
Morningstar Thematic Indexes Offer Superior Thematic Purity

The Morningstar research ecosystem supports differentiated indexes that offer concentrated thematic exposure.

Morningstar Indexes Research

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Overview

Demand for thematic investment solutions has skyrocketed in recent years, spurring the launch of a record 589 new thematic funds globally in 2021, up from the previous record of 271 in 2020. Assets under management in these funds grew to just over \$800 billion by year-end 2021, a nearly threefold increase in just three years' time. These funds promise concentrated exposure to new and exciting themes, drawing investor interest from retail investors and financial professionals alike. Like a new car off the lot with a fresh coat of paint, these funds are designed to turn heads. However, if investors were to take a closer look at their holdings and construction methodologies, they'd frequently come away disappointed by what lies under the hood.

Building on the comprehensive research of the Morningstar Manager Research team in their most recent "Global Thematic Funds Landscape" report, the Morningstar Equity Research team has conducted a thorough analysis of many leading thematic funds. Most fail to deliver the concentrated thematic exposure that they promise. All too often, these funds include companies with only tangential exposure to a given theme. Investors might be surprised to learn that many thematic funds are constructed using automated keyword searches through regulatory filings. The more often a company uses a given keyword or phrase related to a targeted theme, the more likely it is to be included in an associated thematic fund. However, this light-touch approach can lead to the inclusion of companies with as little as 1% or less of its overall revenue tied to the targeted theme. After all, companies are eager to highlight any exposure they might have to an emerging, high-growth trend, even if that exposure is immaterial.

Furthermore, with the thematic fund landscape having become increasingly saturated in recent years, it has become increasingly difficult to be first-to-market with the new thematic concept. This has inspired thematic fund issuers to focus on ever-more-nascent and ever-more-niche themes. However, the more nascent or niche a given theme, the more tenuous its durability and economic foundation. As a result, we've observed the launch of countless thematic products that don't live up to their billing. Indeed, research from the Morningstar Manager Research team indicates that more than three fourths of thematic funds globally have shuttered over the past 15 years.

Investors deserve better and Morningstar is in a unique position to empower investor success via its suite of thematic indexes supported by the insights of the Morningstar Equity Research team. By drawing upon the in-depth expertise and forward-looking research of Morningstar's 100+ equity research analysts, Morningstar Indexes delivers unparalleled thematic purity across a range of durable themes. In short, Morningstar's methodology for thematic index construction holds companies to a

higher standard than conventional approaches. Morningstar equity analysts determine thematic exposure scores for potential holdings by assessing a company's current revenue exposure to a given theme in addition to its revenue exposure five years forward, based on proprietary forecasts. Additionally, for a given company, analysts determine if a thematic exposure is likely to drive a net profit increase over the next five years. They also determine the company's role in the supply chain for products/offerings tied to a given theme. These insights help ensure that only companies with material exposure to a theme can be included in a Morningstar thematic index.

Leveraging the research and subject matter expertise of Morningstar equity analysts is a significant competitive advantage for Morningstar Indexes. After all, the primary responsibility of Morningstar equity analysts is to accurately forecast future cash flows in order to determine fair value estimates for each company they cover. Doing so requires a thorough understanding of emerging themes that might impact these cash flow forecasts. Additionally, while competing thematic indexes determine thematic exposure by use of keywords and historical metrics, Morningstar equity analysts forecast how themes are likely to evolve in the future, along with the business models of companies exposed to them.

While this unique approach to thematic index construction might seem to introduce subjectivity or appear "active" in nature, it is important to note that Morningstar Indexes incorporates the insights of Morningstar equity research analysts in a manner that is disciplined, transparent, and replicable. This involves the use of a thorough, standardized scoring process and an objective, rules-based approach. The result is a thematic index construction methodology that strives to optimize both thematic purity and investability.

Best-in-class client support is an additional benefit from leveraging the comprehensive research and insights of Morningstar equity analysts. While issuers of thematic funds may struggle to answer client inquiries regarding the inclusion or omission of specific stocks, Morningstar shines in this regard. In addition to producing proprietary research reports about emerging themes as well as white papers for related indexes, Morningstar equity analysts regularly conduct marketing activities in support of indexes that have gained traction in the marketplace. In partnership with licensing partners, Morningstar equity analysts regularly participate in webinars and client interactions that pull back the curtain and surface the in-depth, high-quality research supporting Morningstar's unique thematic indexes.

With impressive demand growth for thematic funds likely to persist, the value proposition associated with Morningstar thematic indexes is clear. Morningstar's ecosystem of propriety research allows for not only the construction of unique thematic indexes that offer superior thematic purity, but also for best-in-class client after a product is launched.

Discipline Is Critical in Determining Which Themes Merit New Product Development

While Morningstar Indexes holds companies to a higher standard of thematic exposure when it comes to index inclusion, we also hold themes to a higher standard than many other index providers.

Drawing upon the insights of the Morningstar equity research team, Morningstar Indexes requires that a theme:

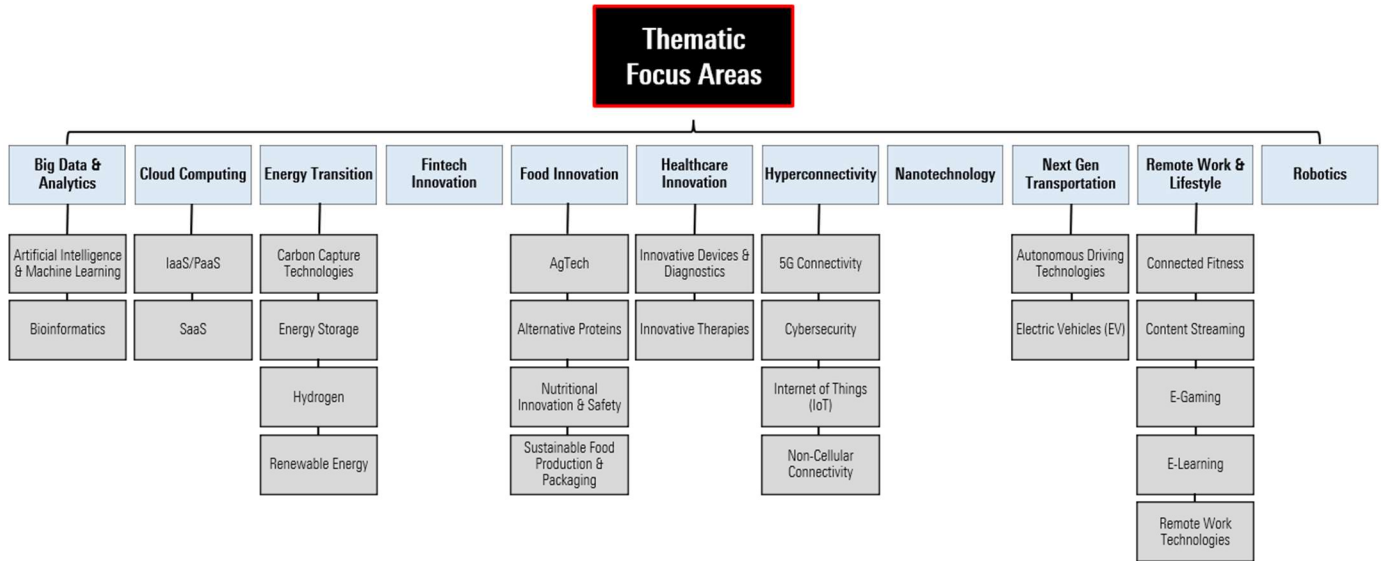
- i) Have a clear definition and economic foundation such that company exposures can be accurately assessed.
- ii) Represent a secular trend that will persist for at least the next ten years.
- iii) Provide meaningful economic benefits to a critical mass of eligible companies based on thematic exposure scores.
- iv) Be supported by subject matter expertise from members of the Morningstar Equity Research team, such that Morningstar equity analysts may opine on future adoption in an informed manner.

While the first three criteria listed above may appear eminently reasonable, numerous existing thematic funds fail to satisfy them. Employing this framework helps Morningstar Indexes avoid projects focused on ephemeral themes with no staying power. The trade-off of heightened selectivity is that situations may occasionally emerge in which Morningstar is unwilling to construct an index that a competing index provider might readily build. In these cases, however, we'd characterize the investor utility of these indexes as questionable at best. For Morningstar Indexes, this framework and the subsequent focus on optimizing thematic purity help ensure that the thematic indexes we offer deliver superior thematic exposure to secular trends that should persist well into the future. We feel this disciplined approach better serves the end investor.

Morningstar's Thematic Focus Areas

Morningstar equity research analysts are constantly monitoring the investment landscape for relevant, emerging themes. Thematic exposure scores enabling index construction are currently provided for the themes included below. This set of themes will continue to expand over time.

Exhibit 1 Thematic Focus Areas for Morningstar Indexes



Source: Morningstar.

Case Studies in Differentiation for Morningstar Thematic Indexes

Supported by the insights of Morningstar equity analysts, Morningstar thematic indexes are truly unique. This is critical because, as the thematic fund landscape becomes increasingly saturated, it is more important than ever to bring differentiated indexes to the market. The following case studies explore this dynamic in more detail.

Housed within Alphabet Inc., Waymo is a leading developer of autonomous driving technologies. Accordingly, one might expect to see Alphabet Inc. included in a thematic index targeting this theme and, indeed, it is widely included in autonomous driving-related indexes offered by competitors. However, Waymo accounts for less than 1% of Alphabet's revenue. Its revenue contribution falls short of Morningstar's requirement that revenue associated with a given theme account for greater than an estimated 10% of companywide revenue five years forward. Accordingly, Waymo's success (or lack thereof) over the next five years will likely have an immaterial impact on Alphabet Inc.'s stock price. Phrased differently, the company offers severely limited exposure to the autonomous driving theme. Therefore, Alphabet is not included in the Morningstar Global Electric & Autonomous Vehicles Index despite the fact that investors might expect to see it included as a holding. This outcome reflects Morningstar's objective to prioritize thematic purity above all else.

While the Waymo case study reflects limited thematic exposure based on an immaterial revenue contribution, other "notable omissions" from Morningstar's thematic indexes are tied to the requirement that thematic exposure should drive a net profit increase for a given company over the next five years. Here, we'd cite telecom providers relative to the "5G Connectivity" theme. Consumers are unable to access 5G networks without telecoms, so it would seem to follow that telecoms should be included in

5G-related thematic indexes. Additionally, revenue exposure to the theme for telecoms will become increasingly meaningful in short order. Indeed, telecoms are very well-represented in competing 5G-related thematic indexes. However, subject matter experts from the Morningstar equity analyst team are skeptical that the provision of 5G connectivity will drive a material net profit increase for telecoms. In large part, 5G profits will cannibalize existing profits streams from 4G connectivity and other prior generations of network connectivity. Additionally, it can cost tens of billions of dollars to build out a 5G network in the first place. Offering 5G connectivity represents "table stakes" for a telecom company and, absent its provision, a given telecom would rapidly fade into obscurity.

On a related note, we'd highlight the role of traditional automakers relative to the "Electric Vehicle" theme. Indeed, just about every well-known automaker now offers electric vehicles (EVs) in addition to internal combustion engine vehicles (ICEs). Once again, however, while their revenue tied to the EV theme is becoming increasingly significant, it isn't clear that their production of EVs will lead to a material net profit increase relative to the status quo. As EV adoption grows, EV sales will largely come at the expense of ICE sales. Morningstar equity analysts are in a unique position to determine which automakers are likely to be net beneficiaries from their EV exposure. While automakers typically command a hefty weighting in competing EV indexes, most offer highly limited "beta" relative to the theme and, therefore, any Morningstar index tied to this theme is likely to have a far lower weighting towards traditional automakers.

Finally, in order to determine company-level thematic exposures, Morningstar equity analysts tag all companies as a "supplier", "producer", or "user" as it pertains to products of offerings related to a given theme. For example, sticking with the "Electric Vehicles" theme, Tesla, Inc. would be a producer, a lithium miner like Albemarle Corp. that is critical for EV battery production would be a supplier, and a company like Lyft, Inc. might be a downstream user. Typically, producers and suppliers of innovative technologies are closest to the innovation itself and, in general, tend to offer higher exposure to a given theme than a downstream user. Phrased differently, the innovators themselves are more likely to enjoy economic benefits from innovative technologies than the users of these technologies, given that anyone can adopt a new technology if they are willing to pay for it. While some Morningstar Indexes include companies across all three nodes of the supply chain, others focus solely on suppliers and producers. For example, while Lyft, Inc. is commonly included in competing Electric Vehicle-related indexes, it is not included in the Morningstar Global Electric & Autonomous Vehicles Index, which focuses only on suppliers and producers of electric vehicles and autonomous driving technologies. Determining a company's role in the supply chain helps further maximize thematic purity.

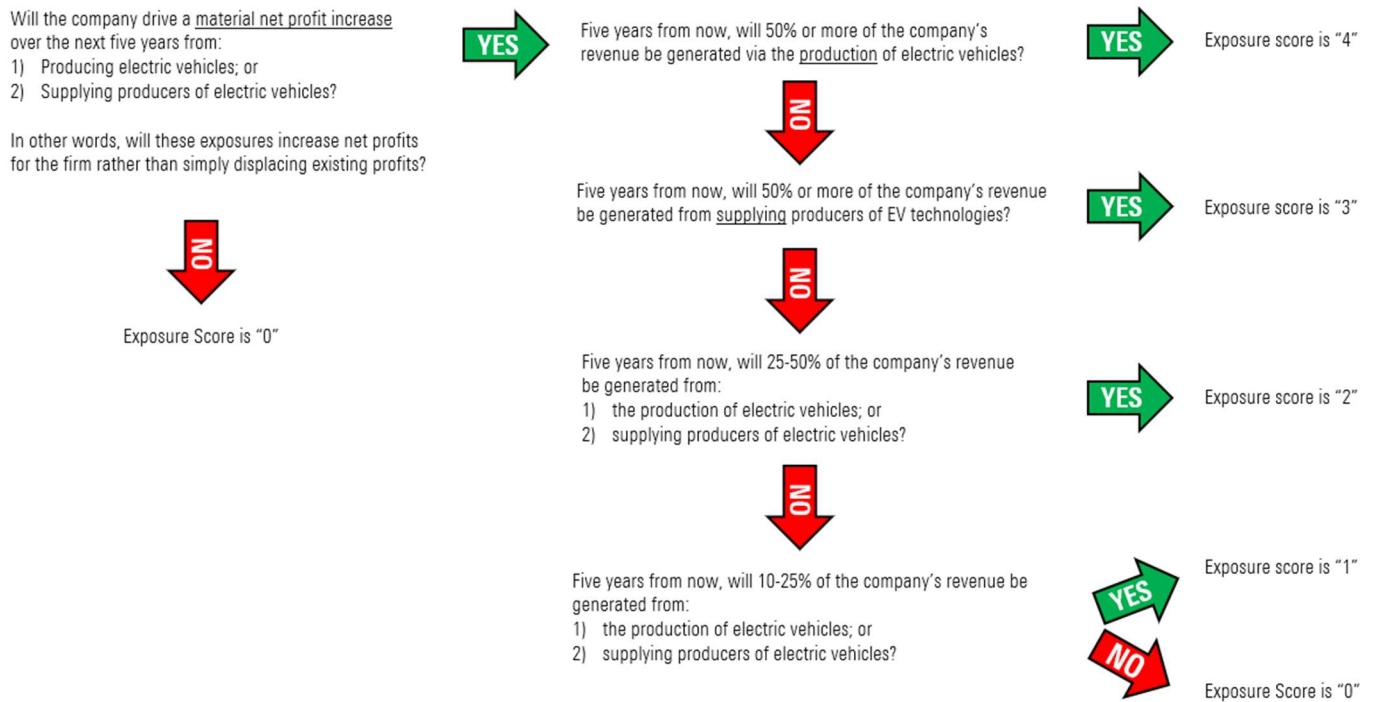
Company-Level Thematic Exposure Scoring Methodology Example

The methodology by which thematic exposure scores are determined for the Morningstar Global Electric & Autonomous Vehicles Index is included below. This example highlights the three equity analyst assessments required for each company-level thematic exposure score:

- i) What % of revenue will be derived from exposure to the theme five years forward?
- ii) Will the company enjoy a net profit increase from exposure to the theme over the next five years?
- iii) What role does the company plays in the supply chain for products/offerings related to the theme?

In addition, the Morningstar Indexes team requires that any holding have at least some current revenue exposure to the theme in question. **IM**

Exhibit 2 Thematic Exposure Scoring Decision Tree: Morningstar Global Electric & Autonomous Vehicles Index



Source: Morningstar.

About Morningstar Indexes

Morningstar Indexes was built to keep up with the evolving needs of investors—and to be a leading-edge advocate for them. Our rich heritage as a transparent, investor-focused leader in data and research uniquely equips us to support individuals, institutions, wealth managers and advisors in navigating investment opportunities across major asset classes, styles and strategies. From traditional benchmarks and unique IP-driven indexes, to index design, calculation and distribution services, our solutions span an investment landscape as diverse as investors themselves.

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