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METHODOLOGICAL INFORMATION

For the Collateral Announcement linked to the Investment Services Business Regulations

On the calculation of the initial margin and variation margin requirements for specific Individual OTC Derivative Transactions, and on the conditions determining the change in the secured claim amount

Effective from: *August 1, 2023*¹

Published on: *June 30, 2023*

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¹ The amended provisions of this Announcement, highlighted in italics and grey, indicate changes as of *November 21, 2022* in the case of contracts made subsequent to that date, and by reference to the Announcement that entered into force as of 11 August 2014 in the case of contracts made previously.

I. **On the calculation of the initial margin requirement for certain Individual OTC Derivative Transactions**

This information announcement provides a description and a summary of the essential elements of the methodology used by the *Bank*, as set out in the *Bank's* "Supplementary Announcement on the daily amount of secured claim transactions for the various Global Markets services, the level of initial margin, the list of Collaterals eligible as security and their collateral values" (*hereinafter: Collateral Announcement*) and the *Bank's Investment Services Business Regulations, in particular the General Terms and Conditions for Global Markets Services*.

A. **Initial margin requirement for an Individual Transaction**

The amount of the initial margin posted for a specific Individual OTC Derivative Transaction secures potential movements in the mark-to-market value of the Individual Transaction that are not secured by a variation margin. The initial margin requirement for an Individual Transaction is a currency amount that is determined at the time of contracting and is fixed for the entire duration of the Transaction; however, the value of the initial margin determined in a currency other than HUF may vary according to exchange rate movements on each banking day, or even several times a day in the case of intraday valuation.

The initial margin requirement is determined individually for each transaction, and may be reduced by transactions associated with the Individual Transaction, specified in Section C.

The initial margins associated with Individual Transactions concluded as part of specific Global Markets services are determined by the *Bank* according to Section B.

B. **Methodology for the calculation of initial margin requirements for specific Individual Transactions**

1. The initial margin requirement for an Individual **FX Forward** is determined as follows:

Nominal value x Initial margin weight x CCY/HUF rate, where:

Nominal value is the amount bought/sold in a forward trade, depending on the currency that was fixed at the time of trading.

Initial margin weight is the percentage value, if any, specified in Section I.B.1 of the Announcement, otherwise 100%.

CCY/HUF rate is the OTP mid-rate quoted for the fixed currency (i.e. the currency by reference to which the amount of the other currency is calculated using the

exchange rate, either the first or second currency of the currency pair) against the forint, as at the time of valuation.

2. The initial margin requirement for an Individual **FX Swap** is determined as follows:

Nominal value x Initial margin weight x CCY/HUF rate, where:

Nominal value is the amount bought/sold on the far leg of the FX Swap, depending on the currency that was fixed at the time of trading.

Initial margin weight is the percentage value, if any, specified in Section I.B.1 of the Announcement, otherwise 100%.

CCY/HUF rate is the OTP mid-rate quoted for the fixed currency (i.e. the currency by reference to which the amount of the other currency is calculated using the exchange rate, either the first or second currency of the currency pair) against the forint, as at the time of valuation.

3. The initial margin requirement for an Individual **Single-currency Interest Rate Swap (IRS)** is determined as follows:

Nominal value x Initial margin weight x CCY/HUF rate, where:

Nominal value is the nominal value (principal amount) of the IRS in the currency of the transaction.

Initial margin weight is the percentage value, if any, specified in Section I.B of the Announcement, otherwise 100%.

CCY/HUF rate is the OTP mid-rate quoted for the transaction currency against the forint, as at the time of valuation.

4. The initial margin requirement for an Individual **Interest Rate Option** is determined as follows:

Nominal value x Initial margin weight x CCY/HUF rate, where:

Nominal value is the nominal value (principal amount) of the Interest Rate Option in the currency of the transaction.

Initial margin weight is the percentage value specified by the **Bank** at the time of trading for the entire transaction on a case-by-case basis.

CCY/HUF rate is the OTP mid-rate quoted for the transaction currency against the forint, as at the time of valuation.

5. The initial margin requirement for an Individual **Cross-currency Interest Rate Swap (CCIRS)** is determined as follows:

Nominal value x Initial margin weight x CCY/HUF rate, where:

Nominal value is the principal amount of the CCIRS to be repaid on maturity by the *Client*, in the currency of the transaction.

Initial margin weight is the percentage value, if any, specified in Section I.B of the Announcement, otherwise 100%.

CCY/HUF rate is the OTP mid-rate quoted for the currency of the principal amount that is to be repaid by the *Client* on maturity, against the forint, as at the time of valuation.

6. In the case of an Individual **FX Option**

- a) The initial margin requirement for an Individual **Plain Vanilla Option** is determined as follows:

Nominal value x Strike x Initial margin weight x CCY2/HUF rate, where:

Nominal value is the size of the FX Option, an amount expressed in the first currency of the currency pair of the transaction.

Strike is the strike price of the FX Option.

Initial margin weight is the percentage value, if any, specified in Section I.B of the Announcement, otherwise 100%, applicable in cases where the option is sold (and the premium is received) by the *Client*. 0 in cases where the option is purchased (and the premium is paid) by the *Client*.

CCY2/HUF rate is the OTP mid-rate quoted for the second currency of the currency pair of the FX option, against the forint, as at the time of valuation.

- b) The initial margin requirement for an Individual **Barrier Option** is determined as follows:

CCY1 initial margin requirement x CCY2/HUF

CCY1 initial margin requirement is the value specified by the Bank at the time of trading on a case-by-case basis, in the second currency of the currency pair of the FX Option, by reference to potential movements in the mark-to-market value of the Individual Transaction in cases where the option is sold (and the premium is received) by the *Client*. 0 in cases where the option is purchased (and the premium is paid) by the *Client*.

CCY2/HUF rate is the OTP mid-rate quoted for the second currency of the currency pair of the FX option, against the forint, as at the time of valuation.

7. The initial margin requirement for an Individual **Inflation Swap** is determined as follows:

Nominal value x Initial margin weight x CCY/HUF rate, where:

Nominal value is the nominal value (principal amount) of the Inflation Swap in the currency of the transaction.

Initial margin weight is the percentage value specified by the **Bank** at the time of trading on a case-by-case basis.

CCY/HUF rate is the OTP mid-rate quoted for the transaction currency against the forint, as at the time of valuation.

8. The initial margin requirement for an Individual **Commodity Swap** is determined as follows:

Nominal value x Initial margin weight x CCY/HUF rate, where:

Nominal value is the forward consideration (fixed leg) payable for the underlying instrument of the transaction, in the payment currency.

Initial margin weight is the percentage value, if any, specified in Section I.B of the Announcement, otherwise 100%.

CCY/HUF rate is the OTP mid-rate quoted for the payment currency of the transaction, against the forint, as at the time of valuation.

C. Cases where the initial margin requirement is reduced

1. Closing/partially closing an Individual Transaction

Initial margin requirements only apply to open positions. There are no initial margin requirements for closed positions.

For the purposes of calculating initial margin requirements:

Closed position refers to a set of opposite transactions that are matched with one another but are not integrated within a strategy according to Section C.2, where the algebraic sum of the nominal values of matched transactions is zero, and other transaction parameters are equal. A closed position may only be established in respect of Individual Transactions traded with the Bank, by reference to the records of the Bank.

Partially closed position refers to a set of opposite transactions that are matched with one another but are not managed within a strategy according to Section C.2, where the algebraic sum of the nominal values of matched transactions is zero, and other transaction parameters are equal. A partially closed position may only be established in respect of Individual Transactions traded with the Bank, by reference to the records of the Bank.

An open position is a position that is neither closed nor partially closed.

Closing (terminating) one transaction in a closed or partially closed position will result in an open position.

2. Strategic integration

For the purposes of calculating initial margin requirements, transactions that belong together in a specific trading logic will be integrated by the *Bank* within a strategy in consultation with the *Client*.

Strategic integration is only available for individual transactions contracted with the *Bank*, which, for the purposes of its records, the *Bank* will treat as individual transactions integrated within a strategy.

On request, the *Bank* will inform the Client about the strategies available.

Individual Transactions integrated within a strategy tend to have a lower initial margin requirement, but no more than the sum of the margin requirement of Individual Transactions integrated within a strategy.

The *Bank* only terminates integration within a strategy after consulting with the *Client*. The exception to this is if a transaction is no longer active, in which case the strategy is automatically terminated.

3. Rolling FX Swaps

In the case of a rollover, the initial margin requirement for any outstanding FX Spot, Individual FX Forward, or FX Swap (the Rolled Transaction) will be calculated up to and excluding the maturity date of the transaction, and the initial margin requirement for the transaction by which such a transaction is rolled (the Rolling FX Swap) is calculated from the value date of the transaction. As per Section B.2.

In the case of a rollback, up to the value date of the Rolling FX Swap the initial margin requirement will be determined by the outstanding Rolled Transaction as per Section B.2. The initial margin requirement is to be calculated from the value date of the Rolling FX Swap, on the basis of the difference between the nominal values of the Rolling FX Swap and the outstanding Rolled Transaction.

II. On the calculation of the variation margin of certain OTC derivative Individual Transactions and on the conditions determining the change in the secured claim

A. Variation margin requirement of the individual transaction

The mark-to-market value of Individual Transactions concluded as part of specific Global Markets services are determined by the *Bank* according to Section II.B², subject to the reduction described in Section II.C.

The Variation Margin requirement for various OTC derivative Individual Transactions is the Mark-to-Market value of the given Individual Transaction until settlement of the transaction, to the extent that it shows a revaluation loss for the *Client*. The *Client* shall keep track of the Variation Margin requirement of the Individual Transaction thus shown and shall make the Variation Margin available to the *Bank*.

The *Bank* is entitled to waive the call for additional collateral in relation to the Individual Transaction until the value calculated for the total of the Individual Transactions in the manner specified in points II.B and II.C - as the difference between the revaluation gains and revaluation losses calculated in relation to the Individual Transactions - has a positive sign. At the same time, the value calculated in this way for the totality of Individual Transactions does not provide real secured claim for the conclusion of a new Individual Transaction.

B. Mark-to-market value of individual transactions

1. The mark-to-market value of the Individual **Forward Foreign Exchange Transaction** is determined as the difference of the discounted values of the prevailing market exchange rate and the contracted price (strike price), using the market yield of the foreign exchange rate's base and quote currency applicable to the residual maturity of the transaction and multiplying it by the nominal value of the transaction. For forward purchases, the difference is calculated in the sequence specified above, while in the case of forward sale it is calculated in reverse.

The market exchange rate used is equivalent to the OTP mid-rate applicable at the time of valuation. The market yields used for discounting are calculated on the basis of the market forward points, the interest and basis swap quotations. Market data are used from data published by market data providers, mostly on Bloomberg, and to a lesser extent on Reuters.

² The *Bank* acquires the market data and information taken into consideration for the purpose of determining the mark-to-market values from internationally recognised data provider systems (Bloomberg, Reuters). The internationally recognised data providers take no responsibility for the completeness of the provided information. Although in its use of market data published by internationally recognised data providers, the *Bank* relies in good faith on sources deemed reliable, the *Bank* undertakes no guarantee, warranty or obligation for the accuracy and completeness of the data published by the data providers.

2. The mark-to-market value of an Individual **FX Swap** is the sum of the mark-to-market value of an FX Spot (or Forward) and that of an opposite FX Forward. The mark-to-market value of the Spot (or Forward) is determined, up to the settlement date, as the difference between the discounted values of the contract price and the prevailing market exchange rate (strike price of the near leg), whereas the mark-to-market value of the Forward is determined as the difference between the discounted values of the prevailing market exchange rate and the contract price (strike price of the far leg), using the market yield of the foreign exchange rate's base and quote currency applicable to the residual maturity of the transaction and multiplying it by the nominal value of the transaction. For forward purchases, the difference is calculated in the sequence specified above, while in the case of forward sale it is calculated in reverse.

The market exchange rate used is equivalent to the OTP mid-rate applicable at the time of valuation. The market yields used for discounting are calculated on the basis of the market forward points, the interest and basis swap quotations. Market data are used from data published by market data providers, mostly on Bloomberg, and to a lesser extent on Reuters.

3. The mark-to-market value of the Individual Transactions for **Forward Equity Sales** is determined as the difference of the discounted values of the current market price of the equity and the contracted price (strike price), using the market yield and the potential dividend yield applicable to the residual maturity of the transaction and multiplying it by the number of the transactions. For forward purchases, the difference is calculated in the sequence specified above, while in the case of forward sale it is calculated in reverse.

4. The method of determining the mark-to-market value of the Individual **Foreign Exchange Option Transactions** depends on the type of the option transaction. For European plain vanilla transactions, the option holder may exercise its option right only upon the maturity of the transaction, based on the relation of the exchange rate prevailing on the maturity date to the contract price (strike price), i.e. in the case of a call option, if the current foreign exchange rate exceeds the strike price, and in the case of a put option in the other way round. Prior to the maturity, the market value of the European, plain vanilla Individual Transactions is determined on the basis of the difference of the discounted values of the current market exchange rate and the contracted price (strike price), using the market yield of the exchange rate's base and quote currency applicable to the residual maturity of the transaction, multiplying it by the nominal value of the transaction, also taking into consideration the values of the changes in the exchange rate calculated by the probability functions, taken at certain points. Thus the value of the Individual Transactions depends, through these functions, on the implied volatility observed in the market (market deviation of the change in the exchange rate derived from the standard option prices), the current market exchange rate, the market yields of

the exchange rate's base and quote currencies applicable to the residual maturity of the transaction, and on the residual maturity.

The market exchange rate used is equivalent to the market mid-rate applicable at the time of valuation, on the understanding that at the end of the last business day of each month, the applicable rate will be the official exchange rate published by the MNB.

The market yields used for discounting are calculated on the basis of the market forward points, the interest and basis swap quotations. Implied volatility data are used from data published by market data providers, mostly on Bloomberg, and to a lesser extent on Reuters.

If the option holder is the *Client*, i.e. the *Client* buys the call or put option, the value determined in the manner described above will be at least 0 from the *Client's* point of view, but in the case of a call transaction, it may also be a positive amount without limit and in the case of a put transaction it may be the full strike price. However, if the option holder is the *Bank*, i.e. the *Client* writes the call or put option, the value determined in the manner described above will be 0 at the most, from the *Client's* point of view, but in the case of a call transaction, it may also be a negative value without limit and in the case of a put transaction it may be the full strike price.

If the foreign exchange option Individual Transaction is not a European plain vanilla transaction, in addition to the above, the specific characteristics of the given transaction are also taken into account in determining its value, as such in the case of barrier-type options, in particular barrier events (the option will be valid or expire when a certain price level is reached during the term of the option). Barrier events are monitored based on the barrier type of the transaction. In the case of a window barrier, in a single continuous time interval (window) within the term of the transaction. In the case of barrier transactions that are strategically aligned with each other (see Section C.2), the barrier event is interpreted separately for the Individual Transaction.

5. The method of determining the mark-to-market value of the Individual **Interest Rate Option Transactions** depends on the type of the option transaction. For European, plain vanilla transactions, the option holder may exercise its option right only upon the maturity of the given transaction period, based on the relation of the reference rate prevailing at the maturity of the period to the contract price (strike price), i.e. in the case of a caplet (call) option, if the current interest level exceeds the strike price (interest level) and in the case of a floorlet (put) option in the other way round. Interest Rate Options typically have several interest periods, i.e. the value of a call interest rate cap is the sum of the caplet values and that of the put interest rate floors it is the sum of the floorlet values. Prior to the expiry of the period, the market value of the European plain vanilla caplet/floorlet is determined on the basis of the discounted difference of the forward market interest rate level

and the contracted price (strike price), using the market yield applicable to the residual maturity of the period, multiplying it by the transaction nominal value and the period length, also taking into consideration the values of the changes in the market reference rates calculated by the probability functions, taken at certain points. Thus the value of the caplet/floorlet depends, through these functions, on the implied volatility observed in the market (market deviation of the change in the reference rates derived from the standard option prices), the current market reference rate level, the market yields applicable to the residual maturity, and on the residual maturity.

The used market reference rate level is the reference rate applicable to the given period.

The market yields used for discounting are calculated on the basis of the market forward points, the interest and basis swap quotations. Implied volatility data are used from data published by market data providers, mostly on Bloomberg, and to a lesser extent on Reuters.

If the option holder is the *Client*, i.e. it buys the cap or floor option, the value determined in the manner described above will be at least 0 from the *Client's* point of view, but in the case of cap transactions, it may also be a positive amount without limit and in the case of a floor transaction – provided that the interest level is at least zero – it may be the full interest amount calculated at the strike price. However, if the option holder is the *Bank*, i.e. it the *Client* writes the cap or floor option, the value determined in the manner described above may be 0 at the most, from the *Client's* point of view, but in the case of cap transactions, it may also be a negative amount without limit and in the case of a floor transaction – provided that the interest level is at least zero – it may be the full interest amount calculated at the strike price.

6. The mark-to-mark value of the **single currency Interest Rate Swaps (IRS)** is determined by the difference of the discounted values of the *Client's* interest receivables from and interest payment obligations to the *Bank* due on the dates specified in the transaction. Of the interest receivables and interest payables one of them may be fixed, i.e. the amounts due in the future are known in advance already on the deal date, while the other is variable, i.e. calculated on the basis of the future value of the reference rate according to the interest payment period (1-, 3-, 6-, 12-month BUBOR, LIBOR rate) or both of them may be variable. The future values of the variable interest receivables and interest payables are not known at the present time, but may be projected from the yield curve data observed in the market.

The market yields used for discounting are calculated on the basis of the market forward points, the interest and basis swap quotations, that is, it typically differs from the yield curves used for the projection of variable rates.

7. The mark-to-mark value of the **Cross Currency Interest Rate Swaps (CCIRS)** is determined by the difference of the discounted values of the *Client's* principal and interest receivables from and principal and interest payment obligations to the *Bank* due on the dates specified in the transaction. The receivables and payables are denominated in different currencies. Of the interest receivables and interest payables one of them may be fixed, i.e. the amounts due in the future are known in advance already on the deal date, while the other is variable, i.e. calculated on the basis of the future value of the reference rate according to the interest payment period (1-, 3-, 6-, 12-month BUBOR, LIBOR rate) or both of them may be variable. The future values of the variable interest receivables and interest payables, and the exchange rate used for their conversion, are not known at the present time, but may be projected from the yield curve data observed in the market.

The market yields used for discounting are calculated on the basis of the market forward points, the interest and basis swap quotations, that is, it typically differs from the yield curves used for the projection of variable rates.

8. The mark-to-mark value of the individual **Commodity Swap Transactions** is determined by the difference of the discounted values of the *Client's* receivables from and payables to the *Bank* due on the dates specified in the transaction. Of the receivables and payables, one is fixed, i.e. the amounts due in the future are known in advance on the deal date, while the other is variable, i.e. it is determined on the basis of either the future price of a commodity or product or the average of the prices in the observation period. The future values of the variable receivables and payables are not known at the present time, but may be projected from the forward prices observed in the market.

If the quote currency of the underlying commodity of the commodity swap transaction and the currency of the commodity swap differ, the future value of the exchange rate used for the conversion or the weighted or simple arithmetic average of those also influences the market value of the Individual Transaction.

The market yields used for discounting are calculated on the basis of the market forward points, the interest and basis swap quotations.

9. The mark-to-mark value of the individual **Inflation Swap Transactions** is determined by the difference of the discounted values of the *Client's* receivables from and payables to the *Bank* due on the dates specified in the transaction. Of the receivables and payables one of them is fixed, i.e. the amounts due in the future are known in advance on the deal date, while the other one is variable, i.e. it is determined on the basis of the future value of an inflation index. The future values of the variable receivables and payables are not known at the present time, but may be projected from the forward prices observed in the market.

The market yields used for discounting are calculated on the basis of the market forward points, the interest and basis swap quotations.

C. Cases where the variation margin requirement is reduced

1. Closing/partially closing an Individual Transaction

For **FX Forwards and FX Swaps** resulting in a closed or partially closed position, the variation margin requirement represents the net total of the foreign currency and forint amounts of the Individual Transactions generating the closed or partially closed position, to be settled upon maturity, to the extent that a loss is shown for the *Client*.

For Equity Forwards, FX Options, Interest Rate Options, Interest Rate Swaps and Cross-currency Interest Rate Swaps, Commodity Swaps and Inflation Swaps resulting in a closed or partially closed position, the variation margin requirement represents the sum of the mark-to-market values of the Individual Transactions generating the closed or partially closed position, to the extent that a loss is shown for the *Client*.

Closed position refers to a set of opposite transactions that are matched with one another but are not integrated within a strategy according to Section C.2, where the algebraic sum of the nominal values of matched transactions is zero, and other transaction parameters are equal. A closed position may only be established in respect of Individual Transactions traded with the *Bank*, by reference to the records of the *Bank*.

Partially closed position refers to a set of opposite transactions that are matched with one another but are not managed within a strategy according to Section C.2, where the algebraic sum of the nominal values of matched transactions is zero, and other transaction parameters are equal. A partially closed position may only be established in respect of Individual Transactions traded with the *Bank*, by reference to the records of the *Bank*.

An open position is a position that is neither closed nor partially closed.

Closing (terminating) one transaction in a closed or partially closed position will result in an open position.

2. Strategic integration

In the case of **FX Options**, for the purposes of calculating variation margin requirements, transactions that belong together in a specific trading logic will be integrated by the *Bank* within a strategy in consultation with the *Client*.

Strategic integration is only available for individual transactions contracted with the *Bank*, which, for the purposes of its records, the *Bank* will treat as individual transactions integrated within a strategy.

On request, the *Bank* will inform the Client about the strategies available.

The *Bank* will only terminate strategic integration in consultation with the *Client*. This restriction does not apply where a transaction is no longer active, in which case the strategy will be cancelled automatically.

Transactions integrated within a strategy generate a variation margin requirement for the *Client* in cases where the sum of the mark-to-market values of the integrated transactions shows a loss for the *Client* in the course of revaluation.

3. Rolling FX Swaps

With rolling FX Swaps, the variation margin will be calculated as the sum of the individual mark-to-market values of any outstanding FX Spot, Individual FX Forward, or FX Swap (the Rolled Transaction) and of the transaction by which such a transaction is rolled (the Rolling FX Swap), to the extent that a loss is shown for the *Client* during revaluation.