CONSULTATION REPORT:

ESTABLISHING AN OVERNIGHT INDEX SWAP (OIS) MARKET IN NOK

WORKING GROUP ON ALTERNATIVE REFERENCE RATES FOR THE NORWEGIAN KRONE

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Contents

Introduction

A working group on alternative Norwegian krone reference rates was established by Norges Bank, in consultation with the financial industry, in early 2018. The main objective of the first part of the group's work was to recommend an alternative reference rate for the Norwegian krone. The working group published its recommendation of a reformed version of Nowa (Norwegian Overnight Weighted Average) as the alternative reference rate at the end of September 2019.[1]

Since then, the second phase of the group's work on alternative reference rates has been focusing on how to transition to using Nowa as an alternative reference rate. Two subgroups have been established, focusing on:

(1) Market standards and fallback solutions

(2) Establishing an OIS (Overnight Index Swap) market in NOK

In this consultation, subgroup (2) elaborates on the work done on establishing an OIS market in NOK. The working group identifies a number of factors that argue in favour of developing an OIS market in Norway, but also identified a number of obstacles that will need to be overcome in order to achieve this. Some suggestions as to how these challenges can be overcome are listed in the last part of the report.

The working group now seeks views and feedback from market participants. Based on this input the working group aims to publish a report with its final recommendations by the end of 2020. The report will look to establish a plan and timeline for the establishment of an OIS market linked to Nowa.

Responses and comments on this report can be sent to the secretariat at ARR@norges-bank.no by 1st September 2020.

1. Background and mandate

Use of interest rate derivatives in Norway

A well-functioning interest rate derivatives market is important for market participants wishing to hedge against interest rate risk. Interest rate derivatives are also widely used by participants wishing to speculate on changes in market yields. The interest rate derivatives market in Norway uses Nibor as a reference rate. A key reason for this is that a very large number of loan and bond contracts in Norway are agreements with floating interest rates based on Nibor. In other words, market participants' interest rate risk through payments and receivables is linked to Nibor, which in turn generates demand for interest rate derivatives with Nibor as the underlying benchmark.

[1] https://www.norges-bank.no/globalassets/upload/markeder/arr/arr_report_-reccommendation_-alternative_reference_rate.pdf

In line with global trends of increasing use of alternative reference rates, Nowa may be increasingly used as a benchmark for financial products in Norway. Greater use of Nowa as a benchmark in financial contracts will likely also lead to greater demand for interest rate derivatives linked to Nowa. An OIS (overnight index swap) market in Norway linked to Nowa will be useful for market participants entering into contracts with Nowa as a benchmark and for participants wishing to speculate on the general level of market yields without being exposed to bank credit and liquidity risk.

Sub-group for establishing an OIS market in NOK

Norway is currently one of few countries without any form of OIS market. Other countries have also chosen overnight rates as alternative reference rates for their respective IBOR rates. Derivatives linked to overnight rates are likely to play an increasing role in global derivatives markets in the years ahead.

In view of this, the subgroup for examining an OIS market in Norwegian kroner has been given the following mandate:

- Prepare an official report with proposals for how to facilitate the establishment of an OIS market linked to Nowa.
- The report should include specific recommendations for how an OIS market linked to Nowa can be established and a plan for carrying out the recommendations
- The report should include recommended measures for increasing interest in derivatives linked to Nowa.

2. Current Market Status

The Norwegian Kroner (NOK) interest rate derivatives market is widely used by parties involved in the NOK financial markets. This includes, but is not limited to, banks, asset managers and insurance companies, hedge funds, the corporate sector and government and semi-government agencies. Note that this report will not cover Foreign Exchange Swaps, which are amongst the most widely traded interest rate derivative products but are not relevant to this report as the use of a reference rate is not required for these contracts.

Products

Although almost an infinite variety of derivative contracts can be created to meet specific purposes, this section will focus on the instruments and conventions that are generally used in the interbank market.

- **Forward Rate Agreements (FRAs):** FRAs are used to hedge against or speculate on the level of a specific NIBOR fixing on a future date. FRAs in Norway typically trade out of International Money Market (IMM) dates, with quotes widely available for the FRAs trading out of the next 12 IMM dates. FRAs most commonly use 3 month NIBOR as their reference rate, although FRAs referencing 6 month NIBOR are also traded. "Broken FRAs" - FRAs trading out of dates other than the IMM dates - are less liquid, but can also be traded.

- **Interest Rate Swaps (IRS):** Interest rate swaps are used to convert a string of floating interest payments to a string of fixed interest payments, or vice versa. Interest Rate Swaps in Norway by convention use 3 month NIBOR as the reference rate for all maturities less than 2 years, and 6 month NIBOR as the reference rate for all maturities 2 years or greater. The fixed rate is generally quoted on an annual 30/360 basis, with the floating NIBOR index quoted on a semiannual (for 6 month NIBOR) or quarterly (for 3 month NIBOR) Actual/360 Basis. IRS is most liquid out to the 10y maturity, but swaps out to 15y trade fairly regularly. Beyond 15yr liquidity is limited due to clearing constraints (see clearing section below).

- **Tenor basis swaps:** Tenor basis swaps allow participants to move risk from one NIBOR tenor to another (i.e. from 6M NIBOR to 3M NIBOR). In Norway these are generally traded using the "two swaps" model, i.e. a "6s3s basis swap" will be quoted as the difference between the fixed rate on a swap against 6 month NIBOR versus the fixed rate on a swap against 3 month NIBOR, and will be traded by booking two swaps against one another (in one direction versus 3 month NIBOR, and in the other direction versus 6 month NIBOR). These basis swaps are widely quoted and traded in the interbank market out to 15yr.

- **Cross-Currency Basis Swaps**: Cross-currency basis swaps are used to convert a string of floating interest payments in one currency into a string of floating interest payments in another currency, or vice versa, and also include an exchange of principle. Cross-currency basis swaps in Norway are generally traded versus USD (3mth NIBOR vs 3mth USD LIBOR), although trades versus EUR (3mth NIBOR vs 3mth EURIBOR) are not uncommon. The interbank market quotes assume quarterly FX resets with constant NOK amount and USD Credit Support Annex (CSA). After trading, adjustments are made to the dealt price if the parties have a non-USD CSA.

Clearing

A number of clearing houses offer clearing for NOK interest rate derivatives, with clearing mandated by regulators in some jurisdictions for certain participants/products. The vast majority of NOK interest rate derivatives are cleared on LCH, which offers clearing for:

- FRAs out to 3yrs and 3mths.
- IRS out to 16yrs.

Note that cross-currency basis swaps do not clear. According to data from LCH, the volume of outstanding NOK interest rate derivatives cleared on LCH stands at around 25 trillion NOK[2]. This volume is divided about evenly between IRS and FRAs.

Reference Rates

The NOK derivatives market currently exclusively uses NIBOR rates as reference rates. Published NIBOR tenors currently include 1 week, 1 month, 2 month, 3 month and 6 months, however generally only 3 month and 6 month NIBOR rates are used in practice, with the shorter tenors only used to calculate "stub" rates (when contracts have short first or last periods).

[2] https://www.lch.com/services/swapclear/volumes

3. The case for developing a NOK OIS Market

Discussions within the working group as well as consultation with parties active in the NOK fixed income market have identified a number of reasons to expect that Nowa might be increasingly used as a benchmark for financial products in Norway. Greater use of Nowa as a benchmark in financial contracts will likely also lead to greater demand for interest rate derivatives linked to Nowa. An OIS (overnight index swap) market in Norway linked to Nowa will be useful for market participants entering into contracts with Nowa as a benchmark and for participants wishing to speculate on the general level of market yields without being exposed to bank liquidity and credit risk.

Some of the advantages identified by the sub-group include:

- **Regulation:** The future of "IBOR" indices, including NIBOR, is uncertain from a regulatory perspective. This is discouraging a number of market participants from entering into contracts that use NIBOR as a reference rate, which inhibits the efficiency of the market. An alternative reference rate with a more certain future will be a welcome development.

- **Robustness:** NIBOR submissions are generated using a waterfall methodology[3], with expert judgement still heavily relied upon given the limited amount of unsecured lending transactions in the interbank market. NIBOR fixings are volatile, difficult to forecast and are heavily influenced by conditions in global money markets, rather than just the domestic Norwegian market. Nowa fixings are based on actual transaction data and are generally very stable at close to the Norges Bank target rate.[4]

- **Transparency:** Separating the NIBOR "premium" from the underlying base OIS rate is not readily achieved (i.e. decomposing NIBOR fixings into Norges Bank target rate expectations + a credit/liquidity spread). This means it is hard for market participants to quantify exactly what market expectations are for the Norges Bank target rate, adding complications to their hedging/speculative decisions.

- **Appropriateness/Relevance:** For many market participants, Nowa might be a more appropriate/relevant reference rate for use in financial contracts / securities. For example, the interest payments for a corporate that issues an FRN linked to NIBOR are exposed to the credit / liquidity conditions in Norwegian and international interbank money markets, which in many cases might not be relevant to the credit / liquidity conditions of the issuing entity. Linking contracts / securities to Nowa removes this bank credit and liquidity premium exposure.

[3] https://www.referanserenter.no/wp-content/uploads/2019/12/1-1-Nibor-Calculation-Methodology-V1.0-p.pdf

[4] https://www.norges-bank.no/en/topics/liquidity-and-markets/nowa/

- **OIS discounting:** When trades are collateralised / cleared, interest is paid/received daily at overnight rates and the cost of funding positions is therefore better represented by Nowa than NIBOR. Market practice is therefore to discount cash-flows for these trades using an OIS curve rather than an IRS curve. The lack of OIS market in Norway creates difficulties here: market participants are unable to hedge this discounting risk, and individual market participants are forced to build their own discounting curves without any external reference point. This creates unnecessary risk/uncertainty and increases market frictions.

- **Risk management**: Market participants are unable to adequately hedge risk in the very short-end of the curve using the currently available benchmarks/products. With liquidity generally only available in FRAs vs 3mth NIBOR, and generally only out of IMM dates, it is difficult to manage risk in the short-end of the curve to hedge or speculate on short-end interest rate movements. This is particularly true given that Norges Bank often schedules meetings just after the expiry of the quarterly IMM FRAs, leaving market participants with a lack of adequate hedging instruments.

- **Alignment with international markets:** With many major markets transitioning away from IBOR reference rates to alternative "risk-free"/OIS rates, it may become impractical to keep using NIBOR as the main reference rate for NOK interest rate derivatives. At a macro level, it is important for the Norwegian market to keep up with global standards in order to maintain market participation and liquidity. At a micro level there could be practical difficulties in certain products like cross-currency basis swaps if one leg is an OIS rate and the other an IBOR rate.

- **Nowa term rates:** A number of jurisdictions are looking at creating OIS term rates/indices for use in financial contracts that have overnight rates as the underlying reference rate. Having an available term rate (e.g. a daily 3mth OIS fix) will allow market participants to create contracts/products that more closely resemble today's IBOR market, where fixings are known at the start of the interest period rather than only finalised at the end of the period as is generally the case with OIS products. Such term rates are reliant on having a liquid derivatives market upon which to base these indices. Whether such term rates could be used in Norway is unclear and unlikely in the initial stages, but having an OIS market keeps this option open.

Question 1: Does your institution share these views and do you see any other advantages not identified in the list above?

4. Challenges in developing an OIS Market

- **Liquidity/transparency:** There is concern as to how to create liquidity in a new Nowa/OIS product. This is particularly if this product is to coexist with the existing NIBOR market, which runs the risk of "splitting" interest rates derivatives liquidity across two different indices. Given potential liquidity challenges, there are valid questions around transparency related to fair mid prices, execution spreads etc.

- **Mandates:** Some market participants will need to update investment/risk mandates in order to be able to trade Nowa-linked derivatives. The majority of market participants the working group spoke to did not anticipate this being a big hurdle.

- **Technical systems:** A larger concern for many market participants was updating technical systems. The majority of market participants the working group spoke to would require system updates in order to accommodate Nowa/OIS products, with estimates of the time required ranging between 6 to 18 months.

- **Volatility of fixings and credit spread:** Some market participants noted that spread volatility for credit products would increase if Nowa was used as the reference rate rather than NIBOR. NIBOR already has a credit component, so a large portion of general changes in credit conditions are captured in NIBOR fixings, meaning credit spreads on top of NIBOR are more stable. If Nowa is used as the reference rate, all changes in credit conditions will have to be reflected in credit spreads, leading to increased volatility. The counter argument to this is that fixings themselves should in general be expected to be significantly less volatile when Nowa is used as a reference rate.

- **Clearing:** Many market participants would require clearing before they would be able to trade Nowa/OIS. The vast majority of NOK interest rate derivatives are currently cleared on LCH, who have also expressed an interest in working with the working group to establish clearing on their platform for a future Nowa/OIS market. The working group is of course open to cooperation with other clearing houses who express an interest.

- **Other:** Concerns were raised about the impact of using Nowa as a reference rate on banks' asset/liability management. When assets are linked to NIBOR, banks have some buffer on the asset side when their funding costs (e.g. NIBOR) rise. This will not be the case if assets are linked to Nowa and has implications for financial stability, bank margins etc. Concerns were also raised as to how non-financial institutions will handle uncertain cashflows, given that compounding of a daily OIS rate is only known at the end of the accrual period. Both these concerns are legitimate concerns about transitioning to an overnight reference rate, but outside the scope of this working group's mandate.

Question 2: Does your institution share the concerns expressed in the list above? What do your institution see as the main challenge in developing an OIS market linked to Nowa?

5. How to facilitate the establishment of an OIS market linked to Nowa?

Liquidity/Transparency

In order to ensure liquidity in Nowa derivatives, the working group proposes enlisting the support of a number of banks that are active in the NOK interest rate derivatives market. These banks will endeavor to support the market by, at best efforts, making markets to customers, as well as directly to one another (up to a certain agreed upon amount and at a certain spread). Such reciprocal quoting arrangements are already in place amongst the local Scandinavian banks for NIBOR derivatives.

Initial indications from local banks are to quote one another ca 5bps wide in 50,000 NOK Dv01 in the following:

- IMM dated OIS for the first 8 IMM dates
- Spot start OIS with maturities 3m, 6m, 9m, 1y, 18m and 2y
- NIBOR/Nowa basis swaps for 2y+

Note that this would be a non-binding agreement and subject to change in changing market conditions.

The working group proposes working with interbank brokers that are active in the NOK interest rate derivatives market to ensure that appropriate “screens” are set up on financial market data vendors (e.g. Bloomberg and Refinitiv), such that indicative mid-market prices are made available to the wider market. This is important to ensure transparency and in order to have a number of independent price sources for use by clearing houses.

The working group also proposes to work with potential issuers of Nowa linked bonds, to encourage issuance that would help establish some “end-user” flow in the market and help to generate activity.

Question 3: Are there any other steps your institution thinks should be taken in order to improve liquidity and transparency in an OIS market linked to Nowa?

Systems/Mandates

In order to ensure market participants and trade affirmation platforms have enough time to get the appropriate systems and mandate changes in place, the working group would seek to ensure that the Nowa/OIS “launch date” is flagged far enough in advance. All product conventions would need to be established ahead of this, which will be done in liason with the sub-working group for market standards and fallback solutions and published later in 2020.

Question 4: How long time does your institution need to get appropriate systems and mandate in place?

Clearing/Trade Affirmation

The working group proposes to work with one or more clearing houses to ensure the ability to clear is available ahead of launch. This will likely require additional data / input with respect to issues like historical market data for margin and stress testing models, and decisions on potential compensation payments if discount curves are revised. LCH have expressed interest in establishing clearing and will maintain a dialogue with the working group as our work continues.

The working group will also work with trade affirmation systems to ensure setup ahead of launch. This is required for clearing and for smooth trade processing for market participants.

Question 5: Does your institution depend on clearing to be able to trade Nowa/OIS?

Timeline

Based on the indications received in its liasons with market participants and clearinghouses, the working group proposes setting Q3 2021 as an indicative launch date. A more detailed timeline with specific steps and goals will be published later in 2020 based on the feedback received to this consultation.

Question 6: Do you expect your institution to have systems, mandate and the interest to trade NOK OIS by the time of the indicative launch date?

Question 7: Do you have any other comments you would like to share with the OIS working group?