

# **AIX QAZAQ INDEX CALCULATION METHODOLOGY**

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# 1. Introduction

## 1.1. The methodology

This methodology outlines description of the AIX Qazaq Index methodology, the general rules for index composition and calculation, the selection criteria for inclusion in the Index, and the index management procedures.

The procedures for changing the composition of the Index and corresponding calculations are based on transparent rules defined in this document.

Unless otherwise stated, abbreviations below shall have the following meanings:

- “AIX” represents Astana International Exchange Limited;
- “Index” represents AIX Qazaq Index in regards to price return and/or total return indices calculations where appropriate;
- “IC” represents Index Committee.

IC is the decision-making body for AIX Qazaq Index. It is responsible for making decisions on key issues regarding the Index rules, composition of the Index, selection of index constituents and making decisions regarding exceptions to the rules.

The rules herein are approved by IC. Any changes and amendments to these rules governing the Index must be approved by IC and will be announced before their entry into force.

## 1.2 Index description

AIX Qazaq Index is comprised of common equities and GDRs of Kazakhstani companies traded on stock exchanges (local and international). For the purpose of calculations and dissemination of the index data, Kazakhstan Tenge (KZT) will be used as base currency for the Index.

Kazakhstani companies include those either registered in Kazakhstan or whose business income is generated partially or fully in Kazakhstan or substantial amount of operational activity is located in Kazakhstan.

### Price Return Index

Price Return Index is a rules-based, float-adjusted market capitalization-weighted equity index that has the objective of measuring the pure share price performance of the eligible equities.

### Total Return Index

Total Return Index reflects both movements in stock prices and the reinvestment of dividend income (dividends and cash distributions). Regular cash distributions paid out of share capital or capital contribution reserves are treated in the same manner as regular cash dividends paid out of retained earnings. This income is reinvested in the Index and thus makes up part of the total index performance.

## 1.3 Index purpose

The purpose of the index is to measure the return of most liquid shares of large Kazakhstani companies that are traded on different stock exchanges worldwide.

The Index was created with the goal of creating instruments for quantifying the performance of Kazakhstani equity market. The Index can be used by market participants as a benchmark and an underlying for the creation of passive and active investment management strategies. The Index also can be used an underlying for the creation of structured products and derivatives designed to reflect price and total return performance of shares of large Kazakhstani companies. Market participants interested in monitoring the performance of Kazakhstani market can also use the Index as an analytical tool.

## 1.4 Data sources

The Index is calculated once a day based on closing prices at international stock exchanges (for dual-listed stocks) or local stock exchanges (for stocks that only trade at local stock exchanges) and published the next day before the market opens.

During non-trading days in Kazakhstan, the Index should not be calculated. In those cases when international stock exchanges and local stock exchanges non-trading days do not match:

- If it is a non-trading day on local stock exchanges, trading data on international stock exchanges should be ignored for this particular non-trading day;
- If it is a non-trading day on international stock exchanges, then the prices from local stock exchanges will be used. In case if a security is listed only on international stock exchange, the price for such security during the non-trading days on international stock exchange should not change (the price change of 0% should be used in Index calculation).

## **2. Eligibility Criteria**

All shares of Kazakhstani companies listed on multiple stock exchanges are subject to periodical screening for inclusion in the Index composition. IC is qualified to assess and select securities that are eligible for inclusion in the Index in accordance with this methodology.

### 2.1 Eligible securities

To be eligible for the Index inclusion securities must meet the following requirements:

#### Market capitalization

The market capitalization of the company on the cut-off date must be 40 bln KZT or higher.

#### Free-float

Percentage of free-float shares of the company to total outstanding shares must be 10% or above. To assess the free float of a company, Bloomberg data is used as the single primary source. The Bloomberg data is then mapped against other data sources including the issuer's data. In case of discrepancies, a query is sent to Bloomberg to review their own data and adjust it if needed.

The free float shares represent shares in free float and publicly available to potential investors. The following shares are not classified as free float:

- Company ownership – positions of more than 5% owned by other companies excluding shares owned by mutual funds, insurance companies, broker-dealer companies, asset management companies and other investment companies with short-term investment strategies.
- Government ownership - shareholdings exceeding 5% owned by governments, government affiliated entities.
- Unified Accumulative Pension Fund ownership – positions of more than 5% in the shares of the company.
- Employee ownership – shareholdings of more than 5% held by employees in a variety of ways.
- Private ownership – positions of more than 5% owned by individuals or families related to or closely affiliated with the company's principal officers or members of the company's board of directors and founding members deemed to be insiders as well as ownerships of individuals that can be considered as strategic investments.

In order to reflect the actual investability of each constituent and to avoid situations when a company with a large market capitalization but a small free float heavily influences the Index, the weight of each constituent of the Index is adjusted based on its free float.

#### Average monthly trading volume

The average monthly trading volume of equity for the last 3 months derived from all stock exchanges that trade that specific equity in aggregate value shall not be below 100 mln KZT.

#### Geographic criteria

The company must be registered in Kazakhstan or it must receive substantial amount of its revenue from operations in Kazakhstan or significant amount of the company's assets must be located in Kazakhstan.

#### Qualitative selection requirements

After eligible companies are determined using the criteria described above, they are also tested against the qualitative criteria detailed below:

- Relevant factors considered by the IC, as the case may be: the company's financial and legal standing, the company's transparency, corporate governance, investors' interest, etc.
- Current and periodic reports as well as financial results submitted in English or Russian, reporting according to IFRS, etc.
- The quality of Investor Relations.

#### 2.2 Ineligible Securities

- Share issues of investment funds and mutual funds units.
- Issues of those holding companies which have emerged from transformation of investment funds
- Preference shares
- Equity derivative instruments

#### Issues of Securities of a Company May Not Be Included in the Index

- If a court confirms a firm's bankruptcy or rejects an insolvency petition due to a lack of company assets, or if a judgment is welcomed by a foreign competent authority with identical legal implications for the company,
- if IC believes in the foreseeable insolvency of the company in the near term, based on its financial performance or market opinion,
- If a decision is taken to wind up the company through liquidation,
- if the trading of these securities on the relevant stock exchanges has been suspended.

#### 2.3 IC authority

The IC may alter, expand, narrow the list of these criteria.

Decisions regarding the inclusion and exclusion of companies in and from the Index are taken by the IC, as decisional body. The changes in Index compositions are made public as soon as the IC decisions are taken, but no later than the next business day.

The IC can decide upon a company being included/retained in the Index, even if the selection criteria stated above are only partially met.

The IC can decide to exclude a company from the Index even if it matches all selection requirements.

### 3. Calculation of the Index

#### 3.1 Calculation of Index Value

The Index is calculated by dividing the sum of Market Capitalization of all equities as of the  $n^{\text{th}}$  day by the value of divisor as below:

$$I_n = \frac{MC_n}{Div_n}$$

where:

$I_n$  – the Index value at the end of trading day $_n$  of the Index calculation

$MC_n$  – sum of adjusted Market Capitalization of equities at the end of trading day $_n$

$Div_n$  – divisor value at the end of trading day $_n$  of the Index calculation

The Divisor refers to the total adjusted market capitalization of all equities on the Index's start date, additionally adjusted for changes in equities and the initial Index value.

The sum of Adjusted Market Capitalization of all equities at the end of trading day $_n$  is calculated as follows:

$$MC_n = \sum_{i=1}^N MC_i$$

where:

$N$  – the total number of equities in the Index

$MC_i$  – adjusted market capitalization of the  $i^{\text{th}}$  equity

As of Index inception day, Divisor value is calculated as below:

$$Div_1 = \frac{MC_1}{I_1}$$

where:

$MC_1$  – sum of adjusted Market Capitalization of equities as of the Index inception date

$I_1$  – the Index value as of the Index inception date

Divisor value remains unchanged ( $Div_1=Div_n$ ) prior to the new rebalancing date.

Index initial value is set as  $I_1 = 1000.00$

The Index is expressed in points accurate to two decimals.

For the purpose of the Index Methodology,  $MC_i$  and  $MC_n$  refers to the market capitalization adjusted for liquidity, free-float and weight constraint.

#### Divisor adjustment

The divisor adjustment is performed for Index revision purposes as discussed in Section 5. New divisor value should not change the level of the Index. This is accomplished with a following adjustment to the divisor:

$$Div_r = Div_{r-1} \cdot \frac{MC_r}{MC_{r-1}}$$

$r$  – rebalancing date

$MC_{r-1}$  – sum of adjusted Market Capitalization of equities at the end of day prior to rebalancing date

$Div_{r-1}$  – divisor value at the end of day prior to rebalancing date

### 3.2 Calculation of Index composition

The Index weighting scheme is based on float-adjusted market capitalization and liquidity score.

The market capitalization adjusted for liquidity, free-float and weight constraint of particular equity is calculated as:

$$MC_i = Pr_i \cdot Qt_i \cdot FFS_i \cdot W_i$$

where:

$Pr_i$  – price of one  $i^{\text{th}}$  equity denominated in KZT

$Qt_i$  – total number of shares of  $i^{\text{th}}$  company

$FFS_i$  – free-floating score of  $i^{\text{th}}$  company

$W_i$  – a coefficient restricting the proportion of the  $i^{\text{th}}$  equities' capitalization (weighting factor)

For the purposes of the Index, prices of all equities included in the Index are converted to KZT.

#### Free-floating score $FFS_i$

Before assigning Free-floating score  $FFS_i$  to a particular equity Free-float ratio  $FF_i$  shall be calculated as a proportion of free-floating equities to total equities:

$$FF_i = FFE_i / TE_i$$

where:

$FF_i$  – Free-float ratio of  $i^{\text{th}}$  equity

$FFE_i$  – number of free-floating equities

$TE_i$  – number of total equities

Based on calculated  $FF_i$  each company is assigned with  $FFS_i$  weighting with pre-determined weightings according to the table below:

$FF_i$	$FFS_i$
Over 60%	1
Between 40% and 60%	0.9
Between 20% and 40%	0.8
Between 10% and 20%	0.7
10% and below	0.6

#### Weighting factor $W_i$

Weighting Factor  $W_i$  is applied to mitigate the impact of specific equity on the Index and comply with diversification rules of the Index.

$W_i$  of the particular equity is calculated as follows:

$$W_i = LS_i \cdot WL_i$$

where:

$LS_i$  – capping factor for the  $i^{\text{th}}$  equity that depends on equity's liquidity score

$WL_i$  – capping factor for the  $i^{\text{th}}$  equity that depends on equity's weight cap limit

## Liquidity Score $LS_i$

The purpose of Liquidity Score  $LS_i$  is to determine appropriate value of each index constituent based on its Liquidity Coefficient  $LC_i$ :

$$LC_i = \frac{Average(Vol_i)}{Pr_i \cdot Qt_i} \cdot DaysYear \cdot 100\%$$

where:

Average (Voli) – average daily trade volume of the ith equity based on last 3 months data

DaysYear – number of trading days per year

$Pr_i$  – closing price of the ith equity

$Qt_i$  – total number of free-floating shares of the ith equity

For the purpose of index calculation, number of trading days in a month is set as 20 days, whilst number of trading days in a year is set as 252 days

As  $LC_i$  values are calculated, Index constituents are assigned with pre-determined  $LS_i$  weightings as shown in tables below.

### For companies not traded on international stock exchanges

$LC_i$	$LS_i$
Less than 5%	0.8
Between 5% and 20%	0.9
20% or more	1

### For companies traded on international stock exchanges

$LC_i$	$LS_i$
Less than 20%	0.5
Between 20% and 40%	0.6
Between 40% and 60%	0.7
Between 60% and 80%	0.8
Between 80% and 100%	0.9
100% or more	1

If company's shares are traded on multiple stock exchanges, then for the purpose of the index calculation the data from international stock exchanges is used.

## Weight Cap Limit $WL_i$

To lessen the impact of a specific instrument on the index performance, weight limit is applied to  $WL_i$ . The weight cap limit is set as 15% of total index weight.

To apply the restrictions, the Weights of Issuers are adjusted as follows:

- If the weight of specific share exceeds the 15% of the index, its weight is capped at 15% level.
- The weights of the remaining index constituents are increased as a consequence of reducing weights of the large companies.
- If the weight of any other company is still greater than 15%, the above-mentioned actions repeated iteratively until there is no constituent with the weight exceeding 15% threshold.

The index weight limits for each constituent are set during rebalancing procedure every quarter, though may be recalculated between the rebalancing date if:

- The actual weight of a specific security between the review dates exceeds the 20% weight of the Index. In such circumstances, IC will have to undertake the rebalancing procedure to ensure that maximum weight limit per security is kept at 15% cap.
- Between the rebalancing dates IC may add or remove specific instrument from the Index.

#### Calculation Procedure of $WL_i$

Market Capitalization of specific equity after free-float and liquidity adjustment, but before weight cap adjustment ( $\widehat{MC}_i$ ) is equal to:

$$\widehat{MC}_i = Pr_i * Qt_i * FFS_i * LS_i$$

If  $\widehat{Wgt}_i = \frac{\widehat{MC}_i}{\sum_{i=1}^N \widehat{MC}_i}$  of  $i^{\text{th}}$  equity is below 15%, then  $WL_i$  is equal to 1

If  $\widehat{Wgt}_i = \frac{\widehat{MC}_i}{\sum_{i=1}^N \widehat{MC}_i}$  of  $i^{\text{th}}$  equity is higher than the 15%, then market capitalization of that equity is calculated by applying below steps:

1.  $\sum_{i=1}^N \widehat{MC}_i$  of equities with  $\widehat{Wgt}_i < 15\% =$   
 $\sum_{i=1}^N \widehat{MC}_i$  of all index constituents  $- \sum_{i=1}^N \widehat{MC}_i$  of equities with  $\widehat{Wgt}_i > 15\%$
2. Recalculated  $\sum_{i=1}^N \widehat{MC}_i = \frac{\sum_{i=1}^N \widehat{MC}_i \text{ of equities with } \widehat{Wgt}_i < 15\%}{100\% - 15\% * \text{number of equities with } \widehat{Wgt}_i > 15\%}$
3. Recalculated  $\sum_{i=1}^N \widehat{MC}_i$  of equities with  $\widehat{Wgt}_i > 15\% =$   
 $\text{Recalculated } \sum_{i=1}^N \widehat{MC}_i - \sum_{i=1}^N \widehat{MC}_i \text{ of equities with } \widehat{Wgt}_i < 15\%$
4. Recalculated  $\widehat{MC}_i$  of equity with  $\widehat{Wgt}_i > 15\% =$   
 $\frac{\text{Recalculated } \sum_{i=1}^N \widehat{MC}_i \text{ of equities with } \widehat{Wgt}_i > 15\%}{\text{Number of equities with } \widehat{Wgt}_i > 15\%}$

Hence, if  $\widehat{Wgt}_i$  of specific equity is higher than the 15% threshold then,  $WL_i = \frac{\text{Recalculated } \widehat{MC}_i}{\widehat{MC}_i}$

Weighting factors  $WL_i$  and  $W_i$  can be anything between 0 and 1. Weighting factors are calculated based on the results of a trading day preceding the date of disclosure of changes in Index Constituents.

#### **Calculation of the weight of equity in the Index**

Finally, after all adjustments, the weight of each equity in the Index is calculated as below:

$$Wgt_i = \frac{MC_i}{\sum_{i=1}^N MC_i}$$

where:

$Wgt_i$  – weight of  $i^{\text{th}}$  equity;

$MC_i$  – adjusted market capitalization of  $i^{\text{th}}$  equity.

If the new  $Wgt_i$  of any equity is higher than the 15%, calculation procedures of Weight Cap Limit  $WL_i$  should be repeated iteratively until no company breaches 15% weight cap limit.

## 4. Total Return Calculation

The total return index both reflects the changes of equity price movements and the reinvestment of dividend income, i.e., dividends from a particular equity are reinvested in the underlying price return index.

Dividends are taken into account on ex-dividend date before the actual record date. The information about dividend payments is received from the issuers or through the other authorized information agencies.

Total dividends received are calculated as follows:

$$TDiv_n = \sum_{i=1}^N DPS_{in} \cdot Qt_{i(n-1)}$$

where:

$TDiv_n$  – total dividends to be received from the equities in the Index as of the day n

N – number of equities in the Index

$DPS_{in}$  – Dividends per each share of  $i^{th}$  equity as of the day n

$Qt_{i(n-1)}$  – Total number of equities of  $i^{th}$  equity in the Index as of the day n-1

Total dividends expressed per Index points are calculated as below:

$$IDiv_n = \frac{TDiv_n}{D_n}$$

where:

$D_n$  – the Divisor of the price return Index

Then, the dividends are taken into consideration in the Index calculation by the following adjustments:

$$R_n = \frac{I_n + IDiv_n}{I_{n-1}} - 1$$

where:

$R_n$  – Daily return of the total return Index adjusted for dividend payments

$I_n$  – Price return Index on the day n

$I_{n-1}$  – Price return Index on the day n-1

$IDiv_n$  – Total dividends expressed in points of total return Index on the day n

The Total Return Index is then equal to:

$$TRI_n = I_{n-1} \cdot (1 + R_n)$$

where:

$TRI_n$  – Total Return Index on the day n

$I_{n-1}$  – Price return Index on the day n-1

After the adjustments, subsequently, the Index value in the next period will be only dependent on the Index value calculated as of day N. The formula would be adjusted as follows:

$$TRI_n = TRI_{n-1} \cdot (1 + R_n)$$

where:

$TRI_{n-1}$  – Total Return Index on the day n-1

## **5. Periodic updates of the Index**

### 5.1 Standard Index revisions.

In order to ensure index quality and stability, periodic reviews are performed on a quarterly basis. IC meetings take place on the first trading day after the end of the quarter.

During the revision period, all eligible companies are screened based on the selection procedure outlined in Section 2.

After the selection procedure, companies are assessed against their market cap, liquidity and free- float characteristics. Based on calculation methodology, each of these securities are then assigned with weight within the Index until the next Index revision (either standard or extraordinary).

Index revision takes place on the 1<sup>st</sup> working date after the quarter end, whilst the implementation of index composition changes takes place within 5 working days after the quarter end.

If an index member is removed from trading during the periodic adjustment, or if other unusual circumstances arise, the Index Committee may decide to postpone the periodic adjustment-related procedures or to change the date at which the periodic adjustment is made and/or the date on which they become effective. If a decision is taken to postpone periodic adjustments and the date on which they become effective, IC will notify the public in a timely manner about the decision and the reasons behind it. The Index Committee will communicate the new date for the periodic adjustment, as well as the date on which the adjustment will take effect, if possible.

### 5.2 Extraordinary Index Revisions

In case of an extraordinary index revision, the procedure is identical to regular revisions of the index basket. In order to provide consistent values of index, extraordinary revisions will take place only in cases of significant changes in the characteristics of the index components. Extraordinary revision of the index basket is carried out in the following cases:

- the weight of individual index component exceeds 20% for 5 consecutive trading days between the review dates
- the free-floating weight of equities shows significant change between the review dates
- the issuer has applied for delisting
- procedure of bankruptcy or liquidation of the issuer was initiated
- merger of issuer with another issuer
- de-merger of issuers

## **6. Special Operations**

The following chapter describes how special operations affect the composition and calculation of the Index.

### 6.1 Stock Splits and Reverse Splits

In case of a stock split or a reverse stock split, the adjustment of the number of shares and their price is made as soon as the information becomes public. Such changes do not result in inflow or outflow of capital. In terms of the index value, they are therefore neutral operations.

### 6.2 IPO

In principle, the Index Committee has the right to include the shares of the companies that have recently performed an IPO if, in the reasonable judgement of its members, there is sufficient data to be suitable for index inclusion at the quarterly Index Committee meetings.

### 6.3 Mergers and Acquisitions

In the event of mergers and acquisitions of companies included in the Index, each such event is considered individually on a case-by-case basis by the Investment Committee.

#### 6.4 Financial Distress

In case of bankruptcy of the company, the issue in question will be removed from the index immediately.

In the event that the company whose securities are included in the index finds itself in financial distress or enters bankruptcy proceedings, the security may be removed from the index.

#### 6.5 Stock Option Programs and Convertible Bonds

New issues due to stock option programs or convertible bonds are implemented within the quarterly index updates.

#### 6.6 GDR conversion

For the purpose of the Index, GDRs will be converted into shares based on conversion ratio applicable for each GDR.

## **7. Corporate Governance**

### 7.1 Index Committee

The Index Committee is the Index self-governing decision-making body. It is in charge of making critical policy decisions, managing the Index rules, deciding on modifications to the Index, and approving exceptions to the Index rules. Meetings of the Index Committee are held quarterly or more frequently in critical situations. The decisions taken by the Index Committee are published immediately after the committee meetings.

IC is in charge of ensuring that the index rules are strictly followed during periodic reviews of the index portfolio and as well as providing advise on how to handle extraordinary corporate events involving index constituents.

### 7.2 Index Committee Membership

The Index Committee consists of AIX employees and, where needed, other capital market specialists who have been appointed by AIX. Members of the Index Committee are required to keep all subjects addressed at meetings strictly confidential until the public announcement of the relevant decisions, to act in good faith, and to respect the interests of investors and investor protection.

### 7.3 Index rules change

The IC will examine index rules whenever there is a need for it, or at least once a year. The scope of the review will include index methodology and index maintenance, as well as corporate action management and market notifications. The purpose of the evaluation, as well as any future revisions to these rules, is to guarantee that the rules that govern the Index are independent and objective.

## **8. Public Announcement Policy**

### 8.1 Index pricing information

The Index price data, constituents and weights will be published on AIX website under a dedicated section according to defined schedule.

The Index values for the previous closing day are published intraday or the Index values published before the main trading session is its closing value for the previous day.

## 8.2 General Announcement Policy

Changes to the index, its components, or methodology will be disclosed through an index announcement sent by email, press release, and posted on the AIX website. The announcement times specified in this article will be followed in most cases; but urgent issues or late notices may compel IC to vary from the regular schedule.

## 8.3 The composition change date

The change of composition of index will be announced immediately after Index Committee meeting.

## 8.4 Extraordinary index adjustments

Extraordinary revision is carried out within 5 business days after the event occurs. Consequent changes to the index composition are announced at least two trading days before the changes take effect. In emergency situations, such announcements may be given in a shorter, but nonetheless adequate period of time.

## **Disclaimer**

AIX, or any of its' subsidiaries or IC of the Index cannot guarantee and accepts no responsibility or liability (i) in respect for any inaccuracies, omissions, mistakes or errors in the computation of the Index; (ii) for any inaccuracies, omissions, mistakes, errors or incompleteness of any information used in connection with the computation of the Index or its' accompanying coefficients and components which is supplied by any other person; and taking into account that the data used in the calculation of the index, the calculation itself or the accompanying coefficients and index components cannot be completely protected from possible inaccuracies, omissions, mistakes, errors, since they can appear as the consequence of irregular delivery of information, incorrect information delivered to the Exchange and other institutions, or due to inadequate application of this methodology; (iii) for any economic or other loss which may be directly or indirectly sustained by any broker, investor, or any other person dealing with the securities (or other derived product) as a result of any of the aforesaid, and no claims, actions or legal proceedings may be brought against AIX or any of its' subsidiaries in connection with securities (or other derived product) in any manner whatsoever by any broker, investor or any other person dealing with securities (or other derived product). Any broker, investor in securities (or other derived product) or other person dealing with securities or other derived product does so therefore in full knowledge of this disclaimer and can place no reliance whatsoever on AIX or any of its' subsidiaries. The content of the Index cannot be considered as a recommendation for investing in any component of the index, and for that reason AIX shall not accept responsibility for the consequences of investment decisions based on the use of index and any derived products. For the avoidance of doubt, this disclaimer does not create any contractual or quasi contractual relationship between any broker, investor in securities (or other derived product) or other person and AIX and/or any of its subsidiaries, and must not be construed to have created such relationship.