

Memo

Date: 11.05.2021

The Nibor Transparency Statement – May 2021

The Nibor Transparency Statement has been introduced with the purpose to provide users of Nibor with illustrative information on what kind of data the fixings of Nibor have been based on. The statement includes the Nibor Transparency model for the Nibor three months tenor, the tenor most widely used as interest rate reference in Norwegian kroner. This model illustrates how various individual factors have contributed to the observed development in Nibor. The statement is to be updated about four times a year.

DISCLAIMER

The information in this statement is unaudited and provided for illustration purposes only. The information may not be regarded as part of the provisioning of the interest rate benchmark Nibor, and the information cannot for any purposes be used as a benchmark.

Brief introduction to Nibor

Nibor - derived from “Norwegian Interbank Offered Rate” - is a collective term for Norwegian money market interest rates with maturities of one week, one month, two months, three months and six months. Nibor is intended to reflect the interest rate level a bank requires for unsecured money market lending in Norwegian kroner (NOK) to another bank. Norske Finansielle Referanser AS (NoRe) is the administrator for Nibor. Nibor is calculated and distributed by Global Rate Set Systems (GRSS), which also acts as licensing agent for Nibor. Information of the Nibor calculation methodology and the provisioning of Nibor is available at NoRe’s homepage - www.referanserenter.no.

Nibor is based on contributions of input data from a panel of six banks. The Nibor panel banks must be active in the market in which the redistribution of NOK liquidity takes place – in the relevant maturities and throughout the market’s trading hours – and have been active for a period of at least three months. The panel banks are also required to quote committing sales prices on Certificates of Deposits (CDs) or Commercial Papers (CPs) denominated in NOK, for the maturities 1, 2, 3 and 6 months. Minimum sales commitment is NOK 100 million for all maturities.

When determining its submissions, the individual bank shall follow the Nibor “waterfall methodology” priority of use of input data, summarized as follows:

- a. The bank’s own interbank lending transactions concluded with leading banks in the Norwegian Money Market with a minimum value of NOK 100 million at the same day as the Fixing. If none;
- b. The bank’s own borrowing transactions concluded from sales of CDs or CPs denominated in NOK with a minimum value of NOK 100 million at the same day as the fixing. If none;
- c. The bank’s committed price quotes on CDs or CPs denominated in NOK and expert judgements based on the bank’s weighted funding costs in USD and EUR, preferable prices from actual transactions. With exception for the one-week tenor, committed price quotes on CDs and CPs shall be given at least 50 percent weight in the calculations.

A spread shall be added to calculated borrowing rates, so that the submissions as best possible reflects the interest rates that the bank would charge for unsecured lending in NOK to a leading bank.

Nibor is fixed/calculated as trimmed averages of the interest rates submitted by the panel banks, where the lowest and the highest rates submitted are omitted.

For more information about Nibor please refer to the [Nibor Benchmark Statement](#) and the [Nibor Framework](#) published on NoRe's website.

Background data for the banks' Nibor submissions

As support for NoRe's control activity the Nibor Panel banks provide NoRe with background information on their submissions. The information required depend on which level in the waterfall methodology the submissions have been based on. For level a og b submissions information is to be provided about the relevant transactions, including whether or not interpolation or transactions with deviating maturity have been used. For level c submissions the banks provide information about CD/CP quotes, foreign funding interest rates, foreign exchange spot and term rates and the weights applied for each component in the calculations. For level b and c submissions the banks also provide information on the spreads used for transforming borrowing rates into offered/lending rates.

Nibor input data

The Norwegian money market is characterised by liquidity, in terms of volume, being redistributed between the major market participants by using the currency swap market. This has been the situation all the time since the liberalisation of the credit markets in the early 1980s. The use of currency swaps reflects the characteristics of the small open Norwegian economy, with relatively large international engagements connected to trade in raw materials and shipping. In later years, after the Financial Crisis, the use of unsecured interbank market lending in Norwegian kroner has contracted even more, in line with the developments observed internationally.

The lack of unsecured NOK-denominated interbank market transactions implies that the submissions to Nibor with few exemptions are of type c. Table 1 below show statistics on the types of submissions received since the reporting of background data was introduced in April 2020.

Table 1. Nibor submissions statistics. All tenors. 01.04.2020-31.03.2021

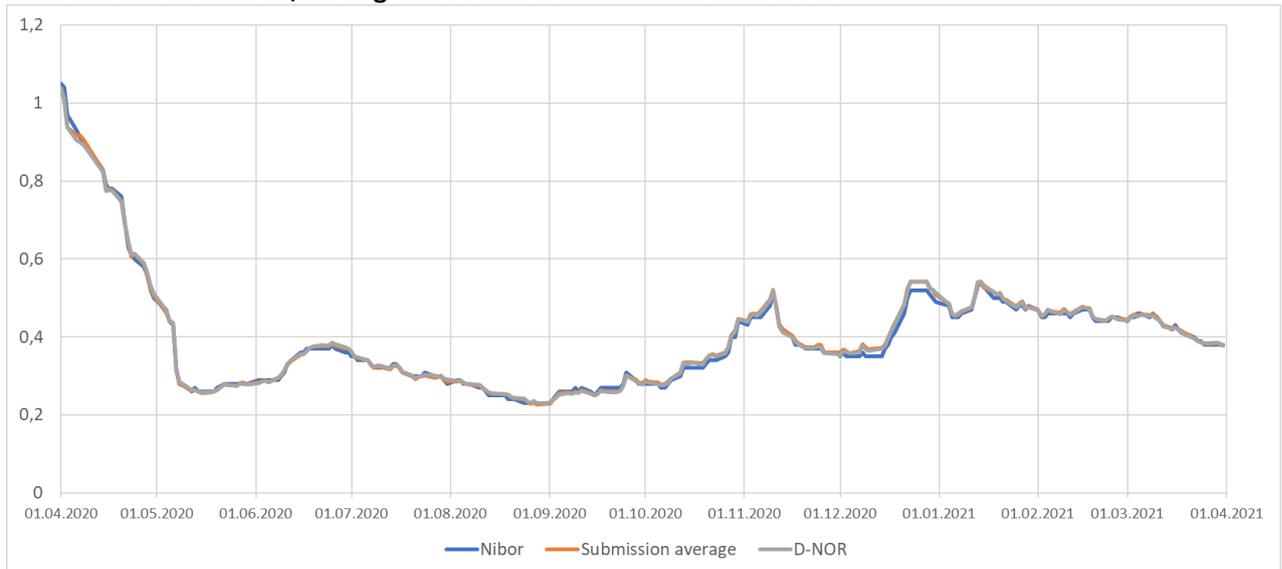
Period	Number of business days	Number of fixings	Number of submissions			
			Total	Level a	Level b	Level c
01.04.-30.06.20	59	295	1770	0	0	1770
01.07.-30.09.20	66	330	1980	0	0	1980
01.10.-31.12.20	64	320	1920	0	1	1919
01.01.-31.03.21	63	315	1890	0	1	1889

The Nibor Transparency model

Since Nibor, with few exemptions, are based on level c submissions, the different underlying input data received from the banks on their input data to level c submissions may be used to illustrate how separate factors have contributed in the calculation of Nibor. The Nibor Transparency model, described in this statement, calculates a Norwegian Krone Offered Rate based on averages of individual input data and averages of the weights used by the banks. This illustrative derived rate is called "D-NOR" in this statement.

Nibor is calculated as a mean of Nibor submissions omitting the lowest and highest submission. This trimmed mean is normally not very different from a simple average of all contributions. Nibor, average of submissions and D-NOR is shown for the Nibor 3-month tenor in Chart 1 below.

Chart 1. 3-month Nibor, average of submissions and D-NOR. Percent



The Nibor contributions of type c) in the waterfall methodology is the result of calculations in each panel bank using the following formula:

$$R_{PB} = r_{PBcp} * W_{PBcp} + (r_{PBeur} + t_{PBeur}) * W_{PBeur} + (r_{PBUSD} + t_{PBUSD}) * W_{PBUSD} + \text{margin}_{PB}$$

where

“ R_{PB} ” is the Nibor submission of type c from the panel bank (“PB”),

“ w ” is the weight used on each component, in sum equal to 1,

“ r ” is interest rates from different markets,

“ t ” is the term premia from the foreign exchange marked expressed as an interest rate and

“cp”, “eur” and “USD” is short for CP/CD, euro and US dollars respectively.

The transparency model isolates the individual components into sub-submissions representing the mean of received data for each individual factor.

- CP/CD-prices (expressed as an interest rates): cp
- Foreign funding costs: r_{eur} and r_{USD}
- Foreign Exchange Term premia (expressed as interest rates): t_{eur} and t_{USD}
- Lending-borrowing margin/Spread: margin

Thereafter the offered rate (D-NOR) is calculated as a weighted average of these mean-sub-submissions using the averages of the banks’ calculation weights for each factor and the following formula:

$$D-NOR = r_{cp} * W_{cp} + (r_{eur} * W_{eur} + r_{USD} * W_{USD}) + (t_{eur} * W_{eur} + t_{USD} * W_{USD}) + \text{margin}$$

The results of the calculations are presented for the Nibor 3-month tenor below in chart 2, where

$$CP \text{ component} = r_{cp} * W_{cp}$$

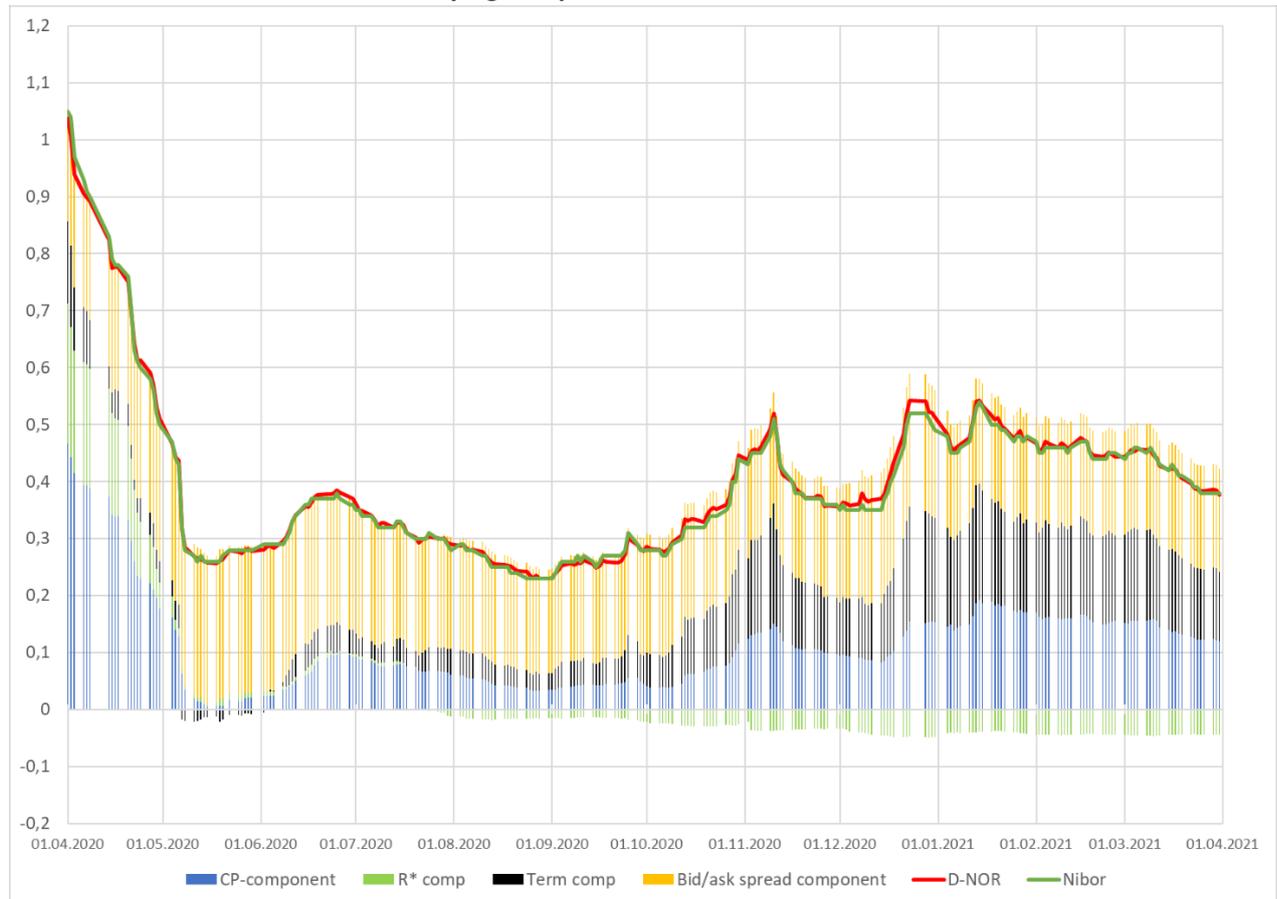
$$R^* \text{ comp} = r_{eur} * W_{eur} + r_{USD} * W_{USD}$$

$$\text{Term comp} = t_{eur} * W_{eur} + t_{USD} * W_{USD}$$

$$\text{Bid/ask spread component} = \text{margin}$$

The components are shown as stacked columns. D-NOR and the corresponding Nibor fixing values are shown as lines.

Chart 2. 3-month D-NOR and underlying components. Percent.



The chart shows that in the period April – mid May 2020 all underlying components contributed positively to the calculated Nibor, in a situation where markets - both in Norway and internationally - were strongly affected by the Corona pandemic and countermeasures by central banks. During a short period in May 2020, the panel banks reported 3 months funding levels close to zero, resulting in Nibor being close to the bid/ask spread (the yellow area). This spread also widened somewhat, before stabilizing at a level around and mostly below 20 bp as from July 2020. As from September 2020 the NOK interest level were influenced by domestic factors, especially more uncertainty about the availability of short-term liquidity in the money market. The banks reported higher foreign exchange term components (black area), while assessments of own foreign funding costs (green area) remained relatively unchanged. Rates on CD/CP (blue area) showed a development similar to the term component.

The explanatory power of the model is somewhat limited when it comes to the part of Nibor movements being explained by changes in CD quotes. CD quotes are required to be given at least 50 percent weight in the Nibor submissions. However, the data indicates a clear historical correlation between the prices on CDs and NOK borrowing costs calculated from foreign funding costs and foreign exchange term premia (the sum of the Term- and R*-component), which reflects that both data sources indicates similar NOK funding cost developments.

The model uses information connected to level c-submissions only. As long as the majority of submissions continues to be based on level c, the model will illustrate the factors behind the movements in Nibor. However, if submissions of type a) and by b) become frequent, the model's explanatory power will be reduced.