



A study of Nibor fallback provision

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1. Executive Summary

Nibor is a critical benchmark subject to the EU Benchmark Regulation (BMR) 2016/1011¹. No plans exist for any cessation or replacement of Nibor in the foreseeable future.

Nevertheless, BMR Article 28(1) states that an administrator shall publish a procedure concerning the actions to be taken by the administrator in the event of changes to, or the cessation of, a benchmark. Furthermore, following the IOSCO Principles for Financial Benchmarks, administrators should encourage users of their benchmarks to make sure that they have robust fallback provisions and may provide a guide on the selection of a credible, alternative benchmark.

As the administrator of Nibor, Norske Finansielle Referanser AS (NoRe) has developed relevant policies which outline the steps that will be taken to ensure an orderly transition to an alternate benchmark, if such a benchmark exists. When it comes to a contingency benchmark, the Working group on Alternative Reference Rates for the Norwegian kroner (the ARR Group) has published a recommendation for replacement rates to be applied if one or more tenors of Nibor are to be ceased and at least one longer and one shorter Nibor tenor will not be published to interpolate between.

The purpose of this document is to inform users of Nibor about the ARR Group's recommendation. NoRe and Global Rate Set Systems (GRSS) have calculated historical fallback rates to Nibor based on the model published by the ARR Group. The calculations are meant for analytical purposes only and should not be mixed with the calculations made by a delegated calculation agent of fallback rates as stated in ISDA protocols for derivatives contracts. The ARR Group has recommended that the same fallback rates for Nibor should be applied across different markets and products.

NoRe's calculations are graphically illustrated, displaying the historical relationship between the ARR Group's recommended Nibor Fallback rate and Nibor. Supplementary comments concerning similarities and differences are applied. The legal references, calculations, illustrations and comments provided are aimed at assisting Nibor users in their assessment of fallback rates. This document is also part of NoRe's efforts to develop and update its own policies.

2. Nibor and NoRe's role as administrator

Nibor (Norwegian Interbank Offered Rate)[®] - is a collective term for the Norwegian money market interest rates provided by Norske Finansielle Referanser AS (NoRe). Nibor is intended to reflect the interest rate level which a bank requires for unsecured money market lending in Norwegian kroner to another bank. Nibor is calculated and published for 1 week, 1, 2, 3 and 6 months. The calculations are based on data submitted by a panel of banks.

¹ REGULATION (EU) 2016/1011 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 8 June 2016 on indices used as benchmarks in financial instruments and financial contracts or to measure the performance of investment funds and amending Directives 2008/48/EC and 2014/17/EU and Regulation (EU) No 596/2014

NoRe is the administrator for Nibor. NoRe is established in Norway. Norway is not a member of the EU, but part of the European Economic Area (EEA). The European Benchmarks Regulation (BMR) was included in the EEA Agreement and incorporated in the Norwegian legislation in December 2019. In October 2020 NoRe was authorised as administrator by the Norwegian Financial Supervisory Authority pursuant to Article 34 of the BMR. As such, NoRe is included in the register of administrators and benchmarks published by The European Securities and Markets Authority (ESMA).

Based on the definition provided in BMR Article 3 (22) Nibor is an ‘interest rate benchmark’. In July 2021 the European Commission added Nibor to the list of critical benchmarks used in financial markets established pursuant to BMR, with reference to the conditions laid down in BMR Article 20(1), point (b).

The *Nibor Cessation Policy* outlines the processes that NoRe will undertake if production of Nibor is to be ceased in its entirety or in any individual tenor. The *Nibor Transition Policy* outlines the steps that NoRe will take to ensure an orderly transition, either to a new benchmark administrator in the case that NoRe can no longer be administrator of Nibor, or in the case that Nibor is discontinued, to an alternative benchmark, if such a benchmark exists.

With reference to the Nibor Transition Policy, NoRe will determine whether there are any alternate benchmarks that closely match the Nibor benchmark, and which may be considered viable alternatives. Relevant criteria for such determination would comprise:

- Other benchmarks on the same underlying market
- Other benchmarks in related or similar underlying markets where there is a known differential

The study revealed in this document is an important part of NoRe’s efforts to develop the Nibor Transition Policy.

For more information about Nibor, BMR and NoRe, please visit www.nore-benchmarks.com.

3. Fallback provision – recommendations and regulations

In 2013 the International Organization of Securities Commissions ([IOSCO](http://www.iosco.org)) published the report “Principles for Financial Benchmarks”. The report contains a set of recommended practices that should be implemented by benchmark administrators and the entities supplying input data to the benchmarks. The report also advises on regulatory actions. The principles have become the standard reference for the development of public regulation of financial benchmarks worldwide. Following the IOSCO Principle 13, on transition, administrators should encourage users of their benchmarks to take steps to make sure that:

- Contracts or other financial instruments that reference a Benchmark, have robust fall-back provisions in the event of material changes to, or cessation of, the referenced Benchmark; and*
- Stakeholders are aware of the possibility that various factors, including external factors beyond the control of the Administrator, might necessitate material changes to a Benchmark.*

The administrator's policies and procedures could include *"Criteria to guide the selection of a credible, alternative Benchmark [...] that seek to match to the extent practicable the existing Benchmark's characteristics"*.

The BMR implement the IOSCO Principles in the European Economic Area (EEA). According to BMR Article 28(1), an administrator shall publish a procedure concerning the actions to be taken by the administrator in the event of changes to or the cessation of a benchmark. For users of benchmarks, BMR Article 28(2) states that:

"Supervised entities other than an administrator as referred to in paragraph 1 that use a benchmark shall produce and maintain robust written plans setting out the actions that they would take in the event that a benchmark materially changes or ceases to be provided. Where feasible and appropriate, such plans shall designate one or several alternative benchmarks that could be referenced to substitute the benchmarks that would no longer be provided, indicating the reasons for the suitability of such alternative benchmarks. The supervised entities shall, upon request and without undue delay, provide the relevant competent authority with those plans and any updates and shall reflect them in their contractual relationship with clients."

4. The Working Group on Alternative Reference Rates in Norwegian kroner

The working group on alternative Reference Rates in Norwegian kroner (ARR Group) was established in 2018 by Norges Bank in consultation with the financial industry. In September 2019, the ARR Group recommended a reformed version of Nowa (Norwegian Overnight Weighted Average) as an alternative reference rate in Norwegian kroner. Since 01 January 2020, when Norges Bank became the administrator for Nowa, reformed Nowa is being calculated. An estimate of reformed Nowa provided by Norges Bank has been applied for historical reformed Nowa (before 2020).

The second phase of the ARR Group's work is divided into two parallel work streams organized as two sub-groups:

- 1) Market standards for Nowa as a reference rate and fallback solutions for Nibor
- 2) Establishing an OIS (Overnight Index Swap) market in NOK

In December 2020, the ARR Group published reports on both work streams, and the respective sub-groups were given revised mandates for the continued work. Information about the ARR Group, its work and reports are available at <https://www.norges-bank.no/en/topics/liquidity-and-markets/working-group-arr/>.

The ARR Group's recommendations on fallback rates for Nibor was presented in the report ["Recommended market conventions for Nowa and fallback solutions in the event of a cessation of Nibor"](#). The objectives of the work had been based on the following principles:

- *as far as possible seek to recommend solutions that minimise value transfer in the event of a cessation of Nibor*

- *as far as possible seek to recommend the same conventions and fallback solutions across products denominated in Norwegian kroner, as well*
- *as far as possible seek to recommend the same conventions and fallback solutions across currencies.*

The ARR Group's recommended fallback solution is based on adding the Nowa («Term-adjusted Nowa») and the median of 5 years historical difference between Nowa and the individual Nibor tenor («Spread-Adjustment Factor»). The recommendation is based on input from various actors through two consultation reports and relies heavily on the work done in similar working groups for other key benchmark interest rates ("ibors") internationally, including, but not limited to, ISDA and ARRC.

In the report the ARR Group recommend the following fallback-clause:

"In the event of a public statement from the Administrator, The Financial Supervisory Authority of Norway, the court or any entity with insolvency or resolution authority over the Administrator, that Nibor will cease to be published or that the Administrator will no longer provide Nibor, provided that, at the time of the latter statement there is no successor administrator that will continue to provide Nibor, the parties agree that Nibor will be replaced with the Replacement Rate from the date Nibor is no longer published, with effect from the first subsequent interest period.

If the Administrator announces that one or more Nibor tenor(s) will no longer be published, and the announcement means that from a certain point in time, at least one longer and one shorter Nibor tenor will not be published to interpolate between for a given tenor, the relevant tenor shall be replaced by the replacement rate from that point on.

'Administrator' means the administrator of Nibor.

'Fallback Rate' means the sum of term-adjusted Nowa and the spread-adjustment factor for the relevant Nibor tenor.

'Term-adjusted Nowa' means the daily compounded Nowa rate with a two-day observation shift multiplied by 360/365.

The **'spread-adjustment factor'** means the historical median difference between The Term Adjusted Nowa and the relevant Nibor tenor in the 5-year period up to and including the date no later than two banking days prior to the statement."

The recommended fallback clause is an adaptation of the fallback clauses recommended by ISDA on derivatives and the ARRC for the reference rate USD Libor, and should, in the opinion of the working group, be applied across different markets and products.

In mathematical terms, the working group's recommended fallback rate is formulated as:

$$FR_{f,t} = ARR_{f,t} + SA_{f,t}$$

Where

$FR_{f,t}$ is the Fallback Rate for tenor f on fixing day t

$ARR_{f,t}$ is the average compounded Nowa in arrears for tenor f on fixing day t

$SA_{f,t}$ is the spread adjustment for tenor f on fixing day t

For more details, please refer to the ARR Group's report.

5. Important aspects to consider related to the fallback rates

Fallback rates in financial contracts or instruments may follow from the use of standardized documentation developed by standard setting organizations like ISDA, or from agreements between the parties to the individual contracts or instruments. It is important that the parties involved have sufficient knowledge about the provisions embedded concerning a benchmark cessation event and the consequences, both in financial and practical terms.

The fallback rates recommended by the ARR Group are not to be considered as financial benchmarks before the Nibor fallback clause is triggered. The replacement rates are to be used in contracts and instruments that already is referring to Nibor only.

Nibor is a forward-looking interest rate benchmark which is fixed at trade date (T) and counts interest days from T+2 until maturity (M). The fallback rates recommended by the AAR Group are based on a backward-looking methodology, calculated in the arrears at maturity. Thus, interest rate payments due will not be known with certainty until two business days before payment valuation date. The backward-looking approach introduces an element of uncertainty which must be acknowledged by both users and their back-office functions which are involved in preparing the payment instructions.

Furthermore, Nibor is based on market prices which incorporates both expectations about the central policy rate, assessments of market liquidity and credit risk. The recommended fallback rate is the sum of i) the "Term-adjusted Nowa", which is the compounded Nowa from T until M-2 and ii) a "Spread-adjustment Factor", which is the median of the spread between Nibor and the "Term-adjusted Nowa" for the historical period between T-5 years and T. The calculations are based on two days observation shift, and count interest days from T until M-2 (Nibor maturity date minus 2 business days).

Since Nowa is an overnight rate and nearly risk free, it tends to closely follow the Norwegian Central Bank policy rate. Hence, the first element of the recommended fallback rate, the "Term-adjusted Nowa", tends to be stable and close to the central bank's policy rate. It reflects no market risks, and it will change in "shifts" which will be mirroring changes to the central bank policy rate. The "Spread-adjustment Factor" adds an element which reflects market risk to the fallback rate. This factor is based on the historical difference between Nibor and the compounded Nowa over the last 5 years. With such a long historical basis, the "Spread-adjustment Factor" tends to be very stable over time.

6. Illustrations of historical recommended fallback rates vs. Nibor

The ARR Group's mathematical formula for the calculation of the recommended fallback rates was presented in Chapter 4. Provided that a user has the necessary historical input data available, this information is assumed to be sufficient for calculating the fallback rates.

However, the calculations are relatively complicated and dependent on a set of details that are not necessarily readily available for all stakeholders. To assist Nibor users in their assessments of the recommended fallback rates, chart 1 to 5 in the Annex to this memo provide illustrations of how fallback rates based on the ARR Groups recommended methodology have performed since 2016 in comparison to the relevant Nibor tenor. The calculations have been made by NoRe and Global Rate Set Systems (GRSS) – the calculation agent for Nibor. The rates are provided for analytical purposes only and must not be mixed with the calculations which later will be made available by a delegated official calculation agent for fallback rates.

The illustrations display a similar pattern for Nibor and the respective historical Fallback Rates, especially for the shortest tenors. The longer the maturity, the larger the discrepancy between the movements in the individual Nibor and its historical fallback rate. This follows from the backward-looking calculation methodology, which implies that market developments between trade date and maturity date will have more significant effects the longer the maturity is.

Nibor reacts to expectations about a future change in interest rate levels, in particular as a consequence of expected changes to the central bank's policy rate. The fallback rate will react gradually as the varying Nibor rate affects the Spread-adjustment Factor. The fallback rates will also integrate an unexpected change in the policy rate differently than Nibor, as they accumulate developments from maturity and back to the start of each tenor. During periods where the market interest level is flat over a longer period of time, Nibor and the recommended fallbacks rates will converge.

7. The use of fallback rates – A practical example

As explained in Chapter 6, there are several reasons why the fallback rate and Nibor will differ, both over time and especially from day to day. It is evident from the charts presented in the Annex to this memo that the calculated historical fallback rate overscores and underscores Nibor over long periods of time. To make it easier to understand the differences observed at a certain point in time, NoRe has explained the difference between Nibor and the fallback rate for a tenor of 3 months.

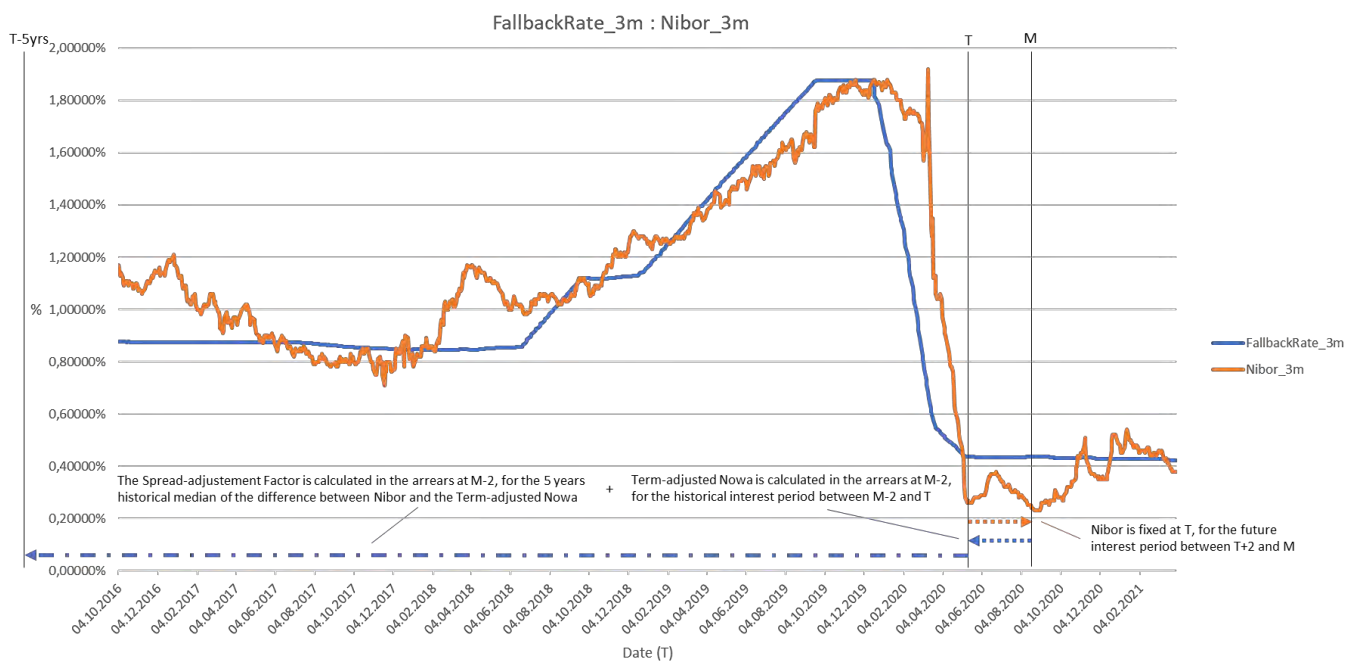
The 3-months Nibor traded on 19 May 2020 was fixed at 0,26%. On this day Nibor reflected an interest rate environment where the central bank policy rate had been cut to 0,00%. On the day of this example, the market was influenced by relatively high uncertainty about developments in the coming months. The Central Bank's liquidity policy measures included access also to medium term financing at the overnight policy rate, and the markets participants did not rule out the possibility of the central bank lowering its policy rate even more. Additional financial budgetary policy measures had been added as a response to the Covid 19 pandemic situation. All these factors affected the forward-looking Nibor.

The fallback rate of 0,44% for the same 3 months tenor was calculated in the arrears three months later as the sum the “Term-adjusted Nowa” and the “Spread Adjustment Factor”. The first component was close to zero, since the Nowa reflected the central bank policy rate. Thus, the second factor decided the fallback rate. This factor was based on the difference between Nibor and the compounded Nowa, and calculated as the median of daily observations over the last five years. The fallback rate took into account what actually happened in the market during the 3-month period prior to maturity in August. It was stable, both due to the fact that the policy rate was not lowered further and owing to a very long term and stable risk-adjustment factor.

For this observation period the Fallback Rate overscored the Nibor by 0,18% (0,44%-0,26%). Since neither fiscal or liquidity measures nor the interpretation of risks into the future are elements of the fallback rate, the fallback rate tells nothing of the potential future, but all of the past.

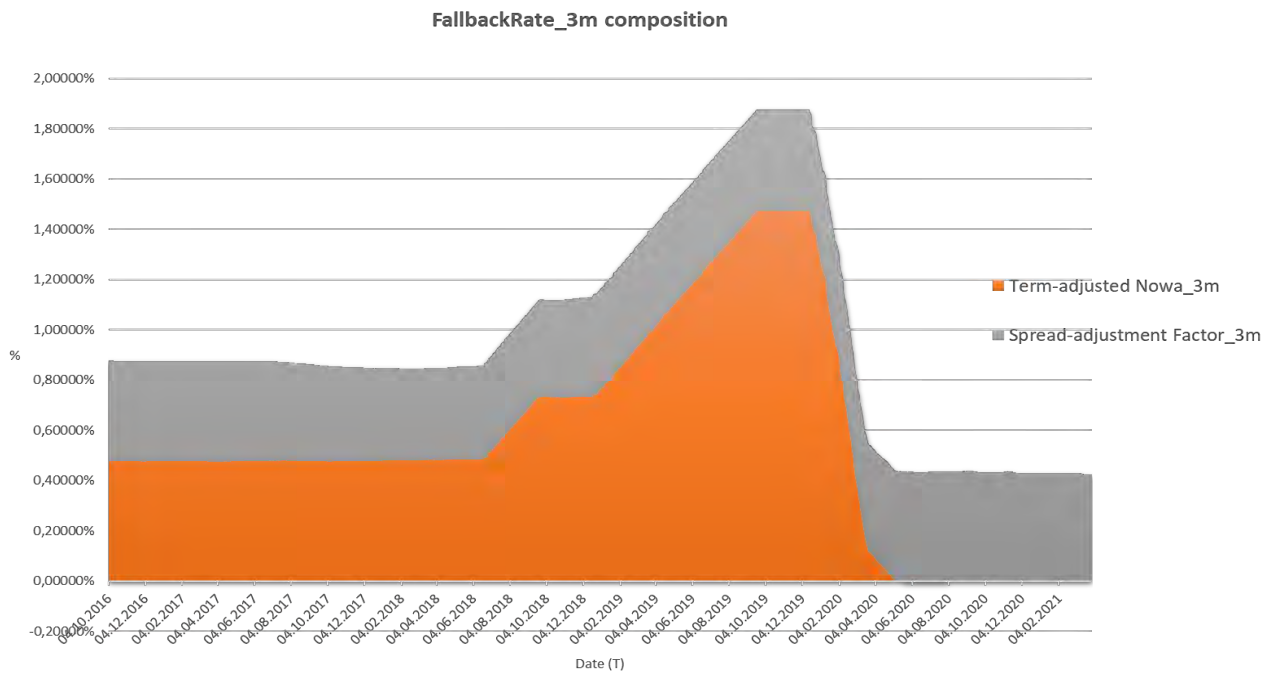
The objective of this example was to demonstrate how and why the recommended fallback rate will deviate from Nibor at a time with high market uncertainty and a recent cut in the central bank policy rate. The example is illustrated in chart A, and a decomposition of the historical 3-months fallback rate is illustrated in chart B below.

Chart A. Example 19 May 2020 - Nibor and calculated historical fallback rate



Source: Norske Finansielle Referanser AS (NoRe)

Chart B. Calculated historical fallback rate – 3 months - Decomposed



Source: Norske Finansielle Referanser AS (NoRe)

8. Concluding remarks

While there is no plan to cease the provisioning of Nibor, all users of Nibor should have in place robust contingency arrangements. NoRe aims to provide updated guidance on available replacement rates. The legal references, explanations and illustrations in this memo are aimed at assisting Nibor users in their assessment of such fallback rates. Hence, the intention of this document is to inform users as a basis for their own analysis and assessments.

The document is also part of NoRe’s efforts to develop and update its own policies.

ANNEX: Nibor and historical Fallback rates

Source for all Charts: Norske Finansielle Referanser AS (NoRe)

Chart 1. Nibor and calculated historical fallback rate – 1-week - % p.a.

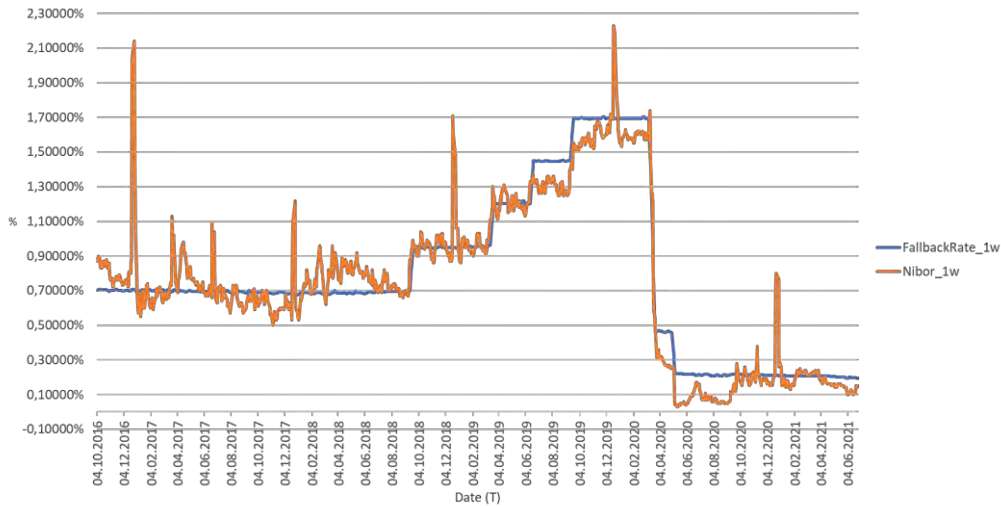


Chart 2. Nibor and calculated historical fallback rate – 1-month - % p.a.

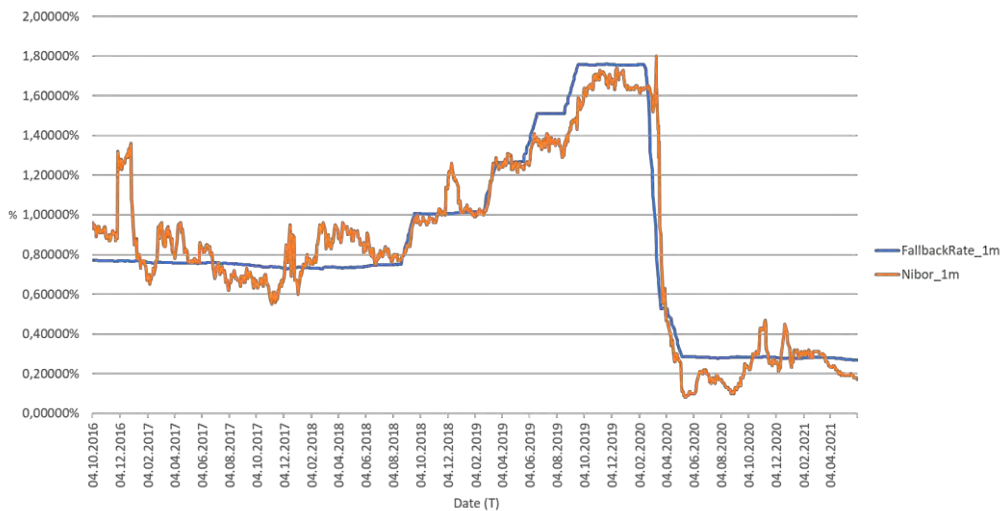


Chart 3. Nibor and calculated historical fallback rate – 2-months - % p.a.

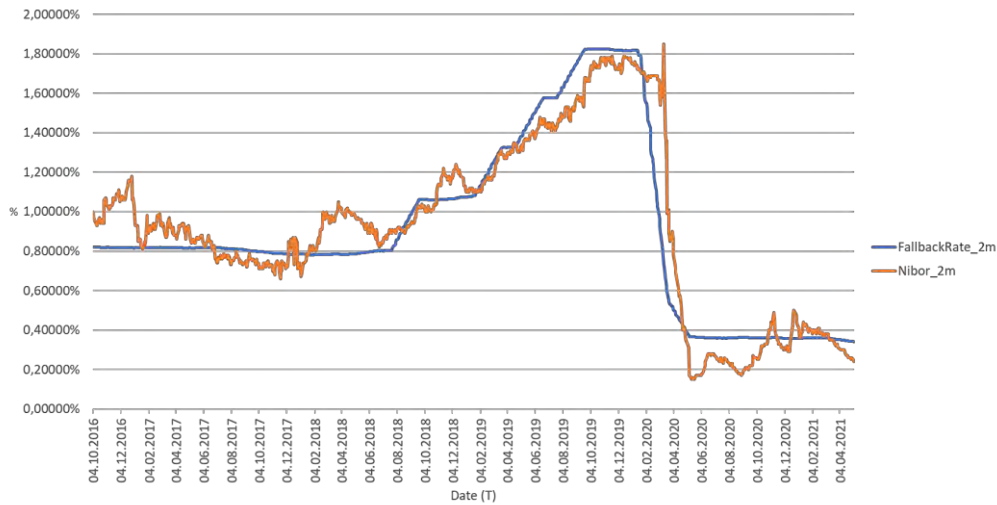


Chart 4. Nibor and calculated historical fallback rate – 3-months - % p.a.

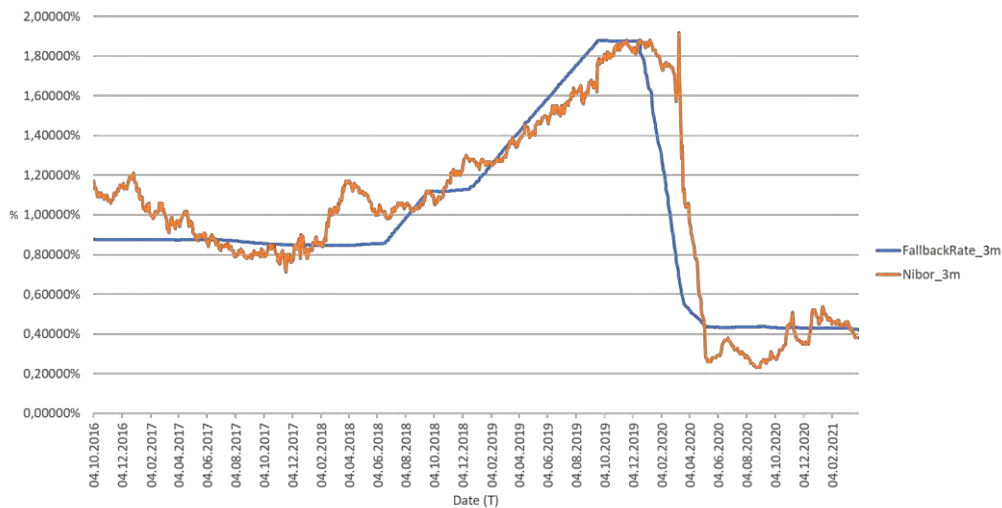


Chart 5 Nibor and calculated historical fallback rate – 6-months - % p.a.

