
Construction Rules for the Morningstar® Exponential Technologies IndexSM

Morningstar Indexes

December 2021

Contents

- 1 Overview
- 2 Index Construction
 - 2.1 Assigning Stocks to the Index
 - 2.2 Index Weighting
- 3 Index Maintenance and Calculation
 - 3.1 Index Maintenance and Corporate Action Treatment
 - 3.2 Index Calculation and Price Data
- 4 Methodology Review and Index Cessation Policy
- 5 Data Correction and Precision
 - 5.1 Intraday Index Data Corrections
 - 5.2 Index-Related Data and Divisor Corrections
 - 5.3 Computational and Reporting Precision
- 6 Appendixes
 - 6.1 Glossary
 - 6.2 Global Equity Research Technology Theme Identification
- 7 About Morningstar

Overview

The Morningstar® Exponential Technologies IndexSM provides exposure to the top 200 companies identified by Morningstar's Equity Research team as positioned to experience meaningful economic benefits as a user or producer of promising technologies.

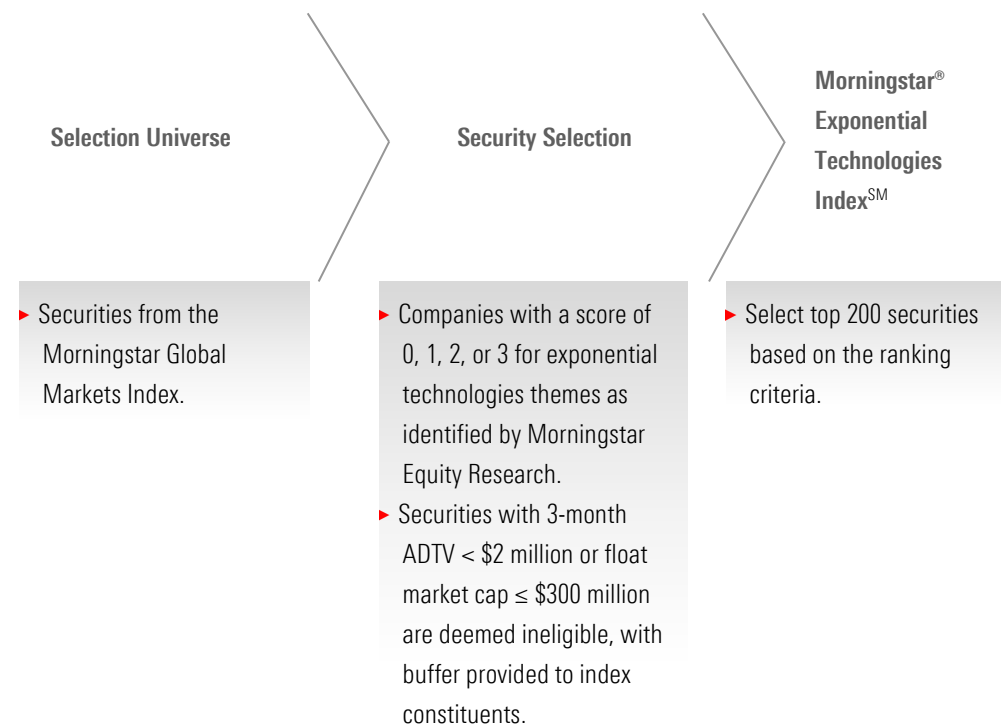
This index does not incorporate Environmental, Social, or Governance (ESG) criteria.

Index Inception Date and Performance Inception Date

The inception date of the index is December 1, 2014, and the performance inception date of the index is December 20, 2013, when the first back-tested index value was calculated.

Index Construction

Exhibit 1 Morningstar Exponential Technologies Index Construction Process



For additional details, refer to the "Assigning Stocks to the Index" section.

Assigning Stocks to the Index

Selection Universe

At each reconstitution, securities for the Morningstar Exponential Technologies Index are derived from the Morningstar Global Markets Index (benchmark). For more details on benchmark construction, refer to the construction rules of the [Morningstar Global Markets Index](#).

Security Selection

To be eligible for the index, all constituents must meet the following criteria in sequence:

- ▶ Companies with average three-month trailing daily trading volume less than \$2 million or free-float market capitalizations of \$300 million or less are deemed ineligible for the index. Current index constituents are eliminated if they have average three-month trading volume less than \$1.5 million or free-float market capitalization of \$200 million or less.

- ▶ If a company has more than one eligible share class:
 - ▶ Select the one that is a current index constituent.
 - ▶ Otherwise, select the most liquid share class determined by Morningstar Indexes.

- ▶ Qualifying potential constituents are ranked in the order that emphasizes exposure to exponential technology themes. The ranking criteria are given below by descending order of absolute preference:
 - ▶ Number of themes in which a constituent is a leader (scores 3).
 - ▶ Number of themes in which a constituent scores 2.
 - ▶ Number of themes in which a constituent scores 1.
 - ▶ Current index constituents are given preference.
 - ▶ Market capitalization, preferring smaller over larger.

Companies ranked in the top 200 are selected for the index.

Number of Stocks

The index contains 200 stocks based on a transparent ranking system subject to selection and eligibility criteria at reconstitution. However, if securities fall short of the selection and eligibility criteria, or if securities are added or deleted as a result of corporate actions after reconstitution, the index can have more or fewer than 200 securities. During reconstitution, if the number of securities is less than the target, the weight of the constituents will be determined based on the index weighting scheme. The schedule for reconstitution and corporate actions is available in the "Index Maintenance and Calculation" section.

Index Weighting

The index is equal weighted. For more details, refer to the [Morningstar Indexes Calculation Methodology rulebook](#).

Index Maintenance and Calculation

Scheduled Maintenance

The index is reconstituted and rebalanced annually and implemented after the close of business on the third Friday of December and is effective the following Monday. If Monday is a holiday, it is effective on the immediate following business day. The market data used for reconstitution and rebalance is as of the last trading day of November.

Because the reconstitution of the Morningstar Exponential Technologies Index is less frequent than the parent index, the securities excluded from the parent index at the reconstitution effective date are also deleted from Morningstar Exponential Technologies Index.

Refer to Appendix 1 for details on reconstitution and rebalancing.

Corporate Action

The treatment of corporate actions can be found in the [Morningstar Indexes Corporate Actions Methodology rulebook](#).

Index Calculation and Price Data

Details about index calculations and price data can be found in their respective rulebooks: [Morningstar Indexes Calculation Methodology](#) and [Equity Closing Prices Used for Index Calculation](#).

Methodology Review and Index Cessation Policy

The index methodology is continually reviewed to ensure it achieves all stated objectives. These reviews take into account corporate action treatment, selection, and maintenance procedures. Subscribers to the index will be notified before any methodology changes are made. For more details, refer to the [Morningstar Index Methodology Change Process](#).

Morningstar also notifies all subscribers and stakeholders of the index that circumstances might arise that require a material change to the index, or a possible cessation of the index. Circumstances that could lead to an index cessation include, but are not limited to, market structure change, product definition change, inadequate supply of data, insufficient revenue associated with the index, insufficient number of clients using the index, and/or other external factors beyond the control of the Morningstar Index Committee.

Because the cessation of the index or benchmark index could disrupt subscriber products that reference this index, all subscribers are encouraged to have robust fallback procedures if an index is terminated. For more details, refer to the [Morningstar Index Cessation Process](#).

Data Correction and Precision

Intraday Index Data Corrections

Commercially reasonable efforts are made to ensure the accuracy of data used in real-time index calculations. If incorrect price or corporate action data affect index daily highs or lows, they are corrected retroactively as soon as is feasible.

Index-Related Data and Divisor Corrections

Incorrect pricing and corporate action data for individual issues in the database will be corrected upon detection. In addition, an incorrect divisor of an index, if discovered within five days of its occurrence, will always be fixed retroactively on the day it is discovered to prevent an error from being carried forward. Commercially reasonable efforts are made to correct an older error subject to its significance and feasibility.

For more details, refer to the [Recalculation Guidelines](#).

Computational and Reporting Precision

For reporting purposes, index values are rounded to two decimal places and divisors are rounded to appropriate decimal places.

Appendixes

Appendix 1: Glossary

Terms	Description
Reconstitution	During each reconstitution, the steps mentioned in the index construction process are performed, resulting in membership reset.
Rebalance	During each rebalancing, the weights are adjusted for updated free-float and shares outstanding data.

Appendix 2: Morningstar's Global Equity Research Technology Theme Identification

► Step 1

Managers from Morningstar's Global Equity Research team identify technology themes with the potential to have significant economic benefits to producers and users. These themes are reviewed annually by the equity research team and can be subject to change over time as they evolve and new themes emerge.

As of Oct. 25, 2021, nine themes have been identified:

- **Big Data & Analytics:** Capabilities with data sets too large and complex to manipulate or interrogate with standard methods or tools. Related subthemes include Artificial Intelligence & Machine Learning and Bioinformatics.
- **Cloud Computing:** A paradigm shift from the legacy IT model whereby each element is accessed in a scalable, on-demand manner through the internet. Relative subthemes include Infrastructure as a Service (IaaS) & Platform as a Service (PaaS) as well as Software as a Service (SaaS).
- **Energy Transition:** The quest to abate global climate change and reduce greenhouse gases has led to a surge of new energy technologies, investment, and innovation. Related subthemes include Carbon Capture Technologies, Energy Storage, Hydrogen, and Renewable Energy.
- **Fintech Innovation:** The search for and acknowledgement of nontraditional emerging funding sources, platforms, currency, and stored and transferred value. In some cases, traditional financial services companies are expanding their offerings with innovative, technology-enabled services to meet consumer preferences. On other cases, companies are building new platforms that could potentially transform the industry.
- **Healthcare Innovation:** Key advancements in unlocking the human genome have opened doors to paradigm shifts that will radically change the way we treat of prevent diseases. Related subthemes include Innovated Devices & Diagnostics and Innovative Therapies.

- ▶ **Hyperconnectivity:** This theme will fuel rapid growth in connected devices and a voracious need to push more data at faster transmission rates between users and devices. Related subthemes include 5G Connectivity, Cybersecurity, Internet of Things (IoT), and Non-Cellular Connectivity.
- ▶ **Nanotechnology:** The branch of technology that deals with dimensions and tolerances of less than 100 nanometers, especially the manipulation of individual atoms and molecules. Significant research dollars are being spent with the goal of starting with atoms and building up, to further progress in miniaturization. We see a wide range of potential applications, spanning medicine, computing, industrial manufacturing, and travel, to name a few.
- ▶ **Next Gen Transportation:** Technologies replacing traditional human-operated, internal combustion engine-based vehicles. This includes a wide variety of applications like traditional light vehicles, public transportation vehicles, scooters/bikes, and drones, to name just a few. Related subthemes include Autonomous Driving Technologies and Electric Vehicles.
- ▶ **Robotics:** The branch of technology that deals with the design, construction, operation, and application of robots. Advances in robotics have seemingly infinite potential applications, spanning technology, industrial, medical, and consumer-facing channels.

▶ Step 2

Morningstar's Equity Research managers train analysts on the themes and scoring framework. Rather than relying on single point-in-time metrics, analysts make forward-looking assessments such as percent of current revenues. Typically, they use models to project growth over at least the next five years and base these assumptions on published, forward-looking research pertaining to these themes. Data points provided by analysts across Morningstar's global coverage translate to thematic exposure scores of 0, 1, or 2 across each theme.

- ▶ No or little exposure: 0
- ▶ Moderate exposure: 1
- ▶ Significant exposure: 2

▶ Step 3

The Exponential Technologies Steering Committee then provides a quality control review of each company's thematic exposure scores to optimize internal consistency. During this step, the committee members engage in discussions with analysts and directors to test the rationale behind the results. During this process, the steering committee also selects five "leaders" for each theme. The thematic exposure score for each designated "leader" is then increased to "3". Leaders are defined as firms expected to have significant exposure to a given theme while also capturing disproportionate economic benefits from that exposure relative to other firms. Phrased differently, "leaders" for a given theme are those companies that offer the highest degree of thematic exposure to that theme across Morningstar's coverage.

Appendix 3: Modification to Rulebook

Section	Description	Update Date
Appendix 2	Themes included were updated.	December 2021

About Morningstar, Inc.

Morningstar, Inc. is a leading provider of independent investment research in North America, Europe, Australia, and Asia. Morningstar offers an extensive line of products and services for individual investors, financial advisors, asset managers, and retirement plan providers and sponsors. Morningstar provides data on approximately 510,000 investment offerings, including stocks, mutual funds, and similar vehicles, along with real-time global market data on more than 17 million equities, indexes, futures, options, commodities, and precious metals, in addition to foreign exchange and Treasury markets. Morningstar also offers investment management services through its investment advisory subsidiaries.

About Morningstar Indexes

Morningstar® Indexes combine the science and art of indexing to give investors a clearer view into the world's financial markets. Our indexes are based on transparent, rules-based methodologies that are thoroughly back-tested and supported by original research. Covering all major asset classes, our indexes originate from the Morningstar Investment Research Ecosystem—our network of accomplished analysts and researchers working to interpret and improve the investment landscape. Clients such as exchange-traded fund providers and other asset management firms work with our team of experts to create distinct, investor-focused products based on our indexes. Morningstar Indexes also serve as a precise benchmarking resource.

Morningstar Index Product Committee

The Morningstar Index Product Committee is comprised of members who possess a wide array of knowledge in relation to Indexes. The Product Committee is responsible for the governance over the creation and maintenance of all Morningstar branded Indexes, ensuring the highest standards are continuously met. Any matters arising from exceptional or undocumented events will be resolved at the discretion of the Morningstar Index Product Committee.

Morningstar Index Oversight Committee

The Morningstar Index Oversight Committee is comprised of informed and qualified professionals who are responsible for the process governance of Morningstar branded Indexes. The Oversight Committee assesses and where appropriate challenges the decisions of Morningstar Indexes with regards to benchmark decisions.

For More Information

For any queries, reach out to us via our [communication page](#).



22 West Washington Street
Chicago, IL 60602 USA

©2020 Morningstar. All Rights Reserved.

The information in this document is the property of Morningstar, Inc. Reproduction or transcription by any means, in whole or part, without the prior written consent of Morningstar, Inc., is prohibited. While data contained in this report are gathered from reliable sources, accuracy and completeness cannot be guaranteed. All data, information, and opinions are subject to change without notice. This document may contain back-tested or simulated performances and the subsequent results achieved by the investment strategy may be materially different.