



ROBO Global® Index Family Methodology

Index Name	Ticker
ROBO Global® Artificial Intelligence Index	THNQ
ROBO Global® Artificial Intelligence US Listed Index	THNQUS
ROBO Global® Healthcare Technology and Innovation Index	HTEC
ROBO Global® Healthcare Technology and Innovation US Listed Index	HTECUS
ROBO Global® Robotics and Automation Index	ROBO
ROBO Global® Robotics and Automation US Listed Index	ROBOUS
ROBO Global® Robotics and Automation UCITS Index	ROBOT
ROBO Global Japan Robotics and Automation UCITS Index	ROBOJP
ROBO Global Robotics and Automation UCITS Yen Index	ROBOYNUI
ROBO Global Robotics and Automation UCITS Hedged to Yen Index	ROBOYN
ROBO Global® Robotics and Automation 18% Volatility Target Index	ROBOVT18

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Introduction

Index Objective

ROBO Global® Artificial Intelligence Index Series

The ROBO Global® Artificial Intelligence Index Series' objective is to provide investors with comprehensive, transparent and diversified benchmarks representing the global value chain of Artificial Intelligence technologies. The index series benchmark companies that have a distinct portion of their business and revenue derived from the field of Artificial Intelligence, and the potential to grow within this space through innovation and/or market adoption of their products and/or services.

ROBO Global® Healthcare Technology and Innovation Index Series

The ROBO Global® Healthcare Technology and Innovation Index Series' objective is to provide investors with comprehensive, transparent and diversified benchmarks representing the global value chain of disruptive and emerging technologies in the healthcare sector. The index series benchmark companies that have a distinct portion of their business and revenue derived from the field of healthcare technologies, and the potential to grow within this space through innovation and/or market adoption of their products and/or services.

ROBO Global® Robotics and Automation Index Series

Robotics, Automation and Artificial Intelligence (AI) are firmly set on a long-term growth trajectory, supported by a unique combination of accelerating technological advances and powerful macro factors. Rapid developments in technologies such as computing and artificial intelligence, motion control, machine vision and learning, enable an increasingly broad range of applications throughout the global economy. Meanwhile, aging demographics and the emergence of a new, enormous class of increasingly demanding consumers will continue to drive efforts to boost productivity and quality across markets. The ROBO Global® Robotics and Automation Index Series' objective is to provide investors with comprehensive, transparent and diversified benchmarks representing the global value chain of robotics, automation and enabling technologies. Additionally, the ROBOVT18 index is an excess return index that mimics an unfunded variable exposure to the ROBO Global® Robotics and Automation Total Return Index (ROBOTR) with the aim of achieving an annualized realized volatility of less than or equal to 18%.

Supporting Documents

This methodology is meant to be read in conjunction with supporting documents providing greater detail with respect to the policies, procedures and calculations described herein.

The list of the main supplemental documents for this methodology can be found in the Methodologies and Governance tabs on the [Index Resources](#) page as follows:

Supporting Documents
Index Maintenance Policy
Index Governance
Index Policies
Methodology Policies
Glossary
Index Change and Consultation Policy

Dates

Determination Date: The first Friday of the last month of each calendar quarter.

Reconstitution/Rebalance Date: Indexes are reconstituted and rebalanced quarterly on the third Friday of the last month of each calendar quarter.

Index Construction

Universe

ROBO Global® created and maintains a unique and broad database of companies across the globe who have a portion of their business and revenue associated with the focus area of one or more of the index series'. In the absence of a benchmark industry classification system for identifying companies engaged in the areas of focus for each index series, the ROBO Global® Industry Classification was created by ROBO Global® in consultation with industry experts and strategic advisors. To be eligible for inclusion in the ROBO Global® Industry Classification, a company's product, technology, services, and/or business model must fit into one of the index series' identified subsectors as listed in appendix A.

Selection

Universe Requirement - All constituents must be a member of the ROBO Global® Industry Classification as of the Determination Date.

Eligible Exchange Requirement - Constituents must be publicly traded on an eligible exchange as listed in appendix B.

ESG Policy Requirement - Constituents must meet the requirements of the ROBO Global ESG Policy as listed in appendix C.

Market Capitalization Requirement - Companies which are not currently an Index Component with a Market Capitalization of less than the \$200 million USD as at the relevant Determination Date are ineligible for inclusion in the indices. Companies which are currently an Index Component with a Market Capitalization of less than \$100 million at the relevant Determination Date are ineligible for inclusion in the indices.

Liquidity Requirement - Companies which are not currently an Index Component, with a trailing 3-month composite average daily value traded at the relevant Determination Date that is less than \$2 million USD, are ineligible for inclusion in the indices. Companies which are currently an Index Component, with a trailing 3-month average daily value traded at the relevant Determination Date that is less than \$1 million USD, are ineligible for inclusion in the indices.

China A Requirement - Companies listed on either the Shanghai/Hong Kong Stock Connect or Shenzhen/Hong Kong Stock Connect exchanges must appear on the "Lists of securities eligible for unrestricted buying and selling" published by the Hong Kong Stock Exchange concerning the eligibility of securities under the China Stock Connect Program (the "China A Eligible List"). In general, removals from the China A Eligible List will be treated equivalent to a delisting. Additionally, companies which have 24% or greater of their total share capital owned by QFII, RQFII, and Stock Connect investors, as reported by the Exchange at the relevant Determination Date, are ineligible for inclusion in the indices.

Theme Score Requirement - Stocks classified within the index series' universe are assigned a "Theme Score," comprised of factors representing the levels of revenue the company receives from business

activities related to the theme, levels of investment the company makes relative to the theme, and the market and technology leadership of the company relative to universe peers. Each stock's "Theme Score" will range from 1 to 100 and will be reviewed on a regular basis. Companies whose "Theme Score" is greater than or equal to 50, and who meet all other eligibility requirements, are eligible for inclusion. Additional details regarding the Theme Score can be found in Appendix A.

Minimum Constituent Requirement - Each index should comprise a minimum of 50 index constituents. Market capitalization and liquidity eligibility requirements may be reduced if fewer than this number are available, until the required number of constituents are eligible.

Maximum Constituent Requirement - Each index should comprise a maximum of 100 index constituents. If a greater number are eligible, the relevant number of constituents are selected by order of the highest "Theme Score" and market capitalization.

Sub-Index Selection

US Listed Index – Includes all constituents of the primary index which are listed on an eligible United States of America exchange.

Japan Listed Index – Includes all constituents of the primary index which are listed on an eligible Japanese exchange.

Weighting

Constituents are weighted according to their "Theme Score." Each constituent's weight is calculated by dividing its "Theme Score" by the sum of all constituents' "Theme Scores", subject to the requirements below.

China A Inclusion Factor

For securities listed on either the Shanghai/Hong Kong Stock Connect or Shenzhen/Hong Kong Stock Connect exchanges (China A shares), the initial weight will be further multiplied by the "China A Inclusion Factor," with excess weight being redistributed equally across the non-China A share companies. As of the publication date of this document, the "China A Inclusion Factor" is defined to be 25%. This factor will be reviewed on a periodic basis and updated as appropriate.

Free Float Weight Cap

Individual security weights will be constrained at rebalance to limit the maximum cumulative holding in any constituent by index licensed funds to approximately 5% of the available shares of any individual constituent. At each review, a "total assets estimate" representing 110% of the dollar value of the total assets under management in exchange-traded funds linked to indices in the index series, at the determination date. In the event the "total assets estimate" is less than \$100 million USD, the "total assets estimate" will be defined to be \$100 million USD.

Where the initial weight of a company multiplied by the "total assets estimate" is greater than 5% of that constituent's free float market capitalization, its weight will be reduced so that it represents 5% of that constituent's free float market capitalization. Weights removed from constituents will be allocated on a pro-rata basis across all remaining constituents, subject to the same 5% limitation.

Sub-Index Weighting

Constituents for sub-indexes are weighted by taking the weight of the constituent in the Reference Index (the "reference weight") and dividing by the sum of all eligible reference weights so that all weights sum to 100%.

UCITS Indices

The weighting schemes used for the various ROBO Global® UCITS indices aim to ensure UCITS compliance at each index review. Should their application to the UCITS indices appear at some future time unlikely to achieve compliance, the VettaFi Index Committee will amend the rules to resolve this, following the procedures and notifying users of those changes as required.

Rebalancing and Reconstitution

The Indexes are rebalanced and reconstituted on the “Rebalance Date”.

Pricing used in share weights used for reconstitutions are as of the “Determination Date”.

Share weights for the rebalanced Indexes are computed as of the “Determination Date”.

Changes to the Indexes related to the rebalances are as of the “Rebalance Date”.

Additions are only made on rebalance or reconstitution dates.

Index Maintenance

Please refer to the Index Maintenance Policy document for information on Data Sourcing, Pricing, Financial distress, Index Dissemination, and Data Correction Policy.

Corporate Actions

Please refer to the Index Maintenance Policy document for information on Corporate Action processing.

Index Calculation

Please refer to the Index Maintenance Policy document for information on index calculations.

Index Governance

The index is governed and managed by a VettaFi Index Committee for the purpose of meeting the goals of the index. For more information, please refer to the Index Governance document.

Index Policies

Please refer to the Index Policies document for information regarding Announcements, Holiday Schedules, Unexpected Exchange Closures, and Recalculation Policy.

Index Information

ROBO Global® Artificial Intelligence Index Series

Index	Calculation Currency	Price Index	Net Total Return Index	Base Date	Launch Date
ROBO Global® Artificial Intelligence Index	USD	THNQ	THNQTR	12/31/2013	08/22/2018
ROBO Global® Artificial Intelligence US Listed Index ¹	USD	THNQUS	THNQSTR	03/19/2021	03/19/2021

¹ Benchmarks the constituents of the ROBO Global® Artificial Intelligence Index which are listed on an eligible United States of America exchange.

ROBO Global® Healthcare Technology and Innovation Index Series

Index	Calculation Currency	Price Index	Net Total Return Index	Base Date	Launch Date
ROBO Global® Healthcare Technology and Innovation Index	USD	HTEC	HTECTR	12/31/2008	04/30/2019
ROBO Global® Healthcare Technology and Innovation US Listed Index ²	USD	HTECUS	HTECUSTR	03/19/2021	03/19/2021

ROBO Global® Robotics and Automation Index Series

Index	Calculation Currency	Price Index	Net Total Return Index	Base Date	Launch Date
ROBO Global® Robotics and Automation Index	USD	ROBO	ROBOTR	12/31/2002	08/02/2013
ROBO Global® Robotics and Automation UCITS Index	USD	ROBOTPR	ROBOT	12/31/2003	06/16/2014
ROBO Global® Robotics and Automation US Listed Index ³	USD	ROBOUS	ROBOUSTR	03/19/2021	03/19/2021
ROBO Global® Japan Robotics and Automation UCITS Index ⁴	JPY	ROBOJPPR	ROBOJP	12/31/2003	10/15/2015
ROBO Global® Robotics and Automation UCITS Yen Index ⁵	JPY	ROBOYNUI	ROBOYNPRUI	12/19/2003	12/01/2016
ROBO Global® Robotics and Automation UCITS Hedged to Yen Index ⁶	JPY	ROBOYNPR	ROBOYN	12/19/2003	12/01/2016
ROBO Global® Robotics and Automation 18% Volatility Target Index ⁷	USD		ROBOVT18	04/11/2012	07/10/2018

² Benchmarks the constituents of the ROBO Global® Healthcare Technology and Innovation Index which are listed on an eligible United States of America exchange.

³ Benchmarks the constituents of the ROBO Global® Robotics and Automation Index which are listed on an eligible United States of America exchange.

⁴ Benchmarks the constituents of the ROBO Global® Robotics and Automation UCITS Index which are listed on an eligible Japanese exchange.

⁵ Benchmarks the constituents of the ROBO Global® Robotics and Automation UCITS Index, calculated in JPY.

⁶ Benchmarks the constituents of the ROBO Global® Robotics and Automation UCITS Index with returns hedged to JPY.

⁷ An excess return index that mimics an unfunded variable exposure to the ROBO Global® Robotics and Automation Total Return Index with the aim of achieving an annualized realized volatility of less than or equal to 18%.

ROBO Global® Robotics and Automation 18% Volatility Target Index

Description

The ROBOVT18 index is an excess return index that mimics an unfunded variable exposure to the ROBO Global® Robotics and Automation Total Return Index (ROBOTR) with the aim of achieving an annualized realized volatility of less than or equal to 18%. The exposure is notionally funded by borrowing at the rate of SOFR plus a spread adjustment of 0.26161%⁸, and a notional synthetic dividend of 5% per annum is also removed from the return.

Index Calculation

The index is calculated on each business day in accordance with the following formula:

The index level on the index start date is set to 100.

$$IL_0 = 100$$

On every business day following the index start date:

$$IL_t = IL_{vcd} * \left(1 + Exp_{vcd} * \left(\frac{targetIndex_t}{targetIndex_{vcd}} - 1 \right) - Exp_{vcd} * rate_{vcd} * \frac{DC_{vcd,t}}{360} - synthDiv * \frac{DC_{vcd,t}}{365} \right)$$

with:

IL_t = Index Level as of business day t

$targetIndex_t$ = The closing level of the target index as of business day t

Exp_{vcd} = The exposure to the target index on the last volatility calculation day as defined further below

$rate_{vcd}$ = Level of the money market rate, expressed as a percentage, for the last volatility calculation day

$DC_{vcd,t}$ = Number of calendar days from (and excluding) the last volatility calculation day to (and including) business day t

$synthDiv$ is a synthetic dividend of 5% per annum, deducted on a daily basis.

The formula for Exp_{vcd} is given below⁹:

$$Exp_{vcd} = \min \left(maxLeverage, \frac{volTarget}{realizedVol_{vcd-2}} \right)$$

Where $maxLeverage = 2$ and $volTarget$ = Index Volatility Target

The $realizedVol_{vcd}$ is calculated according to the following formula, where i is a volatility calculation day (vcd):

$$realizedVol_{vcd} = \sqrt{\frac{252}{20} * \sum_{i=0}^{19} \left(\ln \left(\frac{targetIndex_{vcd-i}}{targetIndex_{vcd-i-1}} \right) \right)^2}$$

⁸ Prior to June 1, 2023, the money market rate was 3-month USD LIBOR.

⁹ Prior to August 23, 2018, the denominator in the Exp_{vcd} formula was defined to be $realizedVol_{vcd-1}$.

The last volatility calculation day (*vcd*) is defined to be the most recent business day for the target index prior to business day *t* where all of the following exchanges are open¹⁰:

- New York Stock Exchange (NYSE) - USA
- London Stock Exchange (LSE) - UK
- Tokyo Stock Exchange - Japan
- XETRA - Germany

¹⁰ Prior to August 23, 2018, the last volatility calculation day (*vcd*) was defined to be the most recent business day for which the target index was calculated.

Rule Book Modifications

Effective Date	Version	Revision
October 30, 2023	5.0	The ROBO Global family of indices were brought under control of the VettaFi Index Committee following their acquisition by VettaFi in April 2023. For a list of methodology changes prior to this date, please contact VettaFi.
December 28, 2023	5.1	The ESG policy was updated to include the following changes: • Companies shall currently not be involved in coal exploration, and not be involved in the exploitation or development of new coal mines. • Companies that derive any portion of their revenue from thermal coal-related activities (including exploration, mining, extraction, transportation, distribution, or refining) are excluded, unless they have a SBTi target set at well-below 2°C or at 1.5°C, or have a SBTi “Business Ambition for 1.5°C” commitment. • Companies shall currently not be involved in exploration, and not be involved in exploitation or development of new unconventional oil or gas fields. • Companies shall currently not be involved in exploration, and not be involved in exploitation or development of new oil or gas fields. • Companies that derive any portion of their revenue from thermal coal power generation are excluded.
March 19, 2025	5.2	The ESG policy language was simplified and definitions slightly modified to match those provided by ESG data vendors. Overall policy requirements remain constant.

Contact Information

For any questions regarding an index, please contact: indexgovernance@vettafi.com

Disclaimer

The Indices are proprietary to VettaFi. No use or publication may be made of an Index, or any of its provisions or values, without the prior written consent of VettaFi. VettaFi is not responsible for any errors or omissions, regardless of the cause, for the results obtained from the use of the Content. In no event shall VettaFi be liable to any party for any direct, indirect, incidental, exemplary, compensatory, punitive, special, or consequential damages, costs, expenses, legal fees, or losses (including, without limitation, lost income or lost profits and opportunity costs) in connection with any use of the Content.

Appendix A – ROBO Global® Industry Classification

ROBO Global® Artificial Intelligence Index Series

Companies within the ROBO Global® Artificial Intelligence Index Series are identified as either “Infrastructure” companies or “Applications & Services” companies:

“Infrastructure” refers to companies that are enablers and developers of AI systems and capabilities. This includes companies at the forefront of the AI ecosystem that are integrated providers of the cloud, hardware, and analytical software for data center and cloud architecture environments. These companies are enabling machine learning and deep learning technology where it can augment human intelligence, increase efficiency where AI is one of the driving forces behind the company’s growth.

“Applications & Services” refers to companies that are well-positioned to benefit from AI given its heavy investments in building out its AI capabilities, offering industry knowledge and technology expertise. It also includes companies that are leveraging AI as a catalyst for revenue growth and extend competitive advantage. These companies are utilizing AI and ML for everything from voice activated technology, digital assistants, predictive analytics, cloud infrastructure tools to machine learning models for data scientists and developers to augment business process and to drive intelligent decision-making.

Companies are further subclassified into the following subsectors under either Infrastructure or Applications & Services.

Big Data / Analytics (Infrastructure)

Predictive analytics, predictive maintenance, data aggregation, and data analysis are among the AI technologies that give companies the power to analyze and predict outcomes. This level of deep, AI-driven analysis informs better marketing, sales, and business decisions. The result: actionable, predictive insights that help companies improve customer experiences, deliver more targeted offerings, and solve complex business challenges.

Cloud Providers (Infrastructure)

Public and private cloud platforms are the key to storing and sharing the massive amounts of data required to feed AI processes, and to delivering the standardization required for AI automation. By increasing the speed of innovation, rapidly delivering new services, and supporting the latest advancements in AI, cloud providers help companies accelerate the delivery lifecycle and rapidly evolve and improve products and services.

Cognitive Computing (Infrastructure)

Cognitive computing provides a higher level of human-like problem solving by using computer-based neural networks to process information, and by giving computers the ability to think, reason, and remember—all without human intervention. Solutions that offer these advanced deep-learning algorithms are driving unprecedented developments in medicine, education, agriculture, and more.

Network & Security (Infrastructure)

AI-driven behavioral analytics use the power of machine learning to model network behavior and improve threat detection. AI’s storage capacity, processing power, and advanced analytics give companies the ability to sort through vast quantities of software vulnerabilities, configuration errors, and threat intelligence to isolate high-risk situations that call for immediate attention—all in near-real-time.

Semiconductor (Infrastructure)

The exploding use of AI is ushering in a new era of semiconductor architectures and computing platforms that can handle the accelerated processing requirements of an AI-driven world. To tackle the challenge, semiconductor companies are creating new, more advanced AI chip engines using a whole new range of materials, equipment, and design methodologies.

Business Process (Applications & Services)

AI powered tools help organizations analyze and leverage massive amounts of data to better understand customer behavior, detect fraud, streamline supply chains, and refine internal efficiencies. AI's ability to transform business models seems nearly endless, and innovations in machine learning, data analytics, and automation are enabling companies to re-imagine traditional workflows and target new market opportunities.

Consulting Services (Applications & Services)

Understanding how to apply leading-edge technology and intelligent product design to support existing business structures is vital to achieving optimal benefits from AI. When companies lack internal AI expertise, AI consulting firms provide knowledge and insights to create effective AI strategies, evaluate AI technologies, and deliver integration services to support the full applications lifecycle and drive greater efficiencies, cut costs, and increase operating margins.

Consumer (Applications & Services)

AI is continuing to reshape the consumer experience. Building on key capabilities that have already transformed the gaming and entertainment industries, AI is now delivering smart homes, changing when and how we shop by driving deeper levels of personalization, and applying immersive computing that puts the power of augmented reality to work to facilitate the purchases of apparel, travel, real estate and more.

eCommerce (Applications & Services)

eCommerce leverages the power of AI to better understand customers, generate new leads, and improve customer engagement. New advancements in natural language processing and image recognition are being used to deliver highly personalized search results, create more efficient sales and lead generation, and streamline global commerce.

Factory Automation (Applications & Services)

Industrial automation remains a hotbed for AI as factories go digital. Machine learning and predictive maintenance increase factory and supply chain efficiencies, shorten time to market, and improve safety. Sensing and advanced computer vision technologies using AI enable greater efficiency gains in logistics.

Healthcare (Applications & Services)

AI is powering innovations in the diagnosis and treatment of diseases, as well as patient care and healthcare productivity. AI-enabled surgical robotics, medical imaging technologies that use AI to scan vast databases of patient records to analyze and diagnose disease, genomic sequencing, and other major innovations are driving more precise diagnosis and advanced treatments that drastically improve patient outcomes.

ROBO Global® Healthcare Technology and Innovation Index Series

Companies within ROBO Global® Healthcare Technology and Innovation Index Series are classified into the following subsectors:

Data Analytics

Software and solution providers that use data analytics and machine learning to support clinical trials, manage medical information, and care providers' workflows.

Diagnostics

Providers of advanced tools, software, and services for medical diagnosis, including next-generation imagery and molecular testing.

Genomics

Providers of technology for the analysis of genetic data, including next-generation gene sequencing tools used to help predict the risk of genetic diseases, detect cancer and improve the application of precision medicine.

Medical Instruments

Providers of next-generation medical instruments, including surgical tools, implantable devices and other instruments for the treatment of chronic and life-threatening illnesses.

Precision Medicine

Providers of custom therapies based on genetic, environmental, lifestyle, and other key factors.

Process Automation

Providers of automation solutions for laboratory processes, including information and sample management, fluid handling, outsourced lab services, and more.

Regenerative Medicine

Providers of solutions for the regeneration of cells, tissue and organs, such as tissue engineering, organ and bone transplants, and plasma therapies.

Robotics

Providers of robotic-assisted platforms, including robots used for surgical and diagnostic applications, sterilization, and product delivery.

Telehealth

Specialists in virtual care and remote monitoring, including virtual doctor visits, mobile and wearable devices.

ROBO Global® Robotics and Automation Index Series

Companies within the ROBO Global® Robotics and Automation Index Series are identified as “Technology” companies or “Applications” companies:

“Technology” refers to all companies that manufacture or provide services related to machinery, equipment, devices, or sensors that support a robot performing a task. It also includes companies that provide key enabling software and processing technologies used to advance the conversion to autonomous systems. Essentially, we are looking to identify the companies that enable robots to sense, process, and act.

“Applications” refers to companies that incorporate multiple robotic and automation technologies into their product or manufacturing process to improve efficiency in traditional business lines, as well those that are developing entirely new business propositions within the theme.

Companies are further subclassified into the following subsectors under either Technology or Applications:

Actuation (Technology)

Actuation is the means by which machines interact with the physical world. For human beings, this mainly refers to our limbs and, in particular, our hands. Machines, however, are not limited to manipulation. Almost anything that has an effect on the physical world can be made into an actuator. Actuation techniques include electric, hydraulic (compressed fluid), mechanical, and pneumatic (compressed air).

Computing & Artificial Intelligence (Technology)

Robotic and autonomous systems must make decisions at various levels, from determining the state of the environment they are operating in to optimally planning actions and controlling motion. This is analogous to the way our brain functions, and it is what allows the processing of information that leads to actuation. Accomplishing this in an autonomous robotics system requires raw computing and processing power, as well as increasingly

advanced software. Computing can vary from embedded systems smaller than a fingernail to hyper-scale datacenters implementing sophisticated algorithms—including artificial intelligence (AI). Advancements in AI, especially machine learning, are key to the growth of autonomous systems. The main advantage of AI over human intelligence is its high scalability, resulting in significant cost savings. Other benefits include AI's consistency and rule-based programs, which eventually reduce errors. AI's longevity coupled with continuous improvement and new growth opportunities are the reasons why AI is drawing wide interest.

Integration (Technology)

Robotics and automated systems are made up of many components (sensors, actuators, and computational units), which can be distributed over large spaces. Integration consists of architecting a system to determine how components work together to achieve a defined objective in a robust, high-performance, and cost-efficient way.

Sensing (Technology)

In order for a system to exhibit autonomy and determine its own internal state, it must be able to sense its environment. This is referred to as exteroception and proprioception. For robotic systems, this level of sensing is important for the same reasons that exteroceptive senses (sight, sound, etc.) and proprioceptive senses (the ability to know where our limbs are and what they are doing without directly observing them) are important for human beings—they enable us to perceive the world around us. Robotic systems, however, are not limited to the standard senses. In robotics, a sensor can be developed to detect almost anything that can be measured.

3D Printing (Application)

Traditionally, things are built either by assembling separate parts together or by removing material from a larger work-piece. 3D printing (also called “additive manufacturing”) adds yet another way of building by depositing different types of materials where they are needed. One of the primary benefits of 3D printing is the potential for customization that is not economically feasible with traditional techniques.

Autonomous Systems (Application)

Autonomous systems are designed to responsively operate in a dynamic environment with minimal human intervention. This is typically achieved by using sensors to perceive environmental conditions, modeling appropriate responses to changing conditions using planning and control system modulation, and then controlling actuators to interact with the environment. Autonomous systems may use adaptive reasoning, machine learning, statistical methods, and other forms of artificial intelligence to refine their own responsive behavior and their models of external conditions. Examples include indoor and outdoor transportation systems, including surface and air vehicles such as autonomous mobile robots, drones, cars, trucks, and trains, as well as autonomous mobile robots for material handling and robotic cleaning machines.

Business Process Automation (Application)

The technology-enabled automation of complex business processes drives greater simplicity, productivity, quality, transparency, sustainability, and ultimately greater competitive advantages for companies embracing a digital transformation. Ranging from data analytics and business intelligence to robotics process automation, examples also include voice assistants, chatbots, visualization and simulation software, and AR/VR. But automation isn't just for IT processes. It can be applied to HR, finance, marketing, and R&D functions, streamlining workflows and automating hundreds of processes.

Food & Agriculture (Application)

Feeding and sustaining the world continues to be one of our most important economic activities. A new generation of autonomous systems and data analytics tools are bringing the benefits of traditional automation, such as precision and the elimination of rote labor, to this domain. For example, precision agriculture offers the potential to greatly reduce costs and minimize our environmental footprint by applying water and fertilizer on an as-needed basis. Meanwhile, the food processing industry continues to automate aggressively to meet the increasing demand for greater volume, lower costs, and more stringent safety requirements.

Healthcare (Application)

As healthcare costs continue to rise globally, robotics, automation, and AI are poised to provide a countering force to this trend. Using robotics and autonomous systems in areas including rehabilitation, diagnostics, exoskeletons, and care for the elderly promises to drastically reduce costs and improve the quality of life for many people. In addition, as in all other application areas, robotics and automation can enable new capabilities that transcend cost-cutting, such as the use of robots for many types of precision medicine, including surgeries on the tiniest elements of the heart and lung, and neurological treatments.

Logistics Automation (Application)

The logistics and warehouse automation industry is at an inflection point as the boon in e-commerce continues to dramatically raise the bar for supply chain efficiency. From autonomous mobile robots and advanced storage systems to track & trace technologies, logistics automation enables increasingly speedy, safe, and error-free distribution, a shorter time-to-market, and ultimately lower costs to businesses and consumers.

Manufacturing & Industrial Automation (Application)

Factory automation is an increasingly critical success factor in manufacturing as businesses pursue higher productivity and lower costs in the face of global competition. Automation also means workplace safety and frees up workers from tedious manual labor to focus on strategic, high-level tasks that require human expertise. While the automotive industry was the first to deploy robotics and automation, many other industries are still in the early esg stages of adoption, offering significant growth potential.

Theme Score

Companies classified within each subsector are assigned a “Theme Score,” comprised of factors representing:

- **Revenue Purity:** An assessment of the revenue a company generates, contributes to, and derives from business activities related to the assigned subsector(s).
- **Investments:** This includes an evaluation of the company's investment in existing or new business areas. Factors considered are R&D, M&A activities, investment in human capital and technology, capital expenditure and overall strategic direction in growth areas related to the assigned subsector(s).
- **Market Leadership:** This criterion involves an assessment of a company's market share, addressable markets, business partnerships, competitive advantages (moats), executive leadership team, financial stability and risk factors, relative to its peers in the respective subsector(s).
- **Technology Leadership:** This includes an evaluation of each company's technological capabilities in key areas related to the specific theme and subsector(s), covering technical moats, patents, development pace, positioning (first mover, etc.) and innovation factor.

Each stock's “Theme Score” ranges from 1 to 100 and is reviewed no less than annually.

Appendix B – Eligible Exchanges

Exchange MIC	Exchange Name	Exchange Country
XWBO	WIENER BOERSE AG	Austria
WBAH	WIENER BOERSE AG AMTLICHER HANDEL (OFFICIAL MARKET)	Austria
WBDM	WIENER BOERSE AG DRITTER MARKT (THIRD MARKET)	Austria
XBRU	EURONEXT - EURONEXT BRUSSELS	Belgium
XTSE	TORONTO STOCK EXCHANGE	Canada
XSEC	SHENZHEN STOCK EXCHANGE - SHENZHEN - HONG KONG STOCK CONNECT	China
XCSE	NASDAQ COPENHAGEN A/S	Denmark
XHEL	NASDAQ HELSINKI LTD	Finland
XPAR	EURONEXT - EURONEXT PARIS	France
ALXP	EURONEXT GROWTH PARIS	France
FRAB	BOERSE FRANKFURT - FREIVERKEHR	Germany
FRAA	BOERSE FRANKFURT - REGULIERTER MARKT	Germany
TGAT	TRADEGATE EXCHANGE	Germany
XETR	XETRA	Germany
XHKG	HONG KONG EXCHANGES AND CLEARING LTD	Hong Kong
XGEM	HONG KONG GROWTH ENTERPRISES MARKET	Hong Kong
XDUB	IRISH STOCK EXCHANGE - ALL MARKET	Ireland
XTAE	TEL AVIV STOCK EXCHANGE	Israel
XAIM	AIM ITALIA - MERCATO ALTERNATIVO DEL CAPITALE	Italy
XMIL	BORSA ITALIANA S.P.A.	Italy
MTAA	ELECTRONIC SHARE MARKET	Italy
XJPX	JAPAN COMPOSITE	Japan
XTKS	TOKYO STOCK EXCHANGE	Japan
XAMS	EURONEXT - EURONEXT AMSTERDAM	Netherlands
XNZE	NEW ZEALAND EXCHANGE LTD	New Zealand
XOAS	OSLO AXESS	Norway
XOSL	OSLO BORS ASA	Norway
XNCO	WARSAW STOCK EXCHANGE/ EQUITIES/NEW CONNECT - MTF	Poland
XWAR	WARSAW STOCK EXCHANGE/EQUITIES/MAIN MARKET	Poland
XLIS	EURONEXT - EURONEXT LISBON	Portugal
XSCA	SINGAPORE CATALIST MARKET	Singapore
XSES	SINGAPORE EXCHANGE	Singapore
XKOS	KOREA EXCHANGE (KOSDAQ)	South Korea
XKRX	KOREA EXCHANGE (STOCK MARKET)	South Korea
XBAR	BOLSA DE BARCELONA	Spain
XMAD	BOLSA DE MADRID	Spain
XMCE	MERCADO CONTINUO ESPANOL - CONTINUOUS MARKET	Spain
XSTO	NASDAQ STOCKHOLM AB	Sweden
XSWX	SIX SWISS EXCHANGE	Switzerland
XVTX	SIX SWISS EXCHANGE - BLUE CHIPS SEGMENT	Switzerland
ROCO	TAIPEI EXCHANGE	Taiwan
XTAI	TAIWAN STOCK EXCHANGE	Taiwan
XLON	LONDON STOCK EXCHANGE	United Kingdom
AIMX	LONDON STOCK EXCHANGE - AIM MTF	United Kingdom
XNAS	NASDAQ - ALL MARKETS	United States
XNCM	NASDAQ CAPITAL MARKET	United States
XNGS	NASDAQ/NGS (GLOBAL SELECT MARKET)	United States
XNMS	NASDAQ/NMS (GLOBAL MARKET)	United States
XNYS	NEW YORK STOCK EXCHANGE INC.	United States
XASE	NYSE MKT LLC	United States

Appendix C – ROBO Global ESG Policy

Objective

Following critical observations, the ROBO Global family of indices will exclude companies that do significant harm to environmental, social, and governance objectives. Existing index members that no longer comply with this ESG policy or for which it is not possible to fulfill a complete evaluation of all ESG criteria are removed from the indices at the next scheduled rebalance. Company activities are evaluated as well as activities of subsidiaries they control.

Each company in the ROBO Global universe is evaluated for the following metrics:

- The ESG risks that companies are exposed to and the risks that their business activities could result in adverse impacts to Environmental, Social, or Governance criteria
- The alignment of companies with international norms and standards
- Involvement in harmful activities
- Suitability for the index objective

ESG Impact Assessment

To determine the risk of adverse impacts to Environmental, Social, or Governance criteria for each company, companies are graded based on the following criteria. Companies determined to be in the worst grading bucket will be excluded from the eligible universe.

- The sustainability impacts of companies' products and services on the environment and society
- Company relationships with employees and suppliers or contractors
- Governance policies, including the strategic management of Corporate Social Responsibility issues

Norms-Based Assessments

All index members must comply with the international norms and standards, including the principles of the U.N. Global Compact, the U.N. Guiding Principles on Business and Human Rights (UNGPs), the OECD Guidelines for Multinational Enterprises, and the ILO Conventions.

Companies involved in severe violations of the following will be excluded:

- **Human Rights** (including controversies over employment conditions, health and safety, health impact of products and services, activities in sensitive countries, and access to basic needs)
- **Labor** (including controversies over discrimination and abuse, freedom of association, and child/forced labor)
- **Environment** (including controversies over environmental pollution, land and sea use change, over-exploitation of natural resources, GHG impact, and involvement in controversial projects)
- **Anti-Corruption** (including controversies over money laundering and bribery and corruption)

Exclusions and Thresholds Relating to Harmful Activities

WEAPONS AND ARMS

- Companies involved in the production, distribution, or sale of weapons that are controversial, or that do indiscriminate or disproportionate harm are excluded. Controversial weapons include anti-personnel mines, cluster munition, depleted uranium, biological/chemical weapons, nuclear weapons, and white phosphorous weapons.
- Companies involved in the retail of arms and defensive equipment are excluded.
- Companies that derive more than 5% of their revenue from activities related to lethal defense equipment are excluded.

ENERGY

- Companies should have a SBTi target set at well-below 2°C or at 1.5°C, or have a SBTi “Business Ambition for 1.5°C” commitment, or:
 - Derive no portion of their revenue from thermal coal-related activities.
 - Derive less than 5% of their revenue from oil and gas-related activities.

POWER GENERATION

- Companies that derive 5% or more of their revenue from nuclear energy are excluded.
- Companies belonging to the following ICE sub-industries are excluded:
 - 11010102 Electricity Generation - Non-Renewable
 - 11010201 Electricity Distribution & Transmission
 - 11010202 Integrated Electricity
- Companies that derive any portion of their revenue from thermal coal power generation are excluded.

PRODUCT EXCLUSIONS

- Companies that derive more than 5% of their revenue from the production, distribution, or sale of the following activities are excluded:
 - Tobacco
 - Palm oil
 - Alcohol
 - Gambling
 - Adult entertainment

ANIMAL TESTING

- Companies flagged for animal welfare controversial events are monitored to fully evaluate factors such as a company’s animal welfare policies and animal welfare ethics committee activity in order to determine index eligibility.

CONTRIBUTING ACTIVITIES

- Companies violating exclusion thresholds but that are determined to be either (a) in the process of reducing exposure below the threshold in the very near-term or (b) involved in contributing activities and services that increase worker safety, reduce energy consumption, or provide significant other environmental or social benefits may be exempted from the exclusion policy.
- For the purposes of this policy, “contributing activities” shall include:
 - Economic activities included in the EU Taxonomy

- Other economic activities (not yet in the EU Taxonomy) that contribute to any of the EU environmental objectives or the Sustainable Development Goals (SDGs), including, but not limited to: Good Health and Well-Being, Quality Education, Decent Work and Economic Growth, Industry, Innovation and Infrastructure, and Responsible Consumption and Production.

Governance

Good governance is viewed as a tool to improve the performance of a company's business, help them become more stable and productive, and unlock new opportunities. With high and transparent levels of governance, companies can reduce risks, enable faster and safer growth, improve reputation, foster trust, and benefit their business, stakeholders, and the local community. Companies that do not adhere to high standards of governance will have their index theme scores impacted versus those of their peers.

Sustainability within Investment Themes

The benefits and efficiencies from robotics, artificial intelligence, and healthcare technology will positively impact many aspects of our business, service, and consumer lives. Globally, we are faced with many social challenges, including aging populations, healthcare systems at capacity, dangerous pollution levels, over-demand for scarce resources, increasing wage inflation, and general safety/health concerns. At its core, these investment themes tackle many of these social challenges by creating efficiencies and flexibility and safeguarding human safety and general well-being.

The **ROBO Global® Artificial Intelligence Index Series** promotes ESG characteristics including, but not limited to, quality education and reduced inequalities. Artificial intelligence offers broad technological capabilities that can be applied to all industries, profoundly transforming the world around us in ways that are highly beneficial to society. The sustainable investment objective of this strategy is to provide global exposure to best-in-class companies that are leading the global artificial intelligence revolution across targeted subsectors, including Healthcare, Network & Security, and Big Data Analytics.

The **ROBO Global® Healthcare Technology and Innovation Index Series** promotes ESG characteristics including, but not limited to, good health and well-being and looks for long-lasting and large-scale developments for increased efficiency and effectiveness in healthcare—all with patients at the center of the innovation. The sustainable investment objective of this strategy is to provide global exposure to best-in-class companies that are leading the global healthcare technology revolution across targeted subsectors, including, Diagnostics, Robotics, Genomics, Precision and Regenerative Medicine, Lab Automation, Instruments, Data Analytics, and Telehealth.

The **ROBO Global® Robotics and Automation Index Series** promotes ESG characteristics including, but not limited to, decent work and economic growth as well as responsible consumption and production. Globally, we are faced with many social challenges, including aging populations, healthcare systems at capacity, dangerous pollution levels, over-demand for scarce resources, increasing wage inflation, and safety & health concerns. The list goes on and on. At its core, robotics and automation is about tackling many of these challenges by creating efficiencies and flexibility while assisting human safety and general well-being. The sustainable investment objective of this strategy is to provide global exposure to best-in-class companies that are leading the global robotics and automation revolution across targeted subsectors, including Healthcare, Food & Agriculture, 3D Printing Logistics, and Sensing.