BIST LEVERAGED AND SHORT INDICES METHODOLOGY

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1. DEFINITION

The objective of leveraged indices is to reflect the return of a reference index (underlying index) by multiple of the leverage factor in the same direction. This means that, if the leverage factor is 2, leveraged index will increase %2 in return for the underlying index increases %1 and leveraged index will decrease %2 in return for the underlying index decreases %1.

It is assumed that, leverage is obtained by borrowing money and investing more in underlying index. The borrowing costs of the leverage is supposed to be on daily repo interest rates. Thus, the index is calculated by deducting the borrowing cost (return on BIST-KYD Repo (Net) Index) from the return on underlying index.

The objective of short indices is to reflect the return of a reference index (underlying index) by multiple of the leverage factor in the opposite direction. This means that, if leverage factor is -2, short index will increase %2 in return for the underlying index decreases %1 and short index will decrease %2 in return for the underlying index increases %1.

It is assumed that, short position is obtained by borrowing equities in underlying index, selling them short, and investing the fund generated, in repo. Thus, the index is calculated by adding the return on lending (BIST-KYD Repo (Net) Index) to the return on underlying index.

Base date of the indices are April 1, 2016 and base values are 1000. Indices are calculated end of day basis.

2. CALCULATED INDICES

BIST Leveraged and Short Indices are shown in the table below.

BIST Leveraged and Short Indices	Underlying Index	Leverage Factor (LF)
BIST 100 Short	BIST 100	-1
BIST 100 Short 2X	BIST 100	-2
BIST 100 Leveraged 2X	BIST 100	2
BIST 30 Short	BIST 30	-1
BIST 30 Short 2X	BIST 30	-2
BIST 30 Leveraged 2X	BIST 30	2

3. CALCULATION METHODOLOGY

BIST Leveraged and Short Indices are calculated with the same formula. Leveraged Factor (LF) takes positive values for leveraged indices and negative values for short indices. Index formula is below:

$$Index_t = Index_{t-1} * \left(1 + LF * \left(\frac{Underlying\ Index_t}{Underlying\ Index_{t-1}} - 1 \right) - (LF - 1) * \left(\frac{Repo\ Index_{t-1}}{Repo\ Index_{t-2}} - 1 \right) \right)$$

$Index_t$ ∶ Value of short/leveraged index at time t

LF ∶ Leverage Factor

$Underlying\ Index_t$ ∶ Underlying index on day t.

$Repo\ Index_t$ ∶ BIST − KYD Repo (Net) Index value on day t

Note: Since BIST-KYD Repo (Net) Index value on day t shows the return on day t+1, the return of repo index is calculated using previous days' values.

4. DATA PRECISION

Leveraged/Short Index Values	Rounded to 4 decimal places
Underlying Index Values	Rounded to 4 decimal places
Repo Index Value	Rounded to 5 decimal places
Leverage Factor	Integer

5. MISCELLANEOUS

Equity borrowing costs in short indices and equity lending returns in leveraged indices are ignored.

Leveraged and short indices are calculated for the days both equity and repo/reverse repo markets are open. In calculating the returns of underlying and repo indices for the following business day after one or both of these two markets are closed, index values of the last day, where both markets are open, are taken as "previous day"s values.