.41%	15.08%
Vol. overall (annualized)	15.45%	14.55%
Volatility (1Y) (annualized)	13.89%	12.45%
Volatility (3Y) (annualized)	19.86%	18.47%
Volatility (5Y) (annualized)	16.22%	15.16%
Sharpe ratio (Overall)	0.72	0.71
Sharpe ratio (5Y)	0.68	0.93
Tracking error (Overall)	4.65%	
Tracking error (5Y)	5.17%	
Dividend yield (Overall)	4.24%	4.64%
Maximum drawdown	39.09%	34.84%
Constituents	355	9821

Performance

Legend: STOXX Global Ageing Population (USD GR) — STOXX D and E mkt (USD GR)

1) Source: Qontigo, daily data. Relative figures calculated against Benchmark
2) LIBOR used as a proxy for riskless returns
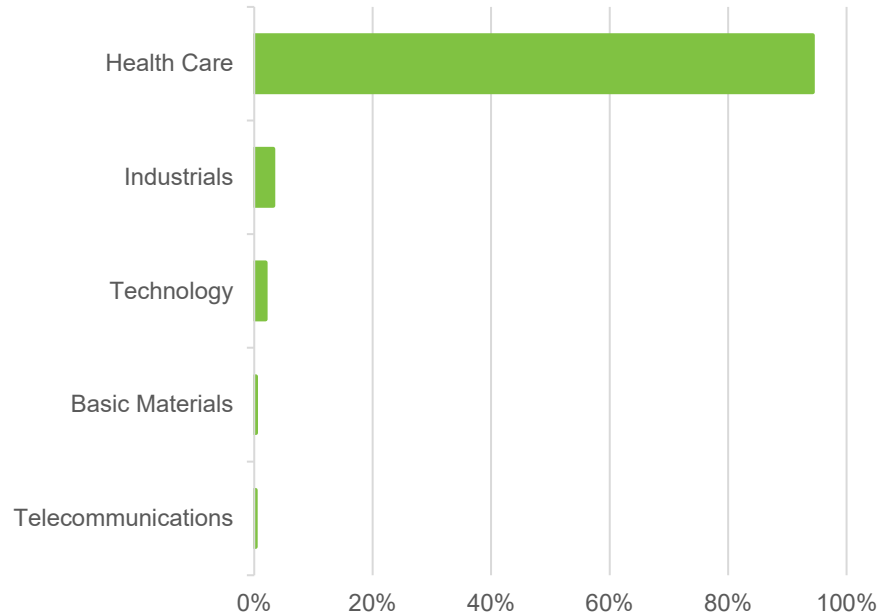3) Qontigo Data Jun 30, 2011 – Jun 30, 2021

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STOXX Global Ageing Population Index
Country and Industry Allocation

Country Allocation[1]

Country	Allocation
USA	~52%
Japan	~7%
UK	~5%
Australia	~4%
Switzerland	~3%
France	~3%
Taiwan	~3%
South Korea	~3%
China	~3%
Canada	~2%
Others	~16%

Industry Allocation[1]

Industry	Allocation
Health Care	~49%
Financials	~36%
Consumer Discretionary	~10%
Consumer Staples	~3%
Real Estate	~2%
Industrials	~1%
Technology	~0%

1) Source: Qontigo. Data as of Jun 30, 2021.

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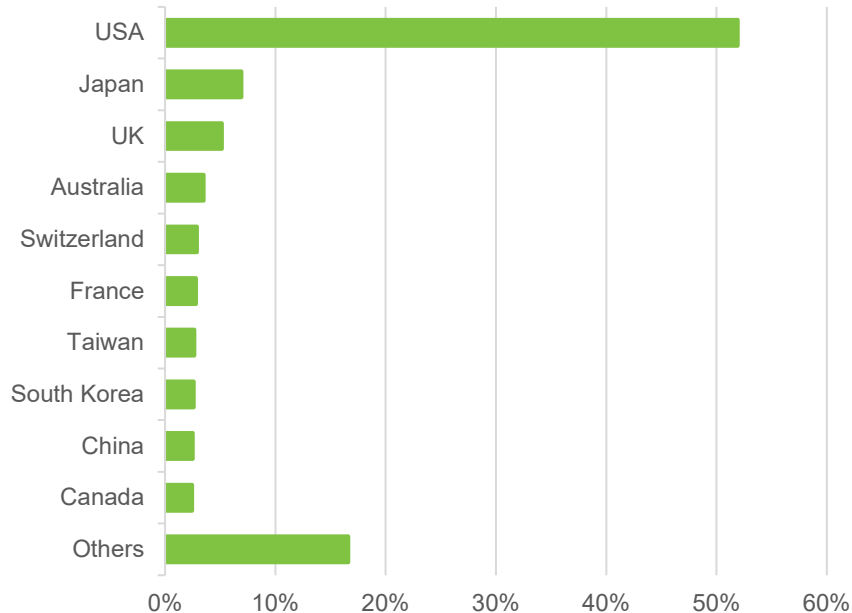
STOXX Global Ageing Population Index – Top 10 Constituents

Name	Supersector	Country	Weight (%)
CRISPR THERAPEUTICS	Health Care	USA	0.52
EDITAS MEDICINE	Health Care	USA	0.50
PEPTIDREAM	Health Care	Japan	0.43
HALOZYME THERAPEUTICS	Health Care	USA	0.43
GLAUKOS	Health Care	USA	0.43
ATHENE HOLDING 'A'	Financial Services	USA	0.43
TELADOC	Health Care	USA	0.43
TURNING POINT THERAPEUTICS	Health Care	USA	0.43
POLARIS	Consumer Products and Services	USA	0.42
GLOBUS MEDICAL CL.A	Health Care	USA	0.42

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STOXX Global Breakthrough Healthcare

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STOXX Global Breakthrough Healthcare Index
Risk and Return Overview

Risk and Return Characteristics

	STOXX Global Breakthrough Healthcare	STOXX Global 1800
Perf. overall (annualized)	15.77%	11.36%
Perf. (1Y)	39.55%	39.59%
Perf. (3Y) (annualized)	18.02%	15.73%
Perf. (5Y) (annualized)	18.11%	15.60%
Vol. overall (annualized)	17.01%	14.97%
Volatility (1Y) (annualized)	19.00%	12.76%
Volatility (3Y) (annualized)	22.42%	18.98%
Volatility (5Y) (annualized)	18.95%	15.58%
Sharpe ratio (Overall)	0.91	0.75
Sharpe ratio (5Y)	0.91	0.94
Tracking error (Overall)	9.86%	
Tracking error (5Y)	11.20%	
Dividend yield (Overall)	2.19%	5.06%
Maximum drawdown	31.62%	33.77%
Constituents	198	1800

Performance

Legend: STOXX Global Breakthrough Healthcare (USD GR) — STOXX Global 1800 (USD GR)

1) Source: Qontigo, daily data. Relative figures calculated against Benchmark
2) LIBOR used as a proxy for riskless returns
3) Qontigo Data Jun 30, 2011 – Jun 30, 2021

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STOXX Global Breakthrough Healthcare Index
Country and Industry Allocation
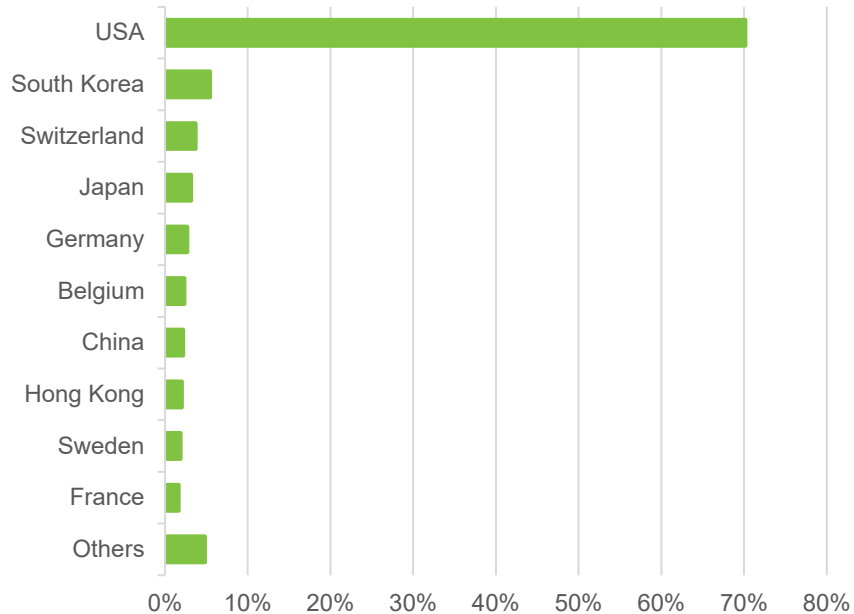
Country Allocation[1]

Country	Allocation
USA	~70%
South Korea	~5%
Switzerland	~4%
Japan	~3%
Germany	~3%
Belgium	~2%
China	~2%
Hong Kong	~2%
Sweden	~2%
France	~2%
Others	~5%

Industry Allocation[1]

Industry	Allocation
Health Care	~95%
Industrials	~3%
Technology	~2%
Basic Materials	~1%
Telecommunications	~1%

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STOXX Global Breakthrough Healthcare Index – Top 10 Constituents

Name	Supersector	Country	Weight (%)
CRISPR THERAPEUTICS	Health Care	USA	1.11
TWIST BIOSCIENCE	Health Care	USA	1.01
PACIFIC BSCS.OF CAL.	Health Care	USA	1.00
Sysmex Corp.	Health Care	Japan	0.98
QUIDEL	Health Care	USA	0.94
PEPTIDREAM	Health Care	Japan	0.93
HALOZYME THERAPEUTICS	Health Care	USA	0.92
Thermo Fisher Scientific Inc.	Health Care	USA	0.92
NATERA	Health Care	USA	0.91
Hologic Inc.	Health Care	USA	0.91

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STOXX Global Smart Cities

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Overview

Smart Cities

29.3% CAGR

The global smart cities market size was valued at USD 98.15 billion in 2020 and is expected to expand at a compound annual growth rate (CAGR) of 29.3% from 2021 to 2028[1]

9.6% CAGR

Global smart energy market was valued at $124.0 billion in 2019, and is projected to reach $253.1 billion by 2027, growing at a CAGR of 9.6% from 2020 to 2027[2]

$1trillion

The $133 billion market in Asia Pacific (ex Japan) is expected to have the fastest growth, CAGR of 22.6%, surpassing $1 trillion in revenues and more than 29% of the market share by 2026[1]

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Themes (1)

Smart Cities

Smart Mobility   Smart Energy   Smart Healthcare

Smart Infrastructure   Smart Security   Smart Education

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Themes (2)

Smart Cities

Smart Mobility

Intelligent Transportation System is expected to revolutionize the way people commute in smart cities. The segment is projected to grow at a CAGR of 19.9% from 2017 to 2023[1].
L6 RBICS sector example: Vehicle Autonomous Control Electronics Makers

Smart Infrastructure

This segment caters to both public and home infrastructure markets. Smart highways and management systems fall under the public infrastructure subdivision, whereas controlling, automating and optimizing household functions (smart home) are classified under home infrastructure.
L6 RBIC sector example: Household Robots

Smart Energy

This segment caters to smart grid, smart solar, and home energy management systems. Smart grid and smart solar markets are expecting to witness a CAGR of 20.9% (2023), 15.4% (2020) respectively[2]
L6 RBICS sector example: Power, Control and Mixed Signal Semiconductors

Smart Security

The Global smart security market is anticipated to grow at a 15.97% CAGR between 2017 and 2025[3]. Some of the driving factors are: rising demand for public safety, growing urbanization, increased crime rates and smart city projects in developing countries
L6 RBICS sector example: Network Security Software

Smart Healthcare

This segment is involved in connected system of medical devices and applications that generate and monitor data. Remote patient monitoring systems and the Internet of Medical Things enable efficient use of resources to provide preventative measures through real time data collection
L6 RBIC sector example: Healthcare Management Software

Smart Education

The global smart education market size is expected to register an annual growth rate of 15.2% from 2018 to 2025[4]. Growth can be attributed to increasing preference for eLearning, rising demand for innovative and interactive techniques such as educational apps and gamification
L6 RBIC sector example: Education Information and News Media and Sites

1) https://www.prnewswire.com/news-releases/global-smart-mobility-market-2023---market-is-expected-to-grow-at-a-cagr-of-199-300547231.html
2) https://www.marketsandmarkets.com/PressReleases/global-smart-grid.asp; https://www.marketsandmarkets.com/PressReleases/smart-solar.asp
3) https://www.reportsnreports.com/reports/1212725-global-smart-security-market-forecast-2017-2025.html
4) https://www.grandviewresearch.com/industry-analysis/smart-education-learning-market

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STOXX Global Smart Cities Index
Risk and Return Overview

Risk and Return Characteristics

	STOXX Global Smart Cities	STOXX Developed and Emerging Markets Total Market
Perf. overall (annualized)	22.87%	12.73%
Perf. (1Y)	66.39%	42.46%
Perf. (3Y) (annualized)	34.85%	15.04%
Perf. (5Y) (annualized)	29.69%	15.08%
Vol. overall (annualized)	20.00%	13.69%
Volatility (1Y) (annualized)	26.32%	12.45%
Volatility (3Y) (annualized)	26.10%	18.47%
Volatility (5Y) (annualized)	21.53%	15.16%
Sharpe ratio (Overall)	1.10	0.89
Sharpe ratio (5Y)	1.26	0.93
Tracking error (Overall)	12.41%	
Tracking error (5Y)	13.05%	
Dividend yield (Overall)	5.08%	5.09%
Maximum drawdown	34.66%	34.84%
Constituents	106	9821

Performance

STOXX Global Smart Cities (USD GR)   STOXX D and E mkt (USD GR)

1) Source: Qontigo, daily data. Relative figures calculated against Benchmark
2) LIBOR used as a proxy for riskless returns
3) Qontigo Data Jun 18, 2012 – Jun 30, 2021

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STOXX Global Smart Cities Index
Country and Industry Allocation
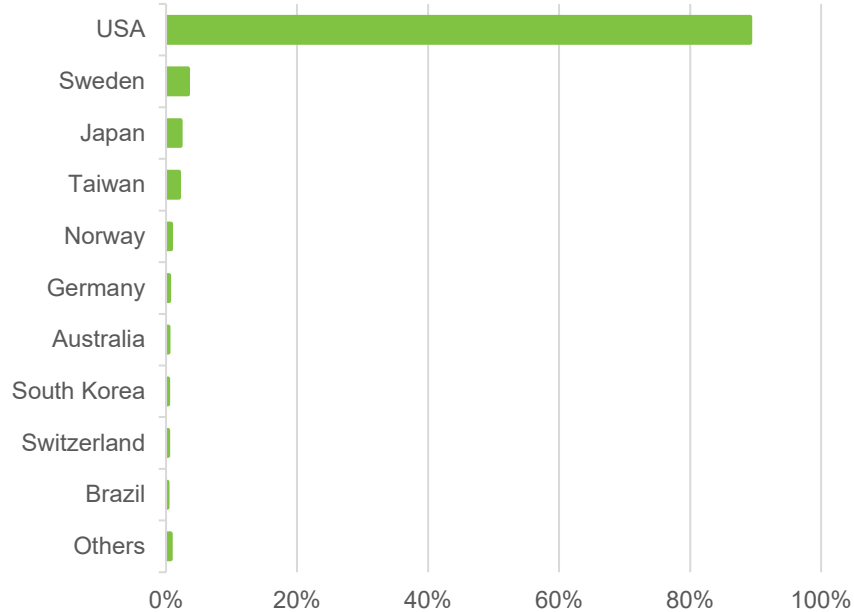
Country Allocation[1]

USA	~90%
Sweden	~4%
Japan	~3%
Taiwan	~3%
Norway	~1%
Germany	~1%
Australia	~1%
South Korea	~1%
Switzerland	~1%
Brazil	~1%
Others	~1%

Industry Allocation[1]

Technology	~60%
Consumer Discretionary	~12%
Health Care	~9%
Energy	~7%
Industrials	~6%
Telecommunications	~4%
Basic Materials	~1%

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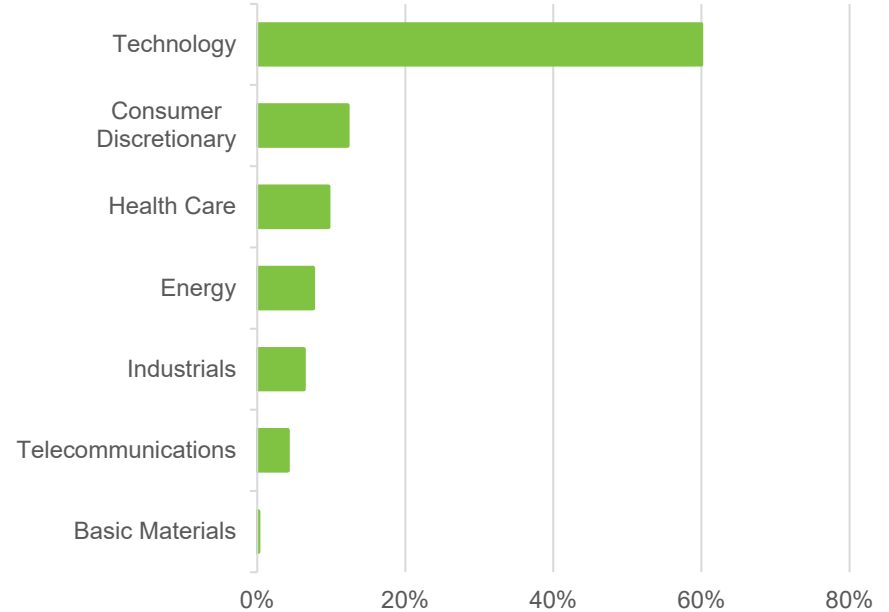
STOXX Global Smart Cities Index – Top 10 Constituents

Name	Supersector	Country	Weight (%)
TESLA	Automobiles and Parts	USA	8.47
BROADCOM	Technology	USA	7.74
Intel Corp.	Technology	USA	7.44
DOCUSIGN	Technology	USA	6.43
CROWDSTRIKE HOLDINGS A	Technology	USA	4.70
VEEVA SYSTEMS CL.A	Health Care	USA	4.51
PALO ALTO NETWORKS	Technology	USA	4.38
Xilinx Inc.	Technology	USA	4.32
FORTINET	Technology	USA	3.92
TE CONNECTIVITY LTD.	Technology	USA	3.37

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STOXX Global Sharing Economy Index

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Overview

Sharing Economy

Sharing Economy is a deep socio-economic trend that permit users to gain temporary access to various assets. According to Forbes, trillions of dollars of assets are underutilized.

Millennials constitute of 25% of the world's population and have spending already over $600 billion annually, are expected to be the biggest facilitators of the sharing economy model[1].

Sharing Economy

Shared mobility - Currently, China and the United States are the two largest markets for shared mobility, at $24 billion and $23 billion, respectively. Both dominated by e-hailing players, which hold market shares that exceed 80 percent in each country[2].

Tourism Industry - The sharing economy is changing the tourism marketplace, giving people new options for where to stay, what to do and how to get around. The biggest disrupter in this space is Airbnb which averages 425,000 guests per night, nearly 22% more than Hilton Worldwide[3].

1) https://www.ft.com/content/f81ac17a-68ae-11e8-b6eb-4acfcfb08c11
2) https://www.mckinsey.com/industries/automotive-and-assembly/our-insights/how-shared-mobility-will-change-the-automotive-industry
3) https://www.pwc.fr/fr/assets/files/pdf/2015/05/pwc_etude_sharing_economy.pdf

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Themes (1)

Sharing Economy

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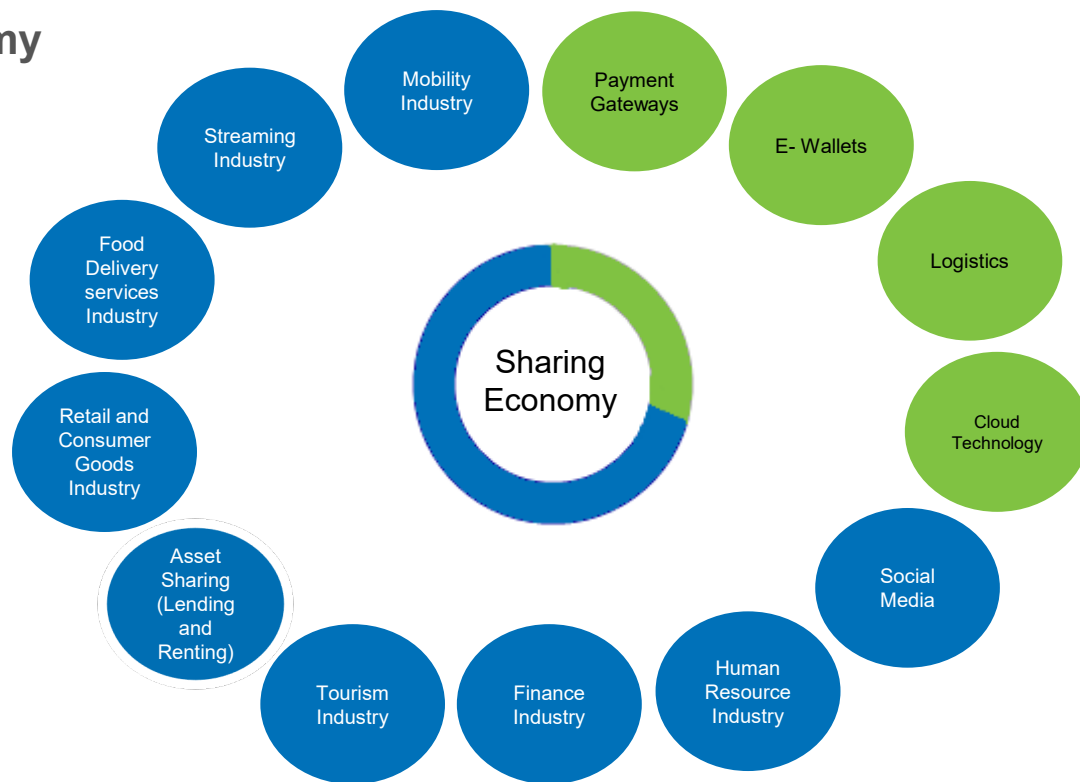
Themes (2) – Drivers

Mobility Industry

Shared mobility includes car sharing and on-demand ride services. Currently, China and US are its largest markets at $24 billion and $23 billion, respectively.

Streaming Industry

Video streaming segment will be worth $ 30.6bn in 2022. Also, for the first time in 2016, digitally streamed music revenues exceeded physically recorded music revenues.

Social Media

Social media is a direct facilitator of the sharing economy model. Due to its collaborative platforms, people are more willing to share information, and opinions with complete strangers.

Food Delivery Services Industry

It is expanding choice and convenience, with a single tap of the mobile phone. Mckinsey estimates that the market will reach more than $ 22.76 billion by 2025.

Retail & Consumer Goods

The segment involves Online Markets, Fashion, Furniture & Sports Rental. For ex, Organized markets facilitate interaction among sellers and buyers.

Asset sharing

The implication of sharing economy enables individuals to monetize assets that are fully utilized (pertains to assets like heaving equipment and construction machinery).

Tourism Industry

The sharing economy is changing tourism, giving people new options of stay, of getting around. For ex, Airbnb averages 425,000 guests per night, nearly 22% more than Hilton Worldwide.

Finance Industry

The sharing economy is reshaping finance through P2P lending, social payments, crowdfunding and P2P insurance. Global P2P lending market expected to be worth $897.85 bn by 2024.

Human Resource Industry

Sharing Economy allows individuals to make use of their specialist knowledge and experience to provide c2c services for free or in return for payment.

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Themes (3) – Facilitators

Payment Gateways

A payment gateway is a service that helps merchants accept payments online. The global market accounted for $ 17.2 bn in 2020 and is expected to grow at an annual rate of 16.43% in 2021-2026[6].

E-Wallets

Digital payments have become a key component of this new sharing economic reality, ensuring the seamless and secure transfer of funds from renter to owner.

Cloud Technology

Sharing-economy companies require easily expandable networks are needed to manage complex and growing business ventures. Cloud platforms meets such complex requirements.

Logistics Industry

Logistics generate over $1.25 trillion annually. However, the fragmented industry is plagued by underutilization of assets, Shared economy is set to disrupt this space.

1) https://www.mckinsey.com/industries/automotive-and-assembly/our-insights/how-shared-mobility-will-change-the-automotive-industr
2) https://www.mckinsey.com/industries/high-tech/our-insights/the-changing-market-for-food-delivery
3) https://www.pwc.fr/fr/assets/files/pdf/2015/05/pwc_etude_sharing_economy.pdf
4) https://www.pwc.nl/en/publicaties/dutch-entertainment-and-media-outlook-2017-2021/music.html
5) https://www.prnewswire.com/news-releases/peer-to-peer-lending-market-to-be-worth-us-897-85-billion-by-2024-tmr-883066968.html
6) https://www.mordorintelligence.com/industry-reports/payment-gateway-market

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STOXX Global Sharing Economy Index
Risk and Return Overview

Risk and Return Characteristics

	STOXX Global Sharing Economy	STOXX Developed and Emerging Markets Total Market
Perf. overall (annualized)	25.34%	12.73%
Perf. (1Y)	35.16%	42.46%
Perf. (3Y) (annualized)	17.67%	15.04%
Perf. (5Y) (annualized)	23.76%	15.08%
Vol. overall (annualized)	19.69%	13.69%
Volatility (1Y) (annualized)	19.19%	12.45%
Volatility (3Y) (annualized)	24.69%	18.47%
Volatility (5Y) (annualized)	20.70%	15.16%
Sharpe ratio (Overall)	1.21	0.89
Sharpe ratio (5Y)	1.08	0.93
Tracking error (Overall)	11.07%	
Tracking error (5Y)	10.42%	
Dividend yield (Overall)	3.32%	5.09%
Maximum drawdown	35.05%	34.84%
Constituents	129	9821

Performance
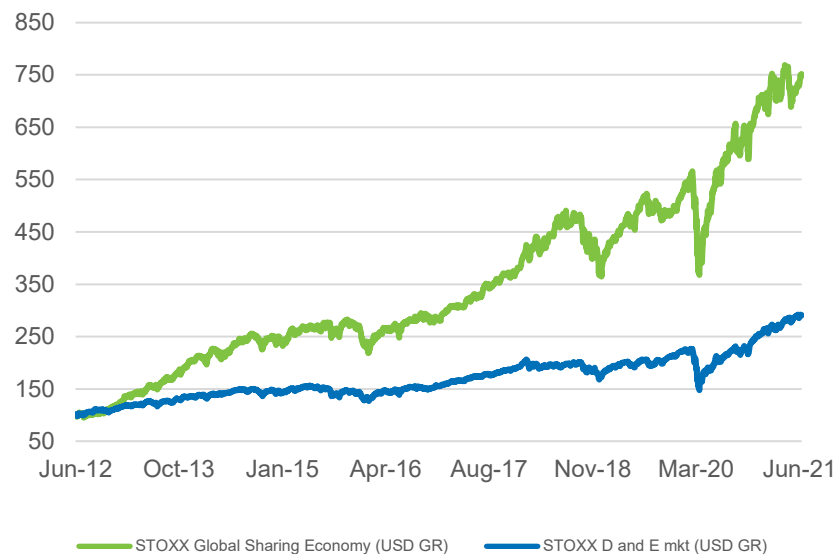
STOXX Global Sharing Economy (USD GR) ——— STOXX D and E mkt (USD GR)

1) Source: Qontigo, daily data. Relative figures calculated against Benchmark
2) LIBOR used as a proxy for riskless returns
3) Qontigo Data Jun 18, 2012 – Jun 30, 2021

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STOXX Global Sharing Economy Index
Country and Industry Allocation
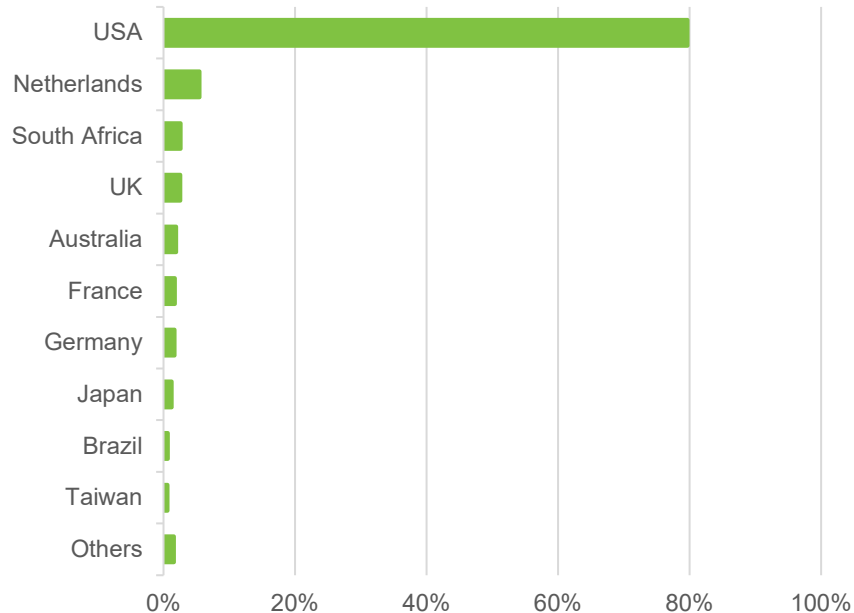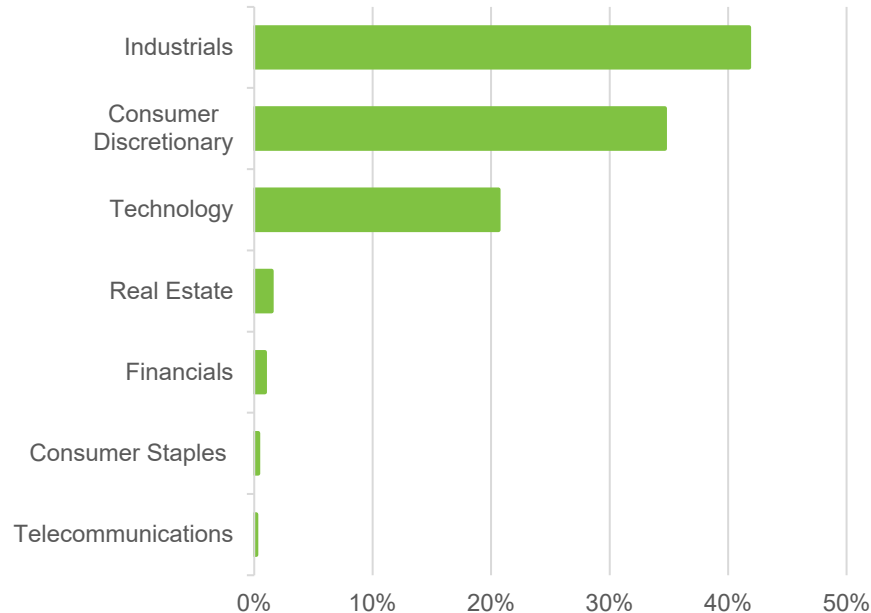
1) Source: Qontigo. Data as of Jun 30, 2021.

STOXX Global Sharing Economy Index – Top 10 Constituents

Name	Supersector	Country	Weight (%)
FACEBOOK CLASS A	Technology	USA	8.10
Amazon.com Inc.	Retail	USA	7.95
MasterCard Inc. Cl A	Industrial Goods and Services	USA	7.76
VISA Inc. Cl A	Industrial Goods and Services	USA	7.74
Netflix Inc.	Media	USA	4.72
PayPal Holdings	Industrial Goods and Services	USA	4.71
BOOKING HOLDINGS	Travel and Leisure	USA	4.10
Fidelity National Information	Industrial Goods and Services	USA	3.53
MERCADOLIBRE	Consumer Products and Services	USA	3.52
ADYEN	Industrial Goods and Services	Netherlands	3.25

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STOXX Global Housing Construction Index

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Infrastructure Construction Industry: At a Glance

The global infrastructure development industry is expected to be worth $10.5 trillion by 2023, growing at a annual rate of 4.2%[1]

Within the infrastructure industry, The Global Construction Materials Market is expected to grow by $ 1123.07 bn during 2021-2025 progressing at a CAGR of almost 16% during the forecast period[2]

Potential growth factors include: Increasing use of green construction, life-enhancing devices for aging structures, BIS for efficient building management.

1) https://www.prnewswire.com/news-releases/growth-opportunities-for-the-global-construction-industry-2018-2023---a-potential-105-trillion-market-300578103.html
2) https://www.globenewswire.com/news-release/2021/04/15/2211130/0/en/The-Global-Construction-Materials-Market-is-expected-to-grow-by-1123-07-bn-during-2021-2025-progressing-at-a-CAGR-of-almost-16-during-the-forecast-period.html

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Themes (1)

Housing Construction

Construction Raw Material

Infrastructure Construction and Development

Green Construction

Smart Technology

Construction Equipment

Building Structures and Fixtures

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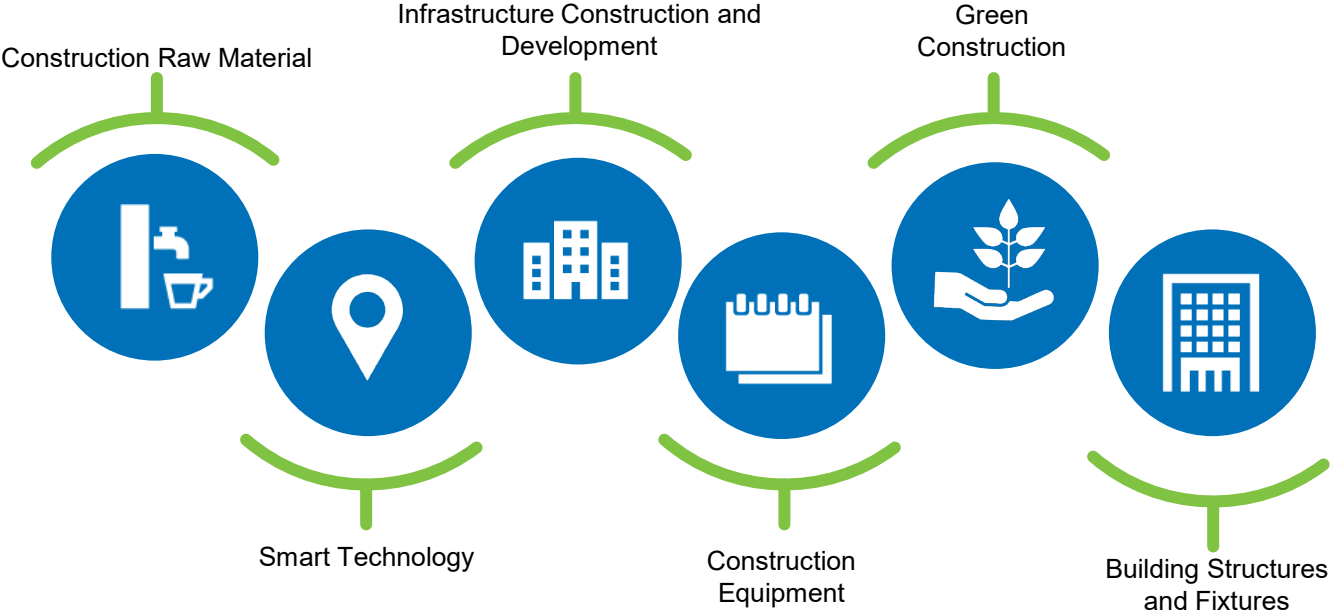
Themes (2)

Construction Raw Material

The global building materials market was valued at almost $940 billion in 2016. It is expected to surpass $1,234 billion by 2021[1].

Construction Equipment
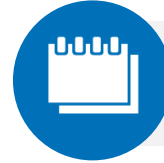
The global heavy construction equipment market was valued at $ 55.9 billion in 2016. It is expected to register a CAGR of 5.4% from 2017 to 2025[2].

Smart Technology

Connected devices give real-time information, which helps in improving downtime, optimizing construction processes, utilizing resources.

Green Construction

The Global Green Building Materials industry was worth $158.8 billion in 2016, rising from $106 billion in 2012, growing at an annual rate of 10.5%[3].

Infrastructure Construction &

the Global Infrastructure Construction market is expected to see growth rate of 6.8% and may see market size of $3.9 Trillion by 2026.

Building Structures and Fixtures

Systems are required for the safe, comfortable and environmentally friendly operation of modern buildings.

1) https://www.technavio.com/pressrelease/global-building-materials-market-new-market-research-report
2) https://www.advancemarketanalytics.com/reports/12283-global-infrastructure-construction-market
3) https://bisresearch.com/industry-report/global-construction-sustainable-materials-market-2026.html

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STOXX Global Housing Construction Index
Risk and Return Overview

Risk and Return Characteristics

	STOXX Global Housing Construction	STOXX Developed and Emerging Markets Total Market
Perf. overall (annualized)	16.65%	12.73%
Perf. (1Y)	53.16%	42.46%
Perf. (3Y) (annualized)	19.40%	15.04%
Perf. (5Y) (annualized)	20.57%	15.08%
Vol. overall (annualized)	17.41%	13.69%
Volatility (1Y) (annualized)	17.01%	12.45%
Volatility (3Y) (annualized)	22.48%	18.47%
Volatility (5Y) (annualized)	18.67%	15.16%
Sharpe ratio (Overall)	0.93	0.89
Sharpe ratio (5Y)	1.04	0.93
Tracking error (Overall)	7.80%	
Tracking error (5Y)	7.46%	
Dividend yield (Overall)	5.49%	5.09%
Maximum drawdown	36.22%	34.84%
Constituents	273	9821
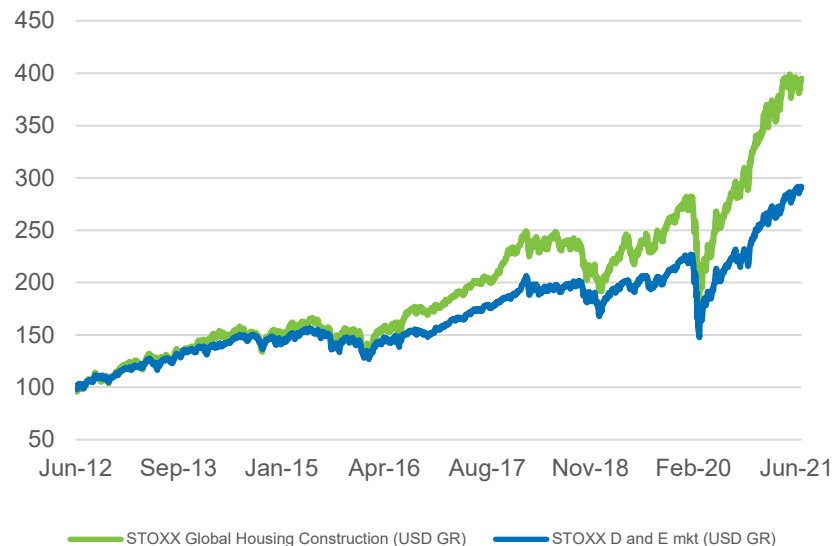
Performance

Legend: STOXX Global Housing Construction (USD GR) — STOXX D and E mkt (USD GR)

1) Source: Qontigo, daily data. Relative figures calculated against Benchmark
2) LIBOR used as a proxy for riskless returns
3) Qontigo Data Jun 18, 2012 – Jun 30, 2021

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STOXX Global Housing Construction Index
Country and Industry Allocation
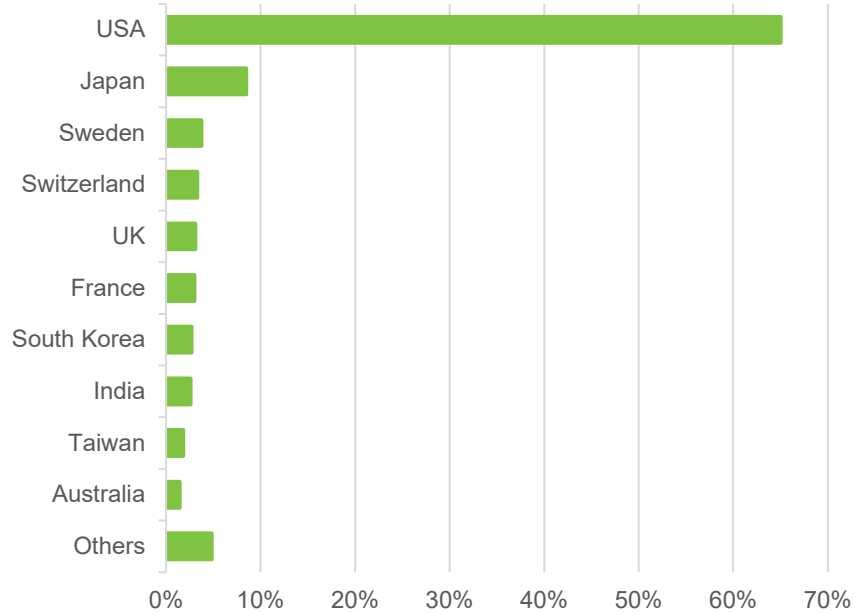
Country Allocation[1)]

Country	Allocation
USA	~65%
Japan	~9%
Sweden	~4%
Switzerland	~3.5%
UK	~3.5%
France	~3%
South Korea	~3%
India	~3%
Taiwan	~2%
Australia	~2%
Others	~5%

Industry Allocation[1)]

Industry	Allocation
Industrials	~42%
Technology	~38%
Consumer Discretionary	~11%
Basic Materials	~5%
Energy	~2%
Real Estate	~1.5%
Telecommunications	~0.3%

1) Source: Qontigo. Data as of Jun 30, 2021.

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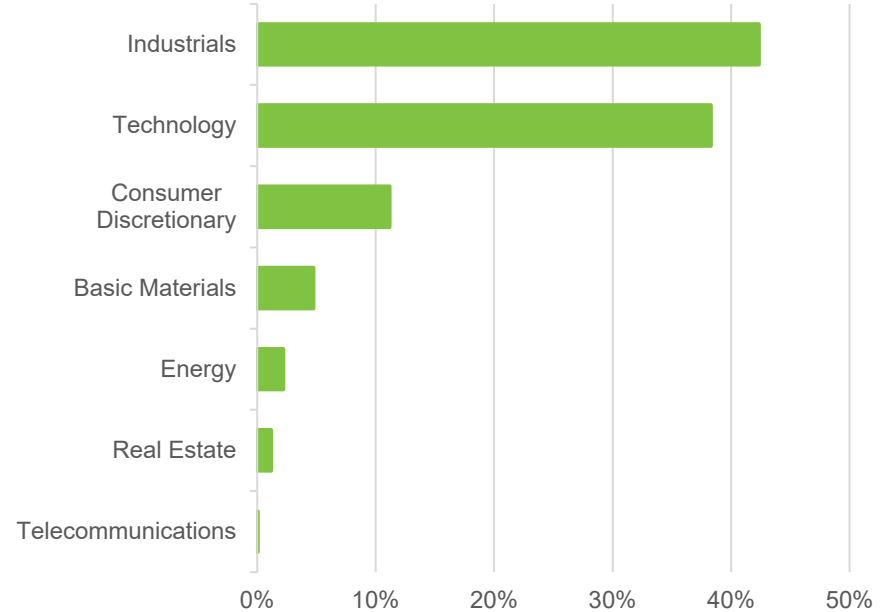
STOXX Global Housing Construction Index – Top 10 Constituents

Name	Supersector	Country	Weight (%)
Qualcomm Inc.	Technology	USA	7.84
Intel Corp.	Technology	USA	7.74
Texas Instruments Inc.	Technology	USA	6.50
Micron Technology Inc.	Technology	USA	3.81
Analog Devices Inc.	Technology	USA	2.66
Daikin Industries Ltd.	Construction and Materials	Japan	2.40
Johnson Controls PLC	Industrial Goods and Services	USA	2.39
Sherwin-Williams Co.	Industrial Goods and Services	USA	2.34
SK HYNIX INC	Technology	South Korea	2.09
SYNOPSYS	Technology	USA	1.84

1) Source: Qontigo. Data as of Jun 30, 2021.

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STOXX Global Video Gaming and eSports Index

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Overview

- Gaming industry is expected to grow with CAGR of 8.7% to reach $218.7 billion in 2024[1].

- 2.8 billion of the world's 3.0 billion gamers in 2021 will play on a mobile device. This is compared to 1.4 billion on PC and 0.9 billion on console.[1].

- The metaverse trend, rapidly accelerated by COVID-19, is powerful enough to persist beyond COVID-19.[1]

QONTIGO   AXIOMA | DAX | STOXX
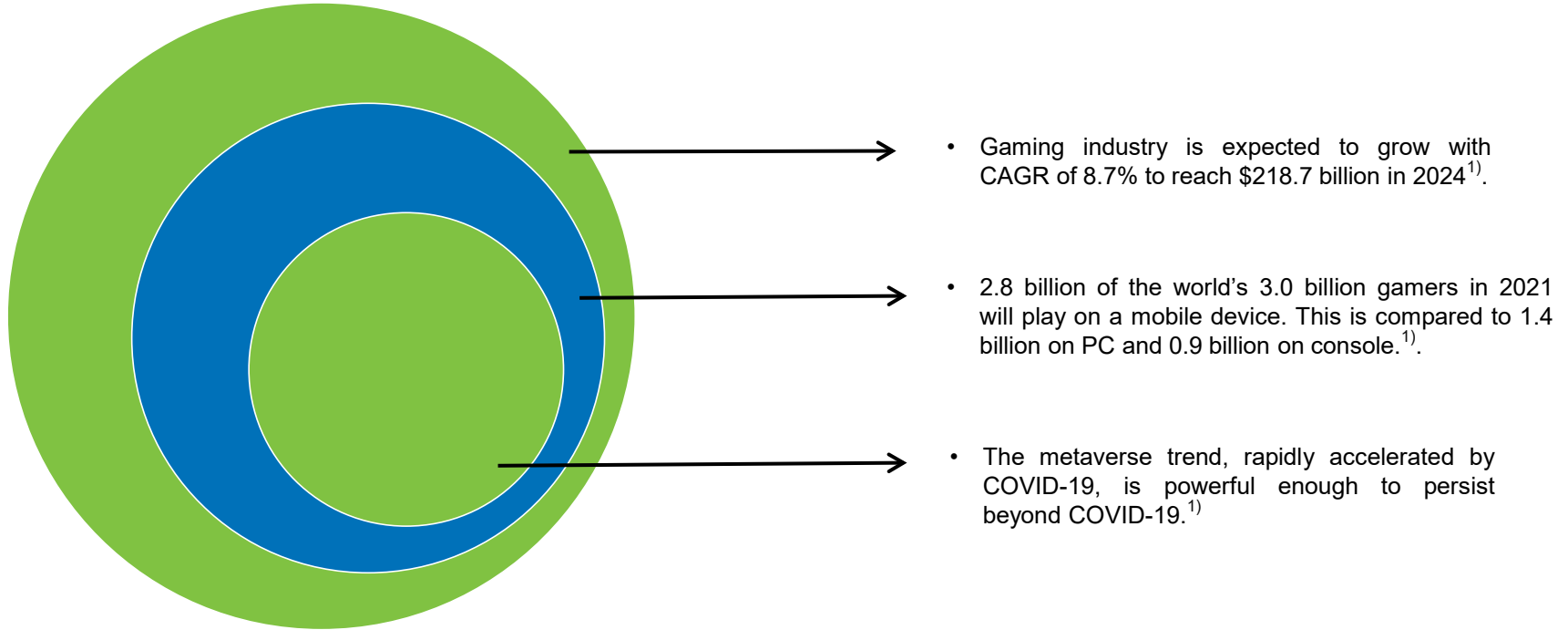
Themes

An increase in demand of video games and eSports is expected to grow global games market with a CAGR of +9% (2018-2022)[1).

Game software

- Game developers to reduce dependency on producing games on hardware with better software performance.
- Availability of multiple software libraries and faster internet.
- Disruption of current video gaming trend with the idea to play video games without owning the physical hardware or console.
- With an increase in demand of download PlayStation games, Sony captured 35% of revenue from software sales in 2017[2).

Peripherals, hardware, platforms (beneficiaries)

- Conventional players prefer to buy latest gadget/peripheral in market to fulfil gaming needs.
- Expansion of product range to gaming specific mice, keyboard and headsets to leverage video gaming trend.
- Upsell opportunities include improved battery life and wireless charging of peripherals.
- Leading by market share, NVIDIA is capitalizing on graphic processing unit (GPU) which renders images in video gaming.

1) Global games Market by newzoo
2) e-Sports – From Wild West to Mainstream by Goldman Sachs

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Drivers and Beneficiaries

Game software

- Game software companies
- Online games websites
- Dedicated console software companies such as Sony PlayStation

Drivers

- Boxed games – Games copied on a disc
- Cloud computing storage providers

Beneficiaries

Peripherals, hardware, platforms (beneficiaries)

- Gaming specific equipment providers such as Logitech
- Graphic processing unit manufactures
- Console manufacturers

- Smart phones
- AR/VR
- Semiconductor companies

QONTIGO   AXIOMA | DAX | STOXX

STOXX Global Video Gaming and eSports Index
Risk and Return Overview

Risk and Return Characteristics

	STOXX Global Video Gaming & eSports	STOXX Developed and Emerging Markets Total Market
Perf. overall (annualized)	27.46%	12.63%
Perf. (1Y)	42.60%	42.26%
Perf. (3Y) (annualized)	26.72%	14.93%
Perf. (5Y) (annualized)	31.74%	14.96%
Vol. overall (annualized)	17.23%	13.65%
Volatility (1Y) (annualized)	18.40%	12.43%
Volatility (3Y) (annualized)	21.45%	18.41%
Volatility (5Y) (annualized)	18.36%	15.11%
Sharpe ratio (Overall)	1.45	0.89
Sharpe ratio (5Y)	1.53	0.92
Tracking error (Overall)	10.65%	
Tracking error (5Y)	10.94%	
Dividend yield (Overall)	8.98%	5.05%
Maximum drawdown	26.07%	34.84%
Constituents	109	9821

Performance

STOXX Global Video Gaming & eSports (USD GR)
STOXX D and E mkt (USD GR)

1) Source: Qontigo, daily data. Relative figures calculated against Benchmark
2) LIBOR used as a proxy for riskless returns
3) Qontigo Data Jun 18, 2012 – Jun 30, 2021

QONTIGO   AXIOMA | DAX | STOXX

STOXX Global Video Gaming and eSports Index

Country and Industry Allocation
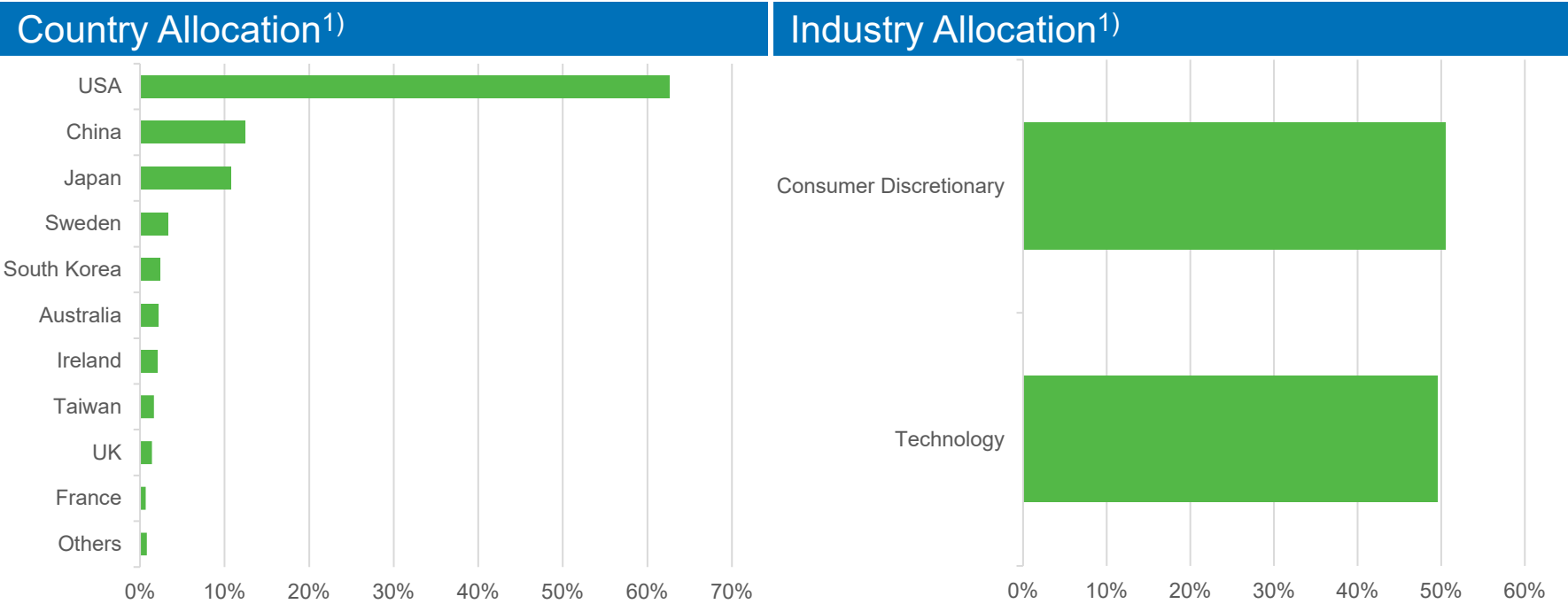
STOXX Global Video Gaming and eSports Index – Top 10 Constituents

Name	Supersector	Country	Weight (%)
NVIDIA Corp.	Technology	USA	9.08
Apple Inc.	Technology	USA	8.59
Microsoft Corp.	Technology	USA	8.33
Intel Corp.	Technology	USA	7.74
ADVANCED MICRO DEVICES	Technology	USA	5.12
Amazon.com Inc.	Retail	USA	4.57
Activision Blizzard Inc.	Consumer Products and Services	USA	4.35
TENCENT HOLDINGS	Technology	China	4.32
Nintendo Co. Ltd.	Consumer Products and Services	Japan	4.23
Electronic Arts Inc.	Consumer Products and Services	USA	3.88

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STOXX Global Health and Weight Loss Index

QONTIGO

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Overview

Body Mass Index (BMI) is the 5th highest risk factor of mortality rate[1].

40%

5th

As per Harvard, By 2030 obesity prevalence is close to 60%, while the lowest states will be approaching 40%.[1]

70%

According to UN estimates, 70% of the world's population will live in cities by 2050 which is one of the two main drivers of obesity rates – less laborious jobs, indulgence in junk food[1].

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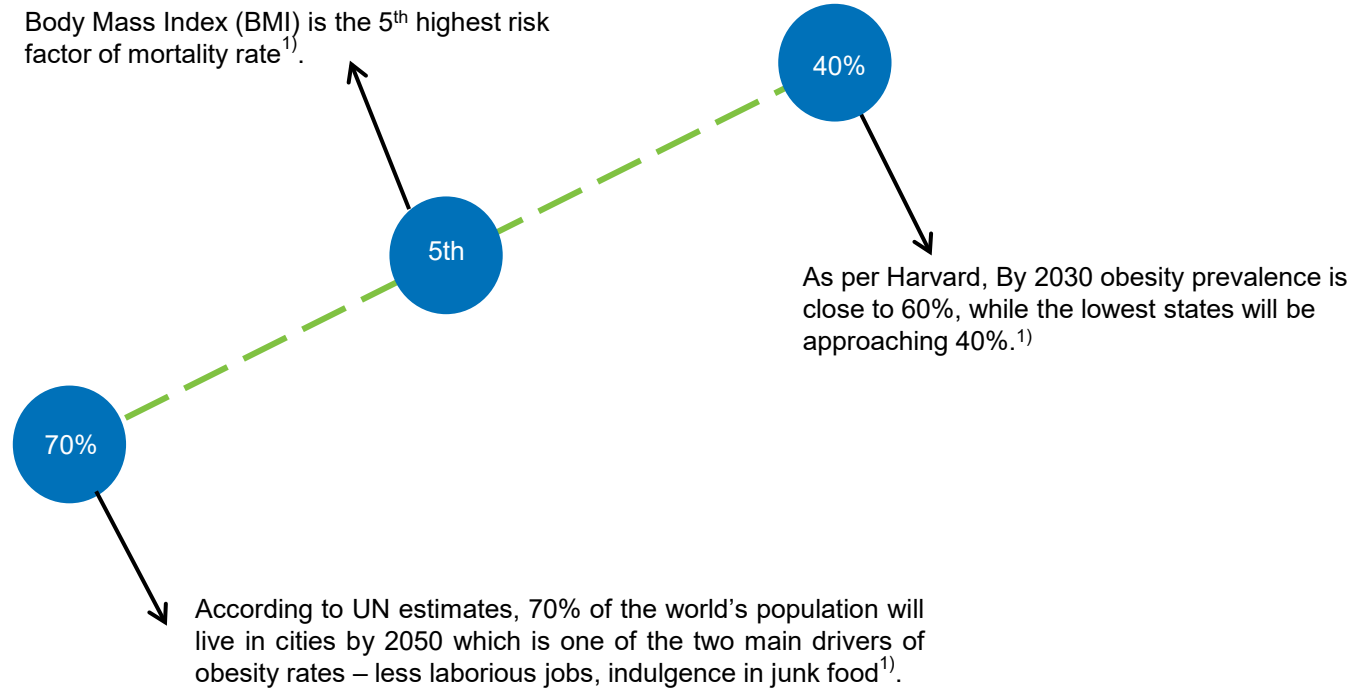
Themes

Physical activity & sportswear apparel
- Growing numbers of affordable equipment to engage in physical activities
- Expansion of sportswear industry both in developed and emerging markets

Diet, healthy food & beverage
- Rise in demand of low calorie food replacements and organic products
- Weight watcher centers reduce obesity
- Supplement industry is benefited with increase in health awareness

Obesity pharma, health care & med-tech
- Increasing support to weight-loss medicines
- Rise in demand of dialysis services due to kidney failures (45% are attributed to obesity) [1]
- High correlation with Type 2 Diabetes leading to increase in demand of Insulin

1) Globesity and Health & Wellness primer by BoAML

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Drivers and Beneficiaries

Diet, healthy food & beverage

Drivers
- Weight management centers
- Fruits and vegetables retailers

Beneficiaries
- Supplement manufactures
- Alternative medicine providers- naturopathic

Obesity pharma, health care & med-tech

Drivers
- Manufacturers of weight-loss medicines

Beneficiaries
- Medical devices
- Clinical diagnostics

Physical activity & sportswear apparel

Drivers
- Health and fitness clubs
- Sports clubs
- Exercise equipment manufactures
- Sports wear manufacturers

Beneficiaries
- Wearable technology gadgets
- Sports goods stores

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STOXX Global Health and Weight Loss Index
Risk and Return Overview

Risk and Return Characteristics

	STOXX Global Health & Weight Loss	STOXX Developed and Emerging Markets Total Market
Perf. overall (annualized)	17.91%	12.63%
Perf. (1Y)	52.40%	42.26%
Perf. (3Y) (annualized)	25.81%	14.93%
Perf. (5Y) (annualized)	21.99%	14.96%
Vol. overall (annualized)	14.74%	13.65%
Volatility (1Y) (annualized)	14.81%	12.43%
Volatility (3Y) (annualized)	17.59%	18.41%
Volatility (5Y) (annualized)	14.84%	15.11%
Sharpe ratio (Overall)	1.14	0.89
Sharpe ratio (5Y)	1.34	0.92
Tracking error (Overall)	9.53%	
Tracking error (5Y)	9.04%	
Dividend yield (Overall)	3.66%	5.05%
Maximum drawdown	30.27%	34.84%
Constituents	108	9821

Performance

STOXX Global Health & Weight Loss (USD GR)
STOXX D and E mkt (USD GR)

1) Source: Qontigo, daily data. Relative figures calculated against Benchmark
2) LIBOR used as a proxy for riskless returns
3) Qontigo Data Jun 18, 2012 – Jun 30, 2021

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STOXX Global Health and Weight Loss Index
Country and Industry Allocation
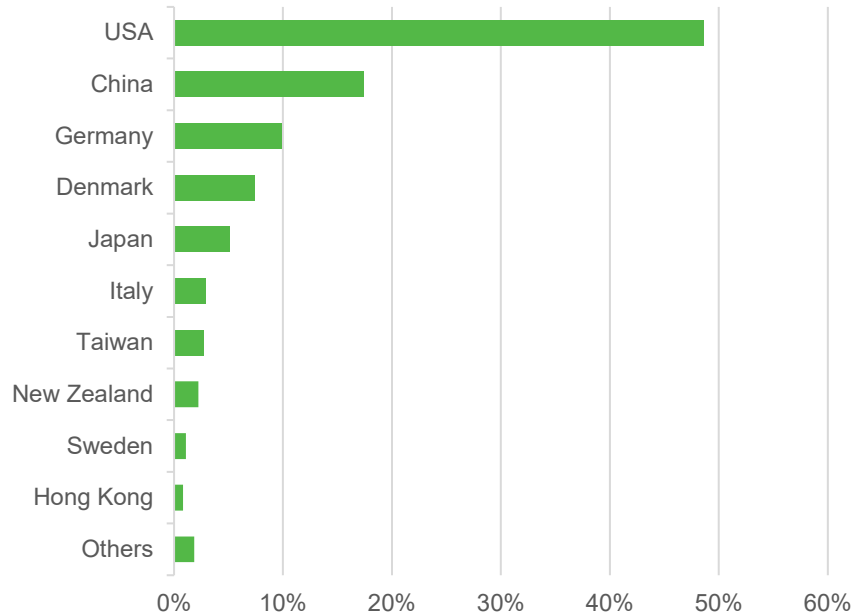
Country Allocation[1]

Industry Allocation[1]

QONTIGO   AXIOMA | DAX | STOXX
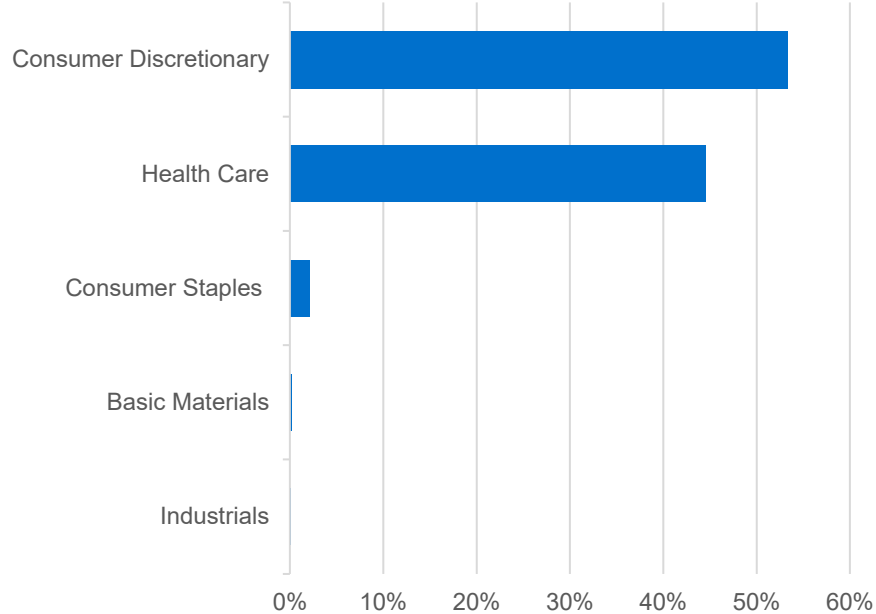
STOXX Global Health and Weight Loss Index – Top 10 Constituents

Name	Supersector	Country	Weight (%)
Nike Inc. Cl B	Consumer Products and Services	USA	8.83
ADIDAS	Consumer Products and Services	Germany	7.86
Edwards Lifesciences Corp.	Health Care	USA	7.76
NOVO NORDISK B	Health Care	Denmark	7.43
PELOTON INTERACTIVE A	Travel and Leisure	USA	4.77
LI NING	Consumer Products and Services	China	4.71
ResMed Inc.	Health Care	USA	4.71
DEXCOM	Health Care	USA	4.51
VF Corp.	Consumer Products and Services	USA	4.40
ANTA SPORTS PRODUCTS	Consumer Products and Services	China	3.06

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STOXX Global Pet Care Index

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Overview

Millennials choose to delay children and refer pet as a 'child' – good way to prepare for parenthood.

Rise in demand of luxury pet hotels and related services

Pet food market is expected to reach $124.9 billion by 2027 with annual growth rate of approx. 4.6%[1].

Online pet care dedicated retailers disrupting trends by eliminating middleman margins.

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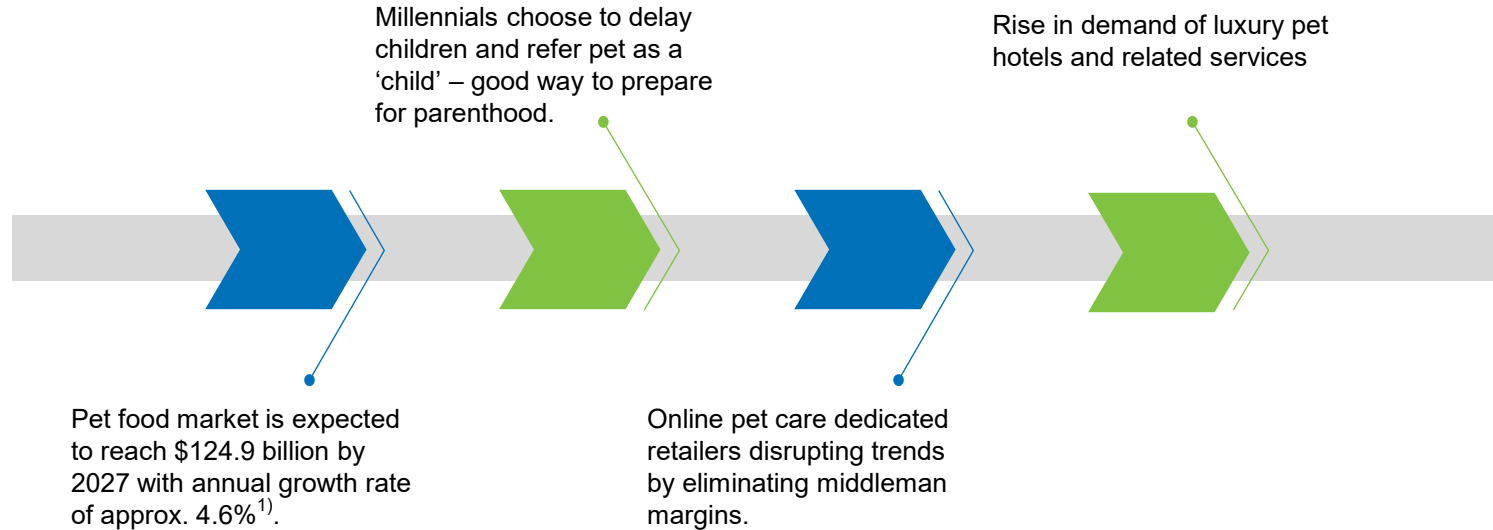
Themes

Pet and pet supplies retail

- Online pet treat stores are on rise
- Innovative pet product range - pet stroller and tech products (tracking gadgets, cameras) in retail stores

Pet food and supply manufacturing

- Manufacturers tweaking treats formulated as per the age and weight of pets
- Revenues from pet grooming, pet hotels, pet care are on rise

Veterinary products and services

- Veterinary services accounts for highest expense of pet care per year

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Drivers and Beneficiaries

Pet and pet supplies retail

Drivers
- Specialized pet retailers selling directly to consumers (online and offline)

Beneficiaries
- General online retailers such as Amazon

Pet food and supply manufacturing

Drivers
- Manufacturers of pet food
- Manufacturers of pet grooming equipment
- Pet hotels

Beneficiaries
- Wearable technology

Veterinary products and services

Drivers
- Pet pharmaceutical and diagnostic distributor
- Veterinary health providers

Beneficiaries
- Pharmaceutical companies
- Surgical and diagnostic devices for pet diseases

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STOXX Global Pet Care Index
Risk and Return Overview

Risk and Return Characteristics

	STOXX Global Pet Care	STOXX Developed and Emerging Markets Total Market
Perf. overall (annualized)	14.77%	12.63%
Perf. (1Y)	35.11%	42.26%
Perf. (3Y) (annualized)	18.15%	14.93%
Perf. (5Y) (annualized)	12.75%	14.96%
Vol. overall (annualized)	13.88%	13.65%
Volatility (1Y) (annualized)	12.28%	12.43%
Volatility (3Y) (annualized)	16.95%	18.41%
Volatility (5Y) (annualized)	14.31%	15.11%
Sharpe ratio (Overall)	1.01	0.89
Sharpe ratio (5Y)	0.83	0.92
Tracking error (Overall)	8.88%	
Tracking error (5Y)	8.66%	
Dividend yield (Overall)	4.52%	5.05%
Maximum drawdown	26.24%	34.84%
Constituents	35	9821

Performance
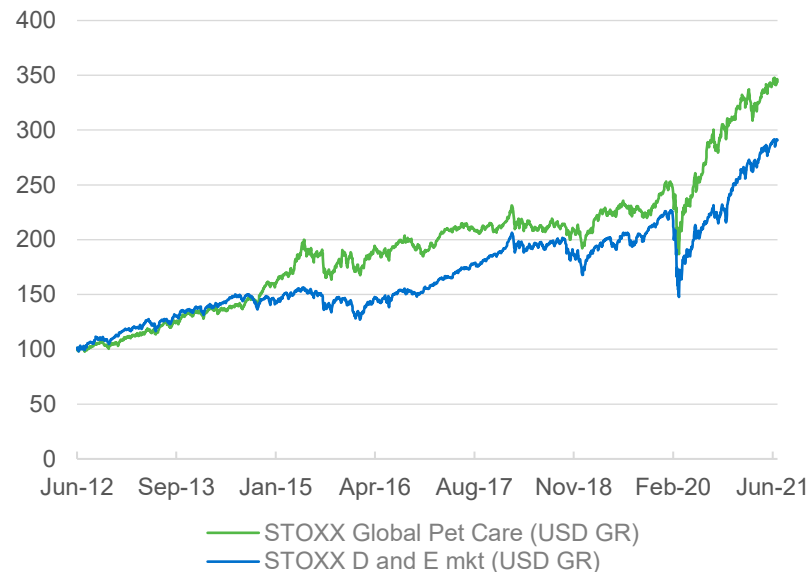
STOXX Global Pet Care (USD GR)
STOXX D and E mkt (USD GR)

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STOXX Global Pet Care Index
Country and Industry Allocation

Country Allocation[1)]

Country	Allocation
USA	~69%
UK	~8%
Switzerland	~8%
Japan	~6%
Germany	~4%
Thailand	~2%
France	~1%
China	~1%
Finland	<1%
Brazil	<1%
Others	

(0%, 20%, 40%, 60%, 80%)

Industry Allocation[1)]

Industry	Allocation
Consumer Staples	~40%
Health Care	~35%
Consumer Discretionary	~21%
Technology	~4%
Basic Materials	

(0%, 10%, 20%, 30%, 40%, 50%)

1) Source: Qontigo. Data as of Jun 30, 2021.

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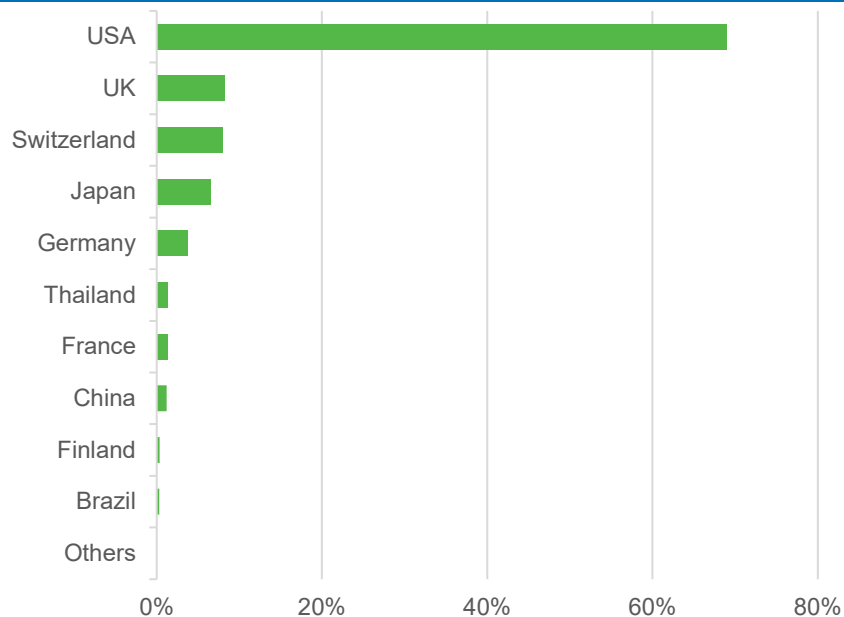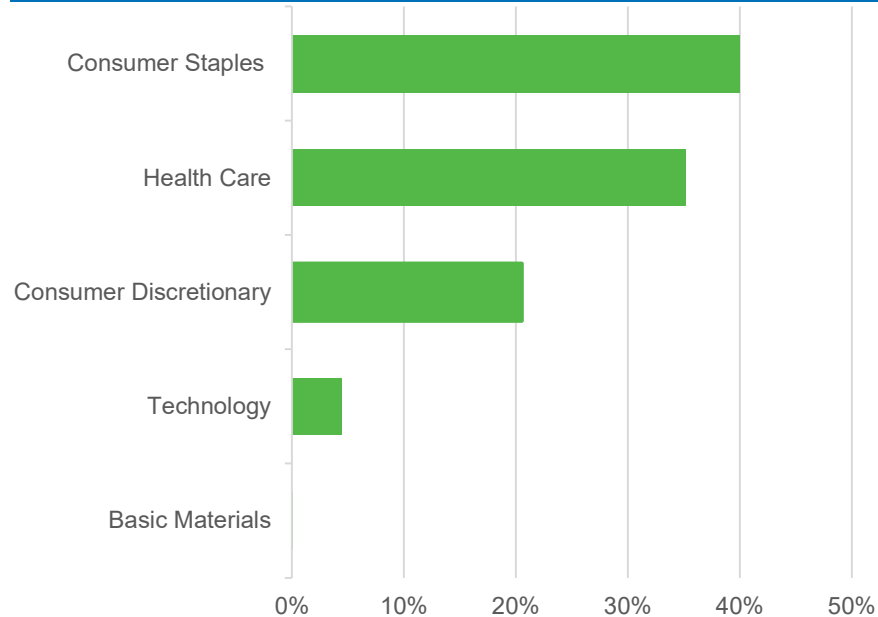
STOXX Global Pet Care Index – Top 10 Constituents

Name	Supersector	Country	Weight (%)
ZOETIS 'A'	Health Care	USA	8.28
Merck & Co. Inc.	Health Care	USA	8.27
NESTLE	Food, Beverage and Tobacco	Switzerland	7.95
Colgate-Palmolive Co.	Personal Care, Drug and Grocery Stores	USA	7.87
IDEXX LABORATORIES	Health Care	USA	4.95
Uni-Charm Corp.	Personal Care, Drug and Grocery Stores	Japan	4.58
CHEWY A	Retail	USA	4.57
General Mills Inc.	Food, Beverage and Tobacco	USA	4.43
COVETRUS	Technology	USA	4.42
J.M. Smucker Co.	Food, Beverage and Tobacco	USA	4.35

1) Source: Qontigo. Data as of Jun 30, 2021.

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Appendix

Sustainability

STOXX Global Smart City Infrastructure Index
Risk and Return Overview

Risk and Return Characteristics

	STOXX Global Smart City Infrastructure	STOXX Global total market
Perf. overall (annualized)	13.31%	12.23%
Perf. (1Y)	42.90%	42.42%
Perf. (3Y) (annualized)	16.21%	15.00%
Perf. (5Y) (annualized)	16.67%	15.05%
Vol. overall (annualized)	14.13%	13.93%
Volatility (1Y) (annualized)	12.86%	12.44%
Volatility (3Y) (annualized)	18.45%	18.46%
Volatility (5Y) (annualized)	15.11%	15.15%
Sharpe ratio (Overall)	0.90	0.84
Sharpe ratio (5Y)	1.02	0.93
Tracking error (Overall)	5.59%	
Tracking error (5Y)	5.51%	
Dividend yield (Overall)	5.32%	4.55%
Maximum drawdown	37.18%	34.83%
Constituents	181	10044

Performance
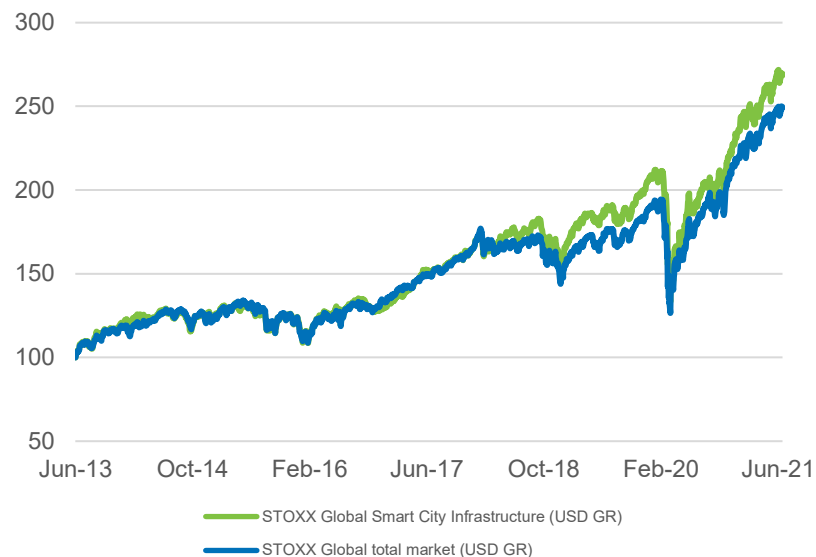
- STOXX Global Smart City Infrastructure (USD GR)
- STOXX Global total market (USD GR)

1) Source: Qontigo, daily data. Relative figures calculated against Benchmark
2) LIBOR used as a proxy for riskless returns
3) Qontigo Data Jun 24, 2013 – Jun 30, 2021

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STOXX Global Smart City Infrastructure Index
Country and Industry Allocation
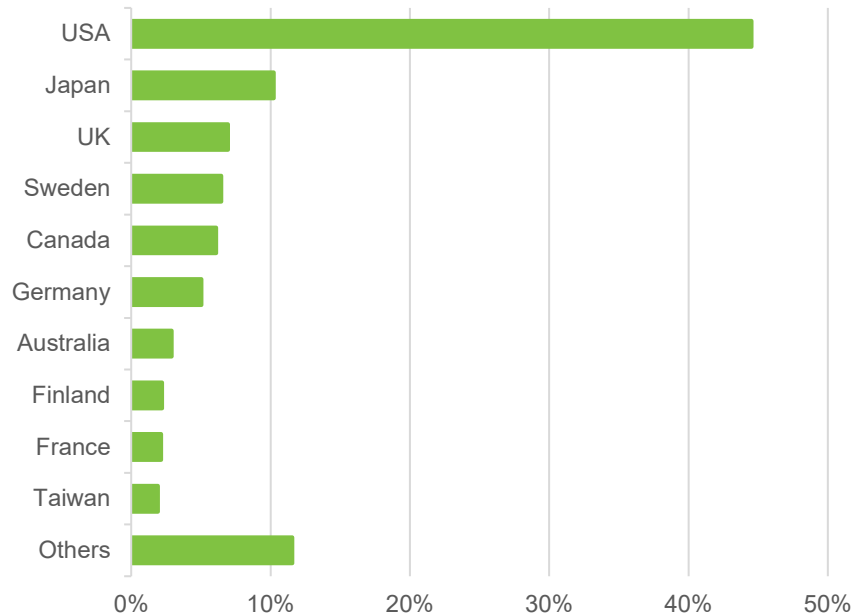
Country Allocation[1]

Country	Allocation
USA	~44%
Japan	~10%
UK	~7%
Sweden	~6%
Canada	~6%
Germany	~5%
Australia	~3%
Finland	~2%
France	~2%
Taiwan	~2%
Others	~11%

Industry Allocation[1]

Industry	Allocation
Industrials	~29%
Real Estate	~25%
Technology	~14%
Telecommunications	~11%
Utilities	~10%
Consumer Discretionary	~5%
Financials	~3%
Basic Materials	~2%

1)   Source: Qontigo. Data as of Jun 30, 2021.

QONTIGO   AXIOMA | DAX | STOXX
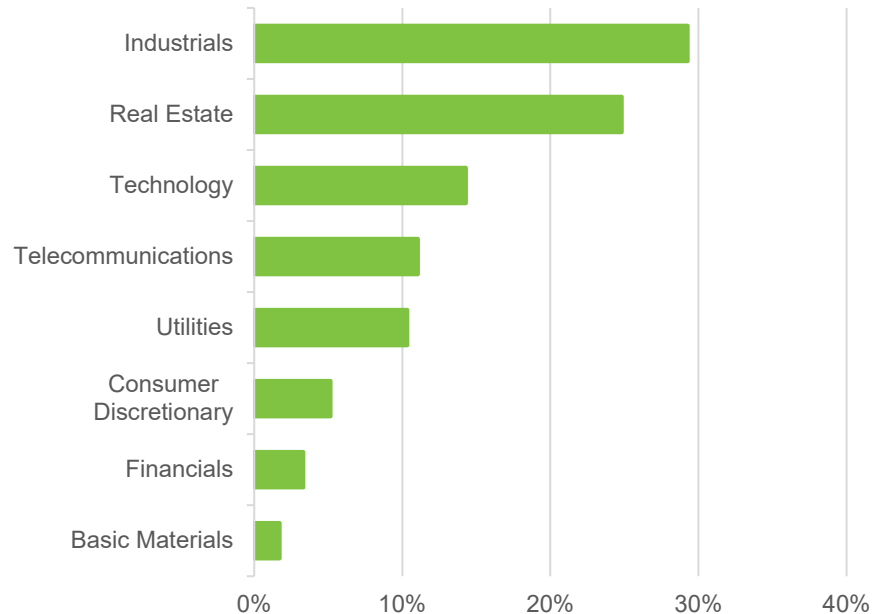
STOXX Global Smart City Infrastructure Index – Top 10 Constituents

Name	Supersector	Country	Weight (%)
NEC Corp.	Technology	Japan	0.81
MONOLITHIC PWR.SYS.	Technology	USA	0.81
LYFT A	Consumer Products and Services	USA	0.81
RINGCENTRAL	Technology	USA	0.81
BAYCURRENT CONSULTING	Technology	Japan	0.80
TYLER TECHNOLOGIES	Technology	USA	0.79
Qualcomm Inc.	Technology	USA	0.79
TOPBUILD	Construction and Materials	USA	0.78
AZBIL CORP.	Industrial Goods and Services	Japan	0.77
FORTINET	Technology	USA	0.77

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Appendix

Future Technology

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STOXX Global Industry 4.0 Index

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Industry 4.0 – At a Glance

15%

Additive manufacturing is poised to grow at a rate of 15.0% CAGR between 2015 – 2025, with Aerospace, Automotive and Medical industries expected to account for 51% of the 3D printing market[1].

9.3%

The smart factory market is projected to be valued at $ 205.42 billion by 2022, reflecting a Compound Annual Growth Rate, CAGR, of 9.3%, between 2017 and 2022[3].

$75b

The industrial robotics market (including the prices of peripherals, software, and system engineering) is projected to grow from USD 42.2 billion in 2021 to reach USD 75.3 billion by 2026[2].

1) Frost and Sullivan, http://namic.sg/wp-content/uploads/2018/04/global-additive-manufacturing-market_1.pdf
2) Markets and Markets, https://www.marketsandmarkets.com/Market-Reports/Industrial-Robotics-Market-643.html
3) Markets and Markets, https://www.marketsandmarkets.com/PressReleases/smart-factory.asp

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Themes (1)

Industry 4.0

Automation

Digitization/Cyber-Physical Systems

Virtual/Augmented Reality

Rapid Prototyping

Industrial Connectivity

Blockchain
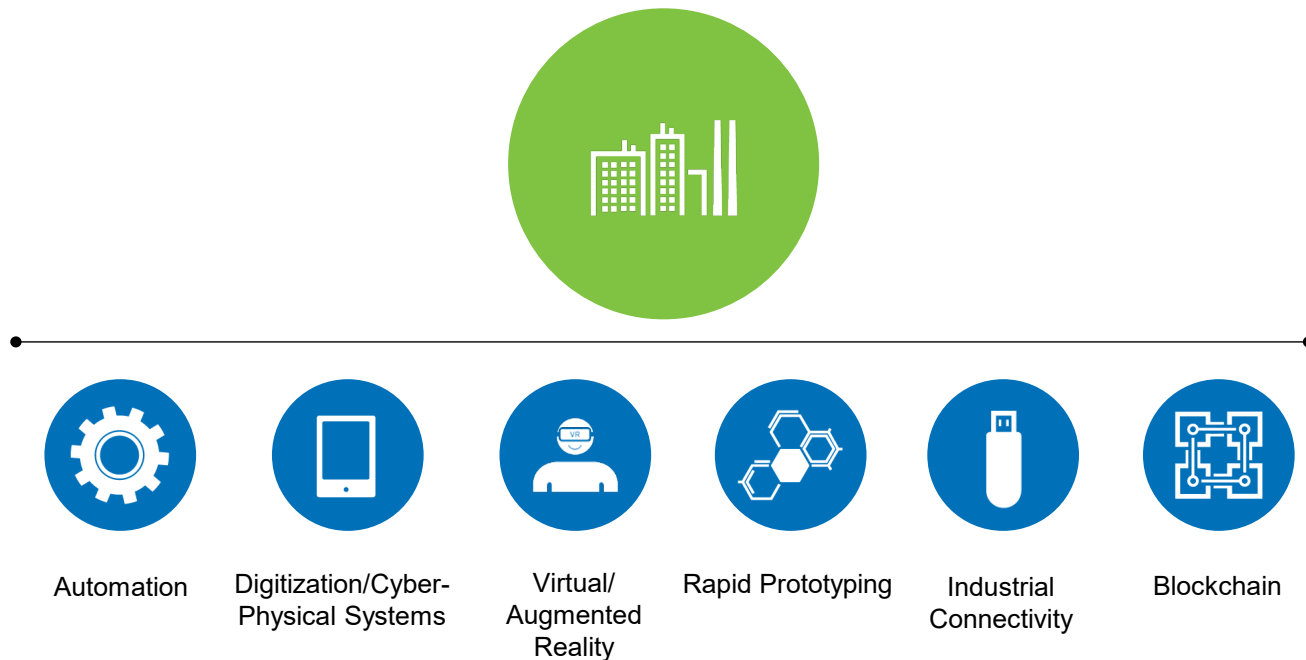
Themes (2)

Automation

Industrial/ Manufacturing Automation involves everything from self-driving trucks, to supply-chain management software. Industrial automation has the ability to pack and ship items using advanced technology

Digitization/ Cyber-Physical Systems

BCG analysis found that use of AI can reduce producers' conversion costs by up to 20%[1] In manufacturing, improvements and efficiencies in the analysis of big data are expected to bring millions of dollar to this industry.

Virtual/ Augmented Reality

Augmented-reality-based systems support a variety of services, such as selecting parts in a warehouse and sending repair instructions over mobile devices.

Rapid Prototyping

With Industry 4.0, additive-manufacturing methods are expected to be widely used to produce small batches of customized products that offer construction advantages, such as complex, lightweight designs.

Industrial Connectivity

By 2025, 100 billion connections – 90 per cent from intelligent sensors in machines of all kinds – will link the globe as a direct result of information and communication technologies (ICT) [2].

Blockchain

Blockchain enables the creation of smart contracts, with terms and conditions both sides can specify and that assures trust in the enforceability of the contract and the identity of the counterparty.

1) The Boston Consulting Group, http://image-src.bcg.com/Images/BCG-AI-in-the-Factory-of-the-Future-Apr-2018_tcm9-188726.pdf
2) BBC, http://www.bbc.com/future/bespoke/specials/connected-world/industry-4-0.html

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STOXX Global Industry 4.0 Index
Risk and Return Overview

Risk and Return Characteristics

	STOXX Global Industry 4.0	STOXX Developed and Emerging Markets Total Market
Perf. overall (annualized)	15.37%	12.73%
Perf. (1Y)	36.47%	42.46%
Perf. (3Y) (annualized)	18.39%	15.04%
Perf. (5Y) (annualized)	22.04%	15.08%
Vol. overall (annualized)	18.18%	13.69%
Volatility (1Y) (annualized)	18.94%	12.45%
Volatility (3Y) (annualized)	23.63%	18.47%
Volatility (5Y) (annualized)	19.65%	15.16%
Sharpe ratio (Overall)	0.84	0.89
Sharpe ratio (5Y)	1.05	0.93
Tracking error (Overall)	9.20%	
Tracking error (5Y)	8.96%	
Dividend yield (Overall)	4.39%	5.09%
Maximum drawdown	31.62%	34.84%
Constituents	225	9821

Performance
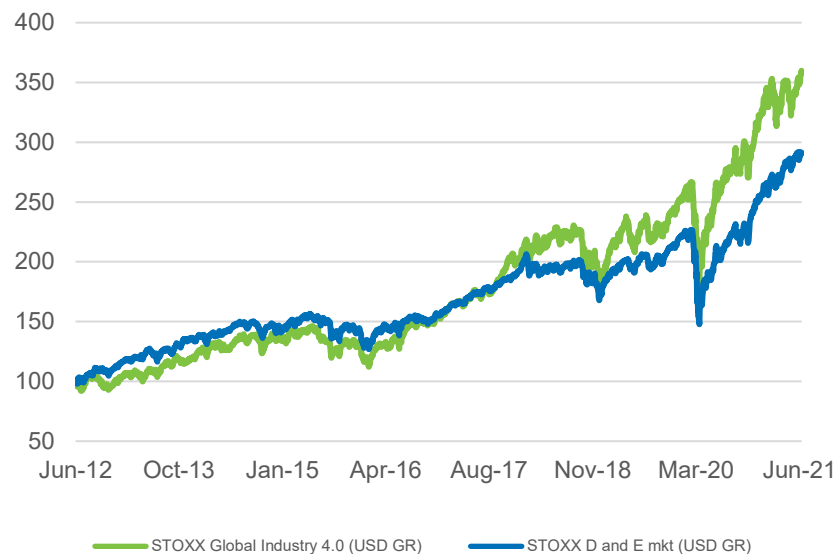
STOXX Global Industry 4.0 (USD GR)   STOXX D and E mkt (USD GR)

1) Source: Qontigo, daily data. Relative figures calculated against Benchmark
2) LIBOR used as a proxy for riskless returns
3) Qontigo Data Jun 18, 2012 – Jun 30, 2021

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STOXX Global Industry 4.0 Index

Country and Industry Allocation
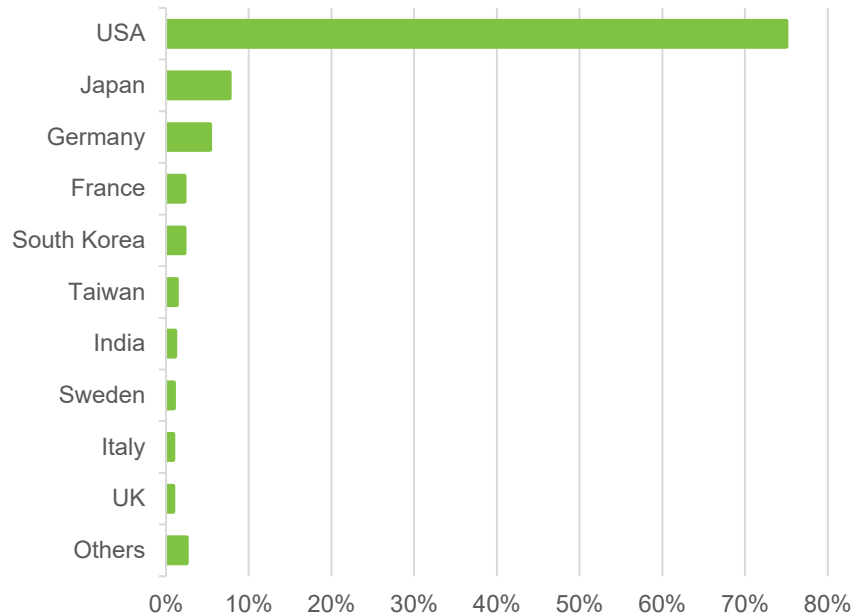
Country Allocation[1]

Country	
USA	~75%
Japan	~8%
Germany	~6%
France	~2%
South Korea	~2%
Taiwan	~1%
India	~1%
Sweden	~1%
Italy	~1%
UK	~1%
Others	~3%

Industry Allocation[1]

Industry	
Technology	~83%
Industrials	~12%
Real Estate	~4%
Telecommunications	~1%
Consumer Discretionary	~1%
Basic Materials	~1%

1) Source: Qontigo. Data as of Jun 30, 2021.

QONTIGO   AXIOMA | DAX | STOXX
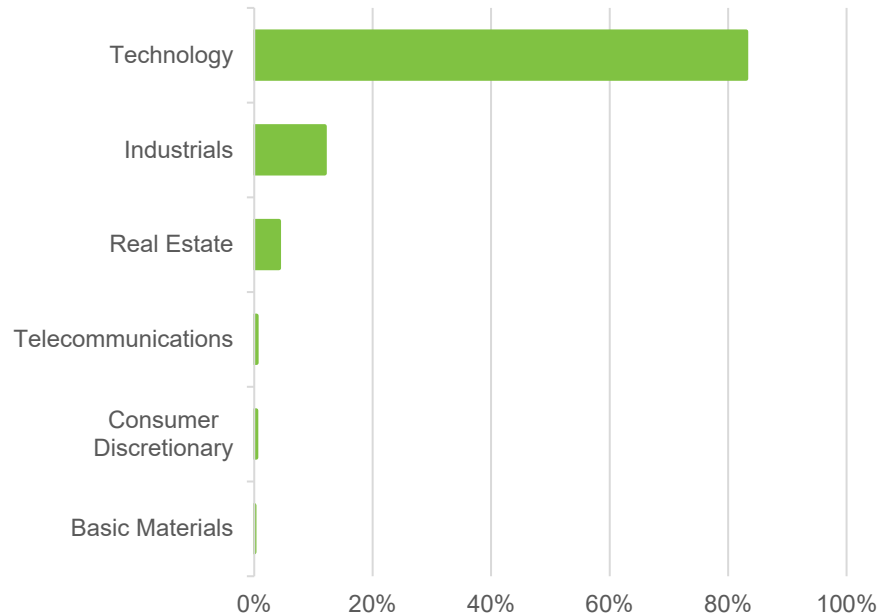
STOXX Global Industry 4.0 Index – Top 10 Constituents

Name	Supersector	Country	Weight (%)
Intel Corp.	Technology	USA	6.84
Texas Instruments Inc.	Technology	USA	5.29
SAP	Technology	Germany	4.87
BROADCOM	Technology	USA	4.51
Qualcomm Inc.	Technology	USA	4.06
Accenture PLC Cl A	Industrial Goods and Services	USA	3.93
International Business Machine	Technology	USA	3.81
SERVICENOW	Technology	USA	3.47
Keyence Corp.	Industrial Goods and Services	Japan	3.10
Micron Technology Inc.	Technology	USA	2.51

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STOXX Global Smart Factory Index

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Smart Factory – At a Glance

11% — The smart factory market is projected to be valued at $134.9 billion by 2026, reflecting a Compound Annual Growth Rate, CAGR, of 11%, between 2021 and 2027[1].

$75 — The industrial robotics market (including the prices of peripherals, software, and system engineering) is projected to grow from USD 42.2 billion in 2021 to reach USD 75.3 billion by 2026[2].

15.0% — Additive manufacturing is poised to grow at a rate of 15.0% CAGR between 2015 – 2025, with Aerospace, Automotive and Medical industries expected to account for 51% of the 3D printing market14[3].

32.0% — Smart Contracts Market is estimated to grow at a CAGR of 32% by forecast to 2023[4].

1) Markets and Markets, https://www.marketsandmarkets.com/Market-Reports/smart-factory-market-1227.html
2) Markets and Markets, https://www.marketsandmarkets.com/Market-Reports/Industrial-Robotics-Market-643.html
3) Frost and Sullivan, http://namic.sg/wp-content/uploads/2018/04/global-additive-manufacturing-market_1.pdf
4) Reuters, https://www.reuters.com/brandfeatures/venture-capital/article?id=33313

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Themes (1)

Smart Factory

Automation

Rapid Prototyping

Virtual/
Augmented
Reality

Industrial
Connectivity
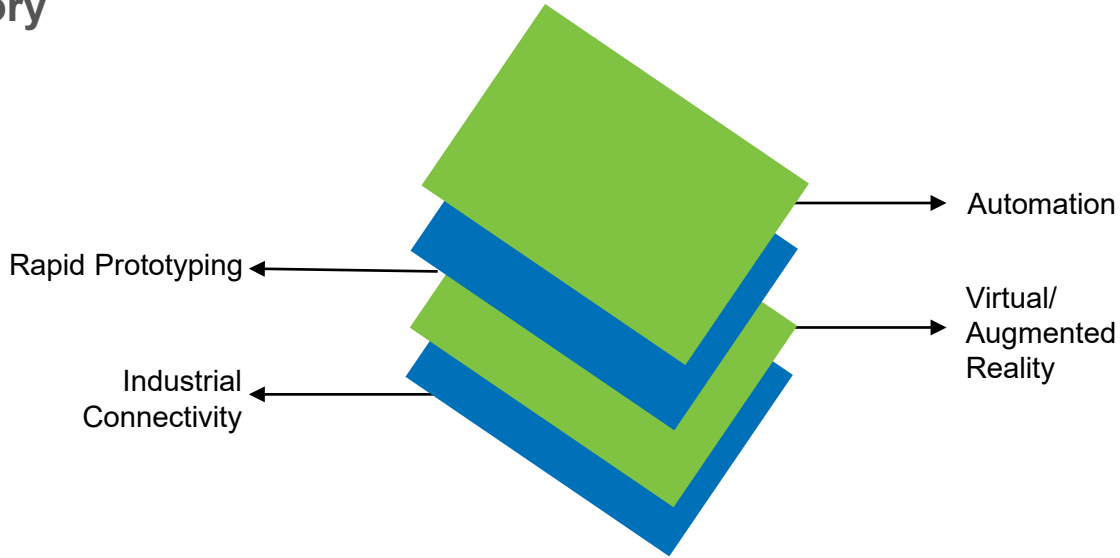
STOXX views the "Smart Factory" trend as the sub-part of Industry 4.0 that focuses on the automation of the manufacturing process, detached from the total group of technologies that are driving the 4th industrial revolution, but may have broader applications.

The companies examined in this field, combine physical production and operations with smart digital technology, machine learning and big data to create a more holistic and well-connected ecosystem for companies that focus on manufacturing and supply chain management.

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Themes (2)

Smart Factory

Automation

Industrial/ Manufacturing Automation involves everything from self-driving trucks, to supply-chain management software. Industrial automation has the ability to pack and ship items using advanced technology termed as 'Smart Manufacturing'.

Rapid Prototyping

With Industry 4.0, additive-manufacturing methods are expected to be widely used to produce small batches of customized products that offer construction advantages, such as complex, lightweight designs.

Industrial Connectivity

By 2025, 100 billion connections – 90 per cent from intelligent sensors in machines of all kinds – will link the globe as a direct result of information and communication technologies (ICT)[1]

Virtual/ Augmented Reality

Augmented-reality-based systems support a variety of services, such as selecting parts in a warehouse and sending repair instructions over mobile devices.

1) BBC, http://www.bbc.com/future/bespoke/specials/connected-world/industry-4-0.html

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STOXX Global Smart Factory Index
Risk and Return Overview

Risk and Return Characteristics

	STOXX Global Smart Factory	STOXX Developed and Emerging Markets Total Market
Perf. overall (annualized)	20.33%	12.73%
Perf. (1Y)	46.00%	42.46%
Perf. (3Y) (annualized)	20.71%	15.04%
Perf. (5Y) (annualized)	27.73%	15.08%
Vol. overall (annualized)	21.48%	13.69%
Volatility (1Y) (annualized)	22.60%	12.45%
Volatility (3Y) (annualized)	28.32%	18.47%
Volatility (5Y) (annualized)	23.85%	15.16%
Sharpe ratio (Overall)	0.94	0.89
Sharpe ratio (5Y)	1.10	0.93
Tracking error (Overall)	12.82%	
Tracking error (5Y)	13.78%	
Dividend Yield (Overall)	6.02%	5.09%
Maximum drawdown	34.36%	34.84%
Constituents	87	9821

Performance
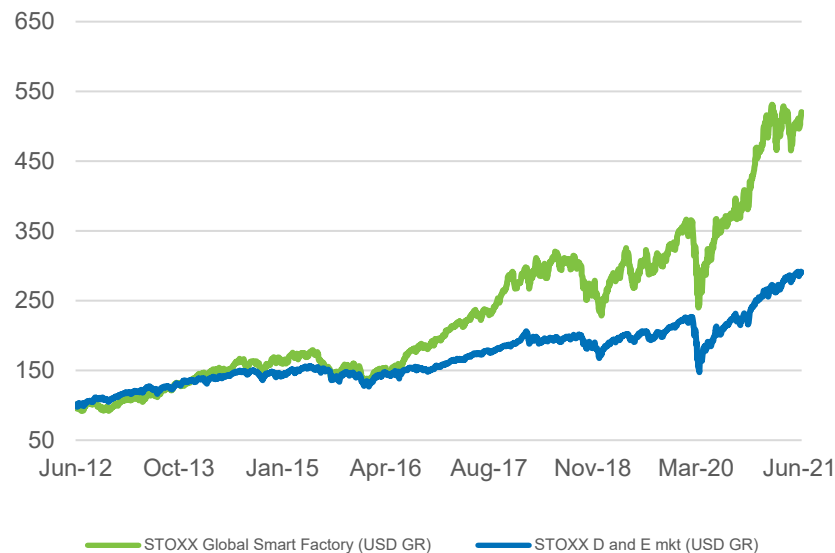
Legend: STOXX Global Smart Factory (USD GR) — STOXX D and E mkt (USD GR)

1) Source: Qontigo, daily data. Relative figures calculated against Benchmark
2) LIBOR used as a proxy for riskless returns
3) Qontigo Data Jun 18, 2012 – Jun 30, 2021

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STOXX Global Smart Factory Index
Country and Industry Allocation
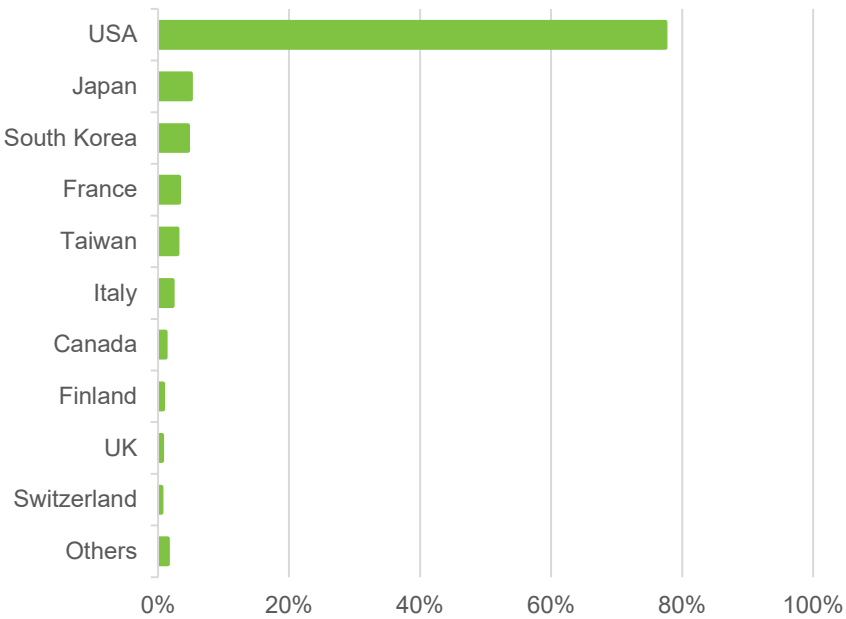
Country Allocation[1)]

Country	
USA	
Japan	
South Korea	
France	
Taiwan	
Italy	
Canada	
Finland	
UK	
Switzerland	
Others	

0%   20%   40%   60%   80%   100%

Industry Allocation[1)]

Industry	
Technology	
Industrials	
Consumer Discretionary	

0%   20%   40%   60%   80%   100%

QONTIGO   AXIOMA | DAX | STOXX
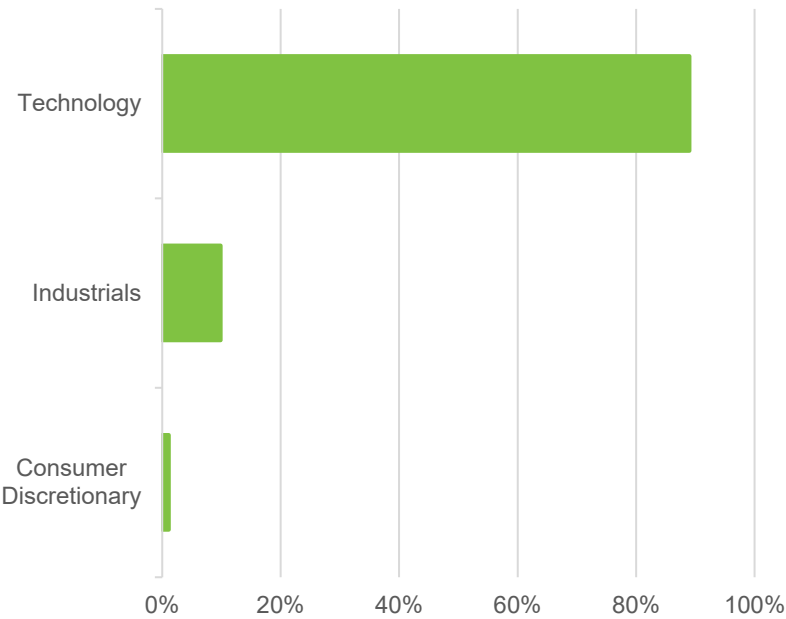
STOXX Global Smart Factory Index – Top 10 Constituents

Name	Supersector	Country	Weight (%)
Qualcomm Inc.	Technology	USA	8.27
Texas Instruments Inc.	Technology	USA	7.94
BROADCOM	Technology	USA	7.90
Intel Corp.	Technology	USA	7.60
Micron Technology Inc.	Technology	USA	4.68
Autodesk Inc.	Technology	USA	4.59
Analog Devices Inc.	Technology	USA	4.49
SK HYNIX INC	Technology	South Korea	4.49
Microchip Technology Inc.	Technology	USA	3.83
Fanuc Ltd.	Industrial Goods and Services	Japan	3.69

1)   Source: Qontigo. Data as of Jun 30, 2021.

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STOXX Global Artificial Intelligence Index

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A Megatrend and the Key Investment Opportunity

Artificial Intelligence

Current State: As of end 2017[1]

> There is a gap between R&D investments in AI and commercial applications.

> This is a typical sign of early technology development curves.

> AI has the potential to accelerate shifts in market share, revenue, and profit pools – these are characteristics of digitally disrupted sectors.

Future State: Forecast for 2035[2]

> By 2035 AI technologies have the potential to increase productivity by 40% or more.

> AI will increase economic growth by an average of 1.7% across 16 industries by 2035.

> Top 3 Industries: Information and **Communication, Manufacturing and Financial Services** are expected to gain the **highest economic growth** in 2035 from AI's benefits.

> AI will have the most **positive effect on Education, Accommodation and Food Services and Construction** sectors' profitability in 2035.

AI is expected to drive economic growth and the profitability of entire industries.

1) "Artificial Intelligence: The Next Digital Frontier", Discussion paper by Jacques Bughin et al., McKinsey Global Institute, Jun. 2017.
2) "AI is the Future of Growth", by Mark Purdy and Paul Daugherty, Accenture, 2016.

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Identifying the Relevant Sectors

Artificial Intelligence

Hardware Providers

- Programmable Logic Device Semiconductors
- Video Multimedia Semiconductors
- Other Programmable Logic and ASIC Semiconductors
- Microprocessor (MPU) Semiconductors
- Other Memory Semiconductors
- Flash Memory Semiconductors
- Other Nonvolatile Memory Semiconductors

Data Providers

- Data Storage Drives and Peripherals
- Data Storage Media
- Multi-Type Data Storage Hardware Makers
- Colocation and Data Centre Services
- Data Transport Carrier Services
- Disk Storage Systems
- Information Storage Systems
- Networking Semiconductors

AI Users

- Communication and Collaboration Content Sites
- Web Search Sites and Software
- Web Navigation Sites and Software
- Business Intelligence Software
- Machine Vision and Quality Control Manufacturing
- Imaging Laboratories

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STOXX Global Artificial Intelligence Index
Risk and Return Overview

Risk and Return Characteristics

	STOXX Global Artificial Intelligence	STOXX Developed and Emerging Markets Total Market
Perf. overall (annualized)	26.33%	12.73%
Perf. (1Y)	58.56%	42.46%
Perf. (3Y) (annualized)	28.20%	15.04%
Perf. (5Y) (annualized)	32.80%	15.08%
Vol. overall (annualized)	23.11%	13.69%
Volatility (1Y) (annualized)	25.12%	12.45%
Volatility (3Y) (annualized)	30.27%	18.47%
Volatility (5Y) (annualized)	25.56%	15.16%
Sharpe ratio (Overall)	1.10	0.89
Sharpe ratio (5Y)	1.19	0.93
Tracking error (Overall)	14.77%	
Tracking error (5Y)	15.91%	
Dividend yield (Overall)	6.38%	5.09%
Maximum drawdown	33.94%	34.84%
Constituents	58	9821

Performance
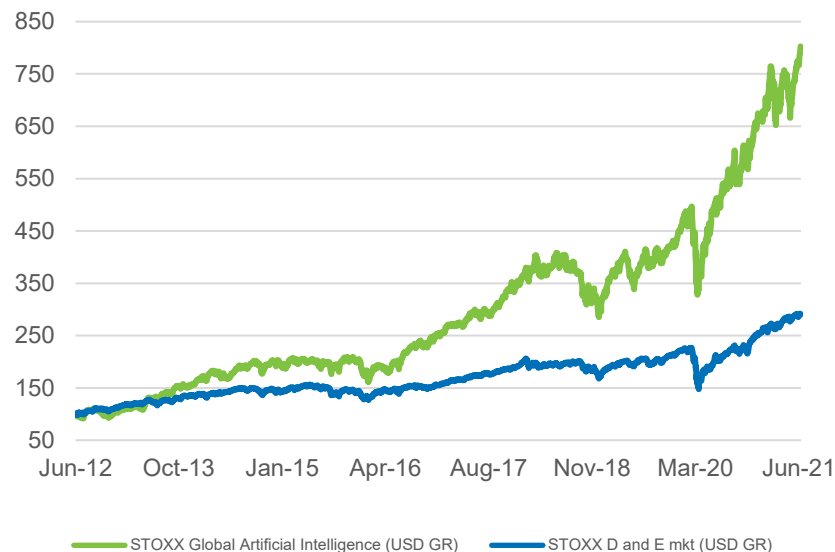
Legend: STOXX Global Artificial Intelligence (USD GR) — STOXX D and E mkt (USD GR)

1) Source: Qontigo, daily data. Relative figures calculated against Benchmark
2) LIBOR used as a proxy for riskless returns
3) Qontigo Data Jun 18, 2012 – Jun 30, 2021

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STOXX Global Artificial Intelligence Index
Country and Industry Allocation

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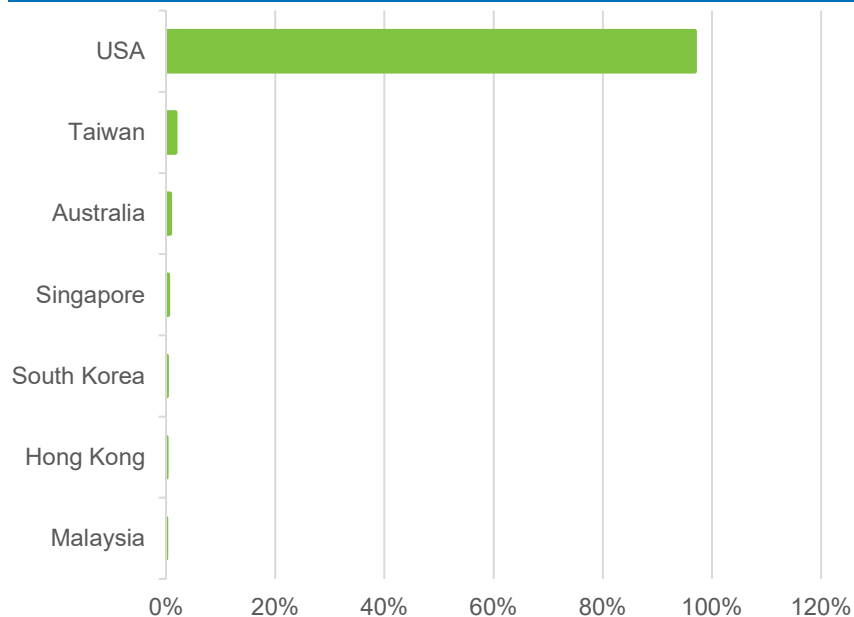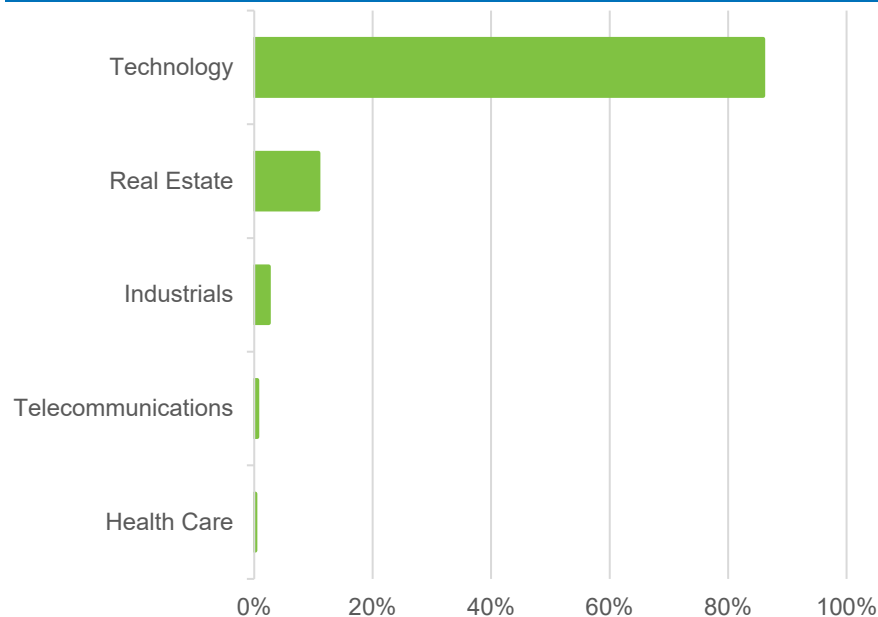
1) Source: Qontigo. Data as of Jun 30, 2021.

STOXX Global Artificial Intelligence Index – Top 10 Constituents

Name	Supersector	Country	Weight (%)
NVIDIA Corp.	Technology	USA	8.79
FACEBOOK CLASS A	Technology	USA	8.00
ALPHABET CLASS C	Technology	USA	7.61
Intel Corp.	Technology	USA	7.49
PINTEREST A	Technology	USA	4.98
ADVANCED MICRO DEVICES	Technology	USA	4.96
TWITTER	Technology	USA	4.91
Xilinx Inc.	Technology	USA	4.83
MARVELL TECHNOLOGY	Technology	USA	4.26
Equinix Inc.	Real Estate	USA	4.20

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STOXX Global Fintech Index

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Overview

The Fintech Innovation

the FinTech blockchain market is expected to grow at a CAGR of 59.9% from 2021 to 2028 to reach $36.04 billion by 2028

The "FinTech" is expected to be US$ 305 billion in 2027[1].

AUM in the Robo-Advisors segment are projected to reach US$1.4 trillion in 2021 with expected CAGR of 18.83% to reach US$2.8 trillion by 2025

20.3%

$305 bn

$1.4 tn

Payments segment is expected to have a CAGR 20.3% from 2021-2028.

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Themes (1)

Fintech

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Themes (2)

Fintech

Money Transfer and Remittances

The use of technology has made remittances extremely cost-effective. The proportion of cross-border B2B transfer values is expected to grow from 7.5% in 2017 to 13.3% by 2022

Reg Tech

The Global Governance, Compliance and Risk Software Market is estimated to reach $52.5 billion by 2025, growing at a CAGR of 12.8% from 2020 to 2025

Insur Tech

A strong need to replace slow and manual insurance industry processes has led to approximately $2.13 bn investment in global insurance tech companies in 2017

Capital Markets

Fintech activity within the capital market infrastructure has grown by almost 300% since 2010. Capital market FinTechs are providing aid by building capabilities to improve existing client relationships and experiences, streamlining front-to-back costs, and optimizing regulatory compliance through advance analytics

Alternative Lending Technology

Total transaction value in alternative lending technology is expected to show an annual growth rate (CAGR 2018-2022) of 18.1%

WealthTech & Personal Finance Mgnt

AUM in the Robo-Advisors segment are projected to reach US$1.4 trillion in 2021 with expected CAGR of 18.83% to reach US$2.8 trillion by 2025.

Payments

Key drivers: financial inclusion, smartphone/internet penetration, cashless and emergence of attractive digital payment solutions powered by the advent of Fintech

Blockchain

Blockchain technology is expected to source future financial market innovation and help lower the worldwide cost of cross-border payments

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STOXX Global Fintech Index
Risk and Return Overview

Risk and Return Characteristics

	STOXX Global Fintech	STOXX Developed and Emerging Markets Total Market
Perf. overall (annualized)	23.85%	12.73%
Perf. (1Y)	31.89%	42.46%
Perf. (3Y) (annualized)	24.00%	15.04%
Perf. (5Y) (annualized)	26.30%	15.08%
Vol. overall (annualized)	18.16%	13.69%
Volatility (1Y) (annualized)	17.92%	12.45%
Volatility (3Y) (annualized)	24.96%	18.47%
Volatility (5Y) (annualized)	20.47%	15.16%
Sharpe ratio (Overall)	1.23	0.89
Sharpe ratio (5Y)	1.19	0.93
Tracking error (Overall)	8.73%	
Tracking error (5Y)	9.42%	
Dividend yield (Overall)	5.91%	5.09%
Maximum drawdown	36.21%	34.84%
Constituents	168	9821

Performance
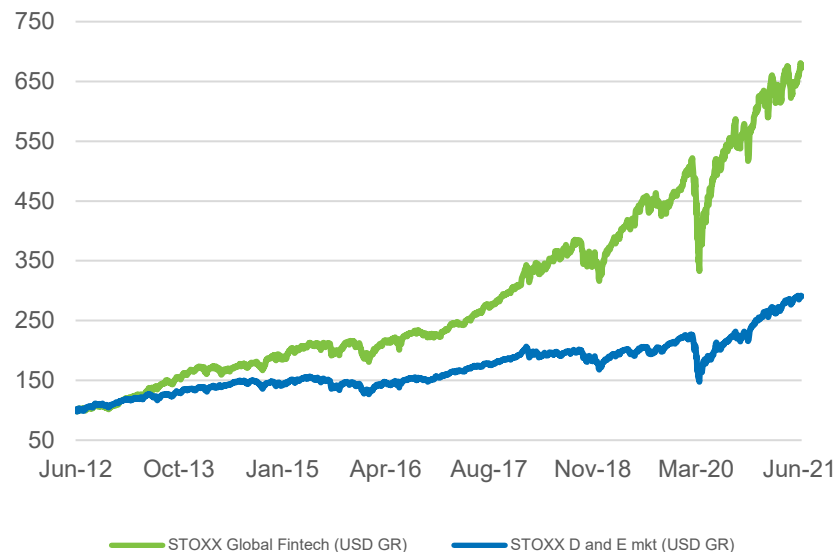
STOXX Global Fintech (USD GR) ——— STOXX D and E mkt (USD GR)

1) Source: Qontigo, daily data. Relative figures calculated against Benchmark
2) LIBOR used as a proxy for riskless returns
3) Qontigo Data Jun 18, 2012 – Jun 30, 2021

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STOXX Global Fintech Index
Country and Industry Allocation

Country Allocation[1]

- USA
- Hong Kong
- Netherlands
- UK
- Australia
- France
- Japan
- Germany
- Brazil
- Canada
- Others

(0%, 20%, 40%, 60%, 80%, 100%)

Industry Allocation[1]

- Industrials
- Financials
- Technology

(0%, 20%, 40%, 60%)

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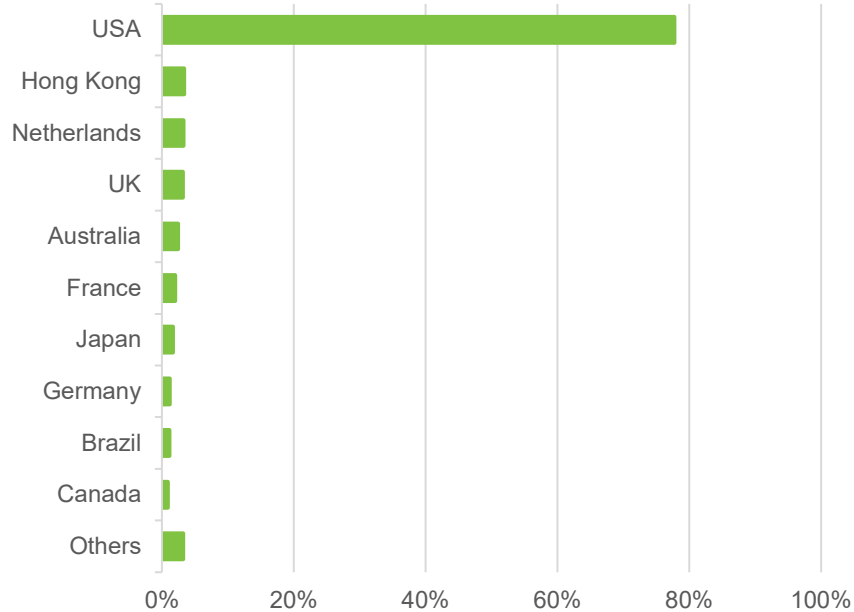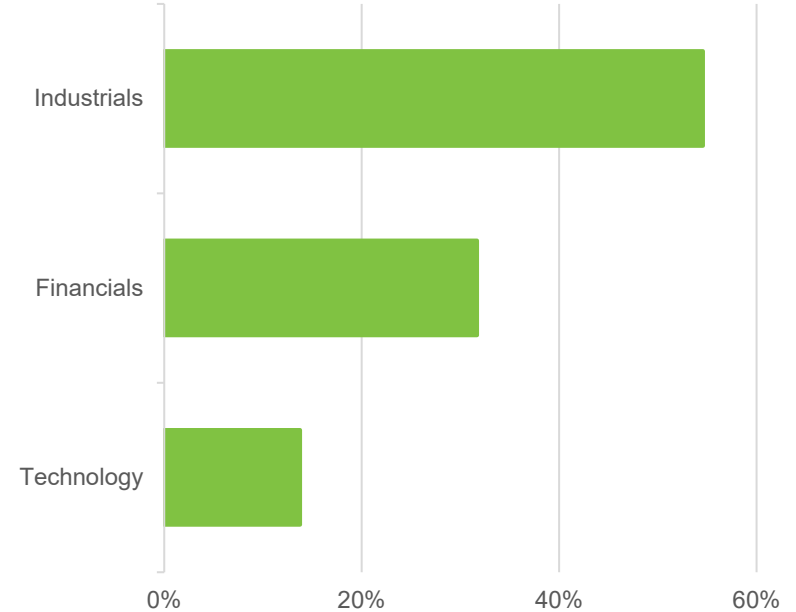
STOXX Global Fintech Index – Top 10 Constituents

Name	Supersector	Country	Weight (%)
PayPal Holdings	Industrial Goods and Services	USA	8.40
MasterCard Inc. Cl A	Industrial Goods and Services	USA	7.78
VISA Inc. Cl A	Industrial Goods and Services	USA	7.76
S&P GLOBAL	Financial Services	USA	4.62
SQUARE CL.A	Industrial Goods and Services	USA	4.42
Fidelity National Information	Industrial Goods and Services	USA	3.63
CME Group Inc. Cl A	Financial Services	USA	3.57
Hong Kong Exchanges & Clearing	Financial Services	Hong Kong	3.32
Intuit Inc.	Technology	USA	3.31
ADYEN	Industrial Goods and Services	Netherlands	3.18

1)   Source: Qontigo. Data as of Jun 30, 2021.

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iSTOXX Developed Markets B.R.AI.N. Index

Methodology

iSTOXX Developed Markets B.R.AI.N. Index

Universe
- STOXX Developed Markets Total Market Index

Filter
- Companies with 3m MDTV below € 1m are excluded
- Only companies with >50% aggregated revenue exposures to at least one of the four thematic sector lists are eligible

Selection
- Within each of the 4 thematic baskets, stocks are ranked based on their exposure to the corresponding theme
- The 20 stocks within each thematic basket with the highest exposure to the theme are eligible for selection
- If a company ranks in the top 20 in more than one themes, then that company is considered eligible for selection only once
- By definition due to the overlap of the themes (common sectors between 2+ themes) the index will have a variable number of components (maximum 80)

Weighting
- The index is weighted according to free-float market cap times exposure[1]
- Additional caps:
  - Maximum 8% at a component level
  - The sum of all weights above 4.5% should not exceed 35%
- The index is reviewed annually, rebalanced quarterly

1) Exposure to all the B.R.AI.N. themes

STOXX B.R.AI.N.

Combining Megatrends

Megatrends

$82.70bn

$727bn

Exposure to four megatrends that will shape the future: Biotechnology, Robotics, Artificial Intelligence and Nanotechnology.

The Global Robotics Technology market is expected to reach $189.6 billion by 2027, registering a CAGR of 13.5% during 2020 – 2027[1].

The global biotechnology market is expected to reach USD $727.10 billion by 2025[2].

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STOXX **B**.R.AI.N.
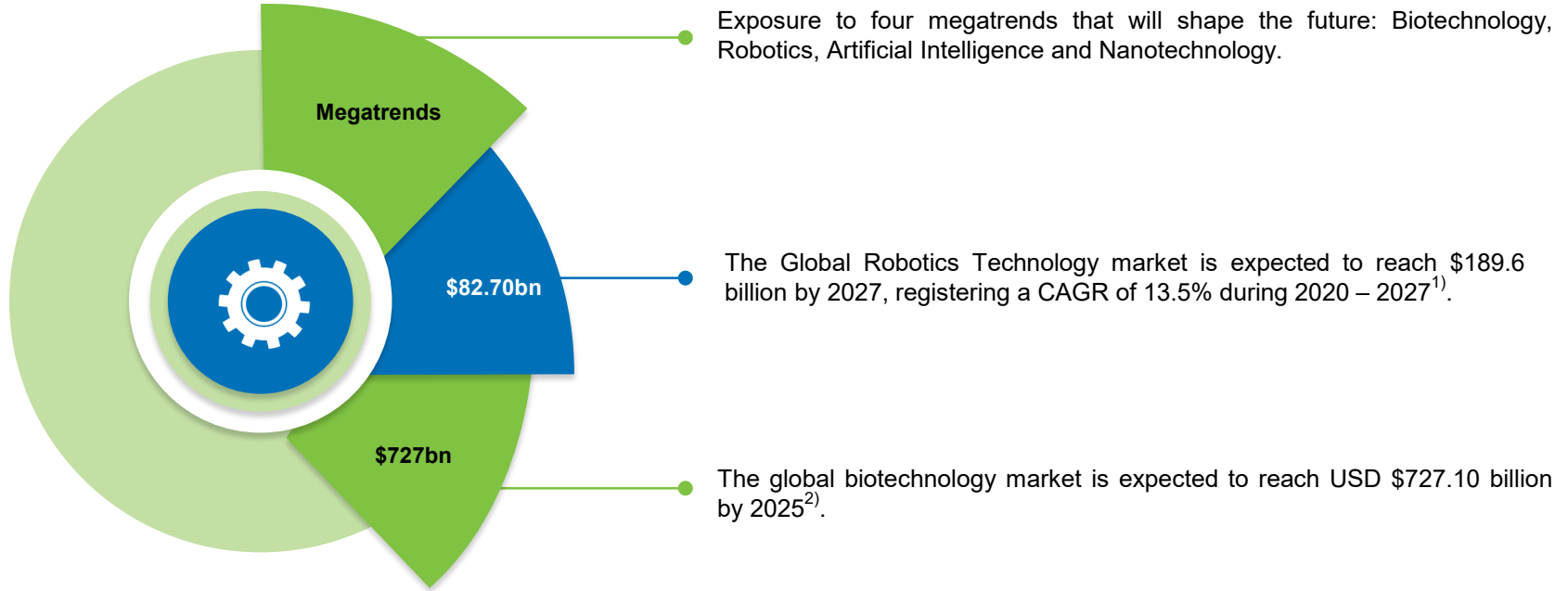
Themes: Biotechnology

Medical Biotechnology

Red biotechnology is the application of biotechnology in biopharmaceuticals and pharmaceuticals production was valued at USD 320.76 billion in 2019 and is projected to reach $510 billion by 2027[1].

- Biopharmaceutical companies

Bio services

Bioservices relate to the services that aid the discovery, development and manufacture of biotechnology products/technologies. These companies provide support services to the biotechnology sector (e.g. storage facilities for biological products, contract manufacturing etc)
- Molecular Diagnostic Devices
- Biological Product Storage Laboratories
- Genetic Test Kit Providers

Agribiotech

Agricultural biotechnology market is forecasted to attain a value of $55.5 bn by 2023, growing at a CAGR of 10.1% during 2017-2023[2].

- Bio fertilizer and biopesticide providers
- Genetically modified food crops providers, seed producers

Biotechnology applications

Global Biofuel market was valued at $168 bn in 2016 and is expected to reach $218.7 bn in 2022 at a grow rate of 4.5% (CAGR)[3]. The global Bioinformatics market is forecasted to grow at a CAGR of 19.37% from 2018 to 2026[4].

- Biofuel providers.
- Bioinformatic companies
- Biomaterial manufacturers

1) https://www.marketwatch.com/story/red-biotechnology-market---size-share-trends-and-global-forecast-to-2027-precedence-research-2021-05-24?siteid=bigcharts&dist=bigcharts
2) https://www.psmarketresearch.com/press-release/agricultural-biotechnology-market
3) https://globenewswire.com/news-release/2018/01/09/1285912/0/en/Biofuels-Market-Size-Will-Reach-USD-218-7-Billion-by-2022-Globally-Zion-Market-Research.html
4) https://www.giiresearch.com/report/ink523671-global-bioinformatics-market-forecast.html

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STOXX B.**R**.AI.N.

Themes: Robotics

Industrial Robots

The industrial robotics market (including the prices of peripherals, software, and system engineering) is projected to grow from USD 42.2 billion in 2021 to reach USD 75.3 billion by 2026[1].

Unmanned Aerial Vehicles/ Drones

The UAV market is estimated to be $ 20.71 bn in 2018 and is projected to reach $ 52.30 bn by 2025, at a CAGR of 14.15% from 2018 to 2025. Within this segment, the military drone market is expected to be worth over $13bn by 2024[3].
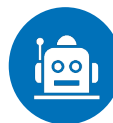
Industrial Robots

- Consumer robot market is projected to witness a CAGR of 22.35% during the forecast period to reach a total market size of $14.9 billion by 2023, increasing from $5.4 billion in 2018[2].

- It is expected that the global Surgical Robotics Market will be valued at $12.6 bn in 2025.

Autonomous Transport

The global autonomous vehicles market revenue is expected to grow at a CAGR of 39.6% during the forecast period 2017-2027 reaching $126.8 bn by 2027[4].

1) Markets and Markets, https://www.marketsandmarkets.com/Market-Reports/Industrial-Robotics-Market-643.html
2) PR Newswire, https://www.prnewswire.com/news-releases/global-consumer-robot-market-2017-2023-market-to-grow-at-a-cagr-of-2235-to-reach-1491-billion---key-players-are-irobot-jibo-3d-robotics-honda-bossa-nova-robotics-dji-and-softbank-300573167.html
3) Aerospace and Defence News, http://www.asdnews.com/news/defense/2018/03/02/unmanned-aerial-vehicle-uav-market-worth-5230-bn-2025
4) PR Newswire, https://www.prnewswire.com/news-releases/1268-billion-autonomous-vehicle-market-global-drivers-restraints-opportunities-trends-and-forecasts-2017-2023-300486159.html

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STOXX B.R.**AI**.N.

Themes: Artificial Intelligence

AI Users

- Companies investing heavily in AI research and/or applications
- Companies with access to interesting datasets/large user base
- Social networking/web advertising companies
- Business software providers
- Some automation specialists (e.g. machine vision)

Hardware Providers

- Providers of specialist hardware for artificial intelligence applications
- Graphics card manufacturers (graphics cards are especially useful for some AI applications as they are optimized for certain mathematical operations that are prevalent in AI)
- Overall chip and CPU manufacturers

Big Data Enablers

- Data storage providers for large datasets
- Online data storage allowing access from multiple locations
- Online storage providers
- Colocation providers (for financial applications)
- Data chip manufacturers

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STOXX B.R.AI.**N.**

Themes: Nanotechnology

Nanomaterials

Nanomaterials are material having particles or constituents of nanoscale dimensions. The global nanomaterial market is projected to grow from $4.75bn in 2017 to $13.1bn by 2024[1].

- Producers and suppliers of nanomaterials (nano-wires and tubes, nano-coatings etc)
- Intermediate users of nanomaterials

Internet of Nano Things (IoNT)

IoNT is a network of nanoscale devices, sensors and machines integrated into everyday physical objects that are connected to the internet for effective data communication. The IoNT market was valued at $6.5bn in 2017 and is expected to reach $22bn by 2023[2].

- Manufacturers of nanoscale devices
- Nano chip manufacturers
- Nano sensor and processor manufacturers

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iSTOXX Developed Markets B.R.AI.N.
Risk and Return Overview

Risk and Return Characteristics

	iSTOXX Developed Markets B.R.AI.N	STOXX Developed Markets Total Market
Perf. overall (annualized)	21.54%	13.46%
Perf. (1Y)	23.87%	41.59%
Perf. (3Y) (annualized)	15.88%	15.44%
Perf. (5Y) (annualized)	21.98%	15.45%
Vol. overall (annualized)	18.15%	14.16%
Volatility (1Y) (annualized)	15.81%	12.98%
Volatility (3Y) (annualized)	21.57%	19.23%
Volatility (5Y) (annualized)	18.71%	15.77%
Sharpe ratio (Overall)	1.13	0.91
Sharpe ratio (5Y)	1.10	0.92
Tracking error (Overall)	10.31%	
Tracking error (5Y)	9.73%	
Dividend yield (Overall)	5.12%	5.33%
Maximum drawdown	25.47%	34.62%
Constituents	77	5988

Performance
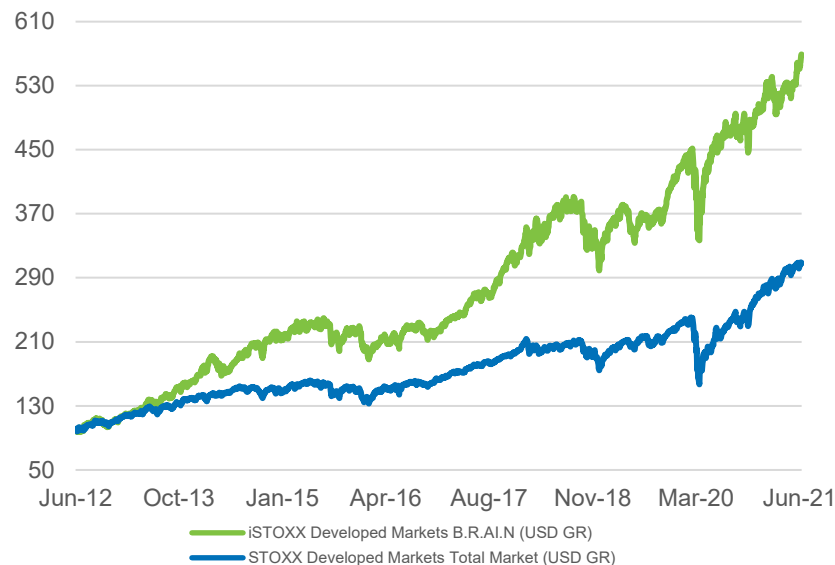
— iSTOXX Developed Markets B.R.AI.N (USD GR)
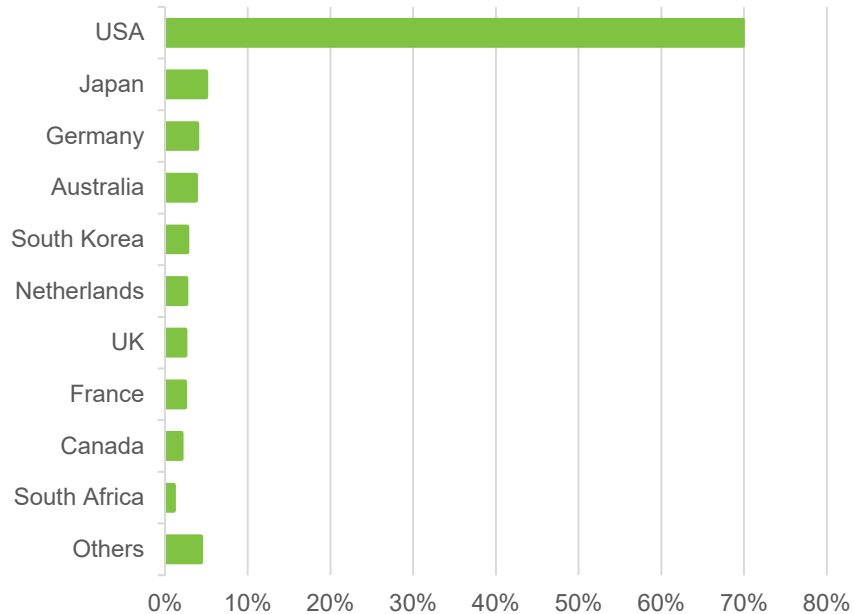— STOXX Developed Markets Total Market (USD GR)

1) Source: Qontigo, daily data. Relative figures calculated against Benchmark
2) LIBOR used as a proxy for riskless returns
3) Qontigo Data Jun 18, 2012 – Jun 30, 2021

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iSTOXX Developed Markets B.R.AI.N.
Country and Industry Allocation
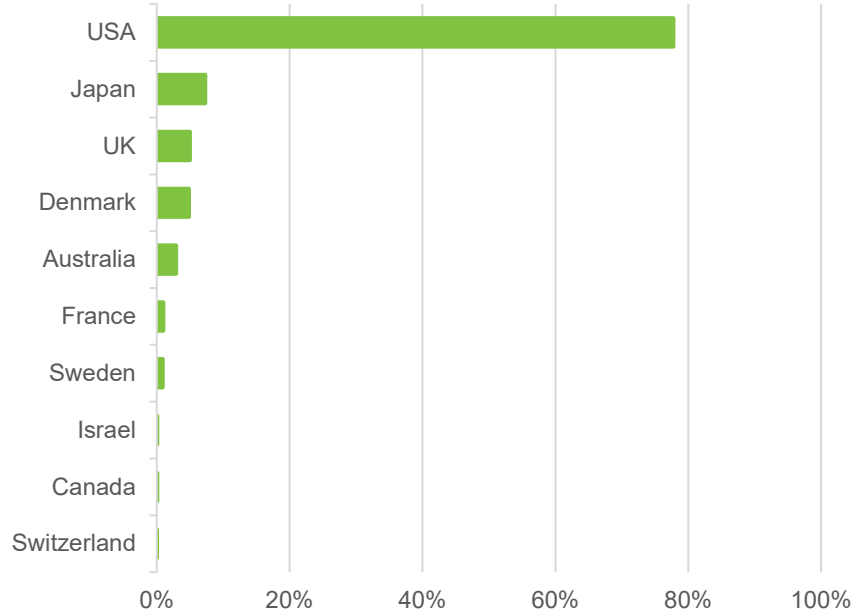
Country Allocation[1]

USA, Japan, UK, Denmark, Australia, France, Sweden, Israel, Canada, Switzerland
(axis: 0%, 20%, 40%, 60%, 80%, 100%)

Industry Allocation[1]

Health Care, Technology, Industrials, Real Estate, Basic Materials, Consumer Discretionary
(axis: 0%, 20%, 40%, 60%)

1) Source: Qontigo. Data as of Jun 30, 2021.

QONTIGO   AXIOMA | DAX | STOXX
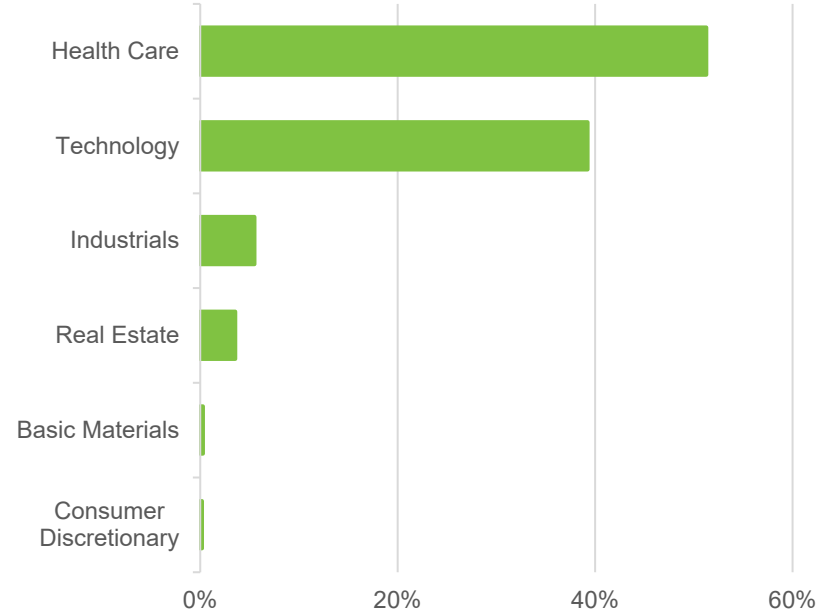
iSTOXX Developed Markets B.R.AI.N. – Top 10 Constituents

Name	Supersector	Country	Weight (%)
NVIDIA Corp.	Technology	USA	8.94
FACEBOOK CLASS A	Technology	USA	8.15
Intel Corp.	Technology	USA	6.44
Eli Lilly & Co.	Health Care	USA	5.63
ASTRAZENECA	Health Care	UK	4.56
Bristol-Myers Squibb Co.	Health Care	USA	4.32
Amgen Inc.	Health Care	USA	4.05
NOVO NORDISK B	Health Care	Denmark	4.02
ADVANCED MICRO DEVICES	Technology	USA	3.30
Intuitive Surgical Inc.	Health Care	USA	3.15

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STOXX Global Digitalization

|

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STOXX Global Digitalization Index
Risk and Return Overview

Risk and Return Characteristics

	STOXX Global Digitalization	STOXX Global 1800
Perf. overall (annualized)	14.67%	11.36%
Perf. (1Y)	47.21%	39.59%
Perf. (3Y) (annualized)	19.95%	15.73%
Perf. (5Y) (annualized)	20.85%	15.60%
Vol. overall (annualized)	16.61%	14.97%
Volatility (1Y) (annualized)	18.51%	12.76%
Volatility (3Y) (annualized)	21.48%	18.98%
Volatility (5Y) (annualized)	17.70%	15.58%
Sharpe ratio (Overall)	0.87	0.75
Sharpe ratio (5Y)	1.10	0.94
Tracking error (Overall)	7.17%	
Tracking error (5Y)	7.85%	
Dividend yield (Overall)	3.30%	5.06%
Maximum drawdown	35.72%	33.77%
Constituents	210	1800

Performance

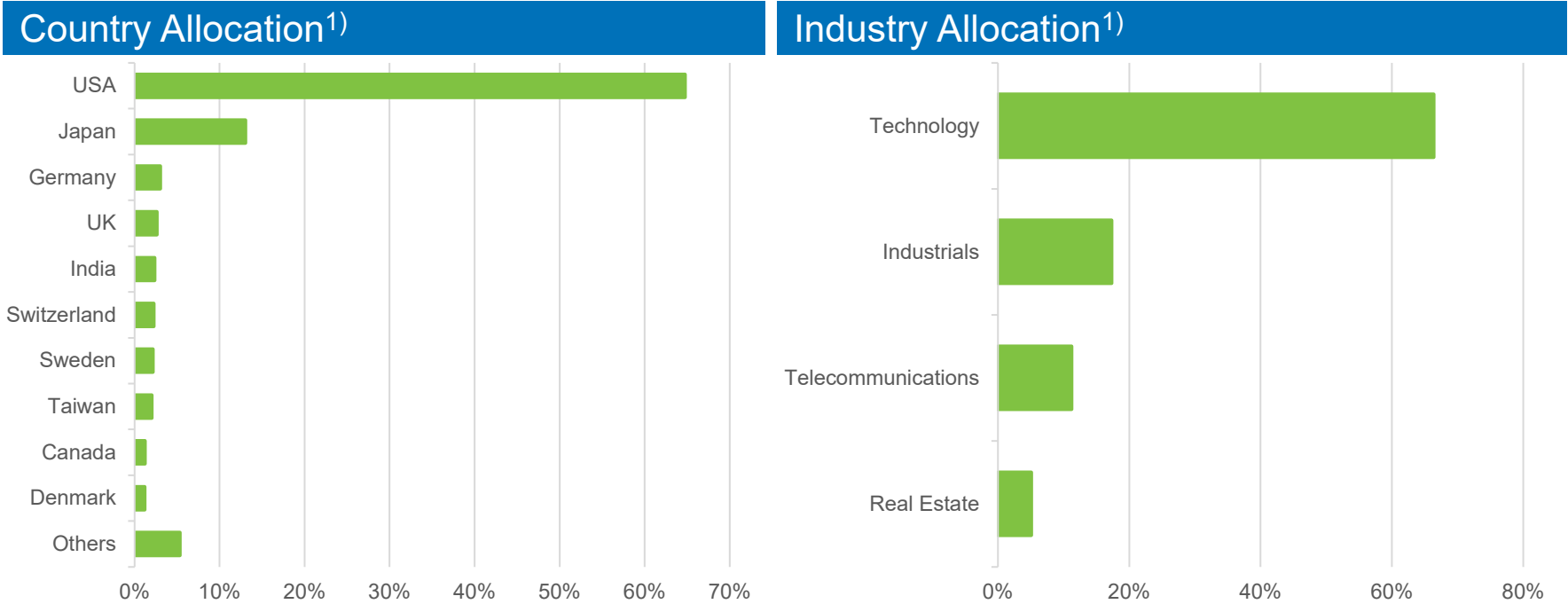

Legend: STOXX Global Digitalization (USD GR) — STOXX Global 1800 (USD GR)

1) Source: Qontigo, daily data. Relative figures calculated against Benchmark
2) LIBOR used as a proxy for riskless returns
3) Qontigo Data Jun 30, 2011 – Jun 30, 2021

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STOXX Global Digitalization Index
Country and Industry Allocation

Country Allocation[1]

Country	Allocation
USA	~70%
Japan	~5%
Germany	~4%
Australia	~4%
South Korea	~3%
Netherlands	~3%
UK	~3%
France	~3%
Canada	~2%
South Africa	~1%
Others	~5%

Industry Allocation[1]

Industry	Allocation
Technology	~45%
Industrials	~27%
Consumer Discretionary	~19%
Real Estate	~6%
Telecommunications	~1%
Financials	~1%
Consumer Staples	~1%

1) Source: Qontigo. Data as of Jun 30, 2021.

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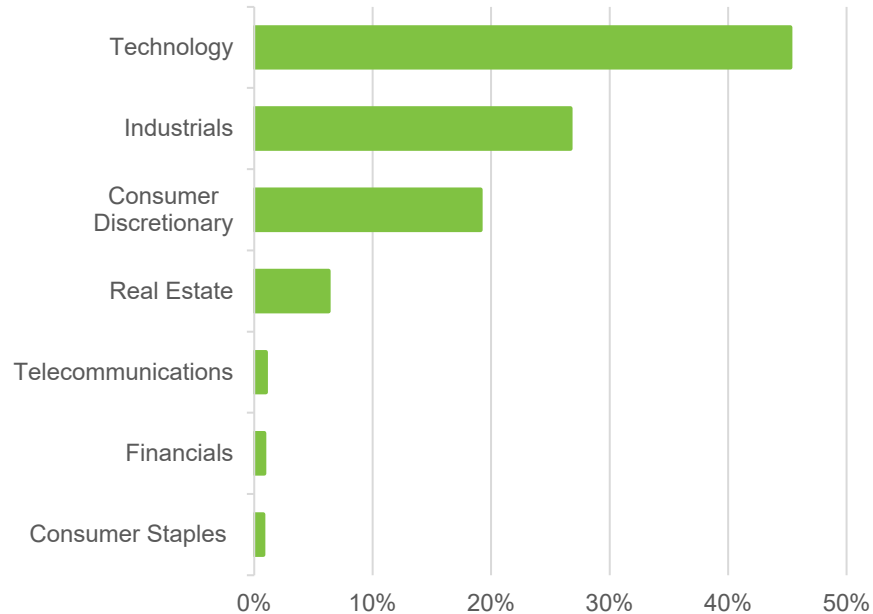
STOXX Global Digitalization Index – Top 10 Constituents

Name	Supersector	Country	Weight (%)
ETSY	Retail	USA	1.32
KAKAO CORP	Technology	South Korea	1.30
PINTEREST A	Technology	USA	1.24
DOCUSIGN	Technology	USA	1.23
AFTERPAY	Industrial Goods and Services	Australia	1.23
TWITTER	Technology	USA	1.22
MATCH GROUP	Technology	USA	1.22
MERCADOLIBRE	Consumer Products and Services	USA	1.22
CARVANA 'A'	Retail	USA	1.21
SQUARE CL.A	Industrial Goods and Services	USA	1.20

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STOXX Global Digital Security

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STOXX Global Digital Security Index
Risk and Return Overview

Risk and Return Characteristics

	STOXX Global Digital Security	STOXX Global 1800
Perf. overall (annualized)	14.85%	13.52%
Perf. (1Y)	38.98%	39.59%
Perf. (3Y) (annualized)	17.23%	15.73%
Perf. (5Y) (annualized)	18.52%	15.60%
Vol. overall (annualized)	15.64%	14.06%
Volatility (1Y) (annualized)	16.33%	12.76%
Volatility (3Y) (annualized)	19.05%	18.98%
Volatility (5Y) (annualized)	15.93%	15.58%
Sharpe ratio (Overall)	0.92	0.92
Sharpe ratio (5Y)	1.08	0.94
Tracking error (Overall)	8.16%	
Tracking error (5Y)	7.28%	
Dividend yield (Overall)	3.58%	5.45%
Maximum drawdown	32.25%	33.77%
Constituents	124	1800

Performance

STOXX Global Digital Security (USD GR) — STOXX Global 1800 (USD GR)

1) Source: Qontigo, daily data. Relative figures calculated against Benchmark
2) LIBOR used as a proxy for riskless returns
3) Qontigo Data Jun 18, 2012 – Jun 30, 2021

QONTIGO AXIOMA | DAX | STOXX

STOXX Global Digital Security Index
Country and Industry Allocation

Country Allocation[1]

Country	
USA	~65%
Japan	~13%
Germany	~3%
UK	~3%
India	~2.5%
Switzerland	~2.5%
Sweden	~2%
Taiwan	~2%
Canada	~1.5%
Denmark	~1.5%
Others	~5%

Industry Allocation[1]

Industry	
Technology	~67%
Industrials	~18%
Telecommunications	~11%
Real Estate	~5%

QONTIGO   AXIOMA | DAX | STOXX

STOXX Global Digital Security Index – Top 10 Constituents

Name	Supersector	Country	Weight (%)
DOCUSIGN	Technology	USA	1.37
CLOUDFLARE A	Technology	USA	1.35
SKYWORKS SLTN.	Technology	USA	1.35
Accton	Telecommunications	Taiwan	1.34
VARONIS SYSTEMS	Technology	USA	1.34
FASTLY A	Technology	USA	1.32
OKTA CL.A	Technology	USA	1.32
DATADOG A	Technology	USA	1.32
CROWDSTRIKE HOLDINGS A	Technology	USA	1.31
Fujitsu Ltd.	Technology	Japan	1.31

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STOXX Global Automation & Robotics

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STOXX Global Automation & Robotics Index
Risk and Return Overview

Risk and Return Characteristics

	STOXX Global Automation & Robotics	STOXX Global 1800
Perf. overall (annualized)	13.55%	11.36%
Perf. (1Y)	51.67%	39.59%
Perf. (3Y) (annualized)	21.05%	15.73%
Perf. (5Y) (annualized)	24.98%	15.60%
Vol. overall (annualized)	17.32%	14.97%
Volatility (1Y) (annualized)	18.41%	12.76%
Volatility (3Y) (annualized)	21.75%	18.98%
Volatility (5Y) (annualized)	18.18%	15.58%
Sharpe ratio (Overall)	0.78	0.75
Sharpe ratio (5Y)	1.26	0.94
Tracking error (Overall)	8.54%	
Tracking error (5Y)	9.31%	
Dividend yield (Overall)	3.83%	5.06%
Maximum drawdown	36.16%	33.77%
Constituents	133	1800

Performance

Legend: STOXX Global Automation & Robotics (USD GR); STOXX Global 1800 (USD GR)

1) Source: Qontigo, daily data. Relative figures calculated against Benchmark
2) LIBOR used as a proxy for riskless returns
3) Qontigo Data Jun 30, 2011 – Jun 30, 2021

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STOXX Global Automation & Robotics Index
Country and Industry Allocation
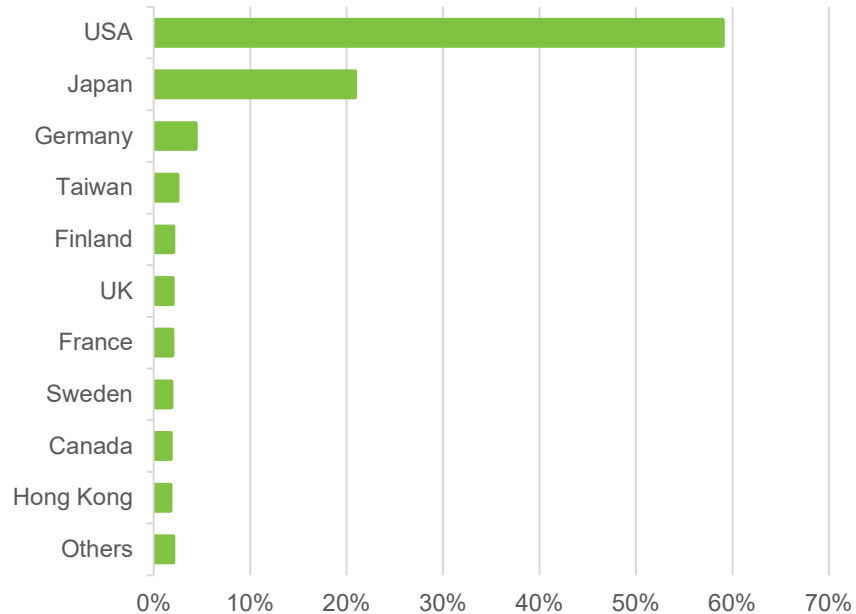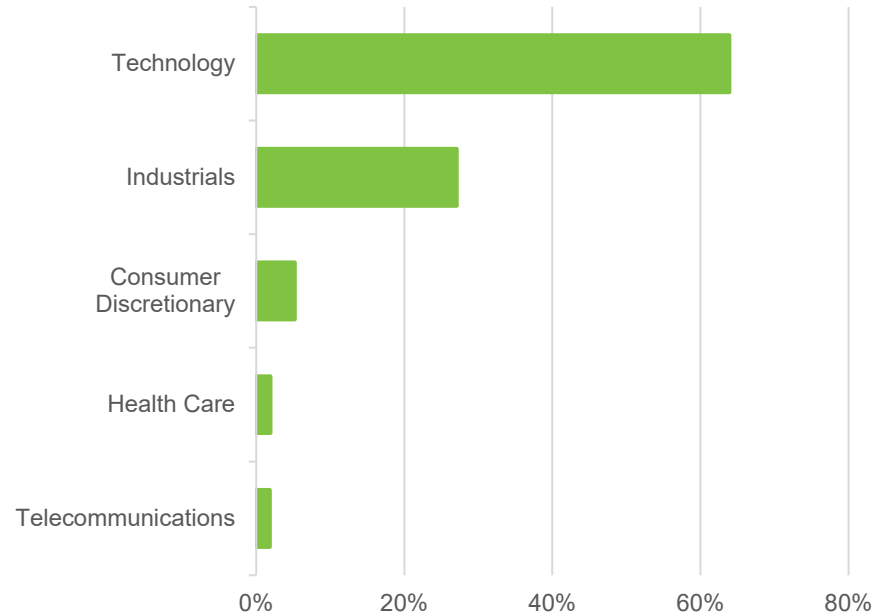
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STOXX Global Automation & Robotics Index – Top 10 Constituents

Name	Supersector	Country	Weight (%)
SPLUNK	Technology	USA	2.18
ADVANCED MICRO DEVICES	Technology	USA	2.09
NVIDIA Corp.	Technology	USA	2.09
SERVICENOW	Technology	USA	2.04
Xilinx Inc.	Technology	USA	2.04
SNAP 'A'	Technology	USA	1.98
Apple Inc.	Technology	USA	1.97
Intuitive Surgical Inc.	Health Care	USA	1.95
Qualcomm Inc.	Technology	USA	1.94
DASSAULT SYSTEMS	Technology	France	1.92

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STOXX Global Next Generation Telecoms Index

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Continuous technological advancement in the telecommunications industry

The most recent change that the industry is undergoing is the deployment of 5G

The global telecom electronic manufacturing services (EMS) market size is likely to reach USD 230.1 billion by 2025, expanding at a CAGR of 7% during the 2018-2025 period[1]
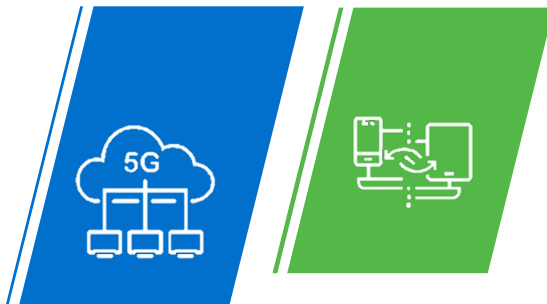
M-2M connections industry is expected to demonstrate revenue growth at 9.9% CAGR between the years 2017 to 2023[2]

The continuous increase of mobile data traffic will drive 5G emergence. 5G will increase download speeds up to 1-10 Gbps
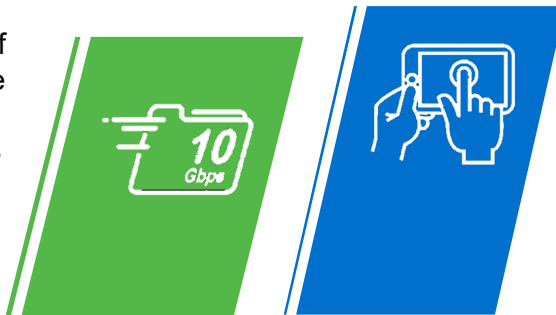
About 1 billion people worldwide are likely to be 5G-enabled, contributing $12.3 trillion in global economic output by the mid-2030s on a cumulative basis[3]
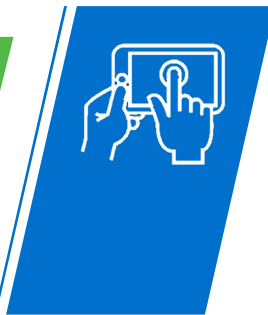
1) MarketWatch: "Telecom EMS Market Size Worth $230.1 Billion by 2025 | CAGR: 7.0%: Grand View Research, Inc."
2) MarketWatch: M2M Connections Market 2021 Global Market
3) IHS Economics/IHS Technology Economic Impact Analysis: "The 5G Economy: How 5G technology will contribute to the global Economy"

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STOXX Global Next Generation Telecoms Index
Risk and Return Overview

Risk and Return Characteristics

	STOXX Global Next Generation Telecoms	STOXX Developed and Emerging Markets Total Market
Perf. overall (annualized)	12.97%	12.73%
Perf. (1Y)	29.65%	42.46%
Perf. (3Y) (annualized)	14.91%	15.04%
Perf. (5Y) (annualized)	13.82%	15.08%
Vol. overall (annualized)	14.09%	13.69%
Volatility (1Y) (annualized)	13.27%	12.45%
Volatility (3Y) (annualized)	18.57%	18.47%
Volatility (5Y) (annualized)	15.48%	15.16%
Sharpe ratio (Overall)	0.89	0.89
Sharpe ratio (5Y)	0.84	0.93
Tracking error (Overall)	5.75%	
Tracking error (5Y)	5.79%	
Dividend yield (Overall)	5.84%	5.09%
Maximum drawdown	28.33%	34.84%
Constituents	261	9821
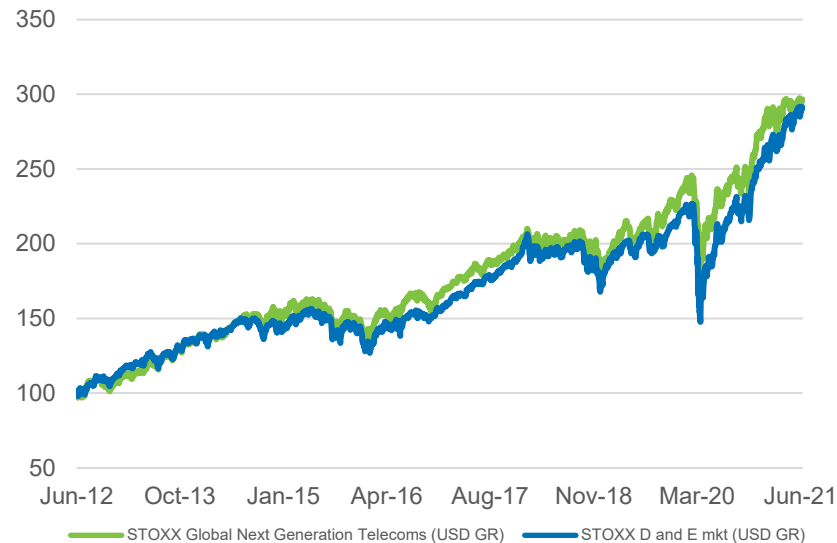
Performance

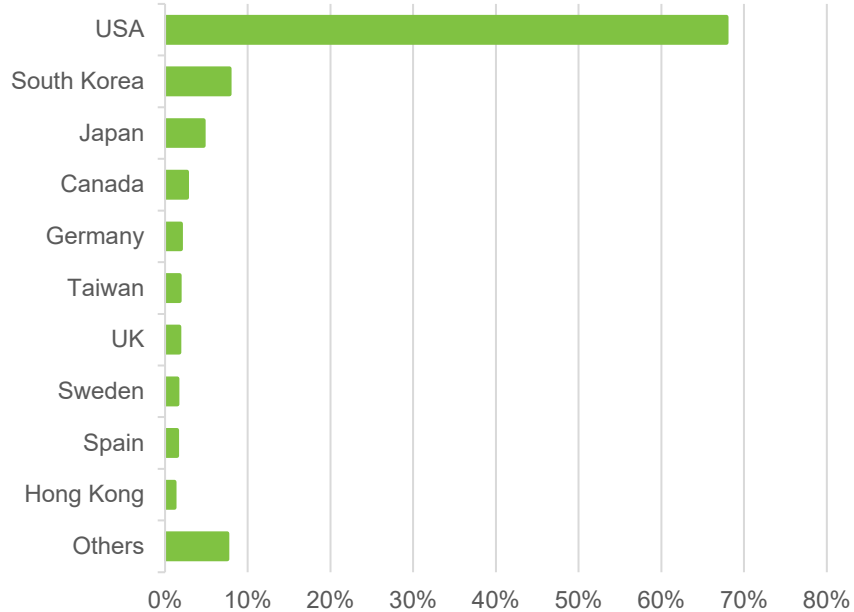STOXX Global Next Generation Telecoms (USD GR) — STOXX D and E mkt (USD GR)

1) Source: Qontigo, daily data. Relative figures calculated against Benchmark
2) EONIA used as a proxy for riskless returns
3) Qontigo Data Jun 18, 2012 – Jun 30, 2021

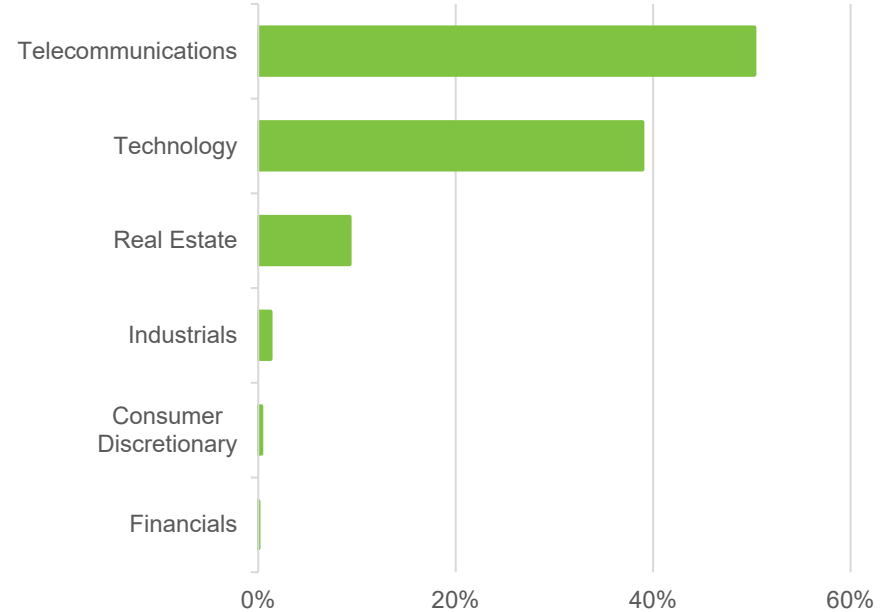QONTIGO   AXIOMA | DAX | STOXX

STOXX Global Next Generation Telecoms Index
Country and Industry Allocation

Country Allocation[1]

Country	Allocation
USA	~68%
South Korea	~8%
Japan	~5%
Canada	~3%
Germany	~2%
Taiwan	~2%
UK	~2%
Sweden	~2%
Spain	~2%
Hong Kong	~1%
Others	~8%

Industry Allocation[1]

Industry	Allocation
Telecommunications	~50%
Technology	~39%
Real Estate	~9%
Industrials	~1%
Consumer Discretionary	<1%
Financials	<1%

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STOXX Global Next Generation Telecoms Index – Top 10 Constituents

Name	Supersector	Country	Weight (%)
Apple Inc.	Technology	USA	8.69
Samsung Electronics Co Ltd	Technology	South Korea	6.06
Verizon Communications Inc.	Telecommunications	USA	5.76
Intel Corp.	Technology	USA	5.13
AT&T Inc.	Telecommunications	USA	4.65
Cisco Systems Inc.	Telecommunications	USA	4.56
Comcast Corp. Cl A	Telecommunications	USA	4.45
Qualcomm Inc.	Technology	USA	4.00
BROADCOM	Technology	USA	3.49
AMERICAN TOWER	Real Estate	USA	2.99

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STOXX AI Global Artificial Intelligence Index

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Overview

Use of knowledge graphs

Asset Universe	AI Patents	AI Producers & Consumers[1]
	Knowledge graph assists decision making process on determining Patents that are related to AI	Portfolio of companies with IP in AI, i.e., with granted patents that are related to Artificial Intelligence.

Global universe of assets constituents of the chosen parent index. → → List of International Patent Classification (IPC) Codes relevant for AI → (AI IP)

US and International patents database

↑
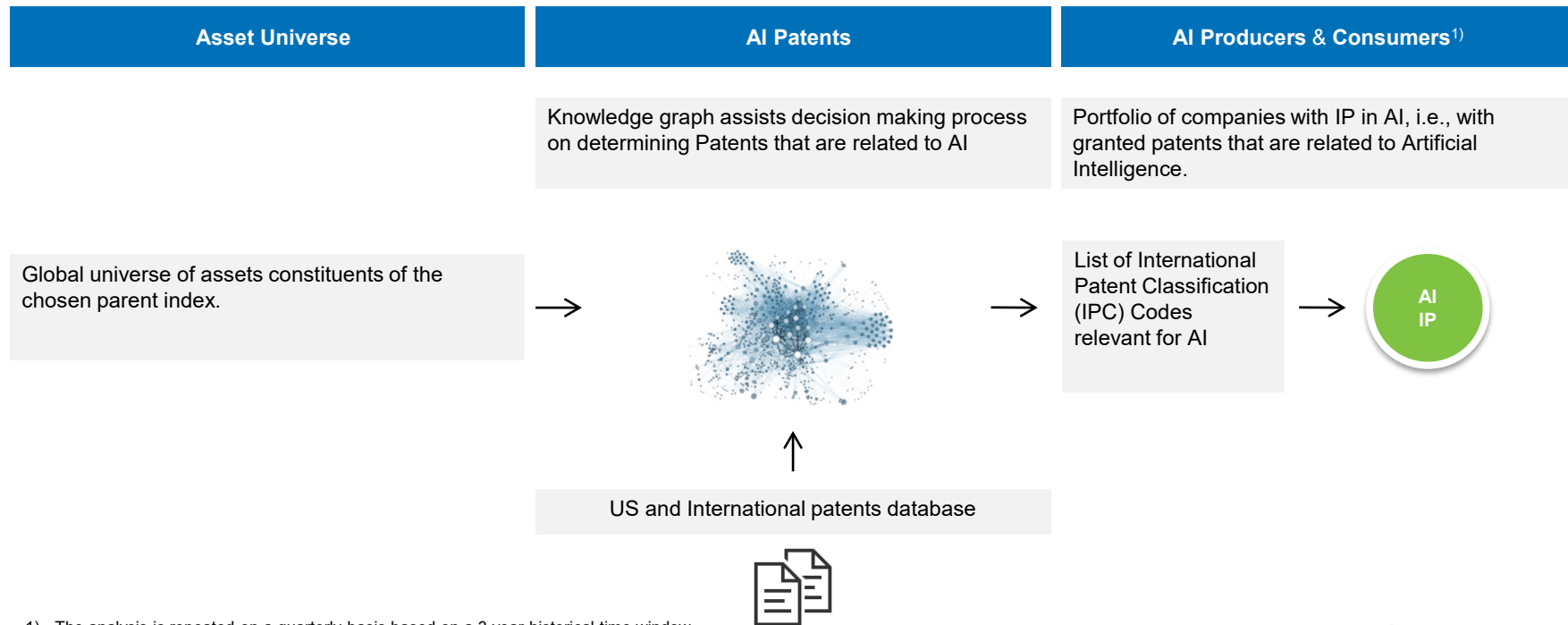
1) The analysis is repeated on a quarterly basis based on a 3 year historical time window.

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STOXX AI Global Artificial Intelligence Index
Risk and Return Overview

Risk and Return Characteristics

	STOXX AI Global Artificial Intelligence	STOXX Developed and Emerging Markets Total MarketIndex
Perf. overall (annualized)	18.33%	11.46%
Perf. (1Y)	57.93%	42.46%
Perf. (3Y) (annualized)	21.83%	15.04%
Perf. (5Y) (annualized)	23.19%	15.08%
Vol. overall (annualized)	14.77%	13.89%
Volatility (1Y) (annualized)	14.23%	12.45%
Volatility (3Y) (annualized)	19.68%	18.47%
Volatility (5Y) (annualized)	16.21%	15.16%
Sharpe ratio (Overall)	1.16	0.80
Sharpe ratio (5Y)	1.30	0.93
Tracking error (Overall)	4.16%	
Tracking error (5Y)	4.23%	
Dividend yield (Overall)	5.17%	4.49%
Maximum drawdown	34.63%	34.84%
Constituents	273	9821

Performance

STOXX AI Global AI (USD GR)
STOXX D and E mkt (USD GR)

1) Source: Qontigo, daily data. Relative figures calculated against Benchmark
2) EONIA used as a proxy for riskless returns
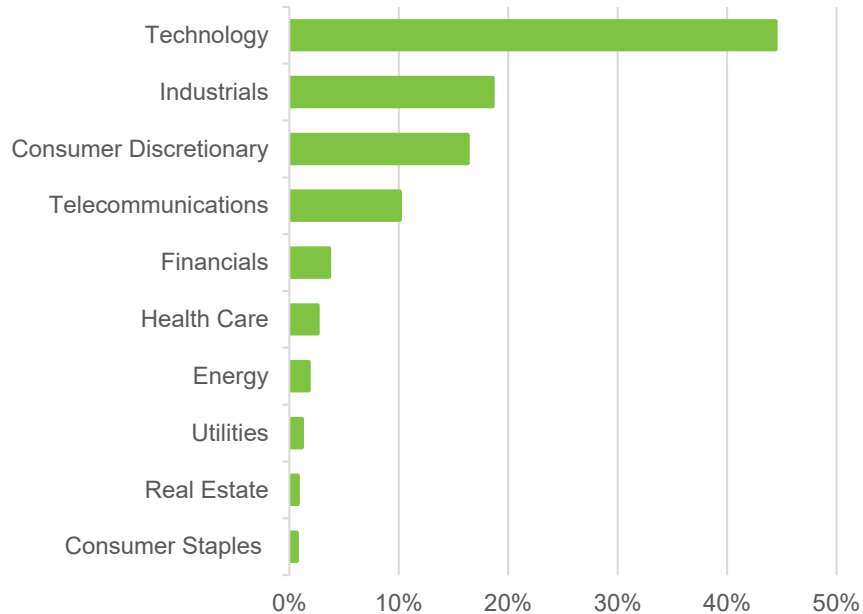3) Qontigo Data Mar 18, 2013 – Jun 30, 2021

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STOXX AI Global Artificial Intelligence Index
Country and Industry Allocation

Country Allocation[1)]

Countries (top to bottom): USA (~60%), Japan (~14%), Taiwan (~5%), South Korea (~5%), Germany (~4%), France (~3%), Canada (~2.5%), India (~2.5%), UK (~2%), Singapore (~1.5%), Others (~5%)

X-axis: 0%, 10%, 20%, 30%, 40%, 50%, 60%, 70%

Industry Allocation[1)]

Industries (top to bottom): Technology (~44%), Industrials (~18%), Consumer Discretionary (~16%), Telecommunications (~10%), Financials (~4%), Health Care (~3%), Energy (~2%), Utilities (~1.5%), Real Estate (~1.5%), Consumer Staples (~1.5%)

X-axis: 0%, 10%, 20%, 30%, 40%, 50%

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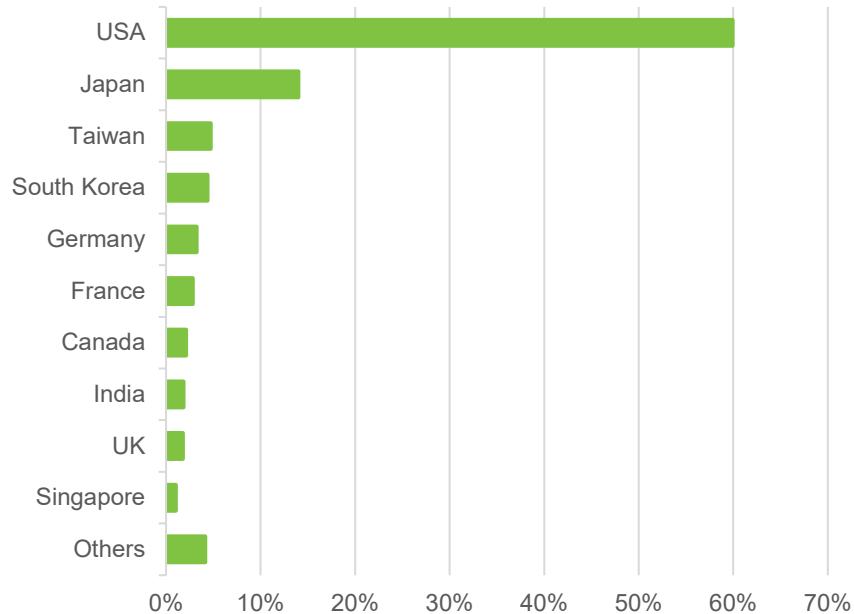
STOXX AI Global Artificial Intelligence Index – Top 10 Constituents

Name	Supersector	Country	Weight (%)
ROKU	Telecommunications	USA	0.48
MICROSTRATEGY	Technology	USA	0.48
SUNRUN	Utilities	USA	0.45
SPLUNK	Technology	USA	0.44
AXON ENTERPRISE	Industrial Goods and Services	USA	0.43
ADVANCED MICRO DEVICES	Technology	USA	0.42
NVIDIA Corp.	Technology	USA	0.42
TWITTER	Technology	USA	0.42
SYNAPTICS	Technology	USA	0.41
CLOUDFLARE A	Technology	USA	0.41

1)   Source: Qontigo. Data as of Jun 30, 2021.

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STOXX AI Global Artificial Intelligence ADTV5 Index

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Overview

Use of knowledge graphs

Asset Universe	AI Patents	AI Producers & Consumers[1]
	Knowledge graph assists decision making process on determining Patents that are related to AI	Portfolio of companies with IP in AI, i.e., with granted patents that are related to Artificial Intelligence.

Global universe of assets constituents of the chosen parent index.

→

→

List of International Patent Classification (IPC) Codes relevant for AI

→

AI IP

US and International patents database

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STOXX AI Global Artificial Intelligence ADTV5 Index
Risk and Return Overview

Risk and Return Characteristics

	STOXX AI Global Aritificial Intelligence ADTV5	STOXX Developed and Emerging Markets Total Market Index
Perf. overall (annualized)	18.02%	11.46%
Perf. (1Y)	57.79%	42.46%
Perf. (3Y) (annualized)	21.97%	15.04%
Perf. (5Y) (annualized)	23.06%	15.08%
Vol. overall (annualized)	14.99%	13.89%
Volatility (1Y) (annualized)	14.30%	12.45%
Volatility (3Y) (annualized)	19.96%	18.47%
Volatility (5Y) (annualized)	16.43%	15.16%
Sharpe ratio (Overall)	1.13	0.80
Sharpe ratio (5Y)	1.28	0.93
Tracking error (Overall)	4.21%	
Tracking error (5Y)	4.26%	
Dividend yield (Overall)	5.00%	4.49%
Maximum drawdown	34.32%	34.84%
Constituents	261	9821
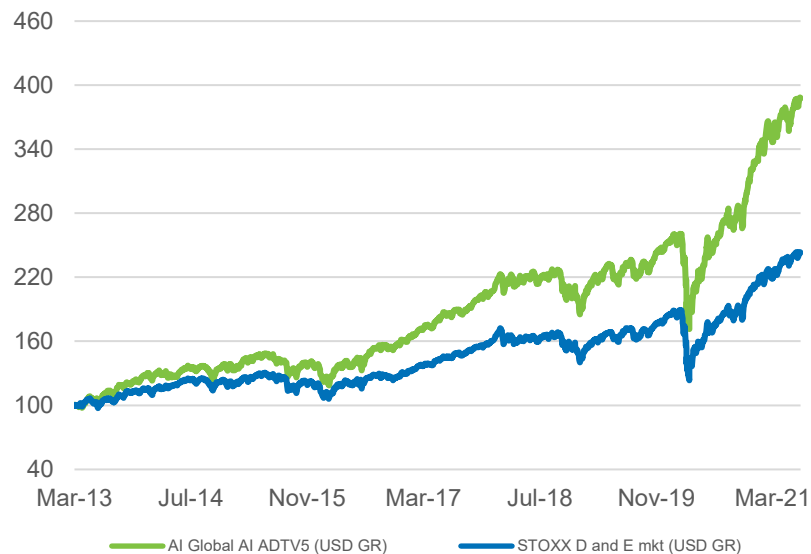
Performance

Legend: AI Global AI ADTV5 (USD GR) — STOXX D and E mkt (USD GR)

1) Source: Qontigo, daily data. Relative figures calculated against Benchmark
2) EONIA used as a proxy for riskless returns
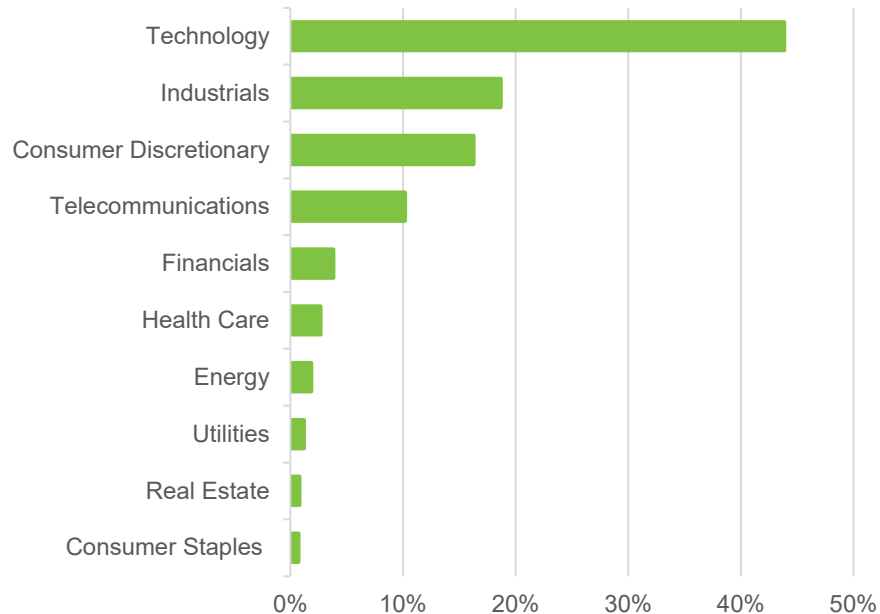3) Qontigo Data Mar 18, 2013 – Jun 30, 2021

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STOXX AI Global Artificial Intelligence ADTV5 Index
Country and Industry Allocation
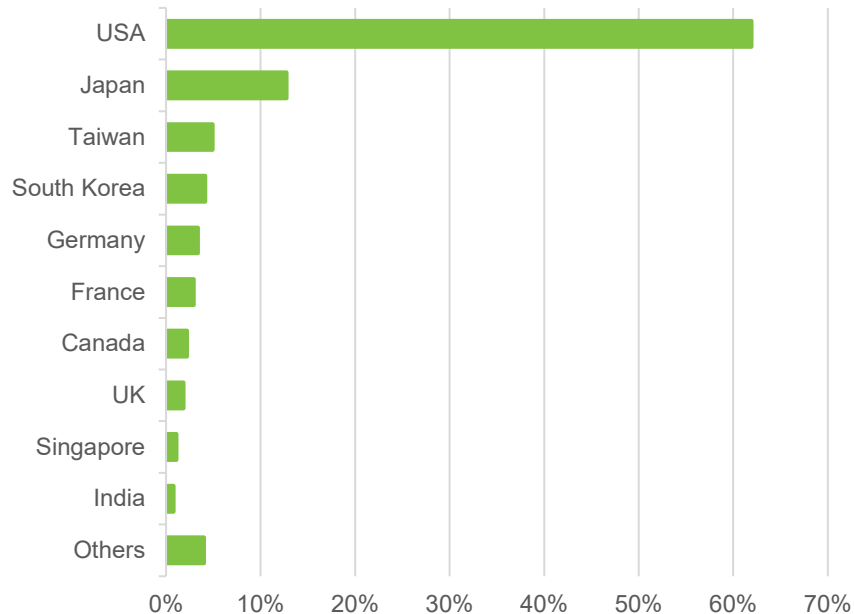
Country Allocation[1)]

Country	Allocation
USA	~62%
Japan	~13%
Taiwan	~5%
South Korea	~4%
Germany	~3.5%
France	~3%
Canada	~2.5%
UK	~2%
Singapore	~1.5%
India	~1%
Others	~4.5%

Industry Allocation[1)]

Industry	Allocation
Technology	~44%
Industrials	~19%
Consumer Discretionary	~16%
Telecommunications	~10%
Financials	~4%
Health Care	~3%
Energy	~2%
Utilities	~1.5%
Real Estate	~1%
Consumer Staples	~1%

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STOXX AI Global Artificial Intelligence ADTV5 Index – Top 10 Constituents

Name	Supersector	Country	Weight (%)
ROKU	Telecommunications	USA	0.50
MICROSTRATEGY	Technology	USA	0.50
SUNRUN	Utilities	USA	0.47
SPLUNK	Technology	USA	0.46
AXON ENTERPRISE	Industrial Goods and Services	USA	0.45
ADVANCED MICRO DEVICES	Technology	USA	0.44
NVIDIA Corp.	Technology	USA	0.44
TWITTER	Technology	USA	0.43
SYNAPTICS	Technology	USA	0.43
CLOUDFLARE A	Technology	USA	0.43

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iSTOXX Yewno Developed Markets Blockchain Index

QONTIGO AXIOMA | DAX | STOXX

Overview

Use of knowledge graphs

Asset Universe	Blockchain Patents	Blockchain Adopters
	Knowledge graph assists decision making process on determining Patents that are related to Blockchain	Portfolio of companies with IP in Blockchain, i.e., with granted patents that are related to Blockchain

Global universe of assets constituents of the chosen parent index.

→

→

List of International Patent Classification (IPC) Codes relevant for Blockchain

→

Block chain IP

↑

US and International patents database

QONTIGO AXIOMA | DAX | STOXX

iSTOXX Yewno Developed Markets Blockchain Index
Risk and Return Overview

Risk and Return Characteristics

	iSTOXX Yewno Developed Markets Blockchain	STOXX Developed Markets Total Market Index
Perf. overall (annualized)	22.67%	12.16%
Perf. (1Y)	46.50%	41.59%
Perf. (3Y) (annualized)	15.85%	15.44%
Perf. (5Y) (annualized)	21.14%	15.45%
Vol. overall (annualized)	20.97%	14.37%
Volatility (1Y) (annualized)	16.41%	12.98%
Volatility (3Y) (annualized)	23.55%	19.23%
Volatility (5Y) (annualized)	20.58%	15.77%
Sharpe ratio (Overall)	1.04	0.82
Sharpe ratio (5Y)	0.98	0.92
Tracking error (Overall)	13.31%	
Tracking error (5Y)	9.65%	
Dividend yield (Overall)	7.53%	4.67%
Maximum drawdown	36.76%	34.62%
Constituents	100	5988

Performance
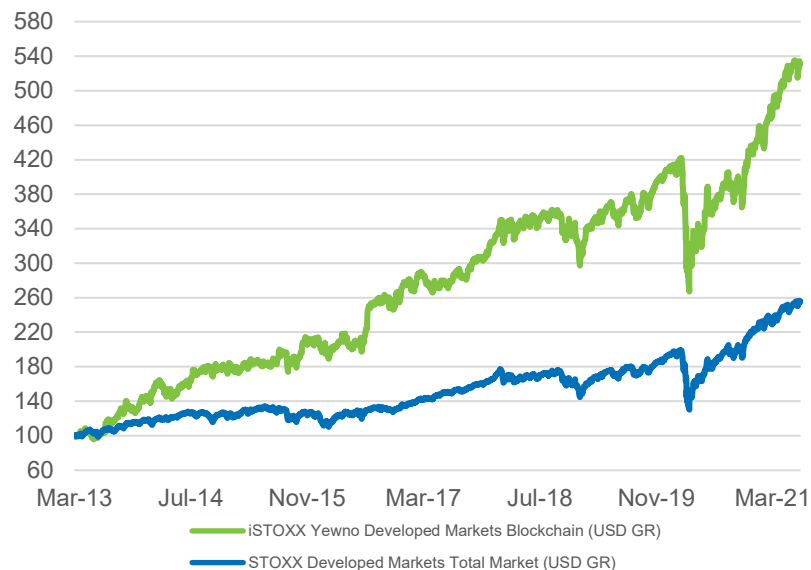
— iSTOXX Yewno Developed Markets Blockchain (USD GR)
— STOXX Developed Markets Total Market (USD GR)

1) Source: Qontigo, daily data. Relative figures calculated against Benchmark
2) EONIA used as a proxy for riskless returns
3) Qontigo Data Mar 18, 2013 – Jun 30, 2021

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iSTOXX Yewno Developed Markets Blockchain Index
Country and Industry Allocation
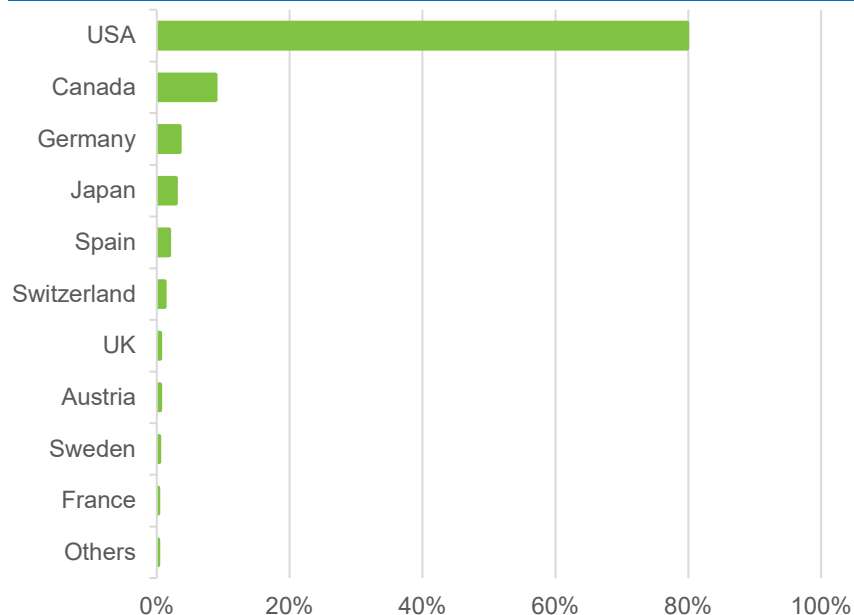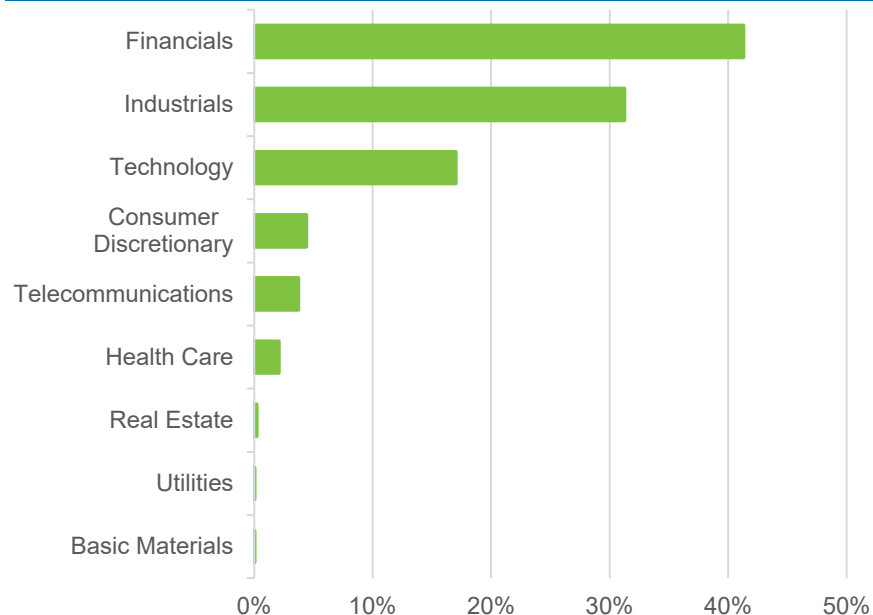
1) Source: Qontigo. Data as of Jun 30, 2021.

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iSTOXX Yewno Developed Markets Blockchain Index – Top 10 Constituents

Name	Supersector	Country	Weight (%)
Microsoft Corp.	Technology	USA	8.43
MasterCard Inc. Cl A	Industrial Goods and Services	USA	8.02
Bank of America Corp.	Banks	USA	7.92
JPMorgan Chase & Co.	Banks	USA	7.76
Accenture PLC Cl A	Industrial Goods and Services	USA	4.67
VISA Inc. Cl A	Industrial Goods and Services	USA	4.50
Northern Trust Corp.	Financial Services	USA	4.45
International Business Machine	Technology	USA	4.39
American Express Co.	Industrial Goods and Services	USA	4.32
Royal Bank of Canada	Banks	Canada	3.98

1)   Source: Qontigo. Data as of Jun 30, 2021.

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Disclaimer

About Qontigo

Qontigo is a financial intelligence innovator and a leader in the modernization of investment management, from risk to return.

The combination of the company's world-class indices and best-of-breed analytics, with its technological expertise and customer-driven innovation enables its clients to achieve competitive advantage in a rapidly changing marketplace.

Qontigo's global client base includes the world's largest financial products issuers, capital owners and asset managers.

Created in 2019 through the combination of STOXX, DAX and Axioma, Qontigo is part of Deutsche Börse Group, headquartered in Eschborn with key locations in New York, Zug and London.

About STOXX

Qontigo's index provider STOXX is part of Deutsche Börse Group, and the administrator of the DAX indices under the European Benchmark Regulation.

STOXX Ltd. is Qontigo's global index provider, currently calculating a global, comprehensive index family of about 13,000 strictly rules-based and transparent indices. Best known for the leading European equity indices EURO STOXX 50, STOXX Europe 50 and STOXX Europe 600, STOXX Ltd. maintains and calculates the STOXX Global index family which consists of total market, broad and blue-chip indices for the regions Americas, Europe, Asia/Pacific and sub-regions Latin America and BRIC (Brazil, Russia, India and China) as well as global markets.

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