



# Solution Quant K-Export Index Calculation Guide

Version 1.1



#### Change History

Version Number	Editor	Date	Comments
0.1	Gareth Parker	26/06/2023	First draft
0.4	Gareth Parker	03/10/2023	Updated the handling of periodic review-related dates where KRX is closed.
1.0	Gareth Parker	04/10/2023	Published document
1.1	Andrea Masnata	02/06/2025	Incorporated the new Morningstar Indexes logo and disclaimer. Made minor content and format changes. Changed the Administrator to Solution Quant Inc.



## Products definition

### 1.1. Solution Quant K-Export Index

1.1.1. The Solution Quant K-Export Index (hereinafter, also referred to as the “Index”) seeks to represent the performance of a diversified group of Korean equities that have a continuous trend of export growth. The Index has a balanced sector exposure to industries such as EV batteries, Bio and Renewable Energy.

1.1.2. Index details:

Name	Ticker	Value	Inception Date
Solution Quant K-Export Index			



## 2. Governance

### 2.1. Solution Quant, Inc.

2.1.1. Solution Quant Inc. ("Solution Quant") is the Index provider, administrator and owner of the Index.

### 2.2. Morningstar Indexes

2.2.1. Morningstar Indexes, a business unit of Morningstar, Inc., is the calculator of the Index.

### 2.3. Solution Quant Index Committee

2.4.1 The Solution Quant Index Management Committee is responsible for the management and implementation of these rules, for their continuing fitness for purpose, and for any periodic amendments thereto.

2.4.2 The Solution Quant Index Management Committee is composed of a chairperson appointed by Solution Quant, and a minimum of two additional members, either from Solution Quant or external index experts.

2.4.3 The Solution Quant Index Management Committee convenes on at least an annual basis.

### 2.4. Morningstar Indexes Services Methodology & Administration Committee

2.4.4 The Morningstar Indexes Services Methodology & Administration Committee (the "ISMA") supervises Morningstar Indexes' Index services calculation activities.

2.4.5 The ISMA is composed of at least five voting members (including the chair) each of whom must be employed in the Morningstar Indexes team and have significant experience in index governance, regulations, research, methodology or calculations.

2.4.6 The ISMA will meet at least monthly in person or by telephone.

### 2.5. Morningstar Indexes Operations Committee

2.5.1. The Morningstar Indexes Operations Committee (hereinafter, referred to as "OPS-Com") governs the processes, systems and exception handling of the day-to-day management of the Index.

2.5.2. Where an Index-impacting event occurs the resolution of which is not clear from these rules, and that due to time constraints cannot be discussed with the Solution Quant Index Committee, the OPS-Com is empowered to decide on the most appropriate action to take to resolve the event. The action will be disclosed to the Solution Quant Index Committee for its review.

2.5.3. The OPS-Com will consist of at least six voting members (including the chair) each of whom must be employed in the Morningstar Indexes team and have significant experience in index operations, methodology or calculations.

2.5.4. The OPS-Com will meet at least monthly in person or by telephone.

### 2.6. Index Methodology Changes

2.6.1. Members of the Solution Quant Index Committee and ISMA may, subject to their terms of reference, recommend changes to this methodology (including the Index construction criteria), by submitting any proposed changes for consideration and approval in advance of the Solution Quant Index Committee's next meeting. Proposals can be sent to the Solution Quant using the contact details provided in Section 8.



- 2.6.2. Proposed changes that the Solution Quant Index Committee deems material will be publicly consulted on, according to the policy detailed within the Morningstar Indexes Methodology Change Policy, available from <https://indexes.morningstar.com>.
- 2.6.3. Following approval by the Solution Quant Index Committee, such changes shall be implemented by way of an update to these rules, which shall be published on <https://solutionquant.com/>.
- 2.6.4. Except in exceptional circumstances, , or as otherwise advised in any consultation, new rules and rules adjustments will become effective after the following periodic review of Index constituents and weightings.



### 3. Index construction – Solution Quant K-Export Index

#### 3.1. Eligible shares

##### **Geographic Eligibility**

- 3.1.1. Potential constituents must have shares listed on the Korea Exchange (KRX) or KOSDAQ.
- 3.1.2. Potential constituents whose primary exchange is not one of the eligible exchanges are removed from the eligible universe.
- 3.1.3. Potential constituents must be domiciled in South Korea.

##### **Type Eligibility**

- 3.1.4. Potential constituents must not be shipping investment companies, investment companies, special purpose acquisition companies (SPACs), real estate investment trusts (REITs), or collective investment vehicles such as ETFs or ETNs.

##### **Size eligibility**

- 3.1.5. Potential constituents with a minimum full market capitalization of less than KRW800bn are removed from the eligible universe.

##### **Liquidity**

- 3.1.6. Potential constituents must have a 60-day average trading volume of at least KRW1bn.
- 3.1.7. Potential constituents must not be suspended or be under notice of delisting.
- 3.1.8. Potential constituents must have been trading for a minimum of three months.

##### **Free float**

- 3.1.9. Potential constituents with a free float of less than 10% are removed from the eligible universe.

##### **Trading currency**

- 3.1.10. Potential constituents must be traded in Korean Won (KRW).

#### 3.2. Constituent Selection

- 3.2.1. Solution Quant creates factor scores by multiplying each of the following metrics calculated according to the coefficients shown:

	<b>Factor</b>	<b>Period</b>	<b>Coefficient value</b>
1	Percentile of latest month export growth	YoY	0.5
2	Percentile of latest month combined export amount	Within 24 months	0.4
3	Percentile of latest month export growth	YoY within 12 months	0.3
4	Correlation coefficient of export growth (YoY) and rate of change of stock price	1 month for 12 months	0.1



5	Market capital		0.2
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3.2.2. The top 30 (i.e. highest z-score) securities are selected for inclusion in the Index.

### 3.3. Constituent Weighting

3.3.1. Constituents are weighted according to the below formula.

$$\frac{1}{n} + \beta \times \left[ \frac{\frac{(n+1)}{2} - rank}{n^2} \right]$$

**Where  $1 \leq rank \leq total, \beta = 2$**



## 4. Monthly review of the Solution Quant K-Export Index

### 4.1. Timings

4.1.1. The Index is reviewed monthly by the OPS-Com.

4.1.2. Dates applicable to reviews are detailed below:

Date	Name	
The last business day of each month (T-2)	Determination date	Date on which data is collected for use in the Index review. (Data is collected at the close of markets on this day.)
The following business day (usually the first business day of each month (T-1))	Review release date	Date on which the results of the review are published to licensees.
The following business day (usually the second business day of the following month (T))	Implementation date	Date on which the results of the review are implemented in the Index. (Changes are effective in the Index after the close of business on the second business day of the following month.)

4.1.3. Where Korean markets are closed on a determination date, review release or implementation date, the following day on which Korean markets are open will be used instead of the indicated date.

### 4.2. Review process

4.2.1. Solution Quant rebuilds the Index from first principles according to the process described in Section 3 above.



## 5. Calculation of the Solution Quant K-Export Index

### 5.1. Index versions calculated

- 5.1.1. Price, net total return, and gross total return versions of the Index are calculated.
- 5.1.2. The Index is calculated in Korean Won (KRW).
- 5.1.3. The Index is an end of day index, calculated on all Korean trading days using the closing auction price received from each constituent's primary listing exchange.

### 5.2. Divisor and other calculations

- 5.2.1. For details of processes related to the Index calculation, please refer to the Morningstar Indexes Equity Index Calculation Guide. The Index is treated as a non-market capitalization-weighted index.

### 5.3. Constituent exits between reviews

- 5.3.1. The handling of constituents who undergo takeover or mergers follows the policy detailed in the Morningstar Indexes Equity Index Calculation Guide.
- 5.3.2. Constituents removed due to takeovers or mergers, or for any other reason, are not replaced until the next Index review.
- 5.3.3. Where a constituent is removed, the weight of the constituent is distributed pro-rata across the remaining constituents. If the company is removed at a zero value, due to bankruptcy etc, no redistribution of weight is necessary.

### 5.4. Other corporate actions and events

- 5.4.1. The constituents of the Solution Quant K-Export Index are proactively maintained to reflect changes that may result from corporate actions.
- 5.4.2. The management of corporate events follows the processes and procedures outlined in the Morningstar Indexes Corporate Actions Guide.

### 5.5. Errors

- 5.5.1. If an error is discovered in an Index value, Morningstar Indexes will follow the process outlined in the "Morningstar Indexes Recalculation Guidelines", available at <https://indexes.morningstar.com>.



## 6. Exceptions and amendments to these Rules

### 6.1. Exceptions

- 6.1.1. Morningstar Indexes shall apply the method described above for the composition and calculation of the Index. However, it cannot be excluded that the market environment, supervisory, legal, financial or tax reasons may require unforeseen changes to be made to the Index. Where possible, such changes will be made in conjunction with the Solution Quant Index Committee, and in all instances, reported to that committee.
- 6.1.2. Wherever exceptions are required, Morningstar Indexes will endeavour to ensure a calculation method is applied that is as consistent as possible with the method described in this document.

### 6.2. Amendments

- 6.2.1. Morningstar Indexes and Solution Quant notify users of the Index that whilst it is the policy of Solution Quant as administrator to consult fully on any material change to the Index, it is possible that circumstances, particularly external events beyond the control of Morningstar Indexes and Solution Quant may necessitate immediate changes to, or the cessation of, the Index and therefore, any financial contracts or other financial instruments that reference the Index, or any market participants that use the Index in valuations should plan to be able to manage the possibility of changes to, or cessation of, the Index. Please consult the Morningstar Indexes Methodology Change Policy and Morningstar Indexes Decommissioning Policy for further details.
- 6.2.2. Solution Quant Index Committee and ISMA may propose changes to the selection criteria and other rules governing the Index and the method applied to calculate the Index, which they deem to be necessary and desirable in order to prevent material errors or to remedy, correct or supplement the rules currently described in these Guidelines.
- 6.2.3. Solution Quant shall ensure that any amendments to the methodology are updated and published as soon as possible after any changes to the Index are implemented, and shall notify all persons who have licensed the use of the Index as far in advance of such implementation as reasonably practicable.



## 7. Data publication

### 7.1. Data distribution

- 7.1.1. The Index values are published via various data vendors. Each vendor determines whether they will distribute/display the Index data via their respective information systems. Values are also published at <https://solutionquant.com/> and <https://indexes.morningstar.com>.
- 7.1.2. The composition of the Index, as well as the respective weightings of Index constituents, is published on a retrospective basis in respect of each review date on the business day immediately following the next review date, at <https://solutionquant.com/> and <https://indexes.morningstar.com>.



## 8. Contact details

- 8.1.1. The Index provider, Solution Quant, can be contacted at [index@SolutionQuant.com](mailto:index@SolutionQuant.com). More information is available at <https://solutionquant.com/>.
- 8.1.2. The Index calculator, Morningstar Indexes, can be contacted at [indexes@morningstar.com](mailto:indexes@morningstar.com). More information is available at <https://indexes.morningstar.com>.



## 9. Legal

- 9.1.1. Solution Quant or any successor thereto (the "Index Owner") owns solely and exclusively the intellectual property rights in the Solution Quant K-Export Index and its methodology (excluding methodological elements not developed specifically for the creation of the Solution Quant K-Export Index). Any use or publication of such intellectual property, as well as of the Solution Quant trademark or any other Solution Quant related methodologies, provisions or values, must be with the prior written consent of Solution Quant.
- 9.1.2. Solution Quant and Morningstar Indexes assume no obligation, duty or liability to any person in relation to the Index save as provided in any written agreement with such person. Solution Quant and Morningstar Indexes make no express or implied warranty as to:
- a) the advisability of purchasing or assuming any risk in connection with any transaction related to the Index;
  - b) the levels at which the Index stand at any particular time on any particular date;
  - c) the results to be obtained by any party from the use of the Index or any data included in them for the purposes of issuing securities or carrying out any financial transaction; and
  - d) any other matter.
- 9.1.3. Solution Quant may assign the proprietary rights in the Index to a third party in its reasonable discretion.

## 9.2. Licensing

- 9.2.1. Licenses to use the Index as the underlying value for investment products and derivative instruments may be issued to stock exchanges, banks, financial services providers and investment houses by Solution Quant.



## Appendix A: Index Information

Name	Ticker	ISIN	Value	Inception Date



## Appendix B

EXPLANATION OF HOW THE KEY ELEMENTS OF THE BENCHMARK METHODOLOGY REFLECT ESG FACTORS <sup>1</sup>		
Item 1.	Name of the benchmark administrator	Solution Quant Inc.
Item 2.	Type of benchmark or family of benchmarks	Equity
Item 3.	Name of the benchmarks	Solution Quant K-Export Index
Item 4.	Does the benchmark methodology for the family of benchmarks or benchmark take into account ESG factors?	No
Item 5.	List of the ESG factors that are taken into account in the benchmark methodology for each family of benchmarks	N/A
Item 6.	List of the ESG factors that are taken into account in the benchmark methodology for each benchmark	N/A
Item 7.	Data and standards used	
(a)	Data input	N/A
(b)	Verification and quality of data	N/A
(c)	Reference standards	N/A
	Date on which information has last been updated and reason for the update:	Version Number 1.0 - 26 June 2023 Publication. Version number 1.1 - 2 June 2025 Changed the administrator to Solution Quant Inc. Annual review.

<sup>1</sup> The information herein contained is provided in accordance with the Commission Delegated Regulation (EU) 2020/1817 of 17 July 2020 supplementing Regulation (EU) 2016/1011 of the European Parliament and of the Council as regards the minimum content of the explanation on how environmental, social and governance factors are reflected in the benchmark methodology.

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