Myrtle Equities

Index Methodology

A full outline of the Myrtle Equities' index development and maintenance process.

Index Methodologies Document

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1. Introduction

1.1. Overview of Myrtle Equities Index Services

Myrtle Equities Global LLC ("Myrtle Equities" or "MEG") stands at the forefront of the global index provider industry, offering a broad array of equity indices designed to meet the evolving needs of institutional and retail investors, asset managers, and financial professionals. MEG's core focus is on the creation, calculation, and ongoing maintenance of indices that cover a wide spectrum of market segments, asset classes, and investment strategies. These indices serve as benchmarks, performance measurement tools, and investment products for clients across the financial markets.

The suite of indices provided by Myrtle Equities includes a wide variety of solutions, each designed to deliver accurate and actionable insights for market participants. Key offerings include:

- Broad Market Indices: These indices track the overall performance of large equity market segments, including regional, country-specific, and global benchmarks. They serve as essential tools for institutional investors looking to benchmark market performance or gain exposure to specific regions or markets.
- Thematic and Sector Indices: These indices capture the performance of distinct themes, industries, or sectors, such as technology, healthcare, and sustainable investing. They are ideal for investors seeking to focus on niche areas of the market, whether emerging trends or established sectors.
- Smart Beta and Factor Indices: Designed for investors interested in systematic factors such as value, momentum, low volatility, and quality, these indices employ advanced quantitative models to provide a more efficient way to capture returns beyond traditional market-capitalization-weighted strategies.
- Custom Indices: MEG also offers the ability to create customized indices tailored to specific client needs. These bespoke indices allow asset managers, hedge funds, and institutional investors to craft investment strategies that are aligned with particular goals and constraints, ensuring a more targeted approach to market exposure.

At the heart of Myrtle Equities' index offerings is a commitment to precision, transparency, and repeatability. Each index is built upon a robust methodology that ensures consistent, reliable, and accurate performance data. The company upholds strict governance standards, overseeing all aspects of index construction, rebalancing, and corporate actions with the highest degree of integrity. Myrtle Equities' services go beyond index creation. The firm also provides performance analysis, comprehensive reporting, and access to real-time data feeds, enabling investors to make informed decisions based on the most up-to-date information. Whether for passive investment vehicles such as Exchange-Traded Funds (ETFs), actively managed funds, or portfolio optimization, MEG's indices are versatile, designed to support a wide range of investment strategies.

Adhering to industry best practices, Myrtle Equities ensures full compliance with global regulations and maintains high standards of transparency throughout its processes. This commitment helps assure clients of the integrity and reliability of MEG's indices, regardless of market conditions.

With a forward-looking approach, Myrtle Equities stays ahead of market trends, incorporates feedback from stakeholders, and continues investing in cutting-edge technology to refine its index offerings. This ensures that MEG's indices remain relevant and provide valuable insights to investors worldwide.

1.2. Purpose and Scope of the Index Methodologies Document

The Index Methodologies Document is designed to serve as a comprehensive and transparent guide to the methodologies employed by Myrtle Equities Global LLC ("Myrtle Equities" or "MEG") in the development, calculation, and maintenance of its equity indices. This document aims to provide clarity and detailed explanations of the processes, principles, and governance structures that underpin MEG's index offerings. It is intended for a wide audience, including institutional investors, asset managers, financial professionals, regulators, and other stakeholders who rely on the accuracy, consistency, and transparency of MEG's indices. By providing in-depth information, this document ensures that MEG's practices meet the highest standards of transparency and accountability.

The scope of this document spans the full lifecycle of MEG's indices, from their initial conceptualization and construction to their ongoing maintenance, adjustments, and publication. It outlines the specific methodologies applied in the design, selection criteria, weighting schemes, and calculation methodologies of the indices. In addition, it addresses the processes for rebalancing indices and implementing corporate actions, among other crucial elements. This thorough approach allows MEG to maintain the integrity of its indices while ensuring that they continue to reflect the intended market exposure and provide meaningful performance insights.

Within the document, detailed descriptions are provided of the index construction methodologies employed by MEG. This includes how assets are selected for inclusion in the indices, the weighting schemes used, the specific calculation methodologies adopted, and the establishment of base dates and index levels. The document also elaborates on the procedures for maintaining and adjusting indices, particularly with regard to rebalancing and making necessary changes to reflect corporate actions, such as stock splits, dividends, and mergers. These procedures are designed to ensure that the indices remain accurate and reliable in representing the underlying market movements.

In addition, the document addresses the governance and oversight mechanisms in place to ensure that all methodologies are applied consistently and in accordance with regulatory standards. This includes the roles and responsibilities of internal governance committees and external oversight bodies, as well as the adherence to global regulatory frameworks, which ensure that MEG's indices remain compliant with industry best practices and regulatory requirements.

The Index Methodologies Document also provides a comprehensive overview of MEG's risk management and compliance practices. It describes the measures employed to mitigate risks associated with index errors, biases, and conflicts of interest. Furthermore, the document outlines the compliance protocols that ensure the indices are aligned with global regulatory requirements, thus safeguarding the integrity of the index construction process.

Transparency and effective stakeholder communication are key components of MEG's approach. This document defines the guidelines for the publication of index methodologies, updates, and revisions. It also describes how MEG engages with stakeholders regarding changes to index construction or methodology, ensuring that all modifications are communicated clearly and promptly.

The Index Methodologies Document is not only a technical reference but also an essential tool for fostering confidence in the reliability and accuracy of MEG's indices. It ensures that stakeholders, ranging from investors and financial professionals to regulators and other market participants, have a clear understanding of the methodologies used to create and manage the indices. By providing this level of transparency, MEG ensures that its indices can be relied upon for various applications, including passive investing, portfolio management, performance benchmarking, and index-linked products.

Moreover, this document will be reviewed and updated regularly to reflect any changes in market conditions, regulatory requirements, or improvements in methodology. Any significant revisions to the methodologies will be communicated to stakeholders in accordance with MEG's commitment to open, effective communication.

In summary, the purpose of the Index Methodologies Document is to provide a clear, thorough, and transparent account of MEG's index development and maintenance processes. It outlines the methodologies, governance structures, risk management practices, and compliance measures that ensure the accuracy, integrity, and reliability of MEG's indices. This document serves as both a technical reference and a statement of MEG's commitment to delivering high-quality index solutions to its clients and stakeholders.

1.3. Importance of Transparency and Accuracy in Index Development

Transparency and accuracy are fundamental principles that underpin the development, calculation, and ongoing maintenance of indices at Myrtle Equities Global LLC ("Myrtle Equities" or "MEG"). As a trusted provider of equity indices, MEG understands that stakeholders—ranging from institutional investors and asset managers to regulators and financial professionals—rely heavily on the integrity and precision of its indices for critical decision-making in areas such as portfolio construction, investment strategy development, risk management, and performance benchmarking. In this context, ensuring both transparency and accuracy throughout the index lifecycle is essential for maintaining stakeholder confidence and safeguarding the credibility of the indices.

Transparency is vital because it provides stakeholders with a clear and unambiguous understanding of the methodologies and procedures applied in the construction and maintenance of an index. By openly communicating the underlying assumptions, selection criteria, calculation methodologies, and rebalancing protocols, MEG enables stakeholders to assess and interpret the index in a consistent and reliable manner. Transparency also ensures that all actions taken during the index's lifecycle—whether related to composition changes, corporate actions, or rebalancing events—are communicated effectively and with adequate notice. This allows investors to make informed decisions based on the same set of information, minimizing uncertainty and promoting fairness in the market. Furthermore, transparency plays a key role in facilitating regulatory compliance and adhering to industry standards, as it allows external oversight bodies to verify that MEG's indices meet all required legal and ethical guidelines.

In parallel with transparency, accuracy is equally critical in the development and maintenance of indices. The accuracy of an index directly impacts its ability to accurately reflect the market or sector it represents, making it an essential tool for investors and other market participants. To ensure accuracy, MEG applies rigorous methodologies in the design, calculation, and adjustment of its indices. This includes the careful selection of index constituents, the use of reliable and up-to-date data sources, and the employment of sophisticated algorithms to calculate the index values. Regular audits, validation processes, and real-time monitoring of the index calculations further enhance the accuracy of the indices, ensuring that they remain free from errors and biases that could compromise their reliability. An accurate index is not only essential for effective performance tracking and risk management but also for ensuring that the index can be used as the basis for financial products, such as Exchange-Traded Funds (ETFs), derivatives, and structured products, which rely on accurate, real-time index data.

The importance of transparency and accuracy extends beyond the technical aspects of index development. Both qualities are key to maintaining the trust of investors and other stakeholders. Inaccurate or opaque index methodologies can lead to confusion, mispricing of financial instruments, and, ultimately, the erosion of market confidence. Conversely, a transparent and accurate index fosters trust and credibility, making it more likely that investors will rely on the index for long-term portfolio construction and investment decision-making. Transparency and accuracy also provide a basis for stakeholders to assess the performance of an index relative to its stated objectives and to evaluate how well it aligns with their investment strategies.

Moreover, as global financial markets continue to evolve, maintaining a high standard of transparency and accuracy becomes increasingly important. With the rise of passive investment strategies, smart beta approaches, and the growing use of indices as the foundation for financial products, the responsibility of index providers to ensure that their methodologies are transparent, and their data is accurate has never been more critical. This is particularly true in the context of regulatory scrutiny, where index providers are expected to demonstrate compliance with global regulatory frameworks, such as the EU's Benchmark Regulation and other relevant financial market regulations.

At Myrtle Equities, the commitment to transparency and accuracy is integral to the company's ethos and operational practices. By adhering to strict standards of transparency in methodology and governance and ensuring the highest levels of accuracy in the construction, calculation, and maintenance of its indices, MEG aims to deliver products that are both reliable and resilient. This commitment not only enhances the value of the indices themselves but also contributes to the broader goal of market integrity and stability.

Ultimately, transparency and accuracy are not just desirable qualities in index development—they are essential to the success and credibility of the indices and the trust placed in them by market participants. Myrtle Equities recognizes the critical importance of these principles and strives to embed them at every stage of the index lifecycle, ensuring that its indices remain reliable, robust, and aligned with the needs of investors and financial professionals.

2. Index Development Process

2.1. Conceptualization and Design

The conceptualization and design phase is the foundational step in the index development process, where the primary objectives, structure, and parameters of the index are determined. This phase plays a critical role in ensuring that the index accurately reflects the market segment, asset class, or investment strategy it is intended to track or represent. A well-conceived and meticulously designed index serves as the cornerstone for all subsequent stages, including calculation, maintenance, and performance evaluation. At Myrtle Equities Global LLC ("Myrtle Equities" or "MEG"), the conceptualization and design process are approached with a clear focus on precision, market relevance, and stakeholder needs.

The first step in the conceptualization process involves defining the objective and purpose of the index. This step establishes the framework for the entire development process. The purpose could be broad, such as representing the overall performance of a specific geographic region, sector, or market, or more specialized, such as capturing a specific investment strategy or factor-based approach. The design team works closely with market participants and stakeholders, including institutional investors, asset managers, and financial professionals, to understand the specific needs of the intended user base. This collaboration helps ensure that the index will meet the practical requirements of those relying on it for benchmarking, investment decision-making, or product creation.

Once the index's purpose is clearly defined, the next step is to determine the selection criteria for the index's constituents. These criteria are designed to ensure that the index accurately reflects the intended market or investment strategy. For example, in the case of a broad market index, the selection criteria may include factors such as market capitalization, liquidity, and trading volume. For a thematic or sector index, the criteria would be tailored to identify companies that fall within the specific theme or sector, ensuring that the index appropriately captures the relevant market dynamics. Selection criteria must be transparent, consistent, and aligned with the intended exposure to the target market, as these criteria will dictate which assets are included and excluded from the index.

Following the determination of selection criteria, the weighting methodology is established. The weighting scheme defines how much influence each constituent will have on the index's overall performance. There are several potential approaches to weighting, with the most common being market-capitalization weighting, equal weighting, and fundamental weighting. Market-capitalization weighting is the most widely used, where larger companies have a greater impact on the index. Equal weighting assigns an identical weight to each constituent, regardless of its size, while fundamental weighting considers factors such as earnings or revenue. The choice of weighting methodology is critical, as it directly affects the index's responsiveness to movements in individual securities and the overall performance of the market segment.

The next aspect of the design process involves establishing the calculation methodology. The calculation methodology outlines the approach used to compute the index value at any given time. This includes specifying how the price or total return of each constituent is determined whether dividends are reinvested, and the manner in which adjustments (such as corporate actions) are incorporated into the index calculation. The index calculation methodology must be robust, transparent, and capable of reflecting real-time market conditions accurately. Furthermore, the methodology should be flexible enough to accommodate future developments, such as changes in the market environment or the introduction of new financial instruments.

Another essential element of the conceptualization and design phase is the index frequency and rebalancing schedule. The frequency refers to how often the index is calculated and updated, which can vary from real-time to daily, weekly, or monthly. Real-time indices are typically used for financial products such as Exchange-Traded Funds (ETFs) or derivatives, whereas other indices may only require daily or periodic updates. Additionally, the rebalancing schedule is crucial for ensuring that the index remains representative of the market segment it tracks. Rebalancing involves adjusting the index's composition and weights to reflect changes in the market, such as the introduction of new securities or the removal of outdated ones. The rebalancing frequency and methodology must be clearly defined, ensuring consistency and minimizing any disruptions to the index's performance.

Governance plays a critical role in the conceptualization and design phase, ensuring that the index is developed in line with best practices, regulatory standards, and the principles of fairness, transparency, and independence. At Myrtle Equities, the governance framework ensures that all stages of the index development process are overseen by a dedicated governance committee, which is responsible for reviewing the methodology, approving design elements, and ensuring that the index adheres to established guidelines. The governance committee also plays an ongoing role in monitoring the index post-launch to ensure its continued relevance and adherence to its original design objectives.

Finally, the documentation and communication of the index design is an essential part of the conceptualization phase. Once the design elements are finalized, the methodology is carefully documented to provide transparency and ensure that all stakeholders have a clear understanding of how the index is constructed, how it will behave, and how it can be utilized. This documentation serves as the reference point for all future modifications, updates, and governance decisions. It is shared with stakeholders, including investors, financial professionals, and regulatory bodies, to provide clarity on the methodology and ensure that there is no ambiguity about how the index is calculated and maintained.

The conceptualization and design phase are a critical step in the index development process. It sets the foundation for a robust, transparent, and accurate index that will meet the needs of its users. At Myrtle Equities, this phase is approached with a focus on clarity, precision, and alignment with market expectations, ensuring that the index serves its intended purpose effectively while maintaining the highest standards of governance and methodology. The decisions made during this phase have a lasting impact on the performance, transparency, and integrity of the index, making it a crucial part of the overall index development process.

2.1.1. Objective and Purpose of the Index

The objective and purpose of an index are the cornerstone upon which its design, composition, and overall structure are built. Establishing a clear objective is the first step in the index development process and plays a crucial role in guiding all subsequent decisions regarding the index's methodology. The objective serves to define the broader goals the index seeks to achieve and the specific market segment, asset class, or investment strategy it is intended to represent.

The objective of an index could vary widely depending on its intended use. For instance, a broad market index may aim to track the performance of a countries or region's entire equity market, reflecting the performance of the most liquid and significant companies within that market. On the other hand, a thematic or sector-specific index might focus on a niche industry or investment theme, such as technology, sustainable investing, or healthcare, and aim to provide exposure to companies or assets that meet certain thematic criteria. Similarly, an index designed for factor-based investing might focus on a specific strategy, such as value or growth, or on particular financial metrics like volatility or dividend yield.

The purpose of an index also helps define its use cases. For example, an index might serve as a benchmark for passive investment strategies, offering a standard to which fund managers compare the performance of their actively managed portfolios. It could also serve as the basis for index-linked financial products, such as Exchange-Traded Funds (ETFs) or structured notes. The index's purpose should align with the needs of its target audience—whether for use in portfolio management, performance measurement, or as the underlying reference for financial products.

In addition to clarifying the index's broader objective, this phase involves detailing the key attributes that will govern the index's behavior and design, such as its methodology, the frequency of updates, and the types of constituents that will be included. Defining these elements with precision ensures that the index is aligned with its intended market exposure and can be effectively employed by investors, asset managers, and other financial professionals.

2.1.2. Target Market and Benchmarking

Defining the target market and understanding its benchmarking needs are crucial components of the index design process. The target market refers to the group of investors, financial institutions, or product developers who will use the index for various purposes, such as performance tracking, investment decision-making, or the development of index-based financial products.

The target market typically includes institutional investors, such as mutual funds, pension funds, and hedge funds, as well as retail investors and financial product developers. Understanding the unique needs of these market participants is essential for creating an index that offers meaningful and practical exposure to the desired market segment. For example, an index tracking large-cap equities may be most relevant for institutional investors focused on core equity allocations, while a smaller, niche sector index could be more suitable for investors seeking targeted exposure to specific industries or investment themes.

Benchmarking is another critical aspect of defining the target market. An index often serves as a benchmark, providing a point of comparison against which the performance of actively managed portfolios, funds, or other financial products can be assessed. A well-designed benchmark must reflect the investment universe or strategy of the portfolio or fund it is comparing. The index should provide a reliable, transparent, and consistent measurement of performance that is appropriate for the specific objectives of the portfolio managers and their clients.

For example, if the target market is a group of investors focused on sustainability, the index may aim to represent companies with strong environmental, social, and governance (ESG) performance, making it suitable for comparison with funds or products that prioritize ESG criteria. Similarly, an index focused on growth stocks would serve as a benchmark for funds targeting high-growth companies, providing a relevant and comparable standard for performance evaluation.

Understanding the target market's needs and the role of the index as a benchmark also informs decisions related to the index's design methodology, constituent selection, and weighting scheme. The index must be constructed in a manner that accurately reflects the segment it tracks and provides a transparent, reliable tool for investors to evaluate their investments.

2.1.3. Defining the Index Universe

The process of defining the index universe is a critical aspect of index design, as it establishes the pool of potential constituents from which the index will be composed. The index universe refers to the universe of assets, securities, or entities eligible for inclusion in the index based on a set of predefined criteria. The parameters used to define the index universe ensure that only the most relevant and appropriate assets are included, aligning with the index's objective and purpose.

The first step in defining the index universe is to establish eligibility criteria. These criteria are typically based on several factors, including the type of asset (e.g., equities, bonds, commodities), market capitalization, liquidity, and trading volume. For instance, in the case of a broad equity market index, the universe may consist of publicly listed companies that meet specific criteria such as a minimum market capitalization and liquidity threshold. The goal is to ensure that the index represents a meaningful cross-section of the relevant market while excluding assets that do not meet the necessary standards for inclusion.

In addition to basic eligibility criteria, the index universe may also be influenced by other considerations, such as geographical location, sector classification, or thematic alignment. For example, if the index is designed to represent the performance of technology companies, the universe may be limited to companies operating within the technology sector, with further restrictions on company size or growth potential. Similarly, a thematic index may define its universe based on companies that meet specific criteria related to sustainability, innovation, or social impact.

Market data plays a crucial role in the process of defining the index universe. Accurate and up-to-date data is essential for determining whether an asset meets the predefined criteria for inclusion. Index providers typically rely on a combination of internal data sources and third-party providers to ensure that the data used to define the universe is comprehensive, accurate, and consistent. The use of reliable data ensures that the final index constituents reflect the true state of the market and remain relevant over time.

The process of defining the index universe is not static but must be revisited periodically to ensure that the index remains representative of its intended market segment. This may involve rebalancing the index universe or updating eligibility criteria based on changes in the market, regulatory environment, or other external factors. The universe definition process is typically documented in the index methodology, ensuring transparency and consistency in the selection of constituents.

In conclusion, defining the index universe is a foundational element of the index development process. By establishing clear eligibility criteria and utilizing reliable data, MEG ensures that the index is composed of the most relevant and appropriate assets for its intended market exposure. This process provides a solid foundation for the accurate and meaningful representation of the market or investment strategy the index aims to track.

2.2. Index Construction Methodology

The index construction methodology is the blueprint for how an index is assembled, calculated, and maintained. It defines the rules and parameters that guide the selection, weighting, and computation of the index’s value. A robust and transparent methodology ensures that the index accurately represents the intended market, asset class, or investment strategy while maintaining consistency, reliability, and alignment with regulatory standards.

The construction methodology encompasses several critical components, including the weighting scheme, selection criteria, calculation methodology, and the establishment of the base date and initial index level. Each of these components is designed to work together to provide a clear and actionable representation of the underlying market or strategy. At Myrtle Equities Global LLC ("Myrtle Equities" or "MEG"), significant emphasis is placed on ensuring that the methodology is clearly documented, rigorously tested, and easily understood by stakeholders.

2.2.1. Weighting Scheme

The weighting scheme determines the relative importance of each constituent within the index. It directly influences the index's performance characteristics and the degree to which individual securities affect the overall index value. Myrtle Equities employs various weighting methodologies depending on the objective and purpose of the index:

1. Market-Capitalization Weighting: Constituents are weighted based on their market capitalization, meaning larger companies have a greater impact on the index. This method is commonly used for broad market indices and provides a clear reflection of the aggregate market performance.

2. Equal Weighting: All constituents are assigned an equal weight, irrespective of their size. This approach ensures that each constituent has an equal impact on the index, promoting diversification and reducing concentration risk.

3. Fundamental Weighting: Weights are assigned based on specific fundamental metrics, such as revenue, earnings, or dividends. This method is used for indices that aim to capture specific investment factors or strategies.

4. Custom Weighting: For thematic or strategy indices, a tailored approach may be used, incorporating specific parameters aligned with the index's objective.

The choice of weighting scheme is determined during the conceptualization phase and documented in the index methodology. Myrtle Equities ensures that all weighting schemes are transparent, replicable, and aligned with industry standards.

2.2.2. Selection Criteria and Inclusion Rules

The selection criteria and inclusion rules define the parameters for determining which securities are eligible for inclusion in the index. These rules ensure that the index remains representative of its intended market or strategy while maintaining transparency and consistency.

1. Eligibility Requirements: Securities must meet specific criteria related to asset type, market capitalization, liquidity, and trading volume. For example, equities must be listed on recognized exchanges and meet minimum capitalization thresholds.

2. Sector and Geographic Filters: Depending on the index's objective, additional filters may be applied, such as sector classification (e.g., technology, healthcare) or geographic location (e.g., North America, Europe).

3. Financial Health: For certain indices, financial metrics like profitability, earnings growth, or debt levels may be considered to ensure constituents align with the index's purpose.

4. Exclusions: Specific exclusions may apply, such as companies involved in controversial industries or those that fail to meet environmental, social, and governance (ESG) criteria in ESG-focused indices.

These rules are evaluated and periodically reviewed by the governance committee to ensure the index remains representative and relevant to its intended purpose.

2.2.3. Calculation Methodology (Price, Total Return, Net Total Return)

The calculation methodology outlines how the index value is computed and updated over time. Myrtle Equities employs three primary calculation methods, depending on the type of index and its use case:

1. Price Return Index: This calculation reflects the changes in the prices of the index constituents, excluding dividends or income distributions. It is suitable for tracking capital appreciation.
2. Total Return Index: This calculation incorporates both price changes and dividends, assuming that dividends are reinvested in the index. It provides a more comprehensive measure of performance by capturing the full return to investors.
3. Net Total Return Index: Similar to the total return index but adjusts for applicable withholding taxes on dividends. This method is particularly relevant for international indices, where tax considerations vary by jurisdiction.

The methodology specifies the frequency of updates (e.g., real-time, end-of-day), the handling of corporate actions, and the application of rounding rules. The calculation methodology is rigorously tested to ensure accuracy and resilience to market changes.

2.2.4. Base Date and Index Level Initialization

The base date and index level initialization represent the starting point of the index and are critical for establishing historical comparability. The base date is typically chosen to coincide with a significant market event or a date that aligns with the index's purpose. The initial index level, often set at 100 or 1,000, provides a benchmark for measuring changes in value over time.

Myrtle Equities leverages the Myrtle Equities Index Hub, a proprietary software platform, to initialize and maintain index levels. The Index Hub integrates real-time and historical market data from credible third-party providers through the use of an Application Programming Interface (API). This data includes information on security prices, corporate actions, and other relevant metrics. The software uses this imported data to calculate the index levels based on the established methodology.

The Index Hub is equipped with advanced data processing capabilities, ensuring the accurate and timely computation of index values. Additionally, it maintains a comprehensive audit trail, documenting all data inputs, calculations, and adjustments. This ensures transparency and facilitates compliance with regulatory standards. By utilizing the Index Hub, Myrtle Equities ensures that the initialization and ongoing calculation of its indices are performed with the highest levels of accuracy, reliability, and efficiency.

2.3. Data Sources and Validation

Accurate and reliable data is the foundation of any robust index. The quality of an index's outputs is directly dependent on the quality of its inputs. At Myrtle Equities, we prioritize the use of trusted data sources and implement rigorous validation processes to ensure the integrity and accuracy of our indices. This section outlines the framework for selecting data providers, ensuring data quality, and validating data before its use in index calculations.

2.3.1. Data Providers and Feeds

Myrtle Equities relies on reputable, well-established data providers to ensure the consistency and reliability of the data used in index construction. Data providers are selected based on their expertise, credibility, and ability to supply accurate and comprehensive information. The selection process includes an evaluation of the provider's track record, technology infrastructure, and compliance with industry standards.

Data feeds typically include real-time and historical prices, corporate action information, dividends, and other financial metrics. These feeds are integrated into the Myrtle Equities Index Hub through secure Application Programming Interfaces (APIs), ensuring seamless data flow and minimal latency. Backup data providers are also identified to ensure continuity in the event of service disruptions from primary sources.

By sourcing data from leading providers, Myrtle Equities ensures that its indices reflect accurate, current, and comprehensive market information, which is critical for both transparency and investor confidence.

2.3.2. Data Quality and Integrity

Maintaining the quality and integrity of data is a cornerstone of the index development process. Myrtle Equities employs stringent controls to validate and monitor data accuracy, consistency, and completeness. Key aspects of our approach to data quality include:

- Accuracy: All data inputs are cross-referenced with multiple sources to verify correctness.
- Consistency: Historical and real-time data are regularly checked to ensure alignment with established patterns and trends.
- Timeliness: Data is updated at the frequency specified in the index methodology, ensuring that the index reflects current market conditions.
- Completeness: All required data fields are reviewed to confirm that no critical information is missing or outdated.

Automated systems within the Index Hub flag anomalies, such as unexpected price changes or incomplete corporate action details, for manual review. This dual approach—automation supplemented by human oversight—ensures that any potential issues are addressed before they impact the index.

2.3.3. Validation and Testing

Before incorporating data into the index calculation process, Myrtle Equities conducts rigorous validation and testing procedures. These procedures are designed to identify and resolve discrepancies, ensuring that data meets the high standards required for index construction. Key steps include:

- Data Validation: All incoming data is subjected to rule-based checks that compare inputs against predefined thresholds and historical trends.
- Simulation Testing: Sample calculations are conducted using validated data to ensure the index methodology operates as intended.
- Error Correction: Any identified errors are promptly investigated and corrected, with corrective actions logged for audit purposes.
- Stress Testing: Data is tested under simulated extreme market conditions to ensure resilience and accuracy in volatile environments.

The results of these validation and testing processes are documented and retained to provide a clear audit trail, supporting transparency and accountability in the index development process.

2.4. Transparency and Communication of Methodology

Transparency is a fundamental principle of Myrtle Equities' approach to index construction. Stakeholders—including investors, regulators, and product developers—must have confidence in the integrity and consistency of the index methodology. To foster trust, Myrtle Equities is committed to clear communication regarding methodology, updates, and stakeholder engagement.

2.4.1. Publication of Index Methodology and Changes

Myrtle Equities publishes detailed index methodologies on its website, ensuring stakeholders have access to all relevant information. These documents include a comprehensive overview of the index's objective, construction rules, calculation methods, and maintenance procedures. By providing full visibility into the methodology, we enable stakeholders to understand how the index is developed, maintained, and calculated.

In the event of any changes to the methodology, Myrtle Equities issues timely notices detailing the nature and rationale for the changes. These notices are accompanied by updated methodology documents, clearly indicating revisions. This practice ensures that stakeholders are informed of all modifications and can assess their potential impact.

2.4.2. Methodology Updates and Revisions

To ensure indices remain relevant and reflective of current market conditions, periodic updates to methodologies may be necessary. Myrtle Equities has established a robust framework for managing updates and revisions, which includes the following steps:

1. Assessment of Necessity: Proposed updates are evaluated to determine their necessity, alignment with the index's objective, and potential impact on stakeholders.
2. Governance Oversight: All updates are reviewed and approved by the Internal Governance Committee to ensure consistency with regulatory and ethical standards.

3. Stakeholder Communication: Changes are communicated to stakeholders in advance of implementation, providing sufficient time for adjustments or feedback.

4. Implementation and Monitoring: Revised methodologies are implemented according to a defined timeline, with post-implementation monitoring to ensure the updates achieve their intended objectives.

By adhering to this process, Myrtle Equities balances the need for adaptability with the importance of stability and predictability in index methodologies.

2.4.3. Engagement with Stakeholders

Myrtle Equities values open and constructive engagement with stakeholders as an integral part of the index development process. This engagement helps ensure that our indices meet the needs of investors, product developers, and other users. Key components of our stakeholder engagement strategy include:

- Feedback Mechanisms: Regular opportunities for stakeholders to provide input on methodology, including surveys, consultations, and public comment periods.

- Advisory Panels: Collaboration with industry experts and advisory panels to gather insights and refine methodologies.

- Transparent Reporting: Publication of annual reports detailing methodology updates, stakeholder feedback, and governance activities.

- Proactive Communication: Outreach initiatives, including webinars and newsletters, to keep stakeholders informed about developments in index methodologies and regulatory requirements.

This ongoing dialogue fosters trust enhances the relevance of our indices and ensures that Myrtle Equities continues to deliver value to its stakeholders.

3.1. Regular Index Rebalancing

Regular index rebalancing is a critical component of the ongoing management process, ensuring that an index remains representative of its target market, strategy, or investment objective. Rebalancing adjusts the composition and weights of the index constituents in response to market changes, corporate actions, or predefined criteria outlined in the index methodology. At Myrtle Equities, rebalancing is conducted with precision and transparency to maintain the integrity, relevance, and consistency of our indices.

3.1.1. Frequency and Triggers for Rebalancing

The frequency of index rebalancing depends on the specific objectives and design of each index. Myrtle Equities categorizes rebalancing schedules into the following typical intervals:

- Periodic Rebalancing: Most indices are rebalanced quarterly, semi-annually, or annually, as specified in the methodology document. These intervals align with standard market reporting cycles and allow for the incorporation of updated financial data, such as earnings or market capitalization changes.

- Event-Driven Rebalancing: Some indices require ad hoc rebalancing in response to specific events, such as mergers, acquisitions, bankruptcies, or extraordinary market disruptions. These events may necessitate immediate adjustments to maintain the index's accuracy and alignment with its objectives.
- Threshold-Based Rebalancing: Certain indices employ thresholds for deviations in constituent weights or market representation. If these thresholds are breached, rebalancing is triggered to restore the index to its intended structure.

The methodology document for each index specifies the exact rebalancing schedule and conditions to ensure predictability for stakeholders.

3.1.2. Rebalancing Methodology

The rebalancing process at Myrtle Equities follows a structured and transparent methodology to ensure consistency and accuracy. The key steps include:

1. Data Collection and Review: Updated market data, including prices, market capitalization, and trading volume, are gathered from credible data providers. This data is validated and reviewed for completeness and accuracy.
2. Constituent Evaluation: Each index constituent is evaluated against the selection criteria and inclusion rules outlined in the methodology. Constituents that no longer meet the eligibility requirements are flagged for removal.
3. Selection of New Constituents: Eligible securities are assessed to identify potential additions to the index. This process ensures that the index remains representative of its target market or strategy.
4. Weight Adjustments: Constituent weights are recalculated based on the specified weighting scheme, such as market-cap weighting, equal weighting, or a custom approach.
5. Testing and Verification: Simulated rebalancing is conducted to ensure that the new index composition meets the methodology's requirements and aligns with market conditions.
6. Implementation: The updated index composition and weights are implemented on the effective date, as communicated to stakeholders in advance.

This rigorous process ensures that rebalancing is performed with precision and minimizes disruption to the index and its users.

3.1.3. Impact of Rebalancing on Index Constituents

Rebalancing can have a significant impact on index constituents, particularly in terms of their inclusion, exclusion, and weight adjustments. Understanding these impacts is crucial for stakeholders, including investors, portfolio managers, and product issuers.

- Inclusion and Exclusion: Constituents that are newly added to the index may experience increased visibility and demand, as investment products tracking the index adjust their holdings accordingly. Conversely, securities removed from the index may face reduced demand.

- Weight Adjustments: Changes in constituent weights can influence the relative impact of individual securities on the index's overall performance. For instance, an increase in weight for a high-performing stock can amplify the index's gains, while a reduction in weight may temper its influence.

- Market Impact: Rebalancing can result in increased trading volumes for affected securities, particularly for indices with significant assets under management in associated investment products. Myrtle Equities seeks to minimize market impact by providing ample notice of rebalancing changes and ensuring that the process is executed with efficiency and transparency.

By maintaining a clear and consistent rebalancing process, Myrtle Equities ensures that its indices remain aligned with their objectives while minimizing disruption to the market and stakeholders.

3.2. Corporate Actions and Adjustments

Corporate actions are events initiated by companies that affect securities in the index, such as stock splits, mergers, or dividends. Managing these actions appropriately is essential for maintaining the integrity and continuity of the index. Myrtle Equities has a structured framework for identifying, analyzing, and implementing corporate action adjustments to ensure the index remains accurate and consistent with its methodology.

3.2.1. Overview of Corporate Actions

Corporate actions can broadly be classified into mandatory and voluntary events:

- Mandatory Corporate Actions: These actions, such as stock splits or dividends, are automatically applied to all shareholders and must be reflected in the index to maintain accuracy.

- Voluntary Corporate Actions: These include events like rights issues or tender offers, where shareholders have a choice. Their impact on the index depends on the level of participation.

Myrtle Equities ensures timely identification and implementation of adjustments for both types of actions using data from reliable providers and predefined adjustment protocols.

3.2.2. Corporate Actions Table (Descriptions and Handling)

The table below summarizes the common corporate actions, their descriptions, and how Myrtle Equities addresses them within its indices:

Action	Description	Handling Methodology
Stock Split	Division of existing shares into multiple shares	Adjustment of share count and price to maintain neutrality
Reverse Stock Split	Consolidation of shares into fewer shares	Reverse adjustment to share count and price
Cash Dividend	Distribution of cash to shareholders	Adjust index level based on dividend amount
Special Dividend	One-time cash distribution	Adjustment of index level using ex-dividend calculation
Rights Issue	Offering of additional shares to existing shareholders	Pro-rata adjustment based on terms of the issue
Merger or Acquisition	Combination or acquisition of companies	Replace or adjust constituent based on terms of the event
Delisting	Removal of a security from the exchange	Immediate removal from the index with replacement
IPO Inclusion	Addition of a newly listed company to the index	Evaluation and addition post-eligibility review

Myrtle Equities ensures the consistent application of corporate action adjustments as outlined in its index methodologies.

3.3. Ongoing Index Calculation and Publication

Accurate and timely calculation and publication of index levels are foundational to maintaining stakeholder trust. Myrtle Equities employs advanced technology and rigorous protocols to ensure the reliability and accessibility of its indices.

3.3.1. Calculation Frequency and Time Zone Considerations

Index levels are calculated in real-time, end-of-day, or intraday intervals based on the index's nature and purpose. Time zone considerations are critical, particularly for indices covering multiple geographies. Myrtle Equities aligns its calculation schedule with the trading hours of relevant markets and ensures seamless synchronization across time zones to avoid discrepancies.

3.3.2. Error Detection and Resolution Protocols

Myrtle Equities employs robust systems to detect and resolve calculation errors promptly. The error-handling process includes:

1. Error Detection: Automated systems monitor for anomalies, such as incorrect prices or misaligned data.
2. Root Cause Analysis: Once detected, the issue is analyzed to identify its source, whether data-related or computational.

3. Correction: The index is recalculated, and the corrected levels are published.
4. Stakeholder Notification: Any significant errors and their resolutions are communicated to stakeholders in a transparent manner.

This ensures the index's credibility and minimizes disruption to stakeholders.

3.3.3. Publication and Distribution Methods

Myrtle Equities publishes index levels, composition changes, and methodology updates via multiple channels, including:

- Official Website: Real-time and historical index data are available for download.
- Data Vendors: Collaborations with reputable vendors ensure wide accessibility to index data.
- Direct API Feeds: Customized data feeds provide real-time access for institutional stakeholders.

This multi-channel approach ensures stakeholders have reliable access to timely and accurate index information.

3.4. Performance Monitoring and Reporting

Monitoring the performance of indices ensures their continued relevance and effectiveness in representing their intended markets or strategies. Transparent reporting provides stakeholders with the insights they need to evaluate the indices' utility.

3.4.1. Tracking and Benchmarking Performance

Myrtle Equities tracks both absolute and relative performance metrics.

- Absolute Metrics: Metrics such as total return, price return, and volatility provide a direct assessment of index performance.
- Relative Metrics: Comparison with peer indices or benchmarks highlights the index’s performance in context.

This comprehensive approach ensures stakeholders have a clear understanding of how the index is performing over time.

3.4.2. Review of Index Composition and Strategy

Periodic reviews of the index composition ensure adherence to the defined methodology. Constituents are evaluated for continued eligibility, and adjustments are made during rebalancing to maintain alignment with the index’s objectives. The review process also evaluates the effectiveness of the index strategy, incorporating stakeholder feedback and market developments.

3.4.3. Index Usage and Applications

Myrtle Equities indices serve diverse applications, including investment products, performance benchmarking, and risk management. Regular monitoring of how indices are utilized provides insights into emerging trends and informs the development of future indices. This ensures the indices remain aligned with market needs and stakeholder expectations.

4. Governance and Oversight

Effective governance and oversight are critical for ensuring the integrity, reliability, and credibility of indices developed and maintained by Myrtle Equities. This chapter outlines the governance framework, approval processes for methodology changes, and compliance with global regulatory standards, all of which ensure the highest levels of transparency, accountability, and market alignment.

4.1. Governance Structure of Index Development and Maintenance

Myrtle Equities has established a robust governance framework that combines internal expertise with external oversight to ensure that its indices are developed, maintained, and operated in a manner consistent with global best practices and regulatory expectations.

4.1.1. Internal Governance Committee

The Internal Governance Committee (IGC) is a multidisciplinary body responsible for overseeing all aspects of index development and maintenance. Comprised of senior representatives from research, compliance, risk management, and operations, the IGC ensures that all processes adhere to the organization's principles of transparency, fairness, and objectivity.

The responsibilities of the IGC include:

- Approval of New Indices: Evaluating the conceptualization, design, and proposed methodology of new indices to ensure alignment with market needs and regulatory standards.
- Monitoring Compliance: Ensuring ongoing adherence to internal policies and external regulatory requirements.
- Risk Mitigation: Identifying and addressing potential risks, such as conflicts of interest, data inaccuracies, or market disruptions.
- Periodic Reviews: Conducting regular reviews of the governance framework to ensure it remains fit for purpose as market and regulatory conditions evolve.

The committee operates under a structured charter that defines its roles, decision-making processes, and reporting lines, ensuring accountability and operational efficiency.

4.1.2. External Oversight and Regulatory Compliance

Myrtle Equities recognizes the importance of independent oversight in maintaining the trust of stakeholders. External oversight is achieved through the following mechanisms:

- External Audit: Independent audits of index processes are conducted periodically to validate compliance with industry standards and regulatory requirements.
- Advisory Panels: Panels composed of industry experts, academics, and practitioners provide independent advice on methodological issues and emerging trends.
- Regulatory Engagement: Myrtle Equities maintains an open and proactive dialogue with regulatory bodies, ensuring alignment with evolving regulatory expectations.

This dual-layered governance structure fosters transparency, builds stakeholder confidence, and enhances the overall robustness of Myrtle Equities' indices.

4.2. Review and Approval of Methodology Changes

Adapting to market changes and stakeholder needs requires a structured process for reviewing and approving methodology updates. Myrtle Equities employs a rigorous framework to evaluate, communicate, and implement changes while minimizing market disruption and ensuring compliance with regulatory standards.

4.2.1. Criteria for Index Methodology Changes

Changes to index methodology are considered only under specific circumstances, including:

- Market Evolution: Adjustments may be required to reflect changes in market structure, such as the emergence of new asset classes or sectors.
- Stakeholder Feedback: Suggestions from stakeholders, including investors and regulators, are evaluated for their potential to enhance the index's utility or accuracy.
- Regulatory Requirements: Updates are made to ensure compliance with new or revised regulatory mandates.
- Operational Enhancements: Improvements in data quality, calculation methods, or technology may necessitate methodological adjustments.

Each proposed change undergoes a thorough evaluation to assess its impact on index integrity, representativeness, and performance.

4.2.2. Stakeholder Consultation and Notification

Myrtle Equities prioritizes stakeholder engagement in the methodology change process. The steps include:

- Consultation: Stakeholders are consulted during the proposal stage, ensuring that diverse perspectives are considered. This may involve formal surveys, public consultations, or direct outreach.
- Impact Assessment: Detailed reports outlining the rationale, expected outcomes, and potential impacts of the proposed change are shared with stakeholders.

- Advance Notification: Changes are communicated well in advance of their implementation, with clear timelines and detailed explanations provided.
- Feedback Mechanism: A formal mechanism is in place to collect, evaluate, and address stakeholder feedback during the consultation period.

This transparent and collaborative process ensures that methodology changes are well-understood, widely accepted, and implemented smoothly.

4.3. Compliance with Global Regulatory Frameworks

Myrtle Equities adheres to a stringent compliance framework designed to align with the requirements of key regulatory bodies and global best practices. This commitment ensures that its indices are reliable, credible, and suitable for use in regulated financial markets worldwide.

4.3.1. Overview of Key Regulatory Bodies

Myrtle Equities operates in compliance with the guidelines and standards set by prominent regulatory authorities, including:

- European Securities and Markets Authority (ESMA): Ensures compliance with the Benchmark Regulation (BMR) for indices used in the European Union.
- U.S. Securities and Exchange Commission (SEC): Oversees indices underpinning investment products traded in U.S. markets.
- Financial Conduct Authority (FCA): Regulates indices used in the United Kingdom.
- International Organization of Securities Commissions (IOSCO): Provides the overarching principles for financial benchmarks globally.

By adhering to these frameworks, Myrtle Equities demonstrates its commitment to integrity, transparency, and accountability.

4.3.2. Compliance with ESMA Benchmark Regulation

Myrtle Equities ensures full compliance with the ESMA Benchmark Regulation (BMR), which establishes stringent standards for index administrators operating within the EU. Key compliance measures include:

- Registration and Supervision: Myrtle Equities is registered with the relevant national competent authority and adheres to ongoing supervisory requirements.
- Conflict of Interest Management: Robust policies are in place to identify and mitigate conflicts of interest in index administration.
- Data Integrity: High standards for data sourcing, validation, and documentation are maintained to ensure the accuracy and reliability of the indices.

- Contingency Planning: Detailed plans are in place to ensure the continuity of index calculations in the event of data provider disruptions or other unforeseen circumstances.

These measures reinforce the credibility and reliability of Myrtle Equities' indices in regulated markets.

4.3.3. Adherence to Global Best Practices

In addition to meeting regulatory requirements, Myrtle Equities voluntarily aligns its operations with global best practices, including:

- IOSCO Principles for Financial Benchmarks: Adherence to these principles ensures the indices meet the highest standards of governance, quality, and transparency.
- Transparency in Methodology: Comprehensive documentation and public disclosure of index methodologies promote stakeholder trust and market confidence.
- Ethical Standards: Myrtle Equities maintains a strong ethical foundation, prioritizing fairness, objectivity, and accountability in all aspects of index administration.

By proactively adopting these practices, Myrtle Equities enhances its reputation as a leader in the index industry.

5. Index Calculation and Measurement Tools

Accurate and reliable index calculation is the cornerstone of maintaining the integrity and credibility of any index. Myrtle Equities employs cutting-edge technology and robust methodologies to ensure its indices reflect market realities and align with their stated objectives. This chapter provides a comprehensive overview of the tools, systems, and methodologies that underpin the calculation of Myrtle Equities' indices, ensuring accuracy, consistency, and efficiency.

5.1. Overview of Calculation Engines and Systems

Myrtle Equities has developed the Myrtle Equities Index Hub, a bespoke software platform designed to handle all aspects of index calculation and management. The Index Hub is the backbone of Myrtle Equities' operational framework, providing a seamless, automated environment for data ingestion, validation, calculation, and reporting. This system connects with trusted data providers through secure APIs, enabling the efficient and continuous ingestion of high-quality market data. The integration of APIs minimizes latency and enhances system responsiveness, ensuring the most up-to-date data is available for calculation.

The Index Hub operates on a modern, scalable architecture. Its modular design allows for the flexible addition of new indices and methodologies without disrupting existing operations. Each module focuses on specific tasks such as data ingestion, weighting scheme application, or index calculation, which streamlines the overall process. High-performance computing capabilities, including parallel processing and advanced algorithms, ensure the system can handle the computational demands of calculating complex indices, even during periods of high market volatility. Security is another critical component of the system, with multi-layered authentication, encryption, and regular system audits ensuring data integrity and compliance with regulatory requirements.

The Index Hub supports various types of indices, including price indices, total return indices, and net total return indices, and is designed to grow alongside Myrtle Equities' expanding suite of indices. Its sophisticated infrastructure ensures future-proof operations, maintaining the firm's ability to deliver accurate, reliable indices across diverse markets.

5.2. Calculation Methodology in Detail

The calculation of Myrtle Equities indices is a meticulous process designed to ensure that each index reflects its stated purpose and methodology. The Index Hub manages the entire workflow, from raw data ingestion to final index level calculation and distribution, with precision and efficiency.

The process begins with the ingestion of raw market data from trusted providers via secure APIs. This data includes price data for constituent securities, details of corporate actions such as stock splits and dividends, and supplementary market metrics like currency exchange rates and interest rates when required by specific methodologies. Once ingested, the data undergoes a rigorous pre-processing phase to validate its accuracy, completeness, and consistency. Any invalid or missing data triggers automated alerts, which escalate to a review process for resolution.

After pre-processing, the Index Hub applies predefined rules to calculate the index level. The system uses advanced algorithms, encoded in industry-standard programming languages like Python and C++, to ensure computational accuracy and efficiency. These algorithms apply selection criteria to identify eligible securities, assign weights according to the index methodology, and adjust for corporate actions to maintain index continuity. For instance, stock splits trigger adjustments to share counts and prices, while dividend payments affect total return calculations. The final index level is computed using formulas tailored to the index type. Price indices are calculated by dividing the weighted value of constituents by a divisor, while total return and net total return indices incorporate reinvested dividends, with net total return indices accounting for withholding taxes to reflect net performance.

The initialization of an index on its base date involves calculating the initial index level, often set to a standard value such as 100 or 1,000. Historical data is used to backfill and simulate performance for back testing purposes. After initialization, the Index Hub performs recalculations daily, intraday, or periodically, depending on the index's frequency requirements. This ensures that the index remains aligned with market conditions, providing timely and accurate reporting for stakeholders.

The final stage involves the publication and distribution of index levels. Before dissemination, index levels undergo a final validation layer to ensure accuracy. The Index Hub supports multiple distribution channels, including real-time feeds to market participants and exchanges, end-of-day reports available in various formats such as CSV and JSON, and online dashboards that allow stakeholders to access and visualize index data.

The software underlying the Index Hub employs robust, modular code to support diverse index types. Python scripts automate workflows like data ingestion and validation, with libraries such as Pandas and

NumPy enabling efficient data manipulation and mathematical operations. The core calculation engine, written in C++, provides the computational power necessary for high-speed index calculations. Additionally, SQL databases store historical data, facilitating back testing, error resolution, and performance analysis.

For example, a Python script for calculating an index might look like this:

```python
def calculate_index(prices, shares, weights, divisor):
    weighted_values = prices * shares * weights
    index_level = sum(weighted_values) / divisor
    return index_level
```

This modular approach ensures flexibility and scalability, supporting the evolving needs of Myrtle Equities and its stakeholders.

By integrating advanced technology with rigorous methodologies, the Myrtle Equities Index Hub ensures that its indices are calculated with precision, reliability, and consistency. This commitment to excellence reinforces Myrtle Equities' reputation as a leader in the index industry, delivering products that stakeholders trust and depend on.

5.2.1. Formulae for Index Calculation

The accurate calculation of indices requires detailed, step-by-step processes tailored to the specific type of index being computed. This section outlines all possible calculations required for various steps in the index calculation process, including the methodologies used for price indices, total return indices, and net total return indices. The objective is to ensure consistency, transparency, and replicability across all indices managed by Myrtle Equities.

Equal Weight Index Calculation Formula

Within an Equal Weight Index, each asset contributes equally to the overall index value regardless of its price or market capitalization.

$$\text{Index Value}=\frac{1}{n}\sum_{i=1}^{n} P_i$$

Where:

- P_i= Price of stock i
- n= Total number of stocks in the index

Market Cap Weighted Index Calculation Formula

In a Capitalization-Weighted Index, each assets weight is proportional to its market capitalization.

$$\text{Index Value} = \sum_{i=1}^{n} (P_i \times Q_i)$$

Where:

- P_i=Price of stock i
- Q_i=Number of outstanding shares of stock i
- n= Total number of stocks in the index

Price Weighted Index Calculation Formula

In a Price Weighted Index, each assets weight is proportional to its price per share

$$\text{Index Value}= \frac{\sum_{i=1}^{n} P_i}{d}$$

Where:

- P_i=Price of stock i
- d=Divisor, used to adjusted for stock splits, dividends, and other corporate actions
- n= Total number of stocks in the index

Adjustment for Corporate Actions

Stock Splits and Reverse Splits

Stock Splits and Reverse splits affect the number of shares outstanding as well as the share price of an asset, but not its market capitalization.

$$P_{\text{new}} = \frac{P_{\text{old}}}{\text{split ratio}}$$

Where:

- P_{new}= New price of the stock
- P_{old}= Old price of the stock
- split ratio= Ratio of the stock split (e.g., 2 for a 2-1 split)

$$Q_{\text{new}} = Q_{\text{old}} \times \text{split ratio}$$

Where:

- Q_{new}= New number of the shares outstanding
- Q_{old}= Old number of shares outstanding

Dividends

In the case of Total Return Index Products, dividends are reinvested. The adjustment on the type of dividend:

- Cash Dividend:

$$\text{Adjusted Price} = P_{\text{old}} - \text{Dividend per share}$$

Where:

- $\textbf{Adjusted Price}$= Adjusted price of the stock after dividend
- P_{old}= Old price of the stock
- $\textbf{Dividend per share}$= Dividend paid per share

- Stock Dividends:

$$\text{Adjusted Price} = \frac{P_{\text{old}}}{1 + \text{Stock dividend ratio}}$$

Where:

- $\textbf{Adjusted Price}$= Adjusted price of the stock after stock dividend
- P_{old}= Old price of the stock
- $\textbf{Stock dividend ratio}$= Ratio of stock dividend (e.g., 0.1 for a 10% stock dividend)

$$\text{Adjusted Shares} = Q_{\text{old}} \times (1 + \text{Stock dividend ratio})$$

Where:

- $\textbf{Adjusted Shares}$= Adjusted number of shares outstanding
- Q_{old}= Old number of shares outstanding

Adjustment for New Listings or Deletions

In the event that a new asset is added, or an existing asset is removed, the index must be adjusted to reflect the changes.

Adding a New Asset	Removing an Asset
The new assets market capitalization is added to the total market capitalization of the index.	The removed assets market capitalization is subtracted from the total market capitalization of the index.

The addition or subtraction of market capitalizations will occur immediately after the end of the trading session during which the asset is added or removed from the index.

Calculation of the Divisor Adjustment

To maintain index continuity when changes to the assets stock occur, the divisor D is adjusted. The new divisor D_{new} is calculated to ensure that the index value remains unchanged.

$$\text{New Divisor} = D_{\text{old}} \times \frac{\sum(P_i \times Q_i)_{\text{new}}}{\sum(P_i \times Q_i)_{\text{old}}}$$

Where:

- New Divisor$=D_{\text{new}}$
- Old Divisor$=D_{\text{old}}$
- $\sum(P_i \times Q_i)_{\text{new}} =$ Sum of new market capitalization of all stocks in the index
- $\sum(P_i \times Q_i)_{\text{old}} =$ Sum of old market capitalization of all stocks in the index

Index Weighing by Market Capitalization

Each constituent's weight is proportional to its market capitalization.

$$\omega_i = \frac{P_i \times Q_i}{\sum_{j=1}^{n}(P_j \times Q_j)}$$

Where:

- $\omega_i =$ Weight of stock i
- $P_i =$ Price of stock i
- $Q_i =$ Number of outstanding shares of stock i
- $\sum_{j=1}^{n}(P_j \times Q_j) =$ Total market capitalization of the index

Index Weighing by Stock Price

Each constituent's weight is proportional to its stock price.

$$\omega_i = \frac{P_i}{\sum_{j=1}^{n} P_j}$$

Where:

- ω_i = Weight of stock i
- P_i = Price of stock i
- $\sum_{j=1}^{n} P_j$ = Total market capitalization of the index

Currency Adjustment

For international indexes, currency fluctuations must be considered. The index value can be calculated in multiple currencies:

$$\text{Index Value (in currency X)} = \sum_{i=1}^{n} \left(\frac{P_i \times Q_i}{\text{Exchange Rate to currency X}} \right)$$

Where:

- $\text{Index Value (in currency X)}$= Index value in a specific currency
- P_i = Price of stock i
- Q_i = Number of outstanding shares of stock i
- $\text{Exchange Rate to currency X}$ = exchange rate to the specific currency

A.5.D-8 Float Adjustment

In a float-adjusted index, only the shares available for public trading (free float) are considered:

$$\text{Float-adjusted Market Capitalization} = P_i \times Q_i \times \text{Float Factor}$$

Where:

- $\text{Float-adjusted Market Capitalization}$= Float-adjusted market capitalization of stock i
- P_i = Price of stock i
- Q_i = Number of outstanding shares of stock i
- Float Factor = Proportion of shares available for public trading

6. Risk Management and Compliance

Effective risk management and stringent compliance frameworks are integral to ensuring the reliability, fairness, and integrity of financial indices. The following sections explore the measures Myrtle Equities employs to address risks inherent in index development and management while adhering to global regulatory standards.

6.1. Risk Mitigation in Index Development

Developing and maintaining financial indices involve several risks that must be carefully managed to preserve market integrity and protect investor interests. Myrtle Equities employs proactive strategies to identify, assess, and mitigate these risks.

6.1.1. Risk of Over-Concentration in Index Composition

One of the primary risks in index development is over-concentration, where a small number of constituents dominate the index's weight. Over-concentration reduces diversification and increases the index's susceptibility to significant fluctuations caused by changes in the performance of a few constituents.

To address this risk, Myrtle Equities employs:

- Capping Rules: A maximum weight is assigned to individual constituents or sectors, ensuring no single entity disproportionately influences the index. For instance, an index may limit the weight of any one stock to 10%.
- Diverse Selection Criteria: Myrtle Equities ensures indices represent a broad spectrum of the market by incorporating robust eligibility and inclusion rules, targeting a mix of large, mid, and small-cap stocks when appropriate.
- Regular Monitoring: The composition of each index is reviewed periodically to ensure compliance with the capping rules and that the index reflects its stated objectives.

6.1.2. Mitigation of Market Impact Risks

Indices can inadvertently influence market behavior, particularly if they are widely tracked by passive investment vehicles such as ETFs. When constituent changes or rebalancing occurs, the resulting buying or selling pressure can distort market prices.

Myrtle Equities mitigates market impact risks by:

- Advanced Rebalancing Announcements: Providing stakeholders with sufficient notice about upcoming changes to reduce the likelihood of abrupt market reactions.
- Phased Implementation: For significant rebalancing activities, changes are executed in multiple stages to minimize the impact on liquidity and price stability.
- Liquidity Screening: Constituents must meet minimum liquidity thresholds to ensure that changes can be implemented with minimal disruption to the market.

6.2. Compliance Framework for Index Providers

Myrtle Equities operates within a comprehensive compliance framework that aligns with global regulations, safeguarding against manipulation and ensuring the accuracy and integrity of indices.

6.2.1. Anti-Manipulation Measures and Controls

Indices can be susceptible to manipulation, especially if participants attempt to influence prices of underlying securities to alter index levels. To prevent such risks, Myrtle Equities implements robust anti-manipulation measures, including:

- Independent Data Sources: Data used for index calculation is sourced exclusively from credible, independent providers to eliminate biases and conflicts of interest.
- Algorithmic Surveillance: The Myrtle Equities Index Hub employs advanced algorithms to monitor unusual patterns in price or volume that may indicate manipulation. Alerts are triggered for further investigation if anomalies are detected.
- Transparent Methodology: By publishing clear and detailed methodology documents, Myrtle Equities ensures transparency, reducing opportunities for market participants to exploit ambiguities.

6.2.2. Adherence to Regulatory Standards

Compliance with global regulatory standards is at the core of Myrtle Equities' operations. Key practices include:

- Benchmark Regulation Compliance: Myrtle Equities adheres to the European Securities and Markets Authority (ESMA) Benchmark Regulation, ensuring its indices meet rigorous standards for governance, data integrity, and transparency.
- Periodic Audits: Internal and external audits are conducted to assess compliance with industry regulations, identify vulnerabilities, and implement corrective measures.
- Training and Awareness: Employees involved in index management undergo regular training to stay updated on regulatory developments and ethical standards.

6.3. Conflict of Interest and Transparency Measures

Maintaining objectivity and avoiding conflicts of interest are critical to ensuring the credibility of Myrtle Equities' indices. The firm employs several strategies to enhance transparency and manage potential conflicts effectively.

- Segregation of Roles: There is a clear delineation between teams involved in index development, data management, and client interactions. This segregation ensures that no single team has undue influence over the index creation process.
- Disclosure of Relationships: Myrtle Equities publicly discloses material relationships with issuers or clients that could influence the index's composition or methodology.

- Stakeholder Consultation: Regular engagement with stakeholders, including asset managers, regulators, and investors, ensures that methodology changes are scrutinized by diverse perspectives, reducing potential bias.
- Independent Oversight Committees: External governance bodies review and approve significant methodology changes, providing an additional layer of accountability.
- Publication of Conflicts Policy: Myrtle Equities maintains and publishes a conflicts of interest policy outlining the processes in place to identify, disclose, and manage potential conflicts.

By adopting these measures, Myrtle Equities upholds its commitment to transparency and impartiality, fostering trust among stakeholders and aligning with global best practices.

6.4. Index Naming Structure

Myrtle Equities uses a 2-letter country acronym system developed by The International Standard when naming its indices that track the markets of specific countries. For more information regarding the ISO country code structure, please follow the link here. A full table of said naming structure can be seen below.

Country	Alpha-2 Code	Alpha-3 Code	Numeric
Afghanistan	AF	AFG	004
Albania	AL	ALB	008
Algeria	DZ	DZA	012
American Samoa	AS	ASM	016
Andorra	AD	AND	020
Angola	AO	AGO	024
Anguilla	AI	AIA	660
Antarctica	AQ	ATA	010
Antigua and Barbuda	AG	ATG	028
Argentina	AR	ARG	032
Armenia	AM	ARM	051
Aruba	AW	ABW	533
Australia	AU	AUS	036
Austria	AT	AUT	040
Azerbaijan	AZ	AZE	031
Bahamas (the)	BS	BHS	044
Bahrain	BH	BHR	048
Bangladesh	BD	BGD	050
Barbados	BB	BRB	052
Belarus	BY	BLR	112
Belgium	BE	BEL	056
Belize	BZ	BLZ	084
Benin	BJ	BEN	204
Bermuda	BM	BMU	060
Bhutan	BT	BTN	064

Bolivia (Plurinational State of)	BO	BOL	068
Bonaire, Sint Eustatius and Saba	BQ	BES	535
Anguilla	AI	AIA	660
Antarctica	AQ	ATA	010
Antigua and Barbuda	AG	ATG	028
Bosnia and Herzegovina	BA	BIH	070
Botswana	BW	BWA	072
Bouvet Island	BV	BVT	074
Brazil	BR	BRA	076
British Indian Ocean Territory (the)	IO	IOT	086
Brunei Darussalam	BN	BRN	096
Bulgaria	BG	BGR	100
Burkina Faso	BF	BFA	854
Burundi	BI	BDI	108
Cabo Verde	CV	CPV	132
Cambodia	KH	KHM	116
Cameroon	CM	CMR	120
Canada	CA	CAN	124
Cayman Islands (the)	KY	CYM	136
Central African Republic (the)	CF	CAF	140
Chad	TD	TCD	148
Chile	CL	CHL	152
China	CN	CHN	156
Christmas Island	CX	CXR	162
Cocos (Keeling) Islands (the)	CC	CCK	166
Colombia	CO	COL	170
Comoros (the)	KM	COM	174
Congo (the Democratic Republic of the)	CD	COD	180
Congo (the)	CG	COG	178
Cook Islands (the)	CK	COK	184
Costa Rica	CR	CRI	188
Croatia	HR	HRV	191
Cuba	CU	CUB	192
Curaçao	CW	CUW	531
Cyprus	CY	CYP	196
Czechia	CZ	CZE	203
Côte d'Ivoire	CI	CIV	384
Denmark	DK	DNK	208
Djibouti	DJ	DJI	262
Dominica	DM	DMA	212
Dominican Republic (the)	DO	DOM	214
Ecuador	EC	ECU	218
Egypt	EG	EGY	818
El Salvador	SV	SLV	222
Equatorial Guinea	GQ	GNQ	226
Eritrea	ER	ERI	232

Estonia	EE	EST	233
Eswatini	SZ	SWZ	748
Ethiopia	ET	ETH	231
Falkland Islands (the) [Malvinas]	FK	FLK	238
Faroe Islands (the)	FO	FRO	234
Fiji	FJ	FJI	242
Finland	FI	FIN	246
France	FR	FRA	250
French Guiana	GF	GUF	254
French Polynesia	PF	PYF	258
French Southern Territories (the)	TF	ATF	260
Gabon	GA	GAB	266
Gambia (the)	GM	GMB	270
Georgia	GE	GEO	268
Germany	DE	DEU	276
Ghana	GH	GHA	288
Gibraltar	GI	GIB	292
Greece	GR	GRC	300
Greenland	GL	GRL	304
Grenada	GD	GRD	308
Guadeloupe	GP	GLP	312
Guam	GU	GUM	316
Guatemala	GT	GTM	320
Guernsey	GG	GGY	831
Guinea	GN	GIN	324
Guinea-Bissau	GW	GNB	624
Guyana	GY	GUY	328
Haiti	HT	HTI	332
Heard Island and McDonald Islands	HM	HMD	334
Holy See (the)	VA	VAT	336
Honduras	HN	HND	340
Hong Kong	HK	HKG	344
Hungary	HU	HUN	348
Iceland	IS	ISL	352
India	IN	IND	356
Indonesia	ID	IDN	360
Iran (Islamic Republic of)	IR	IRN	364
Iraq	IQ	IRQ	368
Ireland	IE	IRL	372
Isle of Man	IM	IMN	833
Israel	IL	ISR	376
Italy	IT	ITA	380
Jamaica	JM	JAM	388
Japan	JP	JPN	392
Jersey	JE	JEY	832
Jordan	JO	JOR	400

Kazakhstan	KZ	KAZ	398
Kenya	KE	KEN	404
Kiribati	KI	KIR	296
Korea (the Democratic People's Republic of)	KP	PRK	408
Korea (the Republic of)	KR	KOR	410
Kuwait	KW	KWT	414
Kyrgyzstan	KG	KGZ	417
Lao People's Democratic Republic (the)	LA	LAO	418
Latvia	LV	LVA	428
Lebanon	LB	LBN	422
Lesotho	LS	LSO	426
Liberia	LR	LBR	430
Libya	LY	LBY	434
Liechtenstein	LI	LIE	438
Lithuania	LT	LTU	440
Luxembourg	LU	LUX	442
Macao	MO	MAC	446
Madagascar	MG	MDG	450
Malawi	MW	MWI	454
Malaysia	MY	MYS	458
Maldives	MV	MDV	462
Mali	ML	MLI	466
Malta	MT	MLT	470
Marshall Islands (the)	MH	MHL	584
Martinique	MQ	MTQ	474
Mauritania	MR	MRT	478
Mauritius	MU	MUS	480
Mayotte	YT	MYT	175
Mexico	MX	MEX	484
Micronesia (Federated States of)	FM	FSM	583
Moldova (the Republic of)	MD	MDA	498
Monaco	MC	MCO	492
Mongolia	MN	MNG	496
Montenegro	ME	MNE	499
Montserrat	MS	MSR	500
Morocco	MA	MAR	504
Mozambique	MZ	MOZ	508
Myanmar	MM	MMR	104
Namibia	NA	NAM	516
Nauru	NR	NRU	520
Nepal	NP	NPL	524
Netherlands (the)	NL	NLD	528
New Caledonia	NC	NCL	540
New Zealand	NZ	NZL	554
Nicaragua	NI	NIC	558
Niger (the)	NE	NER	562

Nigeria	NG	NGA	566
Niue	NU	NIU	570
Norfolk Island	NF	NFK	574
Northern Mariana Islands (the)	MP	MNP	580
Norway	NO	NOR	578
Oman	OM	OMN	512
Pakistan	PK	PAK	586
Palau	PW	PLW	585
Palestine, State of	PS	PSE	275
Panama	PA	PAN	591
Papua New Guinea	PG	PNG	598
Paraguay	PY	PRY	600
Peru	PE	PER	604
Philippines (the)	PH	PHL	608
Pitcairn	PN	PCN	612
Poland	PL	POL	616
Portugal	PT	PRT	620
Puerto Rico	PR	PRI	630
Qatar	QA	QAT	634
Republic of North Macedonia	MK	MKD	807
Romania	RO	ROU	642
Russian Federation (the)	RU	RUS	643
Rwanda	RW	RWA	646
Réunion	RE	REU	638
Saint Barthélemy	BL	BLM	652
Saint Helena, Ascension and Tristan da Cunha	SH	SHN	654
Saint Kitts and Nevis	KN	KNA	659
Saint Lucia	LC	LCA	662
Saint Martin (French part)	MF	MAF	663
Saint Pierre and Miquelon	PM	SPM	666
Saint Vincent and the Grenadines	VC	VCT	670
Samoa	WS	WSM	882
San Marino	SM	SMR	674
Sao Tome and Principe	ST	STP	678
Saudi Arabia	SA	SAU	682
Senegal	SN	SEN	686
Serbia	RS	SRB	688
Seychelles	SC	SYC	690
Sierra Leone	SL	SLE	694
Singapore	SG	SGP	702
Sint Maarten (Dutch part)	SX	SXM	534
Slovakia	SK	SVK	703
Slovenia	SI	SVN	705
Solomon Islands	SB	SLB	090
Somalia	SO	SOM	706
South Africa	ZA	ZAF	710

South Georgia and the South Sandwich Islands	GS	SGS	239
South Sudan	SS	SSD	728
Suriname	SR	SUR	740
Svalbard and Jan Mayen	SJ	SJM	744
Sweden	SE	SWE	752
Switzerland	CH	CHE	756
Syrian Arab Republic	SY	SYR	760
Taiwan (Province of China)	TW	TWN	158
Tajikistan	TJ	TJK	762
Tanzania, United Republic of	TZ	TZA	834
Thailand	TH	THA	764
Timor-Leste	TL	TLS	626
Togo	TG	TGO	768
Tokelau	TK	TKL	772
Tonga	TO	TON	776
Trinidad and Tobago	TT	TTO	780
Tunisia	TN	TUN	788
Turkey	TR	TUR	792
Turkmenistan	TM	TKM	795
Turks and Caicos Islands (the)	TC	TCA	796
Tuvalu	TV	TUV	798
Uganda	UG	UGA	800
Ukraine	UA	UKR	804
United Arab Emirates (the)	AE	ARE	784
United Kingdom of Great Britain and Northern Ireland (the)	GB	GBR	826
United States Minor Outlying Islands (the)	UM	UMI	581
United States of America (the)	US	USA	840
Uruguay	UY	URY	858
Uzbekistan	UZ	UZB	860
Vanuatu	VU	VUT	548
Venezuela (Bolivarian Republic of)	VE	VEN	862
Viet Nam	VN	VNM	704
Virgin Islands (British)	VG	VGB	092
Virgin Islands (U.S.)	VI	VIR	850
Wallis and Futuna	WF	WLF	876
Western Sahara	EH	ESH	732
Yemen	YE	YEM	887
Zambia	ZM	ZMB	894
Zimbabwe	ZW	ZWE	716
Åland Islands	AX	ALA	248

7. Client and Stakeholder Communication

Effective communication with clients and stakeholders is a cornerstone of Myrtle Equities' operations. The firm recognizes the importance of transparency, responsiveness, and consistency in fostering trust and maintaining its reputation as a reliable index provider. Through detailed reporting, proactive engagement, and clear communication of methodology updates, Myrtle Equities ensures that its stakeholders remain well-informed and confident in the indices it provides.

7.1. Reporting and Transparency for Stakeholders

Transparency is vital to ensuring stakeholders have confidence in Myrtle Equities' indices. Accurate and timely reporting forms the backbone of stakeholder engagement, allowing asset managers, institutional investors, and other users to rely on the indices for investment and benchmarking purposes. Myrtle Equities ensures transparency by providing comprehensive reports on the performance, composition, and methodology of its indices. These reports include periodic updates on index performance, offering insights into returns, volatility, and tracking errors, as well as the impact of significant market movements on constituents. The firm also shares complete information about index constituents, including their weights, sector classifications, and other relevant metrics, to provide stakeholders with a holistic understanding of index performance. Regulatory disclosures, such as updates to methodologies and potential conflicts of interest, are published regularly to maintain compliance and transparency. Additionally, the Myrtle Equities Index Hub offers interactive dashboards, providing stakeholders with access to real-time data, historical performance trends, and customizable analytics tools that facilitate in-depth analysis of the indices.

7.2. Responding to Market Events and Feedback

In a dynamic financial environment, market events such as geopolitical crises, sudden price fluctuations, or natural disasters can significantly impact index performance. Myrtle Equities has established robust protocols to address these events and effectively communicate their implications to stakeholders. The firm's Index Hub continuously monitors market conditions and assesses their potential impact on indices. When significant market events occur, the firm promptly evaluates their effect on index constituents and overall performance, implements necessary adjustments such as extraordinary rebalancing, and provides updates to stakeholders detailing the nature of the event, its implications, and any resulting changes to the index.

Stakeholder engagement is an integral part of Myrtle Equities' strategy. Dedicated communication channels are in place to allow stakeholders to provide feedback, raise inquiries, and report issues. Client service teams ensure that responses to these communications are prompt and professional. The firm also conducts regular surveys and consultations to gather insights into user satisfaction, expectations, and concerns. These inputs are used to refine the firm's processes and enhance stakeholder relationships. During periods of heightened market volatility, Myrtle Equities commits to providing frequent and detailed updates to address concerns and offer clarity about ongoing developments.

7.3. Communication of Methodology Changes and Updates

As financial markets evolve, so too must index methodologies. To maintain the relevance, accuracy, and integrity of its indices, Myrtle Equities periodically reviews and updates its methodologies. Clear and transparent communication of these changes is a critical component of stakeholder engagement. Before implementing significant methodology changes, Myrtle Equities provides advance notifications to stakeholders. These notifications include a summary of the proposed revisions, a detailed explanation of how the changes will affect the index, and an implementation timeline. Notifications are disseminated through email alerts, press releases, and updates on the Myrtle Equities website to ensure broad stakeholder awareness.

Stakeholder input is actively sought during the process of methodology revisions. Myrtle Equities hosts consultation periods during which stakeholders can review the proposed changes and provide feedback. Webinars and Q&A sessions are organized to address stakeholder concerns and clarify the potential impact of the changes. Feedback gathered during these consultations is carefully reviewed and incorporated into the final methodology revisions when appropriate. After implementing methodology changes, the firm issues comprehensive reports that detail the updates, their alignment with the index's objectives, the anticipated impact on performance and composition, and the steps taken to address stakeholder feedback.

By maintaining a transparent and inclusive approach to communication, Myrtle Equities ensures its stakeholders remain informed and confident in its methodologies and processes. This commitment to transparency and responsiveness strengthens relationships with clients and stakeholders while upholding the firm's reputation as a trusted index provider.
