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The Hungarian language version of this documentation shall be the exclusively governing and controlling in each and every respect. The following non-binding English translation is not an official translation and serves information purposes only.

Documentation of the government securities market benchmark named as HMAX Index

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Definitions

Primary Dealers: Investment firms and/or credit institutions that have concluded an agency contract with the Government Debt Management Agency Private Company Limited by Shares (hereinafter: ÁKK Zrt.) on the placement and trading of Hungarian Government Bonds.

Ex-coupon day: KELER Central Depository Ltd. conducts the ownership identification of debt securities (including government bonds) before a coupon or principal payment two business days before the cash-flow event (E-2), at the close of such day. Accordingly, the given security is traded without its coupon the day before the coupon or principal payment, which day is the ex-coupon day.

Trading day: Trading days are days when the Primary Dealers are obliged to perform their price quotation duties according to the agency contract.

1. Introduction, the objective of the index

In order to support the lengthening of the average time-to-maturity of the Hungarian government debt portfolio and also the investment policies followed by institutional investors, ÁKK Zrt. introduces a government securities market benchmark (an index) that enables investors to follow a long-duration bond investment strategy with a higher efficiency.

Among the clients of institutional investors, especially those of insurance companies and pension funds, there is a fundamental interest and need that the maturity profile of their government bond investments match the maturity profile of the primary offered services. This requirement cannot be completely fulfilled by following the MAX index, which contains government bonds with a term-to-maturity of at least one year, as its duration is lower than a typical long-maturity life insurance, pension insurance or pension savings product. The HMAX index has been developed with the aforementioned considerations in mind, aiming to become a reliable market benchmark primarily in case of institutional investors, with the help of which government bond portfolios with an average term-to-maturity of at least 3 years might be measured. Government bond series with a term-to-maturity of at least 10 years are given preference by the weighting scheme of the index, thereby the goal of increasing the duration may be attained sooner.

With the construction of the index it was an important consideration to reflect both the prevailing maturity profile of the government bond market and the intention of the Issuer to increase the average time-to-maturity of the government debt.

The index basket of HMAX Index is equivalent to a passively managed, well-diversified government bond portfolio in the targeted maturity range. The constituents of the index basket are Hungarian Forint denominated, fixed interest rate government bonds issued domestically. Therefore, investors acting on the domestic government bond market can at any time construct a portfolio following the composition the HMAX index basket.

2. Characteristics and calculation of the HMAX index

Primary Dealers have a secondary market price quotation obligation for all the Hungarian Government Bonds in the index basket, i.e. to quote two-way (bid and ask) prices for the series on trading days, for the volumes and within the bid-ask spreads set by the agency contract. ÁKK Zrt. calculates and publishes on its website¹ the 'Best bid and ask prices of Primary Dealers' based on these price quotation data. The value of the HMAX Index on a given day is determined (as set forth in subsection 2.4.) by using the best bid and best offer prices as a basis.

2.1. Official Hungarian name of the index

HMAX Magyar Államkötvény Index

2.2. Official English name of the index

HMAX Hungarian Government Bond Index

2.3. Official abbreviation of the index

HMAX

2.4. Formula of the index

$$HMAX_t = HMAX_{t-1} * \frac{\sum_{i \in D_{t-1}} (P_{t,i} + A_{t+2,i} + G_{t+2,i}) * s_{t-1,i} * w_{t-1,i}}{\sum_{i \in D_{t-1}} (P_{t-1,i} + A_{t+1,i}) * s_{t-1,i} * w_{t-1,i}},$$

where

$P_{t,i}$: is the arithmetical average, rounded to four decimals, of the best bid and best offer clean (net) price of government bond series i on trading day t with settlement on day $t + 2$ based on Primary Dealers' two-way secondary market price quotation

$A_{t,i}$: is the interest accrued on government bond i until day t as value date (ignoring the ex-coupon day), rounded to four decimals

$G_{t,i}$: is the interest payment for government bond i on day t , rounded to four decimals

$w_{t,i}$: is the weight of government bond i on trading day t in the index basket based on its outstanding amount

$s_{t,i}$: is the multiplier of government bond i on trading day t based on its remaining term-to-maturity, where

¹ <https://akk.hu/en/page/statistics#best-bid-and-ask-prices-of-primary-dealers>

$$s_{t,i} = \begin{cases} 0,8 & \text{if } 1,095 \leq m_{t,i} < 1,825 \\ 1 & \text{if } 1,825 \leq m_{t,i} < 3,650 \\ 1,2 & \text{if } 3,650 \leq m_{t,i} \end{cases}$$

D_t : is the set of constituent government bonds in the index basket on trading day t

$m_{t,i}$: is the remaining term-to-maturity, measured in days, of government bond i on trading day t .

The value of the HMAX Index is calculated by rounding to four decimals.

2.5. Basis and measure of the index

December 31, 2019 (trading day) = 100.0000 points

2.6. Dates of calculating and publishing the index

The index is calculated once on each trading day during the trading hours of Hungarian Government Bonds. The index value of the given trading day is published at <https://akk.hu/en/statistics/yields-indices-and-secondary-market-turnover/max-index-values> not later than 3 PM local time on that trading day.

The current value of the index is also published on the following pages of news agencies:

- on the HUBONDINDEX1 page of Refinitiv (formerly Thomson Reuters)
- on Bloomberg's GDMA\ 8) MAX Index page.

2.7. Basic criteria of the index basket composition

The HMAX index is a so-called "all-bond" index, meaning its constituents include every eligible government bond that comply with the given criteria.

A government bond series is added to the index basket if it meets all the following criteria:

- It is a fixed rate, Hungarian Forint denominated Hungarian Government Bond issued publicly and domestically by the Hungarian State as the issuer;
- The given government bond series falls under the secondary market bid and ask price quotation obligation of Primary Dealers;
- It has a term-to-maturity of at least 1,095 days at the time of inclusion in the index basket.

2.8. Weighting of the constituent government bonds

Government bonds are represented in the index basket by a nominal value corresponding to their accepted amount at auctions ('classic' and exchange auctions as well as buyback auctions) held by ÁKK Zrt. The sum of these amounts constitute the total nominal value of

the index basket. The weight of the individual government bonds in the index basket is equal to the quotient of their nominal value accepted at auctions and the total nominal value of the entire index basket. In the case of any other transaction involving Hungarian Government Bonds ÁKK Zrt. decides at its own discretion whether the given amounts should be taken into account as regards the composition of the index basket. In the case when ÁKK Zrt. publishes data about Hungarian Government Bond transactions beside auctions and at its own discretion decides that the HMAX index basket should take these transactions into account, then ÁKK Zrt. discloses such information on its own website (<https://akk.hu>).

Additional weight multipliers are applied for constituent government bonds in the HMAX index based on their remaining time-to-maturity as follows:

- The weight of government bonds with a time-to-maturity of at least 1,095 days and shorter than 1,825 days is **0.8**;
- The weight of government bonds with a time-to-maturity of at least 1,825 days and shorter than 3,650 days is **1.0**;
- The weight of government bonds with a time-to-maturity of at least 3,650 days is **1.2**.

The weights of constituent government bonds based on their outstanding amount and term-to-maturity is determined once a month, on the first trading day of the given month.

In case the weight based on the term-to-maturity of a constituent government bond changes on the first trading day of a month, then the corresponding weight change becomes effective on this very day.

2.9. The chain-link method

The index is calculated using the so-called chain-link method, i.e. a given day's index value is the multiple of the previous day's index value and the weighted percentage change of gross prices during the time between. By applying the chain-link method, changes in the compositions of the index do not cause jumps or distortions in the index value.

2.10. Reinvestment of interest payments

Any interest paid by the Issuer on the constituent government bonds is reinvested into the constituent government bonds of the current index basket according to their weights. The interest payment is accounted for in the index calculation on the second trading day before the actual interest payment day.

2.11. Changes in the composition of the index basket

2.11.1. Inclusion into the index basket

In case a new government bond series is issued satisfying all inclusion requirements, it is

added to the index basket on the first trading day of the month following its issuance. Should a given government bond series meet all requirements at first on the first trading day of a given month, it is added to the index basket on that day.

2.11.2. Exclusion from the index basket

In case the remaining term-to-maturity of a constituent government bond – calculated from the value date of the index to the maturity date of the government bond – decreases below 1,095 days, then the government bond is excluded from the index basket on the first trading day of the following month. Should the remaining term-to-maturity of a given constituent government bond as described above fall below 1,095 days on the first trading day of a month, then it is excluded from the index basket on that day.

In line with the index calculation method, the current gross price value as at the date of exclusion of the government bond so excluded is reinvested into the current index constituents according to their weights on the day of exclusion.

2.12. Treatment of extraordinary events

2.12.1. Lack of price quotation

In the case when Primary Dealers' price quotation is for any reason temporarily not available for a constituent government bond, the index should be calculated with the last available correct prices, for a period no longer than 5 consecutive trading days.

In case Primary Dealers' price quotation of the given government bond is not restored within 5 trading days, the government bond is temporarily excluded from the index basket on the sixth trading day following the cause of the lack of price quotation in line with subsection 2.11.2 paragraph 2.

As in this case this is only a 'temporary' exclusion, as soon as Primary Dealers' price quotation becomes available again for the given government bond, the aforementioned technically excluded government bond series is reinstated into the index basket on the first trading day when appropriate price quotation is available (i.e. in such cases not on the first trading day of the following month). Regarding the reinstatement into the index basket the general inclusion rules apply.