

## Danish covered bonds

### Nykredit Total Index EUR (NYKRTEUR Index)

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Marketing communication

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- The Nykredit Total Index is a tracker index based on the Danish callable bond market
- The Nykredit Total Index EUR shows returns in EUR on investments in the index hedged using a 1M FX forward
- The index returns are calculated daily and are available on Bloomberg (Ticker: NYKRTEUR Index)

*Nykredit is launching a new index denominated in EUR. The new index is available as of March 3, 2021. The Nykredit Total Index EUR is based on the Nykredit Total Index, which covers most of the Danish callable covered bond market. The index shows daily returns in EUR on investments in the Nykredit Total Index hedged daily using an FX forward based on 1M FX swaps.*

The Nykredit Total Index EUR is a tracker index based on the Danish callable bond market and is denominated in and hedged to EUR. The index shows daily returns in EUR on investments in the Nykredit Total Index hedged daily using an FX forward. The new index is available as of March 3, 2021.

A tracker index contains a subset of the total market that reflects general market trends. The Nykredit Total Index EUR covers the actively traded part of the Danish callable covered bond market, and the index basis is 30 January 2004.

The Nykredit Total Index, including portfolio criteria, rebalancing and index return calculations, is described in further detail at Nykredit's [index website](#).

#### Calculation of index value

The Nykredit Total Index was originally denominated in DKK. Therefore, we start by defining the return on a simple FX swap (RFXS):

$$RFXS(t) = \frac{F(t, t+2B, t+2B+1M)}{S(t, t+2B)} - 1,$$

where  $t$  is the trade date,  $F$  is the 1M FX DKKEUR forward rate at a point in time  $t$ , and a value date of  $t+2B$ .  $S$  is FX DKKEUR spot. We apply the Danish business calendar, where  $2B$  is two trading days.

The value when settling the FX swap (URFXS) at a point in time  $t+1$  is determined as

$$URFXS(t+1B) = \frac{1}{RFXS(t+1B) \cdot d_t'}$$

where  $d$  is a time factor measuring the relative reduction in the FX swap (set at a point in time  $t+1$ ) entered into on day  $t$ . This is calculated as

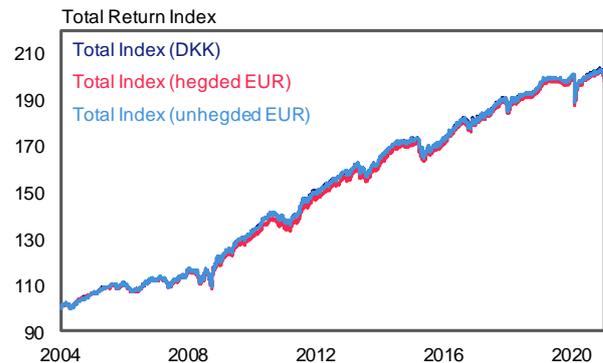
$$d_t = \frac{(t+2B+1M) - (t+1B)}{(t+2B+1M) - (t+2B)}$$

By combining the definitions set out above and including the returns of the original index, we can calculate the index value in EUR as

$$I_{t+1B}^{EUR} = \frac{I_t^{EUR}}{URFXS(t+1B)} \cdot \frac{I_{t+1}^{DKK}}{I_t^{DKK}} \cdot [1 + RFXS(t+1B)],$$

where  $I_t^{DKK}$  is the index value in DKK at a point in time  $t$ .

#### Historical index development



The development of the Nykredit Total Index in DKK and EUR, hedged and unhedged, since January 2004.

Source: Nykredit Markets

FX hedging made on a daily basis using 1M FX swaps. On any given day, the value of the index is hedged by entering into a 1M FX swap contract. The contract is settled on the next day ( $t+1$ ), and the new index value (including the returns during the past day) will be hedged again using a new 1M FX swap. This process is repeated on all business days.

Hedging of the index is based on the index value at the outset, as we do not know the future value of the index at the time of entering into the FX forward contract. This way, we are able to hedge everything except the development of the index value.

The FX risk is (almost) eliminated when investors enter into an FX swap contract, and thus, investors are more exposed to interest rate risk when they enter into FX swap contracts. In our calculations, this is a daily interest rate risk measured at the 1M FX forward point. This may have a positive as well as a negative effect on the difference in returns on Nykredit Total Index and the Total Index hedged to EUR.

## DISCLOSURE

This research is non-independent research prepared by Fixed Income & Nordic Research in Nykredit Markets. Non-independent research is a marketing communication and does not constitute independent, objective investment research and is thus not subject to the legal requirements applicable to independent investment research. Therefore, it is not subject to any prohibition on dealing ahead of the dissemination of the marketing communication.

### **Recommendation and risk assessment structure for government bonds and bonds issued by financial institutions, including covered bonds**

#### Bond recommendations

The research of Fixed Income & Nordic Research generally focuses on isolating relative value in bond and derivatives markets. Therefore, the interest rate and/or volatility risk of the strategy is generally hedged through other bonds or derivatives (swaps, swaptions, caps, floors, etc). In contrast to outright recommendations, our research often includes both a buy and a sell recommendation.

**BUY:** In our view, the bond is fairly inexpensive relative to comparable alternatives in either the bond or derivatives markets. We expect that the bond will offer a higher return than the alternatives on a horizon of usually three months.

**SELL:** In our view, the bond is fairly expensive relative to comparable alternatives in either bond or derivatives markets. We expect that the bond will offer a lower return than the alternatives on a horizon of usually three months.

#### Recommendations on portfolio allocation

The recommendations of Fixed Income & Nordic Research are based on a portfolio investor (long-only investor) in government bonds and bonds issued by financial institutions. Click on the following link to see a [list of all recommendations on financial instruments or issuers disseminated](#) by Fixed Income & Nordic Research in Nykredit Markets over the past 12 months.

**OVERWEIGHT:** In our view, the return on the bond segment will be higher than the return on the total Danish bond market (Danish government bonds and bonds issued by financial institutions) in the next three months.

**NEUTRAL:** In our view, the return on the bond segment will be in line with the return on the total Danish bond market (Danish government bonds and bonds issued by financial institutions) in the next three months.

**UNDERWEIGHT:** In our view, the return on the bond segment will be lower than the return on the total Danish bond market (Danish government bonds and bonds issued by financial institutions) in the next three months.

### **Distribution of recommendations**

The distribution of the direct investment recommendations from Fixed Income & Nordic Research within the past quarter is shown in Table 1 and Table 2. Proportion I is the distribution of our recommendations and it therefore sums to 100%. Proportion II is the share of issuers within each category above for which Nykredit Bank A/S has carried out major investment bank transactions in the past 12 months.

<b>Table 1: Recommendations – fixed income</b>	Proportion I	Proportion II
Buy	50	0
Sell	50	0
<b>Table 2: Recommendations – portfolio allocation</b>	Proportion I	Proportion II
Overweight	0	0
Neutral	0	0
Underweight	0	0

Source: Nykredit Markets

### **Historical returns and price developments**

To the extent that this material contains information on historical prices and/or returns, reference is made to [historical returns and prices](#) at nykredit.dk, which provides information on price developments and returns for the past five years (or the life of the instrument concerned, if less than five years) of the financial instruments for which Fixed Income & Nordic Research has made direct investment recommendations.

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Calculations and presentations are based on ordinary econometric and financial tools and methods as well as publicly available sources. Assessments of Danish callable mortgage bonds are modelled using a proprietary model consisting of a stochastic yield structure model and a statistical refinancing model calibrated to borrowers' historical prepayment behaviour. The models have been approved by the Danish Financial Supervisory Authority.

Unless otherwise specified, prices stated in this research prevailed at 15:40 CET on the trade day before the date stated on the front page.

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