Guide for IDX Quality30 Index

(Appendix of IDX Announcement No.: Peng-00206/BEI.POP/07-2020 date 13 July 2020)

1. INDEX INFORMATION

1.1. General Information

Index Name	IDX Quality30
Index Code	IDXQ30
Description	An index that measures the stock price performance of 30 stocks that historically have relatively high profitability, good solvency, and stable profit growth with high trading liquidity and good financial performance.
Methodology	*Capped Free Float Market Capitalization Weighted & Quality Factored.* On each periodic review, the constituent weight is capped so the highest weight in the index is no more than 15%.
Base Date	February 4, 2014
Base Value	100

1.2. General Selection Criteria

Universe	Constituents of IDX80 index
Selection Criteria	Stocks that are eligible to be selected in the index selection are filtered based on the following criteria: - Profitability Ratio : Return-on-Equity (ROE), - Solvency Ratio : Debt-to-Equity Ratio (DER), and - Earnings Variability : Volatility of Earning per Share (EPS) growth. Quality Score of each stock is calculated based on the assessment of the three variables. The final selection of 30 constituents of IDX Quality30 is based on the highest Quality Score.

2. INDEX MAINTENANCE

2.1. Routine Evaluation

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	Major Evaluation	Minor Evaluation
Evaluation Schedule	January and July	April and October
Effective Date	Third trading day of February and August	Third trading day of May and November
Process / Purposes	- To select the stocks of index constituents - To adjust the stock weights based on their quality scores.	
	- To adjust of changes in the number of listed shares. - To adjust the stock weights based on their free float ratios. - To adjust the stock weights based on the cap	
Announcement	At the latest 5 exchange days prior to the effective date.	

2.2. Incidental Evaluation

Besides the routine evaluation, incidental evaluation can be done at any time if there are significant changes in the number of shares, delisting, or if there is any other information that has significant impact on an index constituent.

3. CONSTITUENT SELECTION PROCESS

3.1. Calculation of Variable Values

Variable	Calculation Formulation
Profitability Ratio: *Return-on-Equity Ratio* (ROE)	The ROE ratio of each stock is calculated as follows: $$\text{ROE} = \frac{\text{Trailing 12 months' profit}}{\text{Total Equity}}$$ Where: - Trailing 12 months' profit is the accumulated profits and losses over the trailing 12 months based on the latest published financial statements. - Total equity is based on the latest published financial statement.

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Variable	Calculation Formulation
Solvency Ratio: *Debt-to-Equity Ratio* (DER)	The DER ratio of each stock is calculated as follows: $$\text{DER} = \frac{\text{Total Liabilities}}{\text{Total Equity}}$$ Where: Total liabilities is based on the latest published financial statement.
Earnings variability (EV)	Earnings variability (EV) of each stock is calculated by the standard deviation of earnings per share (EPS) annual growth (year-on-year) over the past 5 years. Calculating annual EPS growth are as follows: $$\text{EPS growth}_t = \begin{cases} \frac{(\text{EPS}_t - \text{EPS}_{t-1})}{\text{EPS}_{t-1}}, \text{if EPS}_{t-1} > 0 \\ \frac{-(\text{EPS}_t - \text{EPS}_{t-1})}{\text{EPS}_{t-1}}, \text{if EPS}_{t-1} < 0 \end{cases}$$ Where: - Calculation of EPS uses earnings data calculated over the trailing 12 months. - EPS_t is the listed company's EPS on year t. - EPS_t is the listed company's EPS on previous year (t-1). - If EPS growth data in the past 5 years are not fully available, then EV is only calculated using the data in the past 4 years. - If EPS growth data in the past 4 years are not fully available, then EV is only calculated using the data in the past 3 years. - If EPS growth data are available less than 3 years then EV for that stock is considered to be "not available". The calculated annual EPS can be adjusted if there were corporate actions that affect the stock's historical number of shares.

3.2. Quality Score Calculation Process

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3.2.1. Screening Stage Based on Variable Data Availability

Condition	Data Availability*			Screening Result
	ROE	DER	EV	
Condition 1	✓	✓	✓	Proceed to the selection process with three variables
Condition 2	✓	✓	×	Proceed to the selection process with two variables (ROE, DER)
Condition 3	✓	×	✓	Proceed to the selection process with two variables (ROE, EV)
Condition 4	✓	×	×	Do not proceed to the selection process
Condition 5	×	✓	✓	
Condition 6	×	✓	×	
Condition 7	×	×	✓	
Condition 8	×	×	×	

* ✓ available; × not available.

Note:

a. DER of listed companies in the Financial Sector based on IDX's industrial classification is considered to be "not available",

b. If EPS growth data are available less than 3 years then EV for that stock is considered to be "not available".

3.2.2. Calculation of Variable Z-scores

After obtaining the values of each variables, ROE, DER, and EV, then the standardization process is carried out using the Z-score. Standardization ensures that these variables can be compared with each other.

In the process of calculating the Z-score, the winsorization rule is applied to limit the extreme values or outliers. Winsorization is carried out at 5% percentile and 95% of all stocks included in the selection process.

Afterwards, the z-score is calculated using the following formula:

Variable	Justification	Formulation of Variable Z-scores
ROE	The higher the value, the better ranking	$z_i = \frac{(x - \mu_i)}{\sigma_i}$
DER & EV	The lower the value the better rating	$z_i = -\frac{(x - \mu_i)}{\sigma_i}$

Where:

z_i	=	*z-score* of particular stock of variable i
x	=	the value of variable i of particular stock
μ_i	=	the average value of variable i

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σ_i	=	the standard deviation value of variable i

3.2.3. Calculation of Aggregate Z-score

After obtaining the z-score of each variable (z_i), the aggregate z-score (Z) is then calculated as follows:

$$Z = \frac{\sum_{i=1}^{n} z_i}{n}$$

Where:

z_i	=	*Z-score* of particular stock for variable i
n	=	number of variables

3.2.4. Calculation of Quality Score

After obtaining an aggregate z-score (Z), the quality score is then calculated as follows:

$$\text{Quality Score} = \begin{cases} 1 + Z, & \text{if } Z \geq 0 \\ \dfrac{1}{1 - Z}, & \text{if } Z < 0 \end{cases}$$

Furthermore, the quality score is rounded up to two decimal places.

3.3. Process of Determining Selected Constituents

After getting a quality score of each variable, then the process of determining the selected constituents is done by ranking the quality score through the stages that follow the buffer rule. This rule aims to reduce the level of stock turnover at the time of major evaluation by prioritizing previous constituents to stay in the index.

4. METHODOLOGY OF INDEX CALCULATION

4.1. Index Calculation Formula (Weighting Method)

The IDX Quality30 index uses the methodology of "Capped Free Float Market Capitalization Weighted & Quality Factored". This method adds another factor besides the free float market capitalization, namely the quality factor. Moreover, the weight capping process of the index constituents is also applied. The quality factor is the stock's quality score which is calculated through the assessment of quality variables.

Index formula as follows:

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$$\text{Index} = \frac{\sum_{i=1}^{n} (\text{Market Cap}_i \times \text{Free Float Ratio}_i \times \text{Quality Score}_i)}{\text{Base Market Cap}} \times 100$$

Where:

Market Cap_i	=	Total listed shares × market price of stock i
$\text{Free Float Ratio}_i$	=	Ratio of the number of free float shares to the total listed shares of stock i
Quality Score_i	=	Quality score of stock i
n	=	Number of index constituents
Base Market Cap_i	=	Market capitalization on the Base Date (adjusted if there are any changes in the number of shares for the index)

4.2. Process of Adjusting Stock Weight Based on Free Float Ratio and Quality Factor

At each evaluation period, the weight of each stock is evaluated based on the value of the free float ratio. There is no technical difference in weight adjustment between major evaluation and minor evaluation. In the major evaluation, this process is preceded by the selection of the index constituents. Furthermore, adjustments to the quality factor will be made using the quality score.

4.2.1. Calculation of Free Float Ratio

The free float ratio of each stock is calculated based on the ratio of the free float to the total listed shares. The free float definition used is total scripless shares owned by investors with ownership of less than 5%. Afterwards, the percentage value of the free float ratio is rounded to two decimal places.

4.2.2. Calculation of Free Float Market Capitalization

Free float market capitalization and quality factored of each stock is calculated as follows:

$$MC_i = P_i \times S_i \times FF_i \times Q_i$$

Where:

MC_i	=	Free float market capitalization with quality score adjustment of stock i
P_i	=	Price of stock i
S_i	=	Total listed shares of stock i
FF_i	=	Free float ratio of stock i
Q_i	=	Quality score of stock i

4.2.3. Calculation of Stock Weight

The weight of each stock is calculated as follows:

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$$\text{Weight}_i = \frac{MC_i}{\sum_{i=1}^{n} MC_i}$$

Where:

MC_i	=	Free float market capitalization of stock i
n	=	Number of constituents
$\sum_{i=1}^{n} MC_i$	=	Total free float market capitalization of all constituents

4.3. Process of Stock Weight Capping

On the evaluation period, both major evaluation and minor evaluation, the number of shares is also adjusted to ensure the weight of a stock in the index does not exceed the specified cap. In the case of the IDX Quality30 index, the cap is 15%.

If there is no constituent that has a weight exceed the cap, then this step is not necessary. But if there is one or several stocks that have a weight of more than the cap of 15%, then the process of adjusting stock weight by capping is applied, as follows:

4.3.1. Determining the number of stocks that should to be capped

In this process, the number of stocks with weights above the cap are determined. The number of capped stocks = s and the number of uncapped stocks = t = 1-s.

4.3.2. Calculating the total market capitalization of capped stocks

If MC_s is the total market capitalization of capped stocks and c is the cap 15%, then:

$$MC_s = \frac{s \times c}{1 - (s \times c)} \times MC_t$$

Where:

MC_s	=	Total free float market capitalization of all capped stocks
MC_t	=	Total free float market capitalization of all uncapped stocks
s	=	Number of capped stocks
c	=	Cap (15%)

4.3.3. Calculating the market capitalization of each capped stock

If $MC_{i.s}$ is the market capitalization of a capped stock, then:

$$MC_{i.s} = \frac{1}{s} \times MC_s$$

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4.3.4. Calculating the number of shares for the index of each stock

The calculation of the adjusted number of shares for index (Adj. S_i) based on the free float, quality score adjustment, and capping is rounding the free float stock market capitalization divided by stock price, as the following formula:

$$\text{Adj.Si} = \left[\frac{MC_i}{P_i}\right]_{rounded}$$

If a stock is a capped stock, the free float market capitalization and quality score adjusted uses weight after adjustment ($MC_{i.s}$).

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