Interest rate averaging

Interest averaging impacts risk management practices of financial institutions

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Interest rate averaging is a new optionality within mortgage products, which was recently introduced. This article offers an explanation of this development and evaluates the impact on risk management and pricing.

Due to a declining trend of consumer rates in the Dutch mortgage market over the past years, interest rate averaging has gained an increased regulatory and media attention. This year, interest rate averaging is or will be introduced by multiple mortgage providers. As interest rate averaging is a new phenomenon, the impact on risk management and capital is widely unknown. Public perception is that interest rate averaging appears to be a goldmine for banks (FD, 2/2016). This article provides more insight into market practices on interest rate averaging as applied by Dutch Mortgage providers.

What is interest rate averaging?

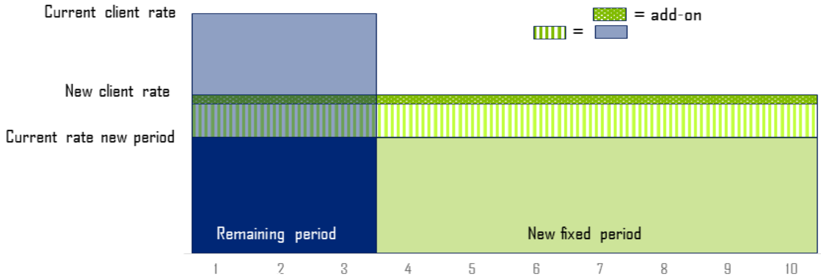
Customers who borrowed money against a fixed rate a couple of years ago pay a much higher interest rate than the current mortgage rate, due to the decline in interest rates. Interest rate averaging can be seen as resettlement of an existing mortgage loan where the client immediately profits from the lower mortgage rate, while not having to pay an upfront penalty. Instead of paying the prepayment penalty, the penalty is spread out over the new fixed interest period of the newly settled mortgage. This can be advantageous for customers who want to decrease their monthly coupon payment. Aspects that influence whether interest rate averaging is beneficial for the client include the level of the rate, the type of mortgage, and the remaining fixed interest period of the mortgage. The market (i.e. clients, regulators, the government, competitors) forces financial institutions to take a position on offering interest rate averaging.

> **"Interest rate averaging: goldmine for banks"**
> **Financieele Dagblad (translated), 11/02/2016 [1]**

Illustration – Example of interest rate averaging

One way to calculate the rate after averaging is by calculating the weighted average of the client rate and the current rate for the new period. Given that the client rate is 5% and the client has 3 years remaining and the current rate for a 10-year period is 2.6% then the rate after averaging is 3.32%[1]. On top of this rate an additional spread can be added. Note that this is just one way to calculate the rate after interest rate averaging.

Figure - 1: Graphical illustration of interest rate averaging



1: $\frac{2.6\%{\cdot}10+(5\%-2.6\%){\cdot}3}{10} = 3.32\%$

"The total upward potential, measured over the new interest period, is small and in certain cases even negative."

MoneyView conclusion on the effect of interest rate averaging for customers (translated), 10/8/2016 [2]

Regulatory restrictions
Regulation poses a number of conditions on the method used for interest rate averaging. These restrictions include the following:

1. In the Mortgage Credit Directive it is stated that the prepayment penalty should not exceed financial loss of the creditor. Hence, no add-ons above financial loss can be incorporated in the new client coupon;
2. Generally prepayment due to relocation does not result in a prepayment penalty. However, relocating after interest rate averaging can be advantageous for customers, since the penalty that is spread out over the new interest fixed period is only paid until the relocation. Introducing a relocation penalty can therefore be considered. The Code of Conduct for Mortgage Loans includes a condition on maximum compensation for prepayments due to relocation, namely the maximum of 4 months of interest on the prepaid amount and 3% of the prepayment amount;

Moreover in political debates, the following technical points regarding the methodology were mentioned about interest rate averaging [3]:

- Calculation of the net present value (NPV) should be in the interest of the customer;
- The total spread (add-on) should not exceed the maximum of 20bps (to allow for tax deduction).

Market research

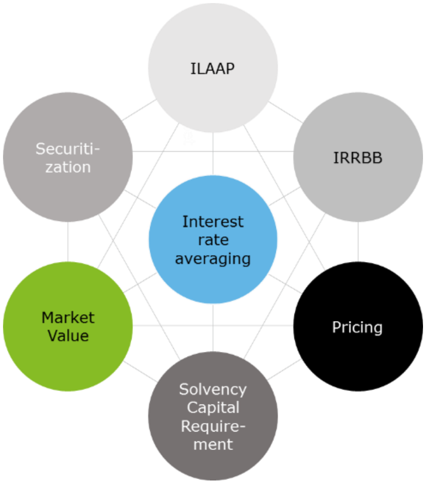
The calculation methods used by mortgage providers combined with the conditions applied result in a wide range of interest rate averaging approaches. Deloitte Financial Risk Management performed a benchmark study. On a high level there following approaches are applied:

- **Simple weighted average**: weighted average of the historical rate and the actual rate for the new period, where the weights are based on the old and new interest fixed period (see illustration above). On top of this rate an additional penalty margin of 0.2% can be included;
- **Adjusted weighted average**: similar to the weighted average but with a difference reference rate. The current mortgage rate for the remaining period is used as a reference rates instead of the rate for the new period;
- **Net present value**: a more complex method where the prepayment penalty is spread over the new fixed interest period using a net present value approach.

Impact of Interest rate averaging

Interest rate averaging has a significant impact on various aspects within risk management and pricing. It will impact among others Internal Liquidity Adequacy Assessment Process (ILAAP), Interest Rate Risk in the Banking Book (IRRBB), market value, Solvency Capital Requirement (SCR) ratio, securitization and pricing.

Figure – 2: Aspects affected by interest rate averaging



ILAAP
In the ILAAP, repayments on mortgages are used to define the liquidity risk. These repayments are based on the expected behavioral repayments of the notional. Behavioral notional payments of a mortgage are earlier than contractual due to prepayments. These prepayments occur due to various reasons and will be affected by introducing interest rate averaging. By introducing interest rate averaging external refinancing is less attractive compared to internal refinancing, therefore customers are more likely to stay with their bank. This results in a reduction of the prepayment rates due to the introduction of interest rate averaging.

IRRBB
Similar to ILAAP, also the interest rate risk measures will change due to changes in prepayment speed. Next to the prepayment speed also the client coupon changes. Since, interest rate risk considers the interest and notional cash flows over a specific period. These cash flows are affected by interest rate averaging in two ways:

- The interest typical prepayment rates change (prepayment changes the term of the interest contract);
- The coupon changes (e.g. used to measure interest income).

Overall, interest rate averaging results in less refinancing with a prepayment penalty, due to extension of the current contract using an adjusted rate.

Market value
Interest rate averaging affects the market value due to a lower coupon and a longer fixed interest period. The impact on the market value is highly dependent on the method used to define the client coupon after interest rate averaging. Due to the following two countervailing effects the market value can either increase or decrease: A longer interest contract increases market value due to the margin earned and the lower coupon decreases market value.

Solvency Capital Requirement (SCR) ratio
Interest rate averaging affects the SCR ratio (own funds divided by SCR). Both the own funds and the SCR are affected. The change in market value leads to a change in own funds. The SCR is affected due to longer interest rate contracts, which in general result in a higher risk and therefore a higher SCR.

Securitization
Financial institutions may have securitized part of their mortgage portfolio. These securitizations may opt restrictions towards introducing new optionalities as interest rate averaging. Securitized assets have been bought with certain assumptions on optionalities. By introducing additional optionalities these restrictions may be broken and for example a buy-back may be necessary.

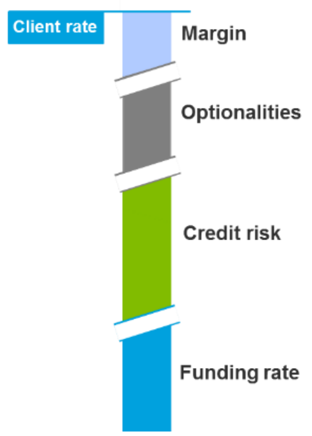
Pricing
Interest rate averaging changes the pricing of mortgages due to changes in optionalities and credit risk. Examples of optionalities are the prepayment option, take-along (meeneem) option (the option to keep the mortgage contract and corresponding coupon after relocating) and interest rate averaging itself. Ideally, each of these optionalities should be included in the pricing of a mortgage, which increases the price. This increase will (partly) vanish due to lower credit risk. Credit risk decreases as the lower client coupon reduces monthly payments for the client and therefore reduces the probability on a default.

To summarize, interest rate averaging affects a wide range of metrics and can therefore have a significant impact on risk management and pricing.

Deloitte FRM Services
Deloitte Financial Risk Management (FRM) can support in selecting an approach, defining impact and incorporating interest rate averaging in pricing and risk management. Topics that Deloitte FRM can support include:

- Analysis of different interest rate averaging approaches;
- Defining the areas of impact, based on the approach and type of institution;
- Calculate the impact in the current situation and the impact under different interest rate environments;
- Determine how the models, methods and underlying assumptions shall be adjusted in order to incorporate interest rate averaging in pricing and risk measurement systems.

Figure – 3: Illustration of pricing of mortgages



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[3] Antwoorden op kamervragen rentemiddeling, Rijksoverheid, 2015.