

Indexes and How Funds and Advisers Use Them: A Primer

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Contents

1	Introduction
5	Background Information on Indexes
5	<i>Overview of the Index Market</i>
6	<i>Common Features of Indexes</i>
7	<i>Contractual Relationships Between Index Providers and Fund Complexes</i>
8	<i>Creation of New Indexes</i>
11	How Funds, Advisers, and Others Use Indexes
11	<i>Performance Assessment</i>
13	<i>Other Regulatory Purposes</i>
15	<i>Portfolio Construction, Management, and Investment Policies</i>
16	<i>Multi-Asset Class Portfolio Construction</i>
17	Conclusion
18	Appendix: Descriptions of Three Prominent Indexes
18	<i>S&P 500</i>
19	<i>MSCI ACWI</i>
20	<i>Bloomberg Barclays US Aggregate Bond Index</i>

The Investment Company Institute (ICI) is the leading association representing regulated funds globally, including mutual funds, exchange-traded funds (ETFs), closed-end funds, and unit investment trusts (UITs) in the United States, and similar funds offered to investors in jurisdictions worldwide. ICI seeks to encourage adherence to high ethical standards, promote public understanding, and otherwise advance the interests of funds, their shareholders, directors, and advisers. ICI's members manage total assets of US\$27.7 trillion in the United States, serving more than 100 million US shareholders, and US\$8.3 trillion in assets in other jurisdictions. ICI carries out its international work through ICI Global, with offices in London, Hong Kong, and Washington, DC.

Indexes and How Funds and Advisers Use Them: A Primer

Introduction

Indexes are an important part of the investment landscape in the United States and abroad, due to regulation, investment practice, and investor preference. Various media outlets provide ample evidence of this impact, as they routinely report daily “market” performance by quoting the performance of the best-known indexes, such as the S&P 500. One of the oldest US market indexes is the Dow Jones Industrial Average, launched in 1896 to serve as a proxy for the performance of the US stock market.¹

Generally speaking, an index is a portfolio of assets designed to measure the performance of a particular financial market (e.g., a stock, bond, or commodity market) or subset of it. Indexes have proliferated over the years—one recent survey indicates that over 3 million currently exist—and are varied in their objectives, methodologies, and underlying investment exposures. Investors cannot invest directly in indexes, but they can obtain similar investment exposures and returns through investments that seek to track index performance, such as index funds (i.e., funds that seek to track the performance of their target indexes).

An index provider may create and administer thousands of separate indexes. The largest index providers—FTSE Russell, MSCI, and S&P Dow Jones—are third parties unaffiliated with funds or advisers.

An index may serve as a benchmark against which to evaluate a fund’s or an investment adviser’s performance. Funds, advisers, investors, and others (including fund boards) use indexes in this way, partly because regulators may require such comparisons (in the United States, the SEC requires registered investment companies to compare their performance to a “broad-based securities market index” in certain regulatory documents) and partly because they otherwise value such comparisons. As the asset management industry has grown and its products have become more specialized in response to investor demand—consider, for instance, the growth of index-related products and environmental, social, and governance (ESG) investing—the number and variety of indexes have more than kept pace.

¹ Current information for this index is available at www.spglobal.com/spdji/en/indices/equity/dow-jones-industrial-average/#overview.

But indexes are not merely performance measurement tools for funds. They serve other regulatory purposes—for instance, they figure prominently in the SEC rule governing funds’ use of derivatives. Indexes also influence funds’ portfolio construction and management and investment policies. While this influence is most significant and obvious for index funds, indexes also affect other fund types, including actively managed funds, in different ways and to varying degrees (e.g., for performance and risk attribution). Indexes also influence multi-asset class portfolio construction, both inside and outside funds.

Indexes and index providers are not regulated as such in the United States and most other jurisdictions, although the EU’s European Benchmark Regulation (BMR) regulates the provision and use of benchmark indexes.² And the International Organization of Securities Commissions (IOSCO) released recommended practices for benchmark administrators to implement in 2013.³

Recently, however, policymakers and others have taken greater interest in indexes, index providers, and how funds and investment advisers use indexes. For instance:

- » In December 2019, the SEC’s Division of Investment Management Director Dalia Blass highlighted risks associated with indexes with significant exposure to emerging and frontier markets—including the reliability of index data, index construction, and index computation—and funds that track those indexes.⁴
- » In January 2020, IOSCO announced “a review of conduct-related issues in relation to Index Providers...to explore issues related to the role of asset managers in relation to indices and index providers, and the role and processes of index providers in the provision of indices (including the potential impact of administrative errors on funds and identifying potential conflicts of interest that may exist at the index provider in relation to the fund).”⁵
- » In April 2020, SEC Chairman Jay Clayton, Public Company Accounting Oversight Board (PCAOB) Chairman William D. Duhnke III, and others at the SEC cautioned investors that emerging markets indexes generally do not weigh individual securities by investor protection considerations, nor do index funds tracking such indexes.⁶

² Regulation (EU) 2016/1011 of the European Parliament and of the Council of June 8, 2016.

³ *Principles for Financial Benchmarks, Final Report*, IOSCO (July 2013)(“IOSCO Report”), available at www.iosco.org/library/pubdocs/pdf/IOSCOPD415.pdf. The IOSCO Report’s principles are “intended to promote the reliability of Benchmark determinations, and address Benchmark governance, quality and accountability mechanisms.”

⁴ *Keynote Address—2019 ICI Securities Law Developments Conference*, Dalia Blass, Director, Division of Investment Management, SEC (December 3, 2019), available at www.sec.gov/news/speech/blass-keynote-address-2019-ici-securities-law-developments-conference. In a March 2018 speech, Director Blass questioned whether all index providers could rely on the publisher’s exclusion from the definition of “investment adviser,” particularly where an index is not broadly used and the provider takes significant input from the fund’s sponsor regarding the creation and composition of the index. *Keynote Address, ICI 2018 Mutual Funds and Investment Management Conference*, Dalia Blass, Director, Division of Investment Management, SEC (March 19, 2018), available at www.sec.gov/news/speech/speech-blass-2018-03-19.

⁵ *Board Priorities: IOSCO Work Program for 2020* (January 30, 2020), available at www.iosco.org/library/pubdocs/pdf/IOSCOPD648.pdf.

⁶ *Emerging Market Investments Entail Significant Disclosure, Financial Reporting and Other Risks; Remedies Are Limited*, SEC Chairman Jay Clayton, PCAOB Chairman William D. Duhnke III, SEC Chief Accountant Sagar Teotia, SEC Division of Corporation Finance Director William Hinman, and SEC Division of Investment Management Director Dalia Blass (April 21, 2020), available at www.sec.gov/news/public-statement/emerging-market-investments-disclosure-reporting.

- » In June 2020, the French financial regulator, Autorité Des Marchés Financiers (AMF), published a study that examines the regulatory issues and market risks associated with indexes, offers specific policy recommendations, and suggests areas for future research.⁷
- » In August 2020, the President’s Working Group on Financial Markets (PWG) released its *Report on Protecting United States Investors from Significant Risks from Chinese Companies*, which includes a recommendation directed to the SEC to encourage or require greater due diligence of indexes and index providers.⁸
- » In November 2020, President Trump issued Executive Order 13959 entitled “Executive Order on Addressing the Threat from Securities Investments that Finance Communist Chinese Military Companies,” which states that companies supporting the People’s Republic of China’s military, intelligence, and security apparatuses “raise capital by selling securities to United States investors that trade on public exchanges both here and abroad, lobbying United States index providers and funds to include these securities in market offerings....”⁹
- » Others have also examined and raised questions about indexes.¹⁰

While it is unclear what future actions, if any, policymakers in the United States or abroad may take, any such action should be preceded by a thorough factual understanding of these matters, including the basics around what indexes are and how they are created and administered. This paper is meant to provide investors and regulators with information about indexes generally and how funds and their advisers use them.

⁷ *Opportunities and Risks in the Financial Index Market*, Autorité Des Marchés Financiers, Laurent Grillet-Aubert (June 2020) (the “AMF Study”), available at www.amf-france.org/sites/default/files/2020-06/opportunities-and-risks-in-the-financial-index-markets.pdf.

⁸ Available at <https://home.treasury.gov/system/files/136/PWG-Report-on-Protecting-United-States-Investors-from-Significant-Risks-from-Chinese-Companies.pdf>. The PWG is chaired by the Secretary of the Treasury and includes the Chairman of the Board of Governors of the Federal Reserve System, the Chairman of the SEC, and the Chairman of the Commodity Futures Trading Commission (CFTC). More specifically, the recommendation suggested that the SEC could encourage or require registered funds that track indexes to perform greater due diligence on an index and its index provider, prior to selection. “This enhanced due diligence should take into account the index provider’s process for index construction, including with respect to index rebalances. In particular, due diligence should address whether the process takes into account any potential errors in index data, index computation and/or index construction if the information from issuers based in NCJs [i.e., jurisdictions that do not currently provide the PCAOB with the ability to inspect public accounting firms, including sufficient access to conduct inspections and investigations of audits of public companies, or otherwise do not cooperate with US regulators], including China, is unreliable or outdated or if less information about such companies is publicly available due to differences in regulatory, accounting, auditing and financial recordkeeping standards.”

⁹ The Executive Order is available at <https://trumpwhitehouse.archives.gov/presidential-actions/executive-order-addressing-threat-securities-investments-finance-communist-chinese-military-companies/>.

¹⁰ See, e.g., “What’s Really in Your Index Fund?” Robert J. Jackson Jr. and Steven Davidoff Solomon, February 18, 2019, available at www.sec.gov/news/speech/jackson-your-index-fund. In this article, former SEC Commissioner Robert Jackson and his co-author stated that “given the conflicts of interest the index providers face and the power they wield over markets, we need a national conversation about how to ensure that they operate with integrity, transparency and accountability” and called on the SEC to study this issue and make recommendations. The article noted the potential for “undue influence” on index providers and how index providers’ choices of index components affect investor demand and market prices.

Although indexes have broad application and importance in the United States and abroad,¹¹ this paper focuses on regulated funds' use of indexes and covers the following:

- » Background information on indexes:
 - » Overview of the index market
 - » Common features of indexes, illustrated by a few prominent examples
 - » Contractual relationships between index providers and fund complexes
 - » Index creation and the role that fund advisers may play
- » How funds, advisers, and others use indexes:
 - » Performance assessment
 - » Other regulatory purposes
 - » Portfolio construction, management, and investment policies
 - » Multi-asset class portfolio construction

¹¹ Indexes may serve as an underlying reference for derivatives, structured products, and loan agreements. See AMF Study at 15.

Background Information on Indexes

Overview of the Index Market

Indexes and index providers are not regulated as such in the United States or many other jurisdictions (other than the European Union), and therefore neither term has a universally agreed-upon meaning.¹² Within investment management, an index generally may be understood as a portfolio of assets designed to measure the performance of a particular financial market (e.g., a stock, bond, or commodity market) or subset of it, and it may serve as a benchmark against which to evaluate a fund's or an investment adviser's performance.

An index requires both initial design¹³ and ongoing administration pursuant to a methodology,¹⁴ and one or both of these broad responsibilities may be carried out by the index provider. The index provider may be solely responsible for the creation of an index although, as discussed below, this may involve input from an investment adviser. Common administrative functions include collecting, analyzing, and processing input data; determining the index's makeup through application of a formula or other method of calculation; and publishing information about the index, including its daily value and components. An index provider may outsource one or more of those functions.

Market indexes are numerous and diverse in what they seek to measure and how they do so. Indexes can be constructed using rules or factors based on asset type, issuer type, security characteristics, geography, sector, industry, or investment style, among many others. Indexes have grown in number, largely in response to investment trends. The Index Industry Association's 2020 member survey indicated that there are 3.05 million indexes globally, a 3 percent increase

¹² However, Europe's BMR defines "index" as "any figure: (a) that is published or made available to the public; (b) that is regularly determined: (i) entirely or partially by the application of a formula or any other method of calculation, or by an assessment; and (ii) on the basis of the value of one or more underlying assets or prices, including estimated prices, actual or estimated interest rates, quotes and committed quotes, or other values or surveys."

The BMR defines "benchmark" in relevant part as "an index that is used to measure the performance of an investment fund with the purpose of tracking the return of such index or of defining the asset allocation of a portfolio or of computing the performance fees."

It defines "index provider" as "a natural or legal person that has control over the provision of an index."

¹³ The IOSCO Report stresses that the "design of the Benchmark should seek to achieve, and result in an accurate and reliable representation of the economic realities of the Interest it seeks to measure..." IOSCO recommends that benchmark design take into account, as appropriate, features and factors such as adequacy of the sample used to represent the interest; size and liquidity of the relevant market; relative size of the underlying market in relation to the volume of trading in the market that references the benchmark; the distribution of trading among market participants (market concentration); and market dynamics (e.g., to ensure that the benchmark reflects changes to the assets underpinning a benchmark). IOSCO Report at 20.

¹⁴ The IOSCO Report defines "methodology" as "written rules and procedures according to which information is collected and the Benchmark is determined." It states that the methodology should contain items such as definitions of key terms; all criteria and procedures used to develop the benchmark, including input selection, the mix of inputs used to derive the benchmark, the guidelines that control the exercise of expert judgment (i.e., discretion) by the administrator, priority given to certain data types, minimum data needed to determine a benchmark, and any models or extrapolation methods; procedures governing benchmark determination in periods of market stress or disruption or periods where data sources may be absent; procedures for dealing with error reports, including when a revision of a benchmark would be applicable; information regarding the frequency for internal reviews and approvals of the methodology; information regarding the procedures and frequency for external review of the methodology; circumstances and procedures under which the administrator will consult with stakeholders, as appropriate; and identification of potential limitations of a benchmark, including its operation in illiquid or fragmented markets and the possible concentration of inputs. IOSCO Report at 23 and 36.

from the prior year's figure.¹⁵ That same survey showed a 40 percent increase in the number of indexes measuring ESG criteria in the past year. The survey also found that indexes covering fixed-income markets grew over 7 percent in the past year and nearly 15 percent in the last two years. France's AMF attributes the growth in the number of indexes to innovation related to bond, smart beta, sustainable investment, strategy, and "proprietary" indexes.¹⁶

Indexes can also be categorized by the entity (or entities) that create and administer them. This is a concentrated market, and the top three global firms—FTSE Russell, MSCI, and S&P Dow Jones—were estimated to have a 71 percent market share in 2018.¹⁷ A small portion of the market consists of fund affiliates that act as index providers ("self-indexers").

Common Features of Indexes

One way to understand indexes—including their design, composition, and administration—is by briefly examining some common features, as drawn from a few well-known examples: the S&P 500, the MSCI ACWI, and the Bloomberg Barclays US Aggregate Bond Index. Examining these examples allows us to make several broad points about indexes and their methodologies. (See the appendix for short descriptions of those indexes.¹⁸)

First, index construction and administration often involve a significant number of assumptions, inputs, rules, and methodological choices. No single way exists to measure the performance of, or even define, a "market." The index provider must first establish what it seeks to measure (e.g., the performance of large-cap US equities) and then create a way to reasonably do so. An index typically must define its universe of permissible holdings, and the index provider will frequently apply additional screens, conditions, or factors to that universe to generate the index's components and their respective weightings.

Second, because financial markets are dynamic, so, too, are the indexes that seek to measure them. Stocks and bonds are continuously coming into and going out of existence, and their characteristics are subject to change. For instance, a stock's market capitalization or a bond's credit rating may change, potentially disqualifying them for inclusion in certain indexes. Consequently, an index's methodology must accommodate and be responsive to those changes. Often, an index's methodology will have detailed guidelines related to rebalancing, with respect to both frequency, component weightings, and changes to the components themselves, as new components may be added, and existing components may be dropped. Index providers also have procedures for communicating the results from these rebalances.

¹⁵ "Fourth Annual IIA Benchmark Survey Reveals Significant Growth in ESG, Continued Multi-Asset Innovation & Heightened Competition," available at www.indexindustry.org/2020/10/28/fourth-annual-ia-benchmark-survey-reveals-significant-growth-in-esg-amid-continued-multi-asset-innovation-heightened-competition/.

¹⁶ AMF Study at 3, 16–17.

¹⁷ See AMF Study at 53.

¹⁸ These are only a few examples, and the descriptions of each in the appendix are by no means exhaustive—the underlying methodologies and policies and procedures for an index may appear in multiple documents totaling hundreds of pages.

Third, an index's methodology itself may afford some discretion and flexibility, and it is not immutable.¹⁹ Some indexes provide the index provider discretion in certain areas (e.g., in adding new components to an index)²⁰ or make exceptions to an existing methodology (e.g., to retain a component that may otherwise violate a condition for continued inclusion). And even for those methodologies that are heavily rules-based, the index provider generally has procedural means of changing those rules. Index providers typically have governance processes in place to guide these changes, and in some cases the index providers will solicit input broadly from market participants prior to making any final changes. These consultations are beneficial in that they allow market participants to raise concerns and highlight potential impacts that the index provider may not have considered, such as whether proposed methodological changes could result in an index that is less "investable." "Investability" may be affected by legal and regulatory constraints on investing (e.g., a country may prohibit its investors from transacting in certain securities), or trading or liquidity limitations that make investing in certain securities costly or impracticable.

Finally, indexes generally have well-developed practices and policies with respect to information dissemination. This includes transmission of recurring data (including the index's daily price), information related to rebalances, significant methodological changes (and in some cases proposed changes), and significant deviations from or exceptions to existing methodologies.

In sum, indexes are not purely objective, self-contained, and fully predetermined constructs.

Contractual Relationships Between Index Providers and Fund Complexes

Index providers receive fees for the range of services they provide to market participants, including fund complexes. While there are a variety of contractual structures and terms that govern these commercial relationships, we summarize the important features below:

- » **Parties to the agreement.** For fund complexes, these agreements are often between the index provider and the investment adviser (or a parent or affiliated entity). The agreement may then permit the adviser to use, or sublicense, the relevant indexes for funds that it manages. A fund complex may have multiple agreements with an index provider (corresponding to different services provided or different parties receiving those services [e.g., specific funds]) or a single "master agreement" with schedules or addendums that outline the specific services and compensation arrangements applicable to each.
- » **Types of services.** Broadly speaking, these agreements may provide for both use of intellectual property, and provision of data and information relating to the index (such as information on the index's components and other relevant information).²¹

¹⁹ For instance, following its consultation in 2017, S&P Dow Jones Indices announced that certain of its indexes (including the S&P 500) would no longer add companies with multiple-share class structures. Existing index constituents were grandfathered in and not affected by this change.

²⁰ See, e.g., "Tesla to Be Added to S&P 500 Index," Heather Somerville, *Wall Street Journal*, November 16, 2020, noting that Tesla was overlooked for inclusion in the index earlier in the year (despite satisfying the index's profitability criteria) and speculating that the company's heavy reliance on regulatory credits to bolster its profitability may have delayed Tesla's inclusion.

²¹ AMF Study at 12.

Funds obtain basic licensing rights, permitting them to use the index's trademark and related information in fund materials such as prospectuses, shareholder reports, and advertisements (including fund websites). Index funds usually require more extensive licensing rights and data for purposes of product creation and marketing and investment management (e.g., index fund managers require frequent and detailed index component information to efficiently track the index's performance). And active funds may use detailed index data for purposes of performance and risk attribution (i.e., explaining and quantifying how the fund's performance and risks differ from those of its benchmark index).

- » **Compensation arrangements.** Compensation generally depends in large part on the breadth and depth of services that the index provider provides. A fund complex with index funds tracking existing or custom indexes, or active funds that make extensive use of index data, typically will pay more than a fund complex using index data for more limited purposes (e.g., inclusion in regulatory documents and other materials). An index provider may charge fees based on assets under management (which may be assessed on an index fund's assets), which may include breakpoints (as assets grow) and a minimum; flat fees (e.g., for basic licensing rights or data services); or some combination, depending on the package of services. Other factors that may affect overall fees include the number of data users (which may be measured by entity, geographic region, or other channel within the fund complex), frequency of data provision/updates by the index provider or usage by the fund complex, degree of customization required (for customized indexes and related products), and amount of data provided.
- » **Limitations of liability and indemnifications.** An index provider generally disclaims most forms of liability arising from the adviser's use of the index or related information (as index funds may disclose) and requires the adviser to indemnify the index provider for any third-party claims arising from the adviser's or funds' use of index information. Index providers themselves may source data from other third parties, and those parties in turn may disclaim liability arising from the index provider's use of that data (indeed, all entities along this "data chain" may similarly disclaim liability). An index provider may indemnify the adviser for any claim that the adviser's use of an index infringes upon any third-party intellectual property rights.

Creation of New Indexes

Third-Party Index Providers and Fund Advisers

The expansiveness of financial markets, methodological flexibility and customization inherent in index construction, and investors' evolving desire for increasingly targeted investment strategies and exposures, all help explain the proliferation of indexes. Origination of new ideas and creation of a new index may occur entirely within a well-established index provider, based on its own internal research and assessments of market trends. But advisers, too, may generate ideas for indexes, based on strategies and exposures sought by investors.

This may happen when an investment adviser believes that adjustments to an existing index could be beneficial to investors in pursuing a specific investment objective or strategy, and the

adviser prefers to leave the related administrative functions to the third-party index provider. Rather than petition to change the existing index (which, in its current form, may be useful to a large number of market participants), the adviser may wish to see the index provider create a new modified version—a “custom” index—that deviates slightly from the “base” or “parent” index.

For example, a newly created custom index might largely replicate the features of an existing index and apply additional screens (e.g., with respect to a specific type of company, industry, or geographic region), exclusion lists, or weightings. After the index provider determines whether and how to implement it, the index provider would be responsible for finalizing and memorializing the methodology. After these design, creation, and documentation phases are complete, the ongoing administrative work, including the application of the methodology and calculation and dissemination of index-related information, remains with the index provider.

Irrespective of the extent of the adviser-provided modifications or specifications, fund advisers may pursue these types of arrangements in connection with the creation and launch of new proprietary (to the adviser) index-tracking products, such as index funds. Consequently, custom indexes tend to be used by a relatively small number of funds or accounts (in some cases, only one). Depending on the extent of the adviser’s contribution, the adviser may own, share, or at least have exclusive rights to use the index and related intellectual property.

Finally, a blended index is a type of index that a fund adviser may compose for performance benchmarking purposes. These are particularly common for multi-asset funds (e.g., balanced funds or funds of funds) or portfolios, where no one single-asset class index may provide an appropriate point of comparison for a fund or portfolio. In this case, a fund adviser may compose a blended index by combining multiple indexes (all of which may be well-established third-party indexes from one or more index providers), with each weighted on the basis of the fund’s approximate asset allocation.

Self-Indexing

No single model or definition of “self-indexing” exists, but it generally arises when an investment adviser (or, often, an affiliate of the adviser) chooses to create an index on its own. This may occur in connection with the launch of a new product, such as an exchange-traded fund (ETF). In adopting the ETF rule in 2019, the SEC recognized “self-indexed ETFs” and did not subject them to additional conditions.²²

²² See *Exchange-Traded Funds*, SEC Release No. 33-10695 (September 25, 2019), at 24–25, available at www.sec.gov/rules/final/2019/33-10695.pdf. The SEC explained that the ETF rule’s portfolio transparency requirements, together with existing federal securities laws, adequately address any special concerns that self-indexed ETFs may present. The SEC listed the following as examples of these federal securities laws and rules: Rule 38a-1 under the Investment Company Act (requiring funds to adopt policies and procedures reasonably designed to prevent violation of federal securities laws); Rule 17j-1(c)(1) under the Investment Company Act (requiring funds to adopt a code of ethics containing provisions designed to prevent certain fund personnel [“access persons”] from misusing information regarding fund transactions); Section 204A of the Investment Advisers Act (requiring an adviser to adopt policies and procedures that are reasonably designed, taking into account the nature of its business, to prevent the misuse of material, nonpublic information by the adviser or any associated person, in violation of the Advisers Act or the Exchange Act or the rules or regulations thereunder); and Section 15(g) of the Exchange Act (requiring a registered broker or dealer to adopt policies and procedures reasonably designed, taking into account the nature of the broker’s or dealer’s business, to prevent the misuse of material, nonpublic information by the broker or dealer or any person associated with the broker or dealer, in violation of the Exchange Act or the rules or regulations thereunder).

To best meet a particular investment objective or strategy, the adviser may have a novel idea for both a fund and an index. An investment adviser could implement such a strategy directly in its client accounts without reference to a new index, but if investor demand for a strategy is broad enough, the adviser may see value in creating an index, whether for tracking purposes (for index funds) or for performance measurement purposes. In the case of a new index fund, investors may seek to pursue certain investment strategies through a transparent, rules-based investment vehicle, in which case the adviser first creates the new index and then launches the fund to track that index.

Several factors may make self-indexing attractive for a fund complex. First, the adviser may conclude that it (or an affiliate) has the resources to design a methodology for a new index. This may result in cost savings for the adviser and its clients (including funds) insofar as the investment adviser would not pay related fees to a third-party index provider. However, “self-indexers” may still use third parties to an extent, including for calculation services or to license certain types of data. Second, maintaining control and ownership of the index and related intellectual property—and therefore controlling future methodological modifications and customizations, branding, and usage of the index and related information—may also appeal to a fund complex. Finally, if an investment adviser (or its affiliate) is not able to come to satisfactory terms with an index provider, self-indexing may be the only practical option.

Those fund complexes that self-index employ practices similar to those described above with respect to adopting and implementing written policies and procedures that address methodologies, calculation and dissemination of index-related information, and ongoing governance. In addition, they have in place other practices and policies designed to eliminate or mitigate potential conflicts of interest that may arise from a single complex managing assets and creating and administering indexes.²³ For instance, the indexing line of business may reside within a separate legal entity with separate personnel or otherwise be walled off from the asset management function, so that the two operate independently. Information barriers help ensure that material nonpublic information is protected and that all index licensees (if more than one, and irrespective of their affiliation status) and all advisory clients (irrespective of whether they use an affiliated index) are treated fairly. Advisory personnel may contribute intellectual property to an affiliated index at its creation stage and provide feedback in response to formal consultations, but ongoing control of the index and its methodology remains with the separate indexing affiliate or unit, consistent with practices of third-party index providers.

²³ See note 22.

How Funds, Advisers, and Others Use Indexes

Indexes have taken on particular importance for funds and advisers, due to both regulation and preferences of investors and other third parties. Below we highlight the principal ways funds, advisers, and others use indexes.

Performance Assessment

US mutual funds and ETFs must compare their performance to that of an “appropriate broad-based securities market index” in their prospectuses and annual shareholder reports; closed-end funds do so only in their annual shareholder reports.²⁴ When adopting this provision in 1993, the SEC described such an index as “one that provides investors with a performance indicator of the overall applicable stock or bond markets, as appropriate.”²⁵ Funds are also permitted to compare their performance to one or more “additional indexes” in their prospectuses and shareholder reports.²⁶ Other jurisdictions also regulate benchmark disclosure and presentation of past performance.²⁷

Regulatorily required comparisons with indexes are not the only means by which investors assess fund performance. Investors may also consider a fund’s absolute performance (its performance standing alone, gross or net of fees), its performance relative to peer funds (those with similar investment objectives and strategies), and risk-adjusted measures of fund performance.²⁸ All of these may contribute to a more complete overall understanding of fund performance.

Even so, when one hears that a fund is “underperforming” or “outperforming,” the commenter most likely is describing the fund’s performance relative to that of an index. Thus, index comparisons are significant outside the regulatory context.

²⁴ See Items 4(b)(2)(iii) and 27(b)(7)(ii) of SEC Form N-1A. This form defines “appropriate broad-based securities market index” in relevant part as “one that is administered by an organization that is not an affiliated person of the Fund, its investment adviser, or principal underwriter, unless the index is widely recognized and used.” Closed-end funds must compare their performance to that of an “appropriate broad-based securities market index” in their annual shareholder reports. See also Instruction 4(g)(2) to Item 24 of Form N-2 for closed-end funds.

²⁵ *Disclosure of Mutual Fund Performance and Portfolio Managers*, SEC Release No. IC-19382 (April 6, 1993), at n. 21, available at www.sec.gov/rules/final/33-6988.pdf.

²⁶ Instruction 6 to Item 27(b)(7) of Form N-1A explains that these would be indexes other than the required broad-based index and may include “other more narrowly based indexes that reflect the market sectors in which the Fund invests” or “an additional broad-based index, or to a non-securities index (e.g., the Consumer Price Index), so long as the comparison is not misleading.” Instruction 7 to Item 27(b)(7) of Form N-1A governs index changes and states that “if the Fund uses an index that is different from the one used for the immediately preceding fiscal year, explain the reason(s) for the change and compare the Fund’s annual change in the value of an investment in the hypothetical account with the new and former indexes.” Instructions 4(g)(2)(G) and (H) to Item 24 of Form N-2 provide similar guidance to closed-end funds with respect to using “additional indexes” and changing indexes.

²⁷ See, e.g., *Questions and Answers, Application of the UCITS Directive*, European Securities and Markets Authority (June 4, 2019), available at www.esma.europa.eu/press-news/esma-news/esma-qas-clarify-benchmark-disclosure-obligations-ucits.

²⁸ One such measure of risk-adjusted return is “alpha,” which measures the difference between a fund’s actual returns against its expected performance over a period of time, given its level of market risk as measured by beta. A positive alpha indicates that the fund performed better than its beta would predict. A negative alpha indicates the fund’s underperformance based on the expectations indicated by the fund’s beta. “Beta” is a measure of a fund’s volatility in relation to a securities market, as measured by a stated index. By definition, the beta of the stated index is 1; a fund with a higher beta has been more volatile than the index, and a fund with a lower beta has been less volatile than the index. Actively managed funds may seek to obtain positive alpha; index funds do not because they are seeking to match the performance of their index, i.e., they are seeking beta only.

The reasons for these index comparisons—and what can meaningfully be derived from such a comparison—differ to some degree by fund type. An investor in an actively managed fund may consider the extent to which the fund outperformed or underperformed an appropriate index, and this may affect the investor’s overall assessment of the fund. If an actively managed fund returns -5 percent during a period in which an appropriate benchmark index returned -10 percent, this may very well constitute strong relative performance. And if the same fund returns +5 percent during a period in which an appropriate benchmark index returned +10 percent, this may very well constitute weak relative performance.

By contrast, an index fund’s investment objective is to track the performance of its specific index. If the index’s return during a period is -10 percent and that index fund’s performance matches it, it has achieved its investment objective during that period (i.e., it would have no tracking error).

Such performance comparisons are important to investors. According to ICI’s latest survey on the subject, when mutual fund-owning households were asked about the information they consider when choosing a mutual fund:

- » Ninety-three percent said that they reviewed the historical performance of a fund, with 51 percent indicating a fund’s historical performance was very important when making their fund purchase decision.
- » Eighty-nine percent indicated that they considered a fund’s performance compared with an index, with 37 percent saying this benchmarking was very important when making their purchase decision.²⁹

A US fund board also reviews fund performance and oversees the investment adviser’s portfolio management generally, pursuant to its fiduciary duties and its statutory responsibilities to annually review and approve continuation of the adviser’s contract with the fund.³⁰ As with investors, a fund board’s evaluation of fund performance generally is multifaceted and often includes benchmark comparisons, among other measures (e.g., peer group comparisons). A fund board may compare a fund’s performance to one or more “appropriate broad-based” indexes (i.e., those included in the fund’s regulatory documents), as well as other more narrow indexes or custom indexes that the adviser may also consider appropriate. The use of multiple indexes may provide a more complete picture of relative fund performance, particularly where a single index may not offer an entirely fitting point of comparison. Accordingly, as part of its evaluation of a fund’s performance relative to one or more indexes, the fund board may consider, among other things, how the fund’s investment objective and portfolio relate to, and differ from, those of the indexes.³¹

And, of course, third parties (e.g., financial advisers and other “gatekeepers”) consider fund performance relative to that of an index, and the opinions and decisions of these entities influence ultimate investment decisions.

²⁹ Sarah Holden, Michael Bogdan, and Daniel Schrass, “What US Households Consider When They Select Mutual Funds, 2019,” *ICI Research Perspective* 26, no. 2 (April 2020). Available at www.ici.org/pdf/per26-02.pdf.

³⁰ See Section 15(c) of the Investment Company Act.

³¹ See, generally, *Investment Performance Oversight by Fund Boards*, Independent Directors Council (October 2013), available at www.idc.org/pdf/pub_13_performance_oversight.pdf.

Indexes play a noteworthy role in certain voluntary industry standards as well. For instance, the CFA Institute³² maintains Global Investment Performance Standards (GIPS®) for firms and asset owners.³³ GIPS set forth detailed requirements and recommendations with respect to presenting benchmark performance in firms' composite performance reports, pooled fund performance reports, and advertisements. Firms generally must present benchmark returns in their composite and pooled fund reports, unless the firm determines that there is no appropriate benchmark.³⁴

Indexes also frequently appear in fund marketing materials. Unlike prospectuses and shareholder reports, SEC and FINRA advertising rules do not require a US fund to compare its performance to that of an index.³⁵ Yet such comparisons are common in various forms of fund marketing materials and advertising, including websites and fact sheets, no doubt driven by investor expectations and preferences.

Other Regulatory Purposes

Indexes may also be used for other regulatory purposes. For example, indexes figure prominently in the SEC's newly adopted rule governing US funds' use of derivatives.³⁶ The derivatives rule imposes on funds using derivatives in more than a minimal amount an outer limit on fund leverage risk based on value-at-risk (VaR).³⁷ This outer limit is generally based on a relative VaR test, which requires a fund to compare its VaR to the VaR of a "designated reference portfolio" for that fund. For this purpose, a fund may use a "designated index" that meets certain requirements (a fund may also use its "securities portfolio").³⁸ In this way, a fund's designated index sets the baseline VaR against which the fund measures itself to ensure that its portfolio is

³² The CFA Institute is a global not-for-profit association of investment professionals that maintains Global Investment Performance Standards ("GIPS") for calculating and presenting investment performance.

³³ Available at www.cfainstitute.org/-/media/documents/code/gips/2020-gips-standards-firms.ashx and www.cfainstitute.org/-/media/documents/code/gips/2020-gips-standards-asset-owners.ashx, respectively. While US registered funds (among others) have detailed requirements for reporting investment performance data, the SEC has not imposed comprehensive requirements on how investment advisers should present investment performance data to current and prospective clients generally. GIPS represent the CFA Institute's attempt to establish broadly accepted standards for calculating and presenting investment performance. GIPS are voluntary and are binding only on those firms that claim compliance with the standards ("firms").

³⁴ GIPS define "benchmark" as "a point of reference against which the composite's or pooled fund's returns or risk are compared." A benchmark used in a GIPS composite or pooled fund report must reflect the investment mandate, objective, or strategy of the composite or pooled fund. Firms may also use custom benchmarks, subject to additional disclosure-related requirements.

³⁵ Rather, the rules focus on how funds must calculate and present their performance data. See, e.g., SEC Securities Act Rule 482(d) and (e) and FINRA Rule 2210(d)(5).

³⁶ See, generally, Rule 18f-4 under the Investment Company Act and *Use of Derivatives by Registered Investment Companies and Business Development Companies*, SEC Release No IC-34084 (November 2, 2020), available at www.sec.gov/rules/final/2020/ic-34084.pdf.

³⁷ VaR is an estimate of an instrument's or portfolio's potential losses over a given time horizon and at a specified confidence level.

³⁸ Rule 18f-4(a) defines "designated index" as "an unleveraged index that: (1) is approved by the derivatives risk manager for purposes of the relative VaR test and that reflects the markets or asset classes in which the fund invests and (2) is not administered by an organization that is an affiliated person of the fund, its investment adviser, or principal underwriter, or created at the request of the fund or its investment adviser, unless the index is widely recognized and used." A blended index may serve as a designated index, provided that "none of the indexes that compose the blended index may be administered by an organization that is an affiliated person of the fund, its investment adviser, or principal underwriter, or created at the request of the fund or its investment adviser, unless the index is widely recognized and used." Finally, the rule requires that an index fund use its tracking index as its designated reference portfolio, notwithstanding the general restrictions on using affiliated indexes.

not excessively leveraged. In Europe, UCITS are also subject to leverage limits, and they too may comply with them using an index as part of a relative VaR test.³⁹

Subject to certain conditions and limitations set forth by the SEC staff, indexes may be incorporated into a US fund's industry concentration⁴⁰ or diversification⁴¹ policy, as required under the Investment Company Act. In the First Australia Fund SEC staff no-action letter, the staff provided no-action assurances such that a fund could implement a concentration policy that would allow it to exceed 25 percent of its assets in securities of issuers in the same industry based on the concentration status of the fund's benchmark index.⁴² And in the Stradley Ronon Stevens & Young, LLP SEC staff no-action letter, the staff stated that it would not recommend enforcement action against an index-based fund that exceeds the Investment Company Act's diversification limits to the extent necessary to track the fund's target broad-based index, provided that the fund revised its diversification policy to reflect that the fund intends to be diversified in approximately the same proportion as its index (among other conditions).⁴³

Indexes also affect the fees that some funds pay to their advisers under performance-based fee arrangements. While not the industry norm, the Investment Advisers Act and related SEC rules permit a US fund to pay its adviser a fee "based on the asset value of the company or fund under management...and increasing and decreasing proportionately with the investment performance of the company or fund...in relation to the investment record of an appropriate index of securities prices..."⁴⁴ For a fund with this arrangement, a fund pays (in percentage terms) a specified fee if it matches the performance of its index (the "fulcrum fee"), a reduced specified fee if it underperforms the index, and an increased fee if it outperforms the index. Thus, performance relative to the chosen index directly affects the management fees—in both dollars and percentage terms—that the fund pays. Certain other jurisdictions also permit funds to pay performance-based fees, and funds in those jurisdictions may use indexes to measure relative performance and calculate the fee.⁴⁵

³⁹ See European Securities and Markets Authority (formerly Committee of European Securities Regulators), *Guidelines on Risk Measurement and the Calculation of Global Exposure and Counterparty Risk for UCITS*, CESR/10-788 (July 28, 2010), available at www.esma.europa.eu/sites/default/files/library/2015/11/10_788.pdf.

⁴⁰ Section 8(b)(1)(E) of the Investment Company Act requires a fund to recite in its registration statement whether it reserves the freedom to concentrate investments in a particular industry or group of industries. The SEC has taken the position that a fund is concentrated if it invests more than 25 percent of the value of its total assets in any one industry. SEC Release No. IC-9011 (October 30, 1975).

⁴¹ Section 8(b)(1)(A) of the Investment Company Act requires a fund to recite in its registration statement whether it is subclassified as "diversified" or "non-diversified." Section 5(b)(1) defines "diversified company" and effectively limits the amount that a diversified fund may invest in any one issuer to 5 percent of the fund's total assets and to 10 percent of such issuer's voting securities, with respect to 75 percent of the fund's total assets. A "non-diversified company" is "any management company other than a diversified company."

⁴² *First Australia Fund SEC Staff No-Action Letter* (July 29, 1999), available at www.sec.gov/divisions/investment/noaction/1999/firstaustralia072999.pdf. Specifically, the staff permitted an actively managed fund that invested primarily in securities included in an index to invest between 25 and 35 percent of its total assets in the securities of any one industry sector if, at the time of investment, that industry sector represented 20 percent or more of the index.

⁴³ *Stradley Ronon Stevens & Young, LLP SEC Staff No-Action Letter* (June 24, 2019), available at www.sec.gov/investment/stradley-062419.

⁴⁴ See Section 205(b)(2)(B) and (c) of the Investment Advisers Act and Rules 205-1 and -2 thereunder.

⁴⁵ See, e.g., *Final Report—Guidelines on Performance Fees in UCITS and Certain Types of AIFs*, European Securities and Markets Authority (April 3, 2020), available at www.esma.europa.eu/sites/default/files/library/esma_34-39-968_final_report_guidelines_on_performance_fees.pdf.

Portfolio Construction, Management, and Investment Policies

Third-party index providers and their indexes are legally and commercially distinct from funds and fund advisers.⁴⁶ This independence is evidenced by the key decisions made within the fund complex, even with respect to index funds: deciding to launch an index-based product, choosing an index for tracking purposes (and, at times, choosing to switch tracking indexes), and determining the means by which the fund will attempt to track that index on a day-to-day basis. The index provider is not advising the independently created and operated index fund. Moreover, funds are legally distinct from their investment advisers and are overseen by boards of directors subject to independence requirements. Finally, funds are subject to the Investment Company Act and its related rules, and investment advisers are subject to the Investment Advisers Act and its related rules, irrespective of the extent to which they use indexes.⁴⁷

Notwithstanding these important distinctions, to varying degrees indexes may influence funds' portfolio construction and management. Along this spectrum, indexes are most significant for traditional index funds. In effect, the chosen target index (including its components and their weights) is the "recipe" for the index fund manager.

With this information, the index fund then seeks to replicate the performance of the index through its purchases and sales of portfolio investments. The index fund rebalances its holdings when the index rebalances its components, and it adds and drops holdings as the index does so with its components.⁴⁸ Consequently, any risks inherent in an index's investment exposures strongly affect an index fund's risk profile.

Funds pursuing non-market capitalization-weighted or "smart beta" strategies (e.g., funds that overweight or underweight portfolio holdings based on certain quantitative factors, such as value, volatility, momentum, dividend yield, and size) may also rely to a significant extent on indexes.⁴⁹ These strategies are frequently incorporated directly into indexes (in which case funds that seek to track these smart beta indexes are a subset of index funds) but may also be incorporated outside the index by the adviser. Either way, an index still serves as a "recipe" of sorts for these funds—the initially chosen index's underlying components and weightings provide a baseline from which the strategy then deviates based on the quantitative factors that it chooses to emphasize or de-emphasize. Smart beta funds also demonstrate how indexes and the funds that track them may incorporate active elements, including investment strategies or investor preferences, and therefore provide investment exposures differing from those of markets broadly understood.

⁴⁶ See, generally, "iShares Investigates: Market Indexes and Index Investing," iShares by BlackRock, available at www.ishares.com/us/literature/whitepaper/ishares-investigates-indexes-and-index-investing-en-us.pdf.

⁴⁷ But see notes 40 through 43 and accompanying text.

⁴⁸ Due to certain other considerations (e.g., transaction costs, liquidity considerations, number of index components), an index fund may not seek or obtain precise replication of its index (i.e., the fund's holdings and their relative proportions may not exactly match the index's components and their relative proportions). But these deviations are generally not economically significant, given the fund's objective of seeking to track the index's investment performance.

⁴⁹ See, e.g., *Index Investing Supports Vibrant Capital Markets*, BlackRock Viewpoint (October 2017), explaining that "active" and "index" strategies exist on a continuum and do not represent a binary choice, available at www.blackrock.com/corporate/literature/whitepaper/viewpoint-index-investing-supports-vibrant-capital-markets-oct-2017.pdf.

Finally, more traditional actively managed funds (e.g., a stock fund that uses fundamental research to select its portfolio holdings) have far more attenuated—but not necessarily nonexistent—connections to their benchmark indexes. To give one example, these funds may find it useful to refer to their benchmark indexes for purposes of establishing investment policies and limitations. For instance, a large-cap equity fund may define “large-cap” by reference to the minimum market capitalization of companies included in a large-cap equity index.⁵⁰

An index may also provide a point of reference with respect to how an adviser actively manages a portfolio. A fund seeking to outperform an appropriate benchmark index (whether in absolute terms or on a risk-adjusted basis) will generally understand how that index is constructed and its current components. The active manager may then over- or underweight positions relative to the index, hold investments not included in the index, and completely avoid holdings included in the index.⁵¹ Similarly, this understanding of the index’s components is needed for purposes of risk analytics and attribution analysis. In attempting to quantify a fund’s relative risk or factors that explain its relative performance, the fund needs an external reference point, and indexes frequently serve this function.

Multi-Asset Class Portfolio Construction

Indexes may affect portfolio construction for certain multi-asset class funds, including balanced funds or funds of funds. In determining the asset classes and their respective weightings for such a fund, the fund manager may begin with indexes as proxies for those asset classes. These asset allocation decisions are themselves “active,” reflecting the judgment and discretion of the fund manager. Furthermore, such allocations are subject to change, depending on market conditions and the fund manager’s views. In this respect, target date funds⁵² are unique in that their asset allocations change over time as a matter of course, and their predicted “glide paths” may also be further modified—temporarily or permanently—by the fund manager.

⁵⁰ See, e.g., *Frequently Asked Questions about Rule 35d-1* (Investment Company Names), SEC Division of Investment Management Staff, Questions 6 and 12 (suggesting that, in developing definitions of terms such as small-, mid-, or large-capitalization, or a term suggesting a particular portfolio duration, funds should consider all pertinent references, including industry indexes), available at www.sec.gov/divisions/investment/guidance/rule35d-1faq.htm#P72_9874.

⁵¹ In doing so, an active fund may be limited by both its voluntary investment policies and certain limitations under the Investment Company Act. See notes 40 and 41.

⁵² Target date funds provide an efficient way for an investor to invest in a mix of asset classes (usually through investments in underlying funds) through a single fund that reallocates its portfolio over time to become less focused on growth of principal and more focused on current income and lessening principal fluctuation.

Once a multi-asset class fund's asset allocation is "set" (temporarily, at least), the fund manager then chooses investments to implement the asset allocation strategy. In doing so, the manager may employ active or passive strategies or funds. As discussed above, these funds may also prefer to measure their overall performance against a customized blended benchmark because no one index representing a single asset class may serve as an appropriate comparative measure (although a target date fund also may seek to track, or measure itself against, the performance of a specifically designed target date index).

Similar dynamics with respect to asset allocation and use of indexes exist outside of funds as well. For instance, large institutional investors (e.g., pensions and endowments) may first set asset allocations for their overall portfolios (determined in part by indexes) and then adopt and implement active or passive strategies (or a combination thereof) within each portfolio "sleeve." They, too, may measure overall portfolio performance against a blended benchmark. Investment advisers that construct and manage "model portfolios" with varying investment objectives, asset allocations, and risk profiles may also take similar steps.

Conclusion

The connections between indexes and the fund industry are varied. They are strongest and most apparent for index funds, but indexes have notable connections to actively managed funds as well (with respect to regulatory requirements, performance and risk measurement, and marketing). As investor demands and preferences have evolved, so, too, have the fund and index industries. The growth of ESG and smart beta-related funds and indexes are examples of how the two have developed in concert to some degree, and it is possible that future evolution in investor preference will continue to affect both of these areas in interconnected or parallel ways.

Appendix: Descriptions of Three Prominent Indexes

One way to understand indexes—including their design, composition, and administration—is by briefly examining a few well-known examples: the S&P 500, the MSCI ACWI, and the Bloomberg Barclays US Aggregate Bond Index. We include short descriptions of these indexes and their methodologies below.⁵³

S&P 500

The S&P 500⁵⁴ is composed of 500 constituent companies and measures the performance of the large-cap segment of the US equity market. Constituent selection is at the discretion of an index committee and is based on eligibility criteria. Only common stocks of US companies are eligible,⁵⁵ and the index also imposes requirements with respect to market capitalization,⁵⁶ public float,⁵⁷ financial viability,⁵⁸ liquidity,⁵⁹ and sector representation.⁶⁰ Constituents are weighted by float-adjusted market capitalization, such that companies with larger market capitalizations are weighted more heavily than those with smaller market capitalizations.

The index is rebalanced quarterly and calculated in real-time using exchange-traded prices when US equity markets are open.⁶¹ A company may be removed from the index if it (i) is involved in a merger, acquisition, or significant restructuring such that it no longer meets the eligibility criteria, or (ii) substantially violates one or more of the eligibility criteria, at the index committee's discretion.

The index is maintained by an index committee (composed entirely of full-time professional members of S&P Dow Jones Indices' staff) that meets monthly. The committee reviews pending corporate actions that may affect index constituents, statistics comparing the composition of the index to the market, companies considered as candidates for addition to an index, and any significant market events. The committee may revise index policy covering rules for selecting

⁵³ All summary information in this appendix is based on publicly available information reviewed prior to the date of this document and is subject to change.

⁵⁴ A current fact sheet and information about this index's methodology is available at www.spglobal.com/spdji/en/indices/equity/sp-500/#overview.

⁵⁵ A US company has the following characteristics: (i) It files 10-K annual reports with the SEC; (ii) the US portion of fixed assets and revenues constitutes a plurality of the total but need not exceed 50 percent; and (iii) the primary listing must be on an eligible US exchange. Certain organizational structures are ineligible (e.g., BDCs, limited partnerships, LLCs, closed-end funds, ADRs, and ETFs).

⁵⁶ A company must have an unadjusted market capitalization of US\$9.8 billion or more. As of December 31, 2020, the five largest constituents of this index were Apple, Microsoft Corp., Amazon.com, Facebook A, and Tesla.

⁵⁷ A company must have a float-adjusted market capitalization that is at least 50 percent of the index's unadjusted minimum market capitalization threshold, or US\$4.9 billion or more.

⁵⁸ The sum of the most recent four consecutive quarters' Generally Accepted Accounting Principles (GAAP) earnings (net income excluding discontinued operations) should be positive, as should the most recent quarter.

⁵⁹ Using composite pricing and volume, the ratio of annual dollar value traded to float-adjusted market capitalization should be at least 1.00, and the stock should trade a minimum of 250,000 shares in each of the six months leading up to the evaluation date.

⁶⁰ Sector balance is also considered in the selection of companies for the index.

⁶¹ Official end-of-day calculations are based on each stock's primary market closing price. Prices used for the calculation of real-time index values are based on the "Consolidated Tape" (i.e., an aggregation of trades for each security over all regional exchanges and trading venues, inclusive of the primary exchange).

companies, among other matters, and it reserves the right to make exceptions when applying the methodology. The methodology is reviewed at least annually, and such reviews may involve publishing consultations inviting comments from external parties.

MSCI ACWI

The MSCI ACWI⁶² is designed to represent performance of the full opportunity set of large- and mid-cap stocks across 23 developed and 26 emerging markets.⁶³ As of November 30, 2020, the index included 2,990 constituents across 11 sectors⁶⁴ and approximately 85 percent of the free float-adjusted market capitalization in each market. The index is built using MSCI's Global Investable Market Index (GIMI) methodology, which aims to provide exhaustive coverage of the relevant investment opportunity set⁶⁵ with a strong emphasis on index liquidity, investability, and replicability.⁶⁶ The index applies its market coverage target range (approximately 85 percent) to the investable equity universe to generate the index's large- and mid-cap components and their weightings.⁶⁷ The index is calculated using transacted security prices from stock exchanges or published indexes.⁶⁸

The index is reviewed quarterly. During the semi-annual index reviews, the index is rebalanced, and the large- and mid-cap cutoff points are recalculated.

All MSCI index methodologies are reviewed at least annually, relative to the market or strategy they are designed to reflect. Proposed changes are presented to an index committee and trigger a consultation if deemed material. MSCI seeks to understand the differing perspectives in the investment community through its broad consultation process with respect to a potentially material change to an MSCI index methodology or its implementation. After the feedback from the consultation process is considered, the decisionmaking remains the responsibility of MSCI solely, through its committees.

⁶² A current fact sheet for this index is available at www.msci.com/documents/10199/a71b65b5-d0ea-4b5c-a709-24b1213bc3c5. Information about this index's methodology is available at www.msci.com/index-methodology.

⁶³ Developed markets countries include Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Hong Kong, Ireland, Israel, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, the United Kingdom, and the United States. Emerging markets countries include Argentina, Brazil, Chile, China, Colombia, Czech Republic, Egypt, Greece, Hungary, India, Indonesia, Korea, Malaysia, Mexico, Pakistan, Peru, Philippines, Poland, Qatar, Russia, Saudi Arabia, South Africa, Taiwan, Thailand, Turkey, and United Arab Emirates. As of December 31, 2020, the country weights were as follows: United States (57.28 percent), Japan (6.77 percent), China (5.20 percent), United Kingdom (3.75 percent), France (2.96 percent), and Other (24.04 percent).

⁶⁴ Those sectors include information technology, financials, consumer discretionary, health care, industrials, communication services, consumer staples, materials, energy, utilities, and real estate.

⁶⁵ The equity universe is defined by identifying eligible equity securities (generally consisting of all listed equity securities, with some exceptions).

⁶⁶ A market investable equity universe is derived by (i) identifying eligible listings for each security in the universe, and (ii) applying investability screens to individual companies and securities. Screens include, among others, minimum size, free float-adjusted market capitalization, and liquidity requirements.

⁶⁷ As of December 31, 2020, the five largest constituents of the index were all US companies: Apple (3.83 percent), Microsoft Corp. (2.70 percent), Amazon.com (2.34 percent), Facebook A (1.11 percent), and Alphabet A, Tesla, and Alphabet C (each 0.89 percent).

⁶⁸ Generally speaking, prices used in end-of-day index calculations are the official exchange closing prices or those figures accepted as such.

Bloomberg Barclays US Aggregate Bond Index⁶⁹

The Bloomberg Barclays US Aggregate Bond Index (or the “Agg”) is a broad-based benchmark that measures the investment grade, US dollar-denominated, fixed-rate taxable bond market. The index includes Treasuries, government-related and corporate securities, mortgage-backed securities (agency fixed-rate and hybrid adjustable rate mortgage pass-throughs), asset-backed securities, and commercial mortgage-backed securities (agency and nonagency). Rules for inclusion relate to currency,⁷⁰ credit quality,⁷¹ coupon,⁷² amount outstanding,⁷³ maturity,⁷⁴ market of issue,⁷⁵ seniority,⁷⁶ taxability,⁷⁷ and security type.

Bonds in the index are included based on these eligibility criteria and weighted based on their market values (i.e., values of outstanding debt) to provide an objective representation of the index’s broad investment choice set. The index also has rules related to rebalancing,⁷⁸ cash flows,⁷⁹ and daily pricing.⁸⁰

⁶⁹ Information about this index’s methodology is available at <https://data.bloomberglp.com/professional/sites/10/Bloomberg-Barclays-Methodology1.pdf>.

⁷⁰ Principal and interest must be denominated in USD.

⁷¹ Generally speaking, securities must be rated investment grade (Baa3/BBB-/BBB- or higher) using the middle rating of Moody’s, S&P, and Fitch.

⁷² Securities generally must have a fixed-rate coupon.

⁷³ Minimums vary depending on security type. For instance, the index has a minimum issue size of US\$300 million for government, credit, and covered bonds.

⁷⁴ Generally speaking, a security must have at least one year until final maturity, regardless of optionality (e.g., whether the bond is callable or puttable).

⁷⁵ Generally speaking, SEC-registered securities, bonds exempt from registration at the time of issuance, and SEC Rule 144A securities with registration rights are eligible. The index includes global bonds that are available in domestic and nondomestic markets.

⁷⁶ Senior and subordinated issues are included.

⁷⁷ Only fully taxable issues are eligible.

⁷⁸ Bloomberg maintains two universes of securities: the Returns (Backward) and the Projected (Forward) Universes. The composition of the Returns Universe is rebalanced at each month-end and represents the fixed set of bonds on which index returns are calculated for the next month. The Projected Universe is a forward-looking projection that changes daily to reflect issues dropping out of and entering the index but is not used for return calculations. On the last business day of the month (the rebalancing date), the composition of the latest Projected Universe becomes the Returns Universe for the following month. During the month, indicative changes to securities (e.g., credit rating changes) are reflected daily in the Projected and Returns Universe of the index. These changes may cause bonds to enter or fall out of the Projected Universe of the index on a daily basis but will affect the composition of the Returns Universe at month-end only, when the index is next rebalanced.

⁷⁹ The events that cause cash to enter the index (coupon and principal payments) are accounted for in monthly total returns calculations as coupon or paydown return, but the cash itself does not generate its own partial month return for the period it resides in the Returns Universe. Accumulated cash is stripped out of the index at month-end and effectively reinvested pro rata across the entire index for cumulative returns purposes.

⁸⁰ Generally speaking, most index-eligible bonds are priced on a daily basis by Bloomberg’s evaluated pricing service as of 3:00 pm ET, and bonds in the index are priced on the bid side.

Bloomberg uses two primary committees to provide overall governance and oversight of its benchmark administration activities.⁸¹ Also, index advisory councils are composed of key market participants (generally meeting annually) to discuss potential rules changes, among other things. All feedback received through these committees is nonbinding, and all final decisions on index rules are made by Bloomberg's internal committees after the review period has ended. Bloomberg reviews its indexes (both the rules of construction and data inputs) on a periodic basis (at least annually) to determine whether they continue to reasonably measure the intended underlying market interest, the economic reality, or otherwise align with their stated objective. Material changes related to an index are made available in advance to affected stakeholders, whose input is solicited.

⁸¹ One committee (composed of Bloomberg personnel) provides direct governance and is responsible for the first line of controls over the creation, design, production, and dissemination of benchmark indexes. The second committee is independent and provides oversight of the first committee and is responsible for reviewing and challenging its activities.



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