

The Role of Matching Adjustment and Fundamental Spread in the Dutch Residential Mortgage Market: A Solvency II Perspective

Part 2



Achmea Mortgages

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- Matching Adjustment reduces liabilities, improving solvency and enhancing stability
- Dutch mortgages provide sustainable returns and diversification.
- Fundamental Spread addresses credit and downgrade risks.

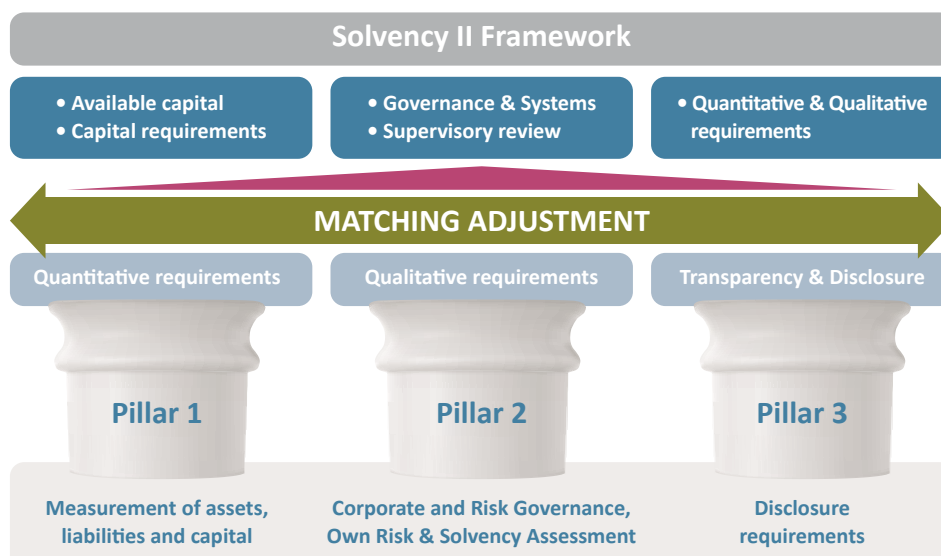
The Matching Adjustment (MA) and Fundamental Spread (FS) are crucial components of the UK Solvency II framework, designed to enhance the stability of insurance companies by accounting for the risk characteristics of assets backing long-term liabilities. This paper examines the application of the Matching Adjustment and the calculation of the Fundamental Spread, with a specific focus on Dutch residential mortgages. We explore how these mechanisms operate and provide detailed numerical examples to illustrate their impact on insurer solvency.

Where this document discusses mortgages, it explicitly refers to directly issued mortgages. It should be noted that this document specifically does not pertain to RMBS (Residential Mortgage-Backed Securities).

1. Introduction

The UK Solvency II Directive provides a risk-based framework for insurers, aiming to protect policyholders by ensuring that insurers hold enough capital to withstand (financial) shocks. A general overview of the UK framework is presented in figure 1:

FIGURE 1: UK SOLVENCY FRAMEWORK



An important component of UK Solvency II is the Matching Adjustment (MA), which allows insurers to adjust the discount rate used in valuing insurance liabilities based on the additional yield able to be earned on illiquid assets held to maturity. This adjustment aims to reflect the additional returns earned on assets that are not sensitive to short-term market movements, such as corporate bonds and mortgages.

For long-term liabilities such as annuities, insurers often hold portfolios of illiquid assets like Dutch residential mortgages. These mortgages typically offer higher yields than government bonds, but they also carry risks such as borrower default. The Fundamental Spread (FS), part of the MA calculation, is used to capture these risks, ensuring that insurers cannot fully benefit from the higher yields without accounting for the risk of default and credit downgrades.

This paper explains the Matching Adjustment and Fundamental Spread, provides detailed numerical examples, and demonstrates how they can be applied in the Dutch residential mortgage market to optimize an insurer’s solvency position.

2. Matching Adjustment: Concept and Application

The Matching Adjustment (MA) enables insurers to apply a higher discount rate when valuing liabilities, reducing balance sheet volatility and improving solvency. This chapter outlines the concept and practical application of the MA, including the key requirements insurers must meet. We also explore how Dutch residential mortgages can support an efficient capital structure within this framework.

2.1. What does Matching Adjustment (MA) do for insurers?

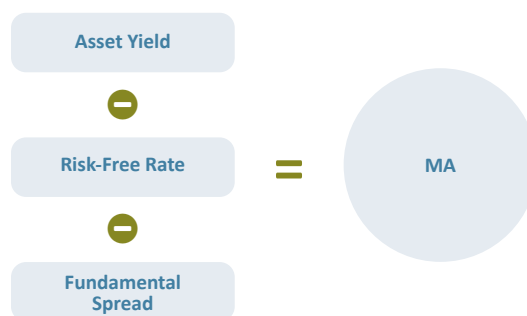
The Matching Adjustment allows insurers to use a higher discount rate when valuing liabilities, which reflects the higher returns from long-term illiquid assets that are held to maturity. In the UK Solvency II framework, this adjustment helps reduce balance sheet volatility, especially for products like annuities, where the insurer’s cash outflows are matched with the cash inflows from assets.

Please see also our paper Investment in Dutch Residential Mortgages: [Eligibility under the Matching Adjustment Framework](#) for further details around eligibility of Dutch residential mortgages.

The adjusted discount rate under the Matching Adjustment is calculated as:



The Matching Adjustment itself is determined by the difference between the yield on the assets and the risk-free rate, minus the **Fundamental Spread**, which accounts for default and downgrade risks:



2.2. Criteria for Using the Matching Adjustment

To qualify for the Matching Adjustment, insurers must meet specific criteria:

- **Portfolio of Eligible Assets:** Assets must have predictable and stable cash flows, such as high-quality corporate bonds or residential mortgages.
- **Matching Cash Flows:** There must be close matching between the liabilities and the cash flows from the assets.
- **Illiquid Assets Held to Maturity:** The insurer must hold these assets to maturity to ensure that short-term price fluctuations do not affect solvency.

Dutch residential mortgages often meet these criteria and are suitable for insurers to diversify their portfolio.

3. Fundamental Spread: Calculation and Importance

The Fundamental Spread (FS) is a critical component of the Matching Adjustment framework, reflecting the credit risks associated with an asset. This chapter explains how the FS is calculated, focusing on credit default and downgrade risks, and its role in preventing insurers from overestimating returns on risky assets. Additionally, we explore how the FS is applied to Dutch residential mortgages, highlighting their relative stability and risk mitigation features, including the benefits of the National Mortgage Guarantee (NHG).

3.1. What is the Fundamental Spread (FS)?

The Fundamental Spread represents the part of the asset yield that is related to credit risks, specifically:

- 1. Credit Default Risk (CDR):** The risk that the borrower will default on payments. To assess the Cumulative Default Rate (CDR), one can utilize stress scenarios in which a borrower defaults, resulting in a loss for the lender if a credit default event occurs.
- 2. Downgrade Risk (DR):** The risk that the credit rating of the asset will be downgraded, increasing the probability of default. A migration matrix can be used to assess the DR. Such a matrix can be utilized by conducting scenarios in which this matrix can be affected. A migration matrix is also provided in the Solvency II framework¹.

The Fundamental Spread is a deduction from the asset yield to ensure that the insurer does not overly benefit from holding risky assets.

The formula for the Fundamental Spread is:



3.2. The Dutch Residential Mortgage Market

In the Dutch residential mortgage market, mortgages are often considered low-risk relative to other credit assets, due to the strong legal framework and relatively stable property market. However, they still carry a risk of default, especially in economic downturns. The Fundamental Spread in the case of Dutch residential mortgages accounts for these risks by incorporating historical data on mortgage defaults and ratings provided by credit rating agencies. The latest publication from Fitch Ratings² concludes that the Dutch residential mortgage market demonstrates resilience. Arrears remain low and continue to decline for Dutch residential mortgage-backed securities (RMBS).

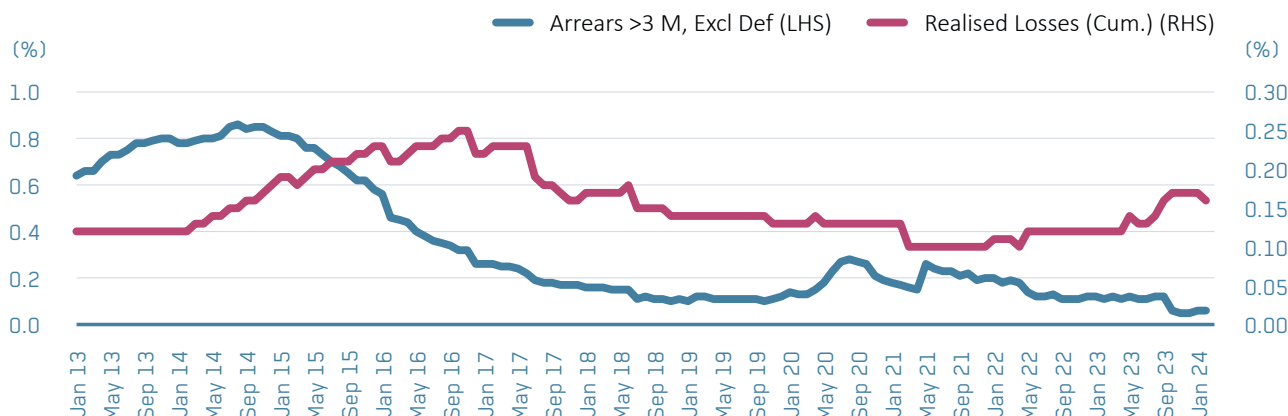
Investing in mortgages backed by the NHG (National Mortgage Guarantee) offers a significant layer of protection for both lenders and investors. Even in the unfortunate event of a homeowner defaulting on the mortgage, the financial exposure remains controlled. After the property is sold, the homeowner is still liable for any remaining debt. This liability continues until the homeowner is either declared bankrupt or enters a government-approved debt reorganization process.

This framework significantly reduces potential losses for lenders, ensuring that even in challenging circumstances, there is a structured process to recover a portion of the outstanding debt. The NHG not only protects investors from significant losses but also enhances the stability of the mortgage market by offering a robust safety net.

¹ [eiopa-bos-21-317-technical-documentation.pdf \(europa.eu\)](https://euiopa-bos-21-317-technical-documentation.pdf)

² Mortgage Market Index – Netherlands 1H24

FIGURE 2: ARREARS RATIOS



Source: Fitch Ratings

Figure 2 illustrates the arrears over the past approximately ten years, with the exception of the COVID-19 pandemic period.

4. Numerical Example: Dutch Residential Mortgages

Hereafter a numerical example is provided to demonstrate the working of Matching Adjustment on the residential mortgage market. The numbers that are used are for demonstrating purposes only. Using simplified assumptions, we demonstrate the calculation of the MA, its impact on liability valuation, and the resulting improvement in the insurer’s solvency position. By contrasting scenarios with and without the MA, the example highlights the practical benefits of incorporating Dutch mortgages into the Matching Adjustment framework.

4.1. Assumptions for the Example

Consider an insurer that holds a portfolio of Dutch residential mortgages with the following characteristics:

- **Total Liabilities:** €100 million payable in 15 years (e.g., annuities).
- **Yield on Dutch Mortgages:** 3.0%.
- **Risk-Free Rate (15-year EUR):** 1.0%.
- **Credit Default Risk (CDR):** 0.4% (based on historical data).
- **Downgrade Risk (DR):** 0.1%.

4.2. Step-by-Step Calculation of the Matching Adjustment

1. Total Spread on Mortgages: The total spread is the difference between the yield on mortgages and the risk-free rate:

$$\text{Total spread} = \text{Yield} - \text{Risk free rate: } 3.0\% - 1.0\% = 2\%$$

2. Fundamental Spread (FS): The Fundamental Spread consists of credit default risk and downgrade risk:

$$\text{Fundamental spread} = \text{CDR} + \text{DR: } 0.4\% + 0.1\% = 0.5\%$$

3. Matching Adjustment (MA): The Matching Adjustment is the difference between the total spread and the Fundamental Spread:

$$\text{Matching Adjustment} = \text{TS} - \text{FS: } 2.0\% - 0.5\% = 1.5\%$$

4.3. Discounting Liabilities with and without the MA

The insurer has liabilities of €100 million due in 15 years. We will calculate the present value of these liabilities using two discount rates:

- Without MA:** The liabilities are discounted at the risk-free rate of 1.0%.
- With MA:** The liabilities are discounted at the adjusted rate, including the Matching Adjustment (1.0% + 1.5% = 2.5%).

• **Present Value of Liabilities without MA:**

PV without MA:
 $100/(1+0.01)^{15} = 86,14$ million

• **Present Value of Liabilities with MA:**

PV With MA:
 $100/(1+0.025)^{15} = 69.61$ million

4.4. Impact on Solvency

The Matching Adjustment reduces the present value of liabilities by approximately €16.53 million, which significantly improves the insurer’s solvency position. By using the Matching Adjustment, the insurer can discount its long-term liabilities at a higher rate, reflecting the illiquidity and higher yield of the Dutch residential mortgages.

5. Diversification Effects of Incorporating Dutch Mortgages

We examine how Dutch residential mortgages in insurance portfolios provide higher yields, reduce portfolio risk through diversification, and contribute to capital relief under the Matching Adjustment. By enhancing return on capital and stabilizing solvency positions, Dutch mortgages play a vital role in achieving both regulatory compliance and financial growth.



5.1. Higher Yielding Assets

Dutch mortgages typically exhibit a higher yield compared to traditional government bonds due to their illiquidity and associated credit risks (DNB, 2023). This yield advantage allows insurers to increase their asset returns while effectively lowering their capital requirements under the MA. The higher spread over the risk-free rate enhances the insurer’s return on capital, contributing positively to its overall financial health.

5.2. Risk Mitigation through Portfolio Diversification

Integrating Dutch mortgages into an insurance portfolio enhances diversification, as these assets generally have a low correlation with other investment classes such as equities and corporate bonds. By combining assets with different risk profiles, insurers can reduce their overall risk exposure, leading to a more stable solvency ratio. The predictable cash flows associated with residential mortgages provide a buffer against market volatility, making the portfolio less sensitive to fluctuations in financial markets.

5.3. Capital Relief and Stability

The capital relief afforded by the MA facilitates a more stable solvency position, particularly during periods of market stress. As insurers can utilize the additional yield from Dutch mortgages, they can maintain a more favorable solvency capital requirement (SCR) ratio, thereby promoting regulatory compliance while achieving growth (EIOPA, 2024). The enhanced capital efficiency allows for greater investment flexibility, enabling insurers to pursue diversified investment strategies without excessive capital strain.

6. Conclusion

The Matching Adjustment and Fundamental Spread are critical tools within the Solvency II framework, enabling insurers to better align asset returns with long-term liabilities. The Dutch residential mortgage market serves as an excellent example of how insurers can optimize their solvency by using illiquid assets with relatively stable returns.

In our example, applying the Matching Adjustment reduced the present value of liabilities by over €16 million, improving the insurer’s financial position. This demonstrates the importance of careful risk

management and the potential for insurers to benefit from holding high-quality illiquid assets like Dutch residential mortgages.

By allowing insurers to reflect the long-term nature of their asset portfolios, the Matching Adjustment provides a more accurate view of their financial health, promoting stability in the insurance sector.

Moreover, incorporating Dutch mortgages into an insurer's portfolio under the Matching Adjustment framework provides multiple benefits, including enhanced yield, improved diversification, and capital relief. This approach not only helps manage long-term liabilities more effectively but also contributes to the overall stability and resilience of the insurer's financial position.

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