**SEK Overnight Index Swaps (STINA)**

NASDAQ Clearing provides clearing of Overnight Index Swaps denominated in SEK. OIS are interest rate swaps with a fixed rate and where the floating rate is made up of a series of fixings that are compounded until the settlement date. NASDAQ Clearing accepts OIS trades with a maturity of ten years from the registration day.

**Product specification**

<table>
<thead>
<tr>
<th><strong>Contract type</strong></th>
<th>Swap contract with cash settlement of the difference between a fixed rate and the reference rate, i.e. T/N STIBOR™</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Notional Amount</strong></td>
<td>The notional amount shall have a minimum of SEK 1,000,000 and a maximum of 50,000,000,000.</td>
</tr>
<tr>
<td><strong>Swap Period</strong></td>
<td>The period between Start Day and End Day. Swap Period is determined by the parties and shall be maximum ten years.</td>
</tr>
<tr>
<td><strong>Cash Settlement</strong></td>
<td>Cash Settlement shall occur on the interest rate period End Day through determination of a settlement amount based upon the Fixed interest rate amount and Floating interest rate amount.</td>
</tr>
<tr>
<td><strong>Tick size</strong></td>
<td>0.0001</td>
</tr>
<tr>
<td><strong>Fixed interest rate amount</strong></td>
<td>Shall be equivalent to an amount calculated on the nominal interest to which parties has agreed which accrues on the nominal amount within the agreed interest rate period calculated with ACT/360 or 30/360 day count convention</td>
</tr>
<tr>
<td><strong>Floating interest rate amount</strong></td>
<td>Shall be an amount calculated on the interest rate base on compounded T/N STIBOR™ rate which accrues on the nominal amount during the agreed interest rate period calculated with ACT/360 day count convention</td>
</tr>
<tr>
<td><strong>Reference rate</strong></td>
<td>T/N STIBOR™ calculated as compound interest rate</td>
</tr>
<tr>
<td><strong>Shifting of variation margin</strong></td>
<td>STINA swap contract will have a daily shift of the variation margin between the purchaser and seller. The posted/received variation margin will be interest compensated/charged with the previous Bank Day T/N STIBOR™ rate</td>
</tr>
<tr>
<td><strong>Series designation</strong></td>
<td>SEK_OIS_TN</td>
</tr>
<tr>
<td><strong>Listing</strong></td>
<td>Clearing listing</td>
</tr>
</tbody>
</table>

**Market model**

Transactions in overnight index swaps are either entered into on a bilateral basis or concluded on a trading venue and then submitted to Nasdaq Clearing for central counterparty clearing. Members wishing to clear SEK overnight index swaps need to have entered into a Default Management Commitment and have posted their Loss Sharing contribution to the Loss Sharing Pool as stipulated in the Loss Sharing Rules.

Clients can choose between a number of models for clearing with different options for segregation and portability. For more details on our clearing model and account structure please click [here](#).
Calculation of fixed and floating interest rate amounts

Example: One week SEK OIS
On 2014-04-09 a one week SEK OIS with notional amount of SEK 100 million is bought at 0.700 percent. Suppose the T/N STIBOR™ will be:

<table>
<thead>
<tr>
<th>Date</th>
<th>Rate</th>
<th>Days</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014-04-07</td>
<td>0.7520%</td>
<td>1 day</td>
</tr>
<tr>
<td>2014-04-08</td>
<td>0.7610%</td>
<td>1 day</td>
</tr>
<tr>
<td>2014-04-09</td>
<td>0.7680%</td>
<td>1 day</td>
</tr>
<tr>
<td>2014-04-10</td>
<td>0.7600%</td>
<td>1 day</td>
</tr>
<tr>
<td>2014-04-11</td>
<td>0.7680%</td>
<td>3 days</td>
</tr>
</tbody>
</table>

Calculation of fixed interest rate amount:

\[
0.007 \times \frac{7}{360} \times 100\,000\,000 = 13,611.11
\]

Calculation of floating interest rate amount:

Following formula shall be used for calculation between interest rates and amounts regarding floating interest for a particular period:

\[
R_c = \left( \prod_{i=1}^{d_0} \left[ 1 + \frac{r_i \times n_i}{360} \right] - 1 \right) \times \frac{360}{d}
\]

"\(R_c\)" is the compounded T/N STIBOR™ interest rounded to the nearest one hundred-thousandths of a percentage point, i.e. if expressed in interest rate in percent it shall be rounded to five decimals

"\(i\)" is a series of whole number from one to \(d_0\) each representing the relevant Bank Day in chronological order from, and including, the first Bank Day in the relevant Interest rate Period

"\(r_i\)" for any day "\(i\)" in the relevant Interest rate Period is a reference rate equal to the daily fixing for T/N STIBOR™ on the day that is one Bank Day preceding that day "\(i\)".

"\(n_i\)" is the number of days in the Interest rate Period which the rate is \(r_i\)

"\(d_0\)" is the number of Bank Days in the Interest rate Period

"\(d\)" is the number of days in the relevant Interest rate Period

If spread is used then it should be added to the rounded \(R_c\)

\[
A_c = N \times R_c \times \frac{d}{360}
\]

"\(A_c\)" is the amount calculated from the compounded T/N STIBOR™ interest

"\(N\)" is the Nominal amount.

Calculation for "\(R_c\)":

\[
R_c = 0.76547\% 
\]
Then calculation for floating interest rate amount $A_c$:

\[ A_c = 14,884.14 \]

Settlement for a bought one week SEK OIS will then be = floating interest amount – fixed interest amount:
\[ 14,884.14 - 13,611.11 = SEK 1,273.03 \]

**Trade registration**

Trade registration of SEK IRS can take place in MarkitWire, Clearing Workstation and via OMnet API. MarkitWire is an external affirmation platform used by most market participants in the swap market. NASDAQ has integrated to MarkitWire via a proprietary gateway, i.e. that all SEK OIS trades registered in MarkitWire with clearing at NASDAQ will be sent via the gateway to our clearing system, Genium INET. All trades will be subject to a pre-novation check and if both buyer and seller have sufficient collateral the trade will be novated. A novation broadcast will be sent to the buyer, seller and to MarkitWire in order to reflect the correct status of the trade.

Clearing Workstation is a back office application offered to all NASDAQ clearing members. The application is used for trade registrations, trade allocations, position handling and clearing report administrations etc. For more details on trade registration of SEK IRS in Clearing Workstation, see the Clearing Workstation User’s Guide.

OMnet API is NASDAQ’s proprietary API that clearing members can integrate with. Detailed information about OMnet API is available in Protocol specifications.

**Risk Model**

OIS swaps use the Cash Flow Margin (CFM) as risk model. CFM is a yield curve based risk model where the yield curves is used to determine the future cash flows and calculate the present value of the fixed and floating leg. The approach towards risk is based on Principal Component Analysis (PCA) where the first three principal components are used for stressing the curve. More information about the CFM model is available here.

**Upfront payment**

NASDAQ support IRS trades with one upfront payment. The upfront amount must be agreed and registered as part of the original trade details. The amount, payer/receiver and the pay date shall be agreed by the parties. The currency must be SEK.

**Backloading historical interest rate swaps**

NASDAQ support registration of historical OTC Rates trades. With historical trades we refer to trades agreed before the current business date. For historical trades, already settled cash flows will not be managed by NASDAQ, only the remaining cash flows will be settled through NASDAQ.

Historical trades can be sent for clearing via MarkitWire, Clearing Workstation 1 and the OMnet API. Historical trades can also be sent directly to the clearinghouse using a template that is available upon request (email fixedincomesweden@nasdaq.com). The clearinghouse will simulate the collateral requirement for the historical trades in the file and, if necessary, request that collateral is pledged to the clearinghouse prior to trade registration. Once sufficient collateral is posted the clearinghouse will register the historical trades and they will be novated.

**Pre-novation**

Novation, meaning the stage at which the clearinghouse substitutes existing contracts with two new ones, in relation to the buyer and seller takes place following a pre-novation check. When a trade is novated by the clearinghouse, there is no counterparty relationship between the buyer and seller instead both parties have the clearinghouse as counterparty.

All swap transactions submitted for clearing will be subject to a pre-novation check. The purpose of a pre-novation check is to verify that both buyer and seller have sufficient collateral to cover both their existing portfolios and the new registered trades. If both parties have sufficient collateral to cover the new trades, the trades will be novated by the clearinghouse immediately. Should any party to a trade lack sufficient collateral the deal will be rejected.
Compression and netting

In collaboration with TriOptima Nasdaq offers a portfolio compression service that is available to members that clear swaps at Nasdaq and also have a membership at TriOptima. The netting service is mainly targeted for end clients but are open for all parties who clear swaps or forward rate agreements. For more information on compression and netting of OTC rates products please consult the "Compression service and manual netting" document available online alongside the product guides or contact the Fixed Income team.

Shifting of variation margin and variation margin interest

For SEK OIS, the market value is shifted on a daily basis. The shifting consists of two components:

Variation margin (VM)

Variation margin interest (PAI)

Both components are calculated at close of business on every business day (T). A portfolio with a positive variation margin will receive a VM payment the following bank day (T+1) and pay PAI on the bank day following T+1 (i.e. T+2). PAI calculations are based on STIBOR™ TN from day T. If STIBOR™ TN rate is negative the party receiving VM on T+1 will also receive PAI on T+2.

Shifting is done daily through the clearinghouse and all cash flows (incl. VM and PAI) are netted with other flows in the same currency to form one net amount to pay or receive per clearing day. Picture below illustrates the flow.

---

**T**

At close of business, VM and PAI are calculated

**T+1**

VM (from T) settles

At close of business, VM and PAI are calculated

**T+2**

VM (from T+1) and PAI (from T) settles

At close of business, VM and PAI are calculated

**T+3**

VM (from T+2) and PAI (from T+1) settles

At close of business, VM and PAI are calculated