Coupon Blending

Compression via Coupon Blending

Overview

• An innovative solution that reduces gross notional outstanding and line items

• Works across pay-fixed and receive-fixed cleared interest rate swaps with varying fixed rates and notional amounts, but otherwise identical attributes. (e.g. currency, effective date)

Competitive Advantages

• Automated and scalable compression solution that is not dependent on a trade counterparty

• Flexibility to utilize daily, on an automated basis as part of the existing EOD workflows, or selectively, as an ad-hoc process

• Reduces notional outstanding and line items without changing cash flows

• All CME fees associated with this activity are currently waived
**Coupon Blending Process**

✓ **Select** trades to be included in the process via the blending identifier found on the trade register

✓ **Identify** the highest and lowest fixed rates in the portfolio

✓ **Solve** for the notional of Remnant 1 (R1) and Remnant 2 (R2) such that the cash flows match those of the original portfolio

✓ **Terminate** the original trades which have been replaced by R1 and R2
### Coupon Blending Example - Step 1

**Step 1: Calculate the net weighted notional amount**

- Weighted notional is the product of the fixed rate and notional amount.
- Net weighted notional is the sum of the weighted notional amounts

**Net Weighted Notional**

\[
Net\ Weighted\ Notional = \sum_{i=1}^{n} Fixed\ Rate_i \times Notional_i
\]

<table>
<thead>
<tr>
<th></th>
<th>Fixed Rate</th>
<th>Notional</th>
<th>Weighted Notional</th>
</tr>
</thead>
<tbody>
<tr>
<td>Swap 1</td>
<td>2.575</td>
<td>-200,000,000</td>
<td>-515,000,000</td>
</tr>
<tr>
<td>Swap 2</td>
<td>3.27</td>
<td>105,000,000</td>
<td>343,350,000</td>
</tr>
<tr>
<td>Swap 3</td>
<td>2.95</td>
<td>-15,000,000</td>
<td>-44,250,000</td>
</tr>
<tr>
<td>Swap 4</td>
<td>3.125</td>
<td>25,000,000</td>
<td>78,125,000</td>
</tr>
<tr>
<td>Swap 5</td>
<td><strong>2.025</strong></td>
<td>-50,000,000</td>
<td>-101,250,000</td>
</tr>
<tr>
<td>Swap 6</td>
<td>3.1345</td>
<td>37,500,000</td>
<td>117,543,750</td>
</tr>
<tr>
<td>Swap 7</td>
<td>2.925</td>
<td>-55,000,000</td>
<td>-160,875,000</td>
</tr>
<tr>
<td>Swap 8</td>
<td>3.1875</td>
<td>300,000,000</td>
<td>956,250,000</td>
</tr>
<tr>
<td>Swap 9</td>
<td>3.325</td>
<td>-111,500,000</td>
<td>-370,737,500</td>
</tr>
<tr>
<td>Swap 10</td>
<td><strong>3.425</strong></td>
<td>145,000,000</td>
<td>496,625,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Lowest Fixed Rate</th>
<th>Highest Fixed Rate</th>
<th>Net Notional</th>
<th>Net Weighted Notional</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2.025</strong></td>
<td>3.42500</td>
<td>181,000,000</td>
<td><strong>799,781,250</strong></td>
</tr>
</tbody>
</table>
Coupon Blending Example- Steps 2 & 3

Step 2: Derive Remnant Trade 1 (T1) notional to minimize gross notional
  o **Highest fixed rate** among the blended trades is fixed rate on Remnant Trade 1 (T1)
  o **Lowest fixed rate** among the blended trades is fixed rate on Remnant Trade 2 (T2)
  o Given the two fixed rates, we calculate notional for T1 (rounded to two decimal places)

\[
T1\text{ Notional} = \frac{(\text{Net Weighted Notional} - \text{Net Notional} \times \text{Fixed Rate Remnant 2})}{(\text{Fixed Rate Remnant 1} - \text{Fixed Rate Remnant 2})}
\]

\[
T1\text{ Notional} = \frac{(799,781,250 - 181,000,000 \times 2.025)}{(3.425 - 2.025)} = 309,468,750.00
\]

Step 3: Create Remnant Trade 2 (T2) so that the cash flows of the fixed and floating legs match those of the original portfolio
  o Notional amount on Remnant Trade 2 is calculated as follows:

\[
T2\text{ Notional} = \text{Net Notional} - T1\text{ Notional}
\]

\[
T2\text{ Notional} = 181,000,000 - 309,468,750 = -128,468,750.00
\]
Coupon Blending Example: Fixed & Float Legs

Fixed Leg: Cash Flows on Remnant Trade 1 (T1) match those of the original portfolio.

<table>
<thead>
<tr>
<th>Swap</th>
<th>Rate</th>
<th>Notional</th>
<th>91</th>
<th>182</th>
<th>271</th>
<th>364</th>
</tr>
</thead>
<tbody>
<tr>
<td>Swap 1</td>
<td>2.575</td>
<td>-200,000,000</td>
<td>$(1,301,806)</td>
<td>$(1,301,806)</td>
<td>$(1,273,194)</td>
<td>$(1,330,417)</td>
</tr>
<tr>
<td>....</td>
<td>....</td>
<td>....</td>
<td>....</td>
<td>....</td>
<td>....</td>
<td>....</td>
</tr>
<tr>
<td>Swap 10</td>
<td>3.425</td>
<td>145,000,000</td>
<td>$1,255,357</td>
<td>$(393,472)</td>
<td>$(384,824)</td>
<td>$(402,120)</td>
</tr>
<tr>
<td><strong>Sum of Portfolio</strong></td>
<td></td>
<td></td>
<td><strong>$2,021,669</strong></td>
<td><strong>$2,021,669</strong></td>
<td><strong>$1,977,237</strong></td>
<td><strong>$2,066,102</strong></td>
</tr>
</tbody>
</table>

Fixed Leg: Cash Flows on Remnant Trade 1 (T1) match those of the original portfolio.

<table>
<thead>
<tr>
<th>Swap</th>
<th>Rate</th>
<th>Notional</th>
<th>91</th>
<th>182</th>
<th>271</th>
<th>364</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1</td>
<td>3.425</td>
<td>309,468,750</td>
<td>$2,679,268</td>
<td>$2,679,268</td>
<td>$2,620,384</td>
<td>$2,738,154</td>
</tr>
<tr>
<td>T2</td>
<td>2.025</td>
<td>-128,468,750</td>
<td>$(575,999)</td>
<td>$(575,999)</td>
<td>$(543,147)</td>
<td>$(572,052)</td>
</tr>
<tr>
<td><strong>Sum of Remnants</strong></td>
<td></td>
<td></td>
<td><strong>$2,021,669</strong></td>
<td><strong>$2,021,669</strong></td>
<td><strong>$1,977,237</strong></td>
<td><strong>$2,066,102</strong></td>
</tr>
</tbody>
</table>

Float Leg: Notional amount of Remnant Trade 1 (T1) + Remnant Trade (2) matches net notional of original portfolio. The floating rate payments also match those of the original portfolio.

<table>
<thead>
<tr>
<th>Trade</th>
<th>Notional</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remnant Trade 1</td>
<td>309,468,750.00</td>
</tr>
<tr>
<td>Remnant Trade 2</td>
<td>-128,468,750.00</td>
</tr>
<tr>
<td><strong>Net Notional</strong></td>
<td><strong>181,000,000.00</strong></td>
</tr>
</tbody>
</table>
Coupon Blending Example: Results

- **Float Leg** Cash Flows **Match** Original Portfolio
- **Fixed Leg** Cash Flows **Match** Original Portfolio
- **Reduced** Gross Notional and Line Items, with no change in cash flows

<table>
<thead>
<tr>
<th></th>
<th>Before</th>
<th>After</th>
<th>Reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Line Items</td>
<td>10</td>
<td>2</td>
<td>80%</td>
</tr>
<tr>
<td>Gross Notional</td>
<td>$1,044,000,000</td>
<td>$437,937,500</td>
<td>58%</td>
</tr>
</tbody>
</table>
Operational Details

- CME provides a Blending ID to identify trades eligible for coupon blending. **Any two trades with matching blending IDs can be blended**
- Coupon Blending is an account level setting represented by two new netting options:
  1. **Full Coupon Blending**: All trades with matching blending IDs will automatically blend
  2. **Selective Coupon Blending**: All trades with matching blending IDs and matching client IDs will blend. Provides client’s flexibility to manage which trades will compress.

**Eligible Products**: Vanilla fixed/float IRS and OIS
**Not Eligible**: Basis Swaps and FRAs
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