

## 2.7 Theoretical Values: Flexible Options Contracts – FPTHEF [Modified]

This file contains derivative theoretical prices used for margining of flexible contracts.

Record layout of the file FPTHEF:

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01  RMTHEF-WS-REC.
    10  MGN-CLS-COD-RMTHEF                PIC  X(5) .
    10  SERI-GRP-ID-COD-RMTHEF .
        15  PROD-ID-COD-RMTHEF            PIC  X(4) .
        15  SERI-CLAS-COD-RMTHEF          PIC  X(1) .
        15  SERI-EXP-DAT-RMTHEF .
            20  EXPI-YR-DAT-RMTHEF         PIC  9(2) .
            20  EXPI-MTH-DAT-RMTHEF       PIC  9(2) .
            20  EXPI-DAY-DAT-RMTHEF       PIC  9(2) .
        15  EXER-PRC-RMTHEF                PIC  9(5).9(4) .
        15  EXER-STYLE-FLG-RMTHEF         PIC  X(1) .
        15  SERI-VERS-NO-RMTHEF           PIC  9(1) .
    10  FLEX-PRODUCT-ID-RMTHEF            PIC  X(4) .
    10  RISK-ARRAY-INDEX-RMTHEF           PIC  9(2) .
    10  CALC-BUC-PRICE-RMTHEF             PIC  X(9) .
    10  CALC-UND-PRICE-RMTHEF             PIC  X(9) .
    10  FORWARD-UND-PRICE-RMTHEF         PIC  Z(4)9.9(6) .
    10  UD-IND-RMTHEF                     PIC  X(1) .
    10  STOCK-PRC-IND-RMTHEF              PIC  X(1) .
    10  EA-THEO-VALUE-RMTHEF              PIC  X(9) .
    10  ADJ-VOL-U-RMTHEF                  PIC  Z(2)9.9(2) .
    10  THEO-VALUE-U-RMTHEF               PIC  Z(4)9.9(6) .
    10  SHORT-OPT-THEO-U-RMTHEF           PIC  Z(4)9.9(6) .
    10  ADJ-VOL-N-RMTHEF                  PIC  Z(2)9.9(2) .
    10  THEO-VALUE-N-RMTHEF               PIC  Z(4)9.9(6) .
    10  SHORT-OPT-THEO-N-RMTHEF           PIC  Z(4)9.9(6) .
    10  ADJ-VOL-D-RMTHEF                  PIC  Z(2)9.9(2) .
    10  THEO-VALUE-D-RMTHEF               PIC  Z(4)9.9(6) .
    10  SHORT-OPT-THEO-D-RMTHEF           PIC  Z(4)9.9(6) .
    10  UND-REF-PRC-RMTHEF                 PIC  X(10) .
    10  INTP-REF-PRC-RMTHEF                PIC  X(10) .
    10  SERI-REF-PRC-RMTHEF                PIC  X(10) .
    10  MGN-INTERVAL-RMTHEF                PIC  X(11) .
    10  VOL-RMTHEF                         PIC  Z(2)9.9(2) .
    10  INTR-RAT-PCT-RMTHEF                PIC  9(1).9(6) .
    10  YIELD-RAT-PCT-RMTHEF               PIC  9(1).9(6) .
    10  SECU-TRD-UNT-NO-RMTHEF            PIC  Z(3)9.9(4) .
    10  PROD-TIC-SIZE-RMTHEF               PIC  X(7) .
    10  PROD-TIC-VAL-RMTHEF                PIC  Z(3)9.9(4) .
    10  SERI-STS-COD-RMTHEF                PIC  X(1) .
    10  MGN-STYLE-FLG-RMTHEF               PIC  X(1) .
    10  CURR-DCML-SHFT-GRP-RMTHEF .
        15  CURR-TYP-COD-RMTHEF           PIC  X(3) .
        15  DCML-SHFT-NO-RMTHEF           PIC  9(1) .
    10  DAYS-TO-EXP-RMTHEF                 PIC  Z(4)9.
01  RMTHEF-FILE-INFO-REC REDEFINES RMTHEF-WS-REC.
    05  FILE-END-MARK-RMTHEF                PIC  X(5) .
    05  FILLER                              PIC  X.
    05  FILE-COUNTER-RMTHEF                 PIC  9(8) .
    05  FILLER                              PIC  X.
    05  CURR-BUS-DAY-RMTHEF                 PIC  9(8) .
    05  FILLER                              PIC  X.
    05  DESCRIPTION-RMTHEF                  PIC  X(92) .
    05  FILLER                              PIC  X(147) .

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The fields contained in the file FPTHEF are described in the following list.

FPTHEF	
Field	Description
MGN-CLS-COD-RMTHEF	This field contains the margin class code assigned by the exchange.
PROD-ID-COD-RMTHEF	This field contains the product ID.
SERI-CLAS-COD-RMTHEF	This field contains the class code for option series or a blank for futures contracts. Field values include: "C" - Call "P" - Put " " - Future
EXPI-YR-DAT-RMTHEF	This field contains the year when the flexible contract expires.
EXPI-MTH-DAT-RMTHEF	This field contains the month when the flexible contract expires.
EXPI-DAY-DAT-RMTHEF	This field contains the day when the flexible contract expires.
EXER-PRC-RMTHEF	This field contains the price at which an option contract may be exercised. This field has the format 99999.9999.
EXER-STYLE-FLG-RMTHEF	This field contains the exercise style of the flexible options contract. It has either the value 'A' for American style or 'E' for European style.

## FPTHEF

Field	Description
SERI-VERS-NO-RMTHEF	<p>This field contains the version number assigned to the series on creation. The value is zero for all standard series not changed as a result of capital adjustment to the underlying instrument and for futures contracts. Valid values include:</p> <ul style="list-style-type: none"> <li>0 - standard series version or futures contract</li> <li>1 - adjusted series version from most recent capital adjustment</li> <li>2 - adjusted series version from the last two capital adjustments</li> <li>3 - adjusted series version from the last three capital adjustments</li> <li>...</li> <li>9 – adjusted series version from the last ninth capital adjustments</li> </ul>
FLEX-PRODUCT-ID-RMTHEF	<p>This field contains the ID of the product for which flexible series were created.</p>
RISK-ARRAY-INDEX-RMTHEF	<p>This field contains the current index in the risk array; for each risk array this indicator starts with 1 and is increased up to the risk array size. Maximum is 29.</p>
CALC-BUC-PRICE-RMTHEF	<p>This field contains the projected underlying price for the interval product. For each class there is one interval product which determines the margin interval and projected underlying values for all products in the class. This field has the same value as the CALC-UND-PRICE-RMTHEF for products that are themselves interval products, or have the same underlying as the interval product for their class.</p> <p>This field contains a decimal point with a variable number of decimal places depending on the product.</p>

## FPTHEF

Field	Description
CALC-UND-PRICE-RMTHEF	<p>This field contains the projected underlying price used to calculate the theoretical value for this record.</p> <p>This field contains a decimal point with a variable number of decimal places depending on the product.</p>
FORWARD-UND-PRICE-RMTHEF	This entry contains the forward underlying price.
UD-IND-RMTHEF	<p>This field contains an indicator showing whether the projected underlying price is less than (downside), greater than (upside) or movement neutral to the closing price of the underlying.</p> <p>"D" - downside  "U" - upside  "N" - neutral</p>
STOCK-PRC-IND-RMTHEF	This field contains an indicator showing whether the theoretical price calculated relates to a minimum projected underlying price (2), to an in-between strike (3) or to a maximum projected underlying price (1).
EA-THEO-VALUE-RMTHEF	<p>This field contains the theoretical value calculated for an exercised/assigned or notified/allocated flexible contract for a given CALC-UND-PRICE-RMTHEF.</p> <p>This field contains a decimal point with a variable number of decimal places depending on the product.</p>
SHORT-OPT-THEO-RMTHEF	This field contains the value short option adjustment. It is calculated by multiplying the margin interval by the out-of-the-money minimum percentage and adding to it the settlement price for the series. It replaces the maximum upside theoretical option price for a short call option if it is greater than that theoretical. It replaces the maximum downside theoretical option price for a short put option if it is greater than that theoretical.

## FPTHEF

Field	Description
UND-REF-PRC-RMTHEF	<p>This field contains the underlying reference price (in EOD file, it is the last closing price of the underlying asset or for futures with no underlying price, this field contains the settlement price of the appropriate series).</p> <p>This field contains a decimal point with a variable number of decimal places depending on the product.</p>
INTP-REF-PRC-RMTHEF	<p>This field contains a reference price of the underlying for the interval product (in EOD file, it is the last closing price of the underlying asset or if the interval product is a future with no underlying price, this field contains the settlement price of the spot month series).</p> <p>This field contains a decimal point with a variable number of decimal places depending on the product.</p>
SERI-REF-PRC-RMTHEF	<p>This field contains the series reference price (in EOD file, it is the last settlement price of the series). This field contains a decimal point with a variable number of decimal places depending on the product.</p>
MGN-INTERVAL-RMTHEF	<p>The value of this field is determined using the last closing price and historical volatility of the interval product. For products, whose historical volatility is expressed as a percentage (for instance stock options), the margin interval is the historical volatility multiplied by the last closing price. For products with a historical volatility expressed in ticks (such as the Bund and DAX futures and their options), the margin interval is the historical volatility multiplied by the tick value.</p> <p>This field contains a decimal point with a variable number of decimal places depending on the product.</p>
VOL-RMTHEF	<p>This field contains the volatility used for theoretical price calculations.</p>

## FPTHEF

Field	Description
ADJ-VOL-U-RMTHEF	This field contains the simulated implied volatility (up scenario) used for theoretical price calculations.
THEO-VALUE-U-RMTHEF	This field contains the theoretical value calculated for an active options/future position for a given CALC-UND-PRICE-RMTHEF and ADJ-U-VOL-RMTHEF
SHORT-OPT-THEO-U-RMTHEF	This field contains a value also called short option adjustment. It is calculated by multiplying the margin interval with the out-of-the-money minimum percentage and adding the settlement price for the series to this. It replaces the maximum upside theoretical option price for a short call option if it is greater than that theoretical. It replaces the maximum downside theoretical option price for a short put option if it is greater than that theoretical. For futures this field is set zero.
ADJ-VOL-N-RMTHEF	This field contains the simulated implied volatility (neutral scenario) used for theoretical price calculations.
THEO-VALUE-N-RMTHEF	This field contains the theoretical value calculated for an active options/future position for a given CALC-UND-PRICE-RMTHEF and ADJ-N-VOL-RMTHEF.
SHORT-OPT-THEO-N-RMTHEF	This field contains a value also called short option adjustment. It is calculated by multiplying the margin interval with the out-of-the-money minimum percentage and adding the settlement price for the series to this. It replaces the maximum upside theoretical option price for a short call option if it is greater than that theoretical. It replaces the maximum downside theoretical option price for a short put option if it is greater than that theoretical. For futures this field is set zero.
ADJ-VOL-D-RMTHEF	This field contains the simulated implied volatility (down scenario) used for theoretical price calculations.

## FPTHEF

Field	Description
THEO-VALUE-D-RMTHEF	This field contains the theoretical value calculated for an active options/future position for a given CALC-UND-PRICE-RMTHEF and ADJ-D-VOL-RMITHEF.
SHORT-OPT-THEO-D-RMTHEF	This field contains a value also called short option adjustment. It is calculated by multiplying the margin interval with the out-of-the-money minimum percentage and adding the settlement price for the series to this. It replaces the maximum upside theoretical option price for a short call option if it is greater than that theoretical. It replaces the maximum downside theoretical option price for a short put option if it is greater than that theoretical. For futures this field is set zero.
INTR-RAT-PCT-RMTHEF	This field contains the security risk free interest rate used to calculate the theoretical value.
YIELD-RAT-PCT-RMTHEF	This field contains the yield rate which is used for the calculation of theoretical prices of currency options.
SECU-TRD-UNT-NO-RMTHEF	This field contains the quantity of the underlying instrument traded per contract.
PROD-TIC-SIZE-RMTHEF	This field contains the tick size for the product. This field contains a decimal point with a variable number of decimal places depending on the product.
PROD-TIC-VAL-RMTHEF	This field contains the tick value for the product.
SERI-STS-COD-RMTHEF	This field contains a code to identify an option series/future contract as active ("A") or expired ("E").
MGN-STYLE-FLG-RMTHEF	This field contains a code to identify the margining style for the product. Valid values are: "F" - futures style "T" - traditional style

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**FPTHEF**

Field	Description
CURR-TYP-COD-RMTHEF	This field contains the currency code of the underlying instrument.
DCML-SHFT-NO-RMTHEF	This field contains one digit specifying a decimal given as a power of ten. It represents the factor by which a price has to be multiplied in order to get the „real“ price. Example: Decimal Shift: 0 Factor: $10^0 = 1$ (e.g. for EUR) The amount “23.45” is then understood by the user in the associated currency as: $23.45 \times 1 = 23.45$ EUR
DAYS-TO-EXP-RMTHEF	This field contains the number of days until expiration of the contract.

The following descriptions apply to the last record of FPTHEF only.

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**FPTHEF**

Field	Description
FILE-END-MARK-RMTHEF	This field marks the end of the file and contains the string “*EOF*”.
FILE-COUNTER-RMTHEF	This field contains the number of data records contained in the file, <i>not</i> including the last record.
CURR-BUS-DAY-RMTHEF	This field contains the date of the business day in the format YYYYMMDD.
DESCRIPTION-RMTHEF	This field contains a short description of the file content.