

MILLIMAN REPORT

# Mind the gap between insurers and banks

How different perspectives on risk and return can lead to possible  
investment opportunities

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## Introduction

These are challenging times for many European financial institutions. Interest rates have been low since the credit crisis, putting increasing pressure on the business models of banks and insurers. On top of the direct impact, the COVID-19 pandemic has increased the likelihood of Japanification.<sup>1</sup> To be successful, banks and insurers both need to operate as efficiently as possible, enhance returns, and optimize scarce capital. Banks and insurers are two of the main players in the financial services industry, but their roles are different. As a result, these institutions have different perspectives on risk and return.

Traditionally, banks and insurers have had relatively little overlap, but recent developments may lead their paths to cross again. The upcoming implementation of Basel IV limits the benefits of internal models for banks and requires them to rethink their business and asset mix to optimize their return on equity. Meanwhile, driven by a search for yield, we see an increased appetite for investments in illiquid assets by life insurers, partially on the back of acquisitions from private equity firms. We see opportunities for insurers to step into asset classes that become less attractive for banks under the new regulation. At the same time, this may allow banks to optimize their balance sheet and business.

Given these developments, understanding the other industry is key. In this paper we will compare banks and life insurers, with a focus on the asset side. The outline is as follows:

- In Chapter 1, we compare the business models of European banks and life insurers to highlight their investment needs and their perspectives on risk and return.
- In Chapter 2, we examine the capital framework under Basel and Solvency II, respectively.
- Chapter 3 provides a deep dive, where we compare capital requirements for several credit asset classes.
- In Chapter 4, we look ahead, given the search for yield for insurers and the adoption of Basel IV, we discuss how firms may adapt to the new normal.

Our focus is limited to European commercial banks and life insurers, where we aim to provide a comparison of capital treatments for different asset classes.

### KEY HIGHLIGHTS OF THIS PAPER

1. Optimizing capital is a key consideration for both banks and insurers, with capital requirements driven by regulation. Given their different business models banks and insurers have a different view on valuation, risk, and return.
2. Banks and insurers need to hold capital for the risks of their businesses. However, the way this capital is determined is different between the two types of institutions. Therefore, capital requirements for insurers and banks may differ for similar assets.
3. The landscape of European life insurers is diverse, in terms of products, balance sheet composition, and risks. Therefore, capital requirements may depend on the individual insurer and results don't always generalize.
4. In the search for yield, life insurers may explore attracting assets that traditionally have been on bank balance sheets.

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<sup>1</sup> Slow economic growth, low inflation, and interest rates reaching their lowest levels.

# 1. A different point of view; an industry comparison

Banks and insurance firms both take on risks to allow their clients to achieve their financial goals. Both types of institutions are subject to stringent regulatory environments. However, there are important differences in the business models of banks and insurance firms that lead to markedly different perspectives on the world. In this chapter, we provide a brief description of each of these sectors, including business models and risks, in order to create a common understanding of banks and life insurers and the drivers of their respective investment strategies.

## ROLE, PRODUCTS, AND SERVICES

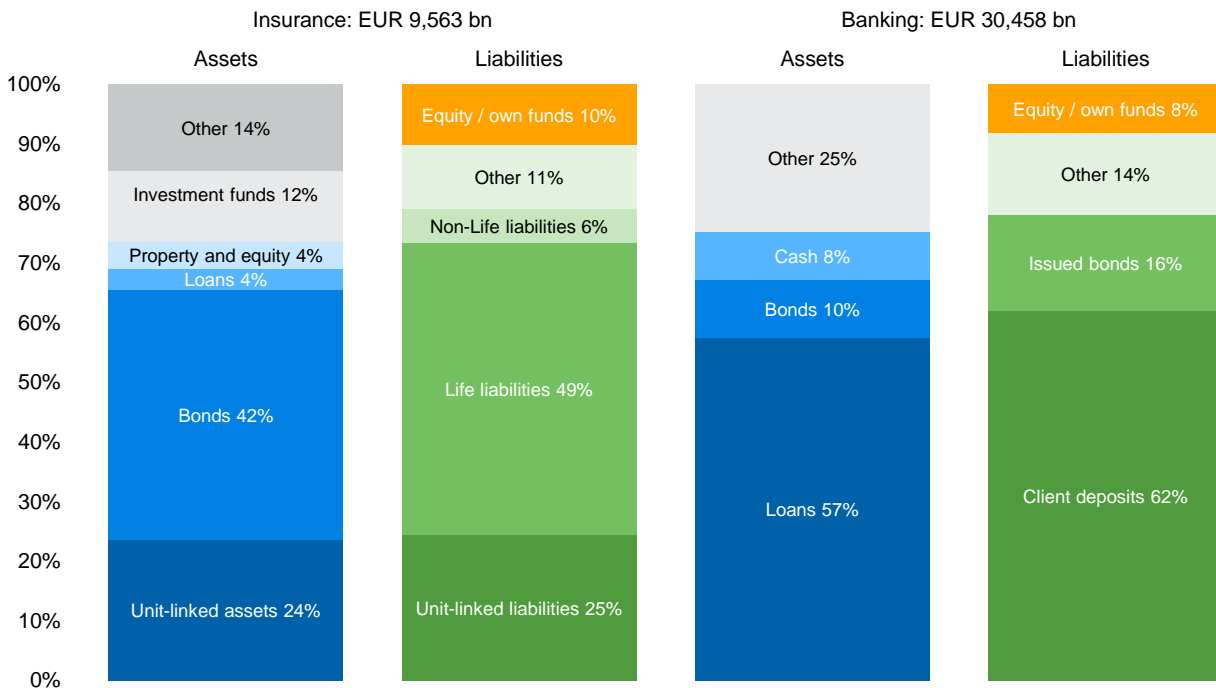
Insurers provide protection from risks that clients are unable or unwilling to bear, by offering financial compensation. Life insurers additionally offer various savings and pension products that include an insurance component. The role of insurers in the economy is to pool and transform risks such that expected losses are more predictable and are spread among policyholders. Typical life insurance products include annuities, endowments, and term insurance. The products offered and businesses differ across countries. Given the typically long duration of life insurance products, the business, strategy, and operations of life insurers are aimed at ensuring that policyholder benefit payments are guaranteed over the entire duration of the contract.

Banks are the archetypical financial intermediary and one of the few institutions that serve clients on both sides of their balance sheets. Traditional banking consists of taking in deposits, granting loans, and providing other financial services, such as payments. Banks offer current accounts, savings accounts, and term deposits to households, corporates, and institutions. Typically, these deposits are repayable on demand, yet behaviorally are more stable. Banks transform these funds into loans, mortgages, credit lines, and other financial instruments with different characteristics. This transformation function allows banks to fulfil their key role in financing the economy and, in the process, to accept and manage credit risk.

## COMPARISON OF BALANCE SHEETS

The described business models shape the balance sheets of insurers and banks. In Figure 1 below, a comparison is made between typical balance sheets of banks and insurers.<sup>2</sup> The total balance sheet of European banks are around three times the size of that of life insurers in Europe. Whereas the core activity of a bank is the managing of savings deposits and issuing of loans, an insurer’s main purpose is to provide benefit payments to policyholders over a long-term horizon. These activities define the composition of the balance sheets.

**FIGURE 1: COMPARISON OF AGGREGATE EUROPEAN INSURANCE AND BANK BALANCE SHEETS**



<sup>2</sup> Insurers’ balance sheet based on Group Consolidated QRT data published by EIOPA. Banks balance sheet based on EBA data.

A strong link between the assets and liabilities is observed on the insurance balance sheet. Policyholders' premiums are mostly invested in government and corporate bonds given the relatively high creditworthiness, low capital requirements, and match with the insurance liabilities. However, these assets typically have a shorter duration than the typical long-term life insurance liabilities. For unit-linked products, an almost perfect match exists between assets and liabilities, given that policyholders benefits are (largely) dependent on the performance of the assets invested. Since insurers use investments to meet liabilities due in the future, they have a market value view on risk and return.

For banks, loans and deposits seem to match well in terms of volume. However, due to the different nature of the loans and deposits, there is mismatch in duration and pricing. To cover for potential outflows of deposits, banks hold cash and government bonds for liquidity purposes. Hence, not all deposits can be used to grant loans and the need for bank financing is higher than can be supplied by deposits. Therefore, banks increase their leverage and attract additional funding by issuing bonds. Commercial banks primarily have a book value perspective on risk and return. This fits their business model, since they generally have no intention to sell their loans and market value is difficult to define for deposits.

## RISKS

The most predominant financial risks insurers face are market risk and underwriting risk. Market risk relates to the risk of financial losses resulting from adverse market developments, impacting the ability of assets to meet liabilities. The most significant market risk for insurers is interest rate risk, given the duration gap between assets and liabilities. Underwriting risk arises as a result of uncertainty in the assumed actuarial risks, or from unforeseen events (i.e., mispricing of insurance risk). The typical life insurance underwriting risks are clients living longer than expected (longevity risk), living shorter than expected (mortality risk), and early termination of the contract (lapse risk).

The financial crisis of 2008 made the risks of banking painfully clear. Credit risk and liquidity risk are the dominant risks of a typical bank, with liquidity risk being the most significant. While the assets are usually expected to have a longer duration, client outflows of deposits may occur within days. To cover for potential cash outflows, banks have substantial buffers of cash and government bonds. The lending side of their business exposes banks to credit risk. Commercial banks generally have a buy-and-hold perspective, where they intend to keep loans until maturity. Therefore, credit risk predominantly stems from clients defaulting on obligations.

Both insurers and banks are required to hold risk-based capital in respect of the risks that they face. In Chapter 2 we compare the capital requirements for the two types of institutions.

## PROFITABILITY

In 2019, total written premiums and claims incurred for European life insurers were EUR 917 bn and EUR 812 bn, respectively,<sup>3</sup> with both showing strong historical growth. Life insurers receive premiums in the short term to meet insured events expected in the distant future. Premiums are therefore invested to meet the expected future payouts. Profits comprise an underwriting result and an investment margin on assets invested.

By charging a higher interest rate on loans than they pay out to depositors or other providers of funds, banks earn interest income. This is the main source of revenue for traditional banks and amounts to 60% of operating income of European banks. In addition, banks generate revenues by a range of activities including payments services, wealth management, investment banking, and market making. Fee income amounts to approximately 30% of operating income, while trading income adds around 10%.

Profitability of the European banks has been underwhelming since the 2008 financial crisis. The return on regulatory capital for 2019 was 6%. The low interest rates and flat yield curve have suppressed interest margins. European banks have high cost-to-income ratios and suffer from non-performing loans. The European Central Bank (ECB) sees consolidation as a necessary step to improve profitability in an overbanked environment.

Meanwhile, decreasing interest rates have also put a significant strain on insurers' profitability. With the persistent low (and negative) interest environment, it becomes more and more difficult to make investment returns in excess of the returns required to meet the insurance liabilities. Between 2017 and 2019 the European Insurance and Occupational Pensions Authority (EIOPA) reported a median return on regulatory capital of 5.6%, 4.9%, and 8.5%, respectively. Recent years have shown a clear trend in consolidations as well as other institutions such as private equity investors entering the market.

<sup>3</sup> Source [https://www.eiopa.europa.eu/tools-and-data/insurance-statistics\\_en](https://www.eiopa.europa.eu/tools-and-data/insurance-statistics_en).

Given the COVID-19 pandemic and the high likelihood of a low-for-long scenario for interest rates, it remains challenging for insurers and banks to earn sufficient return on capital. The next section compares the regulatory capital frameworks of insurers and banks.

## 2. Comparison of capital frameworks

### GENERAL FRAMEWORKS

Optimizing capital is a key consideration for both banks and insurers, with capital requirements driven by regulation. The regulation aims to ensure that institutions fulfil their obligations and limit contagion in the market, thereby protecting clients and ultimately the taxpayer. Solvency II applies to European insurers, whereas the Basel framework applies to banks.<sup>4</sup> The philosophies behind these frameworks are remarkably similar, stipulating a capital requirement that is sufficient given the risks of the undertaking. Each framework caters to the specific business models of the institutions, with terminology and details that vary. Both Basel and Solvency II take a similar 3-pillar approach. In this section, we discuss the risk-based capital frameworks<sup>5</sup> (Pillar 1) and thereafter, the internal models and a review of capital consumption in practice.

Solvency II uses a Value-at-Risk approach to determine risk capital. Insurers are required to hold sufficient capital to withstand unexpected losses with 99.5% confidence (1-in-200 scenario) at a one-year horizon. The Solvency II framework is based on a market value perspective and therefore own funds are required to cover losses at market value. Insurers can either determine their capital calculations using a standardized approach (the “standard formula”) or develop an internal model.

The Basel regulation requires banks to hold capital to withstand unexpected losses. The amount of capital is determined with reference to an archetypical risk-weighted asset (RWA). The risk weight is a percentage of the book value of the asset (which can be greater than 100%). Riskier positions receive higher risk weights, while safer assets receive lower risk weights. Other risk types are converted into RWA. Banks can either base their capital calculations using the standardized approach or develop an internal model.

FIGURE 2: MATERIAL RISKS BETWEEN INSURERS AND BANKS

INSURERS	BANKS
$\text{Solvency II Ratio} = \frac{\text{Eligible Own funds}}{\text{Solvency Capital Requirement}}$	$\text{Capital Adequacy Ratio} = \frac{\text{Capital}}{\text{Risk Weighted Assets}}$
Eligible own funds represent the difference between the market value of assets and liabilities, adjusted for tiering restrictions.	Capital consists of the book value of shareholder’s equity, retained earnings, other adjustments, and eligible capital instruments.
Solvency Capital Requirement (SCR) is the quantitative statement of the required regulatory capital and provides a measure of the riskiness of the insurer.	Risk-weighted assets (RWA) refer to the bank’s exposures, which are then weighted according to the risk presented.
The SCR consists of the following components: <ul style="list-style-type: none"> <li>▪ Market risk captures the risk of losses in the value of own funds as a result of adverse market developments. Interest rate risk, as a result of fair value changes of the values of assets and liabilities, is an important factor. The market risk module further captures credit spread risk, the risks of investments in equity and property, currency risk, and concentration risk.</li> <li>▪ Counterparty default risk applies to credit risk not covered in the spread risk module (part of market risk). This includes the credit risk of counterparties of derivatives and reinsurance contracts. In the Solvency II standard formula, residential mortgages are also covered within this module.</li> <li>▪ Underwriting risk arises when the insurer is unable to meet the insurance obligations due, as a result of inaccuracy in the assumed actuarial risks. This module comprises life underwriting risk, non-life underwriting risk, and health underwriting risk. The main life underwriting risks are mortality risk, longevity risk, lapse risk, and expense risk.</li> <li>▪ Operational risk, resulting from inadequate or failed internal processes, people and systems, or from external events.</li> </ul>	The following types of RWA are distinguished: <ul style="list-style-type: none"> <li>▪ Credit risk consists predominantly of the default risk of loans and advances. An additional source of credit risk is counterparty credit risk, covering the risk presented by counterparties to transactions (e.g., derivatives).</li> <li>▪ Market risk comprises the risk of trading positions, for example, risk due to market making or certain arbitrage activities. Market risk from banking book positions, such as interest rate risk stemming from typical loans and deposits, is not subject to Pillar 1 capital requirements.</li> <li>▪ Operational risk resulting from inadequate or failed internal processes, people and systems, or from external events.</li> </ul> Other relatively smaller items, including settlement risk and Credit Valuation Adjustment (CVA).

<sup>4</sup> In Europe, the Basel III framework is implemented via the Capital Requirements Regulation (CRR) and the Capital Requirements Directive (CRD).

<sup>5</sup> Banks need to adhere to the Leverage ratio and MREL as well, but that is beyond the scope of this paper.

INSURERS	BANKS
Aggregation: an important feature of the Solvency II framework is that correlations between the various risks are taken into account. The most significant areas are within the market risk module and between underwriting risk, market risk, and counterparty default risk.	Aggregation: in the Basel framework, the RWAs of the individual risk types are simply added. Hence there are no diversification benefits between risks.
Adjustments: where insurers can demonstrate the possibility to lower the total SCR due to: <ul style="list-style-type: none"> <li>▪ Loss-absorbing capacity of deferred taxes (LAC DT): Tax recoveries resulting from losses in capital equal to the total SCR.</li> <li>▪ Loss-absorbing capacity of technical provisions (LAC TP): Part of the insurance liabilities that can be recovered in the event of losses in the 1-in-200 scenario by reducing the expected future profit sharing to policyholders.</li> </ul>	Adjustments: no adjustments that lower RWAs.

There are material differences in the way risks are viewed between banks and insurers.

- For banks, market risk RWA arises only from the trading book, while for insurers, the market risk SCR is calculated with reference to their entire balance sheet.
- Credit risk for banks refers mainly to the risk of default of loans and advances. This is viewed from a nominal basis. For insurers, asset holdings are viewed from a market value perspective. Therefore, credit risk for insurers arises predominantly via changes in credit spreads that affect the valuation of bonds and loans.
- In terms of aggregation, Solvency II takes into account the diversification between risks. As a result, the total risk capital requirement (SCR) is lower than the sum of the individual components. Diversification benefits can significantly decrease the amount of required capital for insurers. Basel does not take into account any diversification benefit. Total RWA are then simply the sum of the standalone components.
- Solvency II allows insurers to include adjustments to the total SCR to allow for certain losses that can be (partly) mitigated resulting from tax payments or discretionary profit sharing.

## INTERNAL MODELS

### General considerations

Both Basel and Solvency II allow institutions to use internal models to determine their RWA and SCR, respectively. It is common practice for banks and large insurers (less so) to use an internal model to calculate the risks of their positions, rather than the standardized methodologies provided by the respective regulations. Internal models provide the benefit of greater insight into the risk and better alignment with the institution's risk management. Institutions may use their internal data to better reflect their specific positions.

Further, internal models allow for the following benefits:

- For insurers, a better reflection of correlation between risks. This may lead to increased diversification benefits from internal estimates of the correlations between risks.
- For banks and insurers, the option to assign ratings to unrated investments and a better representation of collateral and credit risk mitigating measures.

Internal models are common practice among banks. For instance, the majority of the credit risk exposure of European banks is determined by the use of an internal model. For insurers, while large insurers typically have internal models, smaller institutions commonly rely on the standard formula.

### Internal models for loans and bonds

The focus of this paper is the asset side of balance sheet. Therefore, we highlight the setup of internal models for loans and bonds.

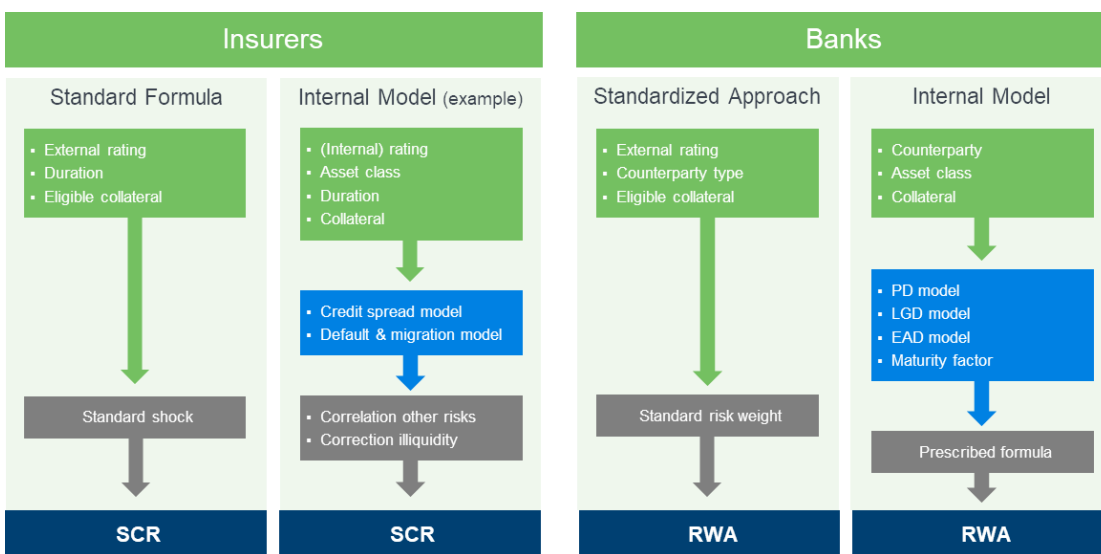
Insurers have considerable discretion in the design of their internal models. Commonly, we see that insurers model the credit risk of loans and bonds by modelling the impact of credit spread volatility on the market value. The spread risk of these (unrated) instruments can be described by mapping the assets to liquid indices (e.g., Corporates BBB) and modelling those indices. In addition, insurers may model default risk and rating migration risk (risk of deterioration of the credit rating).

An important consideration of insurers to use an internal model for market risk can be the modelling of the spread risk. Insurers often hold bonds and loans until maturity. This exposes them to short-term credit spread volatility. If the insurer does not sell the investment and the counterparty does not default, this risk does not materialize. To prevent volatility in the Solvency II ratio, insurers are allowed to dampen part of the credit spread movements by using the Dynamic Volatility Adjustment (DVA) or Matching Adjustment (MA).<sup>6</sup>

For banks, internal models allow the use of internal credit ratings and better reflection of collateral. Compared to Solvency II, the Basel framework imposes a more prescriptive approach to internal model design. Internal models estimate the unexpected credit risk losses due to defaults of clients. The RWA is based on the Probability of Default (PD), Loss Given Default (LGD), Exposure at Default (EAD), and a Maturity factor (M). Given these inputs, the RWA formulas (including several correction factors) are completely prescribed.<sup>7</sup> Several further restrictions may apply, both in terms of calculations and of portfolios that may have an internal model. For these reasons, it is possible that insurers' internal models and banks' internal models may differ in their quantification of the capital requirements for identical loans.

We set out in Figure 3 below a graphical representation of the capital requirements for loans and bonds.

**FIGURE 3: DIFFERENCES BETWEEN INSURERS AND BANKS WHEN QUANTIFYING CAPITAL REQUIREMENTS FOR LOANS**



**CAPITAL CONSUMPTION IN PRACTICE**

The diagram below shows the relative risk exposures of insurers and banks, measured as SCR and RWA, respectively. The largest risk for insurers is market risk, at an average of 60% of the undiversified SCR. This consists predominantly of interest rate risk and credit spread risk. The insurance risk amounts to a total of approximately 30% of the SCR and predominantly comprises life underwriting risk.

Solvency II allows for several items that reduce the total SCR. Diversification across the main risk modules results in an SCR reduction of 21%. Other insurance-specific offsets exist, such as LAC DT (28% offsetting effect) and LAC TP (7% offsetting effect). The impact of the three reduction factors on the total capital requirement is very significant with a total reduction of 56% across Europe as a whole in 2019.

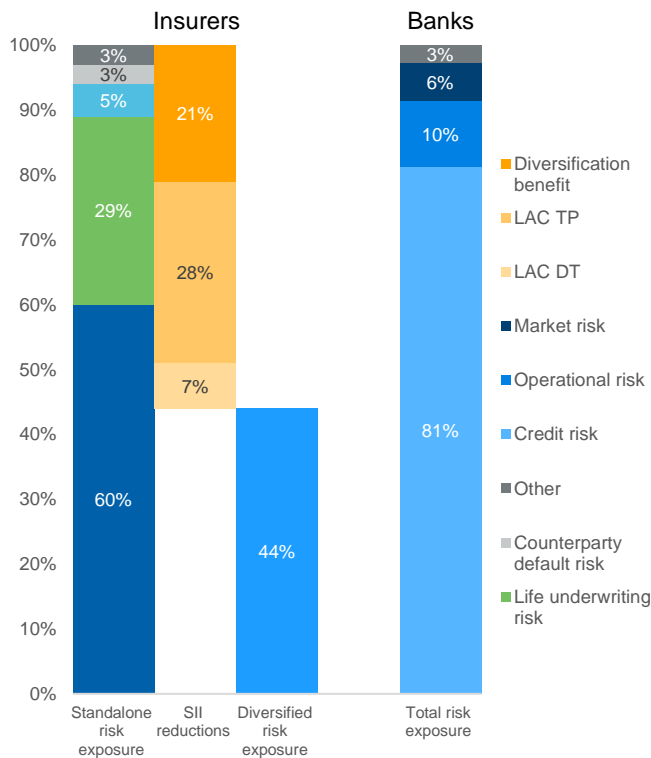
It is important to note however that the landscape of European life insurers is diverse. Products and balance sheets vary considerably across countries. For example, market risk represents more than 70% of the undiversified SCR of French insurers but only 30% for Irish insurers. Likewise, diversification benefits are around 30% in the Netherlands and around 10% in Sweden. Conclusions therefore do not always generalize across countries.

<sup>6</sup> Under Solvency II defined “long-term guarantee measures” that either increase the risk-free interest rate curve used in the valuation of insurance liabilities, or decrease the spreads in the valuation of assets.

<sup>7</sup> The formula is based on the Merton model.



FIGURE 4: OVERVIEW OF RISK EXPOSURES INSURERS AND BANKS



European banks primarily hold capital to cover credit risk losses, 81% of RWAs are held for credit risk. More than half of this credit exposure is towards corporates, highlighting the role of banks in financing European businesses. The remainder comprises predominantly mortgages and other retail lending. Market risk for banks is typically a small part of the total exposure, as it only relates to market risk of trading book positions. Compared to insurers, the relative weight of operational risk for banks is approximately twice as high and amounts to 10% of the total exposure.

Contrary to insurers, data from the ECB shows that the composition of RWAs is comparable in different countries. Credit risk is typically 80% to 90% of the total exposure. Compared to universal banks, investment banks typically have a higher exposure to market risk and operational risk. This is due to trading, higher fees, and underwriting activities.

The Solvency II ratio and the capital adequacy ratio are subject to regulatory minimums of 100% and 8%, respectively. In addition, the ECB and national supervisors require banks to hold several additional capital buffers as part of the so-called 'Pillar 2' requirements. In Europe, we see institutions steering to

higher ratios. At year-end 2019, European life insurers had an average Solvency II ratio of 232%,<sup>8</sup> while European banks had an average capital adequacy ratio of 18.5%.<sup>9</sup> It is interesting to note that, in both cases, on average, the industries are operating at just over double their prescribed regulatory minimum level of capital adequacy.

**SUPERVISION**

While banks and insurers must comply to regulation of European Union, supervision is arranged differently. Insurers are subject to their national supervisor. This leaves room for differences in the interpretation of the Solvency II rules and varying standards across the EU and may partially explain the different practices. Banking supervision on the other hand, is more harmonized with a prominent role for the ECB. Joint Supervisory teams of the ECB and the local supervisor perform the supervision of significant banks. In addition, the ECB has undertaken several initiatives to increase and harmonize standards for banks under its supervision. These include a Target Review of the Internal Models project and the Definition of Default exercise.

**3. Deep dive: capital requirements for loans and bonds**

Insurers and banks generate a large part of their income through their investments (loans and bonds). The attractiveness of these assets depends on the returns available and on the amount of capital that needs to be held. In order to highlight the difference in regulatory regimes of insurance firms and banks, we provide examples of capital requirements for several asset classes. We quantify the capital requirements of these investments under the standard formula of Solvency II and standardized approach of the upcoming Basel IV and qualitatively discuss the impact of internal models.

<sup>8</sup> Insurers figures obtained from Group Consolidated QRT data published by EIOPA.

<sup>9</sup> Figures obtained from: <https://www.bankingsupervision.europa.eu/banking/statistics/html/index.en.html>.

**CORPORATE LOANS, MORTGAGES, AND COMMERCIAL REAL ESTATE UNDER THE STANDARDIZED APPROACH / STANDARD FORMULA**

European corporates obtain approximately 70% to 80% of their external financing from banks.<sup>10</sup> Meanwhile, insurers held EUR 2 trillion in corporate bonds and a mere EUR 360 billion in loans and mortgages combined. Based on these figures it would seem that loans are an unattractive asset for insurers. Therefore, we compare capital requirements for three types of loans traditionally provided by banks:

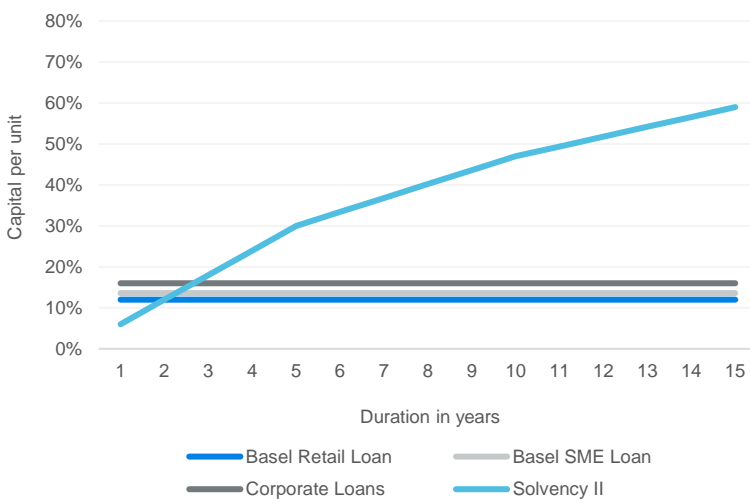
- An unrated corporate loan
- A residential mortgage
- A collateralized commercial real estate loan

The amount of capital that firms hold for an asset depends both on the riskiness of the asset and on its target capital/solvency ratio. SCRs and RWAs are not directly comparable. In order to provide a meaningful comparison, we use the following indicative target ratios<sup>11</sup> in our calculations:

- A capital adequacy ratio of 16% for banks, according to the Basel IV proposal
- A Solvency II ratio of 200% for insurers

For simplicity, we assume that the composition of the own funds and capital instruments are comparable. Capital requirements for other risks that result from holding the asset, such as interest rate risk and currency risk, are disregarded, as these can be hedged separately. Also note that diversification benefits have not been included in the results.

**FIGURE 5: COMPARISON OF CAPITAL CHARGE FOR UNRATED CORPORATE LOANS**



The diagrams in this section present the allocated capital amount per unit of investment in various asset classes, prior to diversification according to the standardized approach and standard formula, respectively.

Under Basel, loans result in credit risk, due to potential defaults. The RWA for credit risk depends on the external credit rating (if applicable), the type of counterparty, and the qualifying collateral. Several asset classes, such as loans secured by real estate, specialized lending, and securitizations receive a separate treatment.

Insurers see loans as investments that lead to credit spread risk. Under the standard

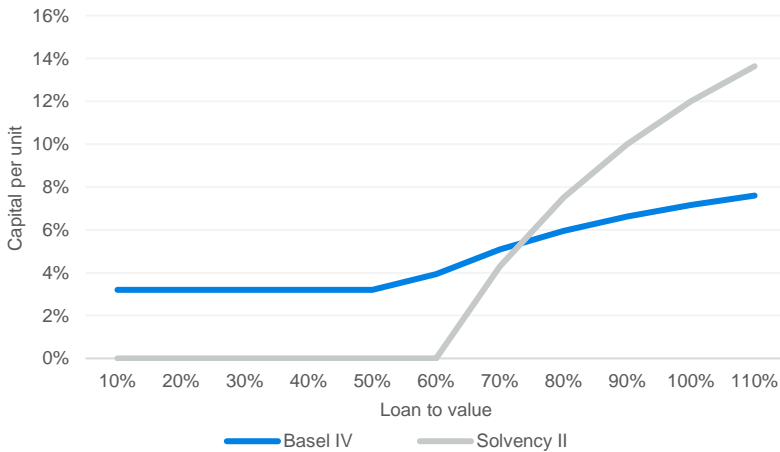
formula, the spread risk of a bond or loan depends on the external credit rating of the counterparty and the duration. Qualifying collateral can lead to a reduction of the spread risk. Under the standard formula, the risk of mortgages is covered under counterparty default risk.

The example (Figure 5) shows that for short-dated loans, capital costs for an insurer may be lower than for banks. For longer-term loans, this reverses. The standard formula heavily penalizes long-term loans. Note that a corporate loan portfolio would typically have an average maturity of between two and three years, such that the average capital costs would be comparable. Solvency II does not distinguish between counterparty types. Hence, capital for an SME loan is the same as for a similar loan to a corporate.

<sup>10</sup> Source: EBF.

<sup>11</sup> Ratios calibrated at twice the regulatory minimum and in line with ratios observed in the market.

**FIGURE 6: COMPARISON OF CAPITAL CHARGE FOR RESIDENTIAL MORTGAGES**

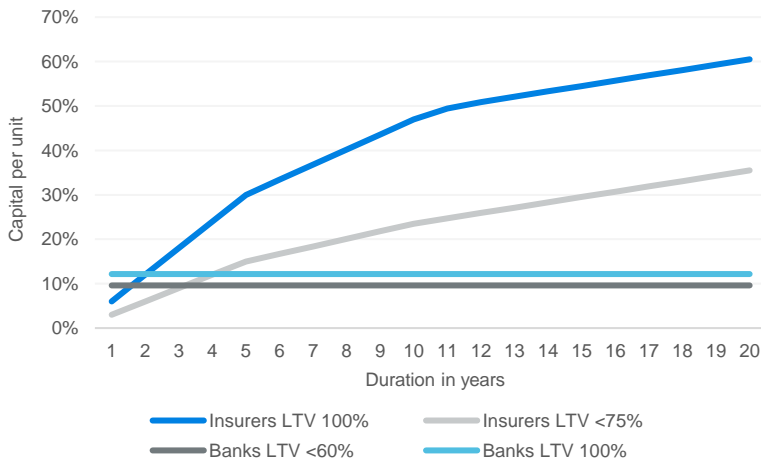


Compared to other loans, the capital charge for mortgages (Figure 6) is relatively low under both Basel and Solvency II. The capital requirements for both banks and insurers depend only on the Loan to Value (LTV). For low LTV mortgages (below 60%), insurers that apply the standard formula do not need to hold any capital. For high LTV mortgages, banks are required to hold less capital compared to insurers. For a mature residential portfolio, the capital requirements of insurers could be comparable to those of banks, before diversification effects.<sup>12</sup>

Commercial real estate loans (Figure 7), being collateralized, are judged safer than regular corporate loans. Both Solvency II and Basel have lower risk capital requirements for lower LTV loans. Again Solvency II assigns higher-risk capital to longer-term loans.

The examples presented do not include diversification benefits for insurers, as this impact depends on the circumstance of each individual insurer. A 50% SCR reduction due to diversification and insurance specific offsets is not uncommon. We would expect that including diversification and other offsets, insurers may need to hold less capital than banks for several of these assets under the standard formula; The exception to this result being (uncollateralized) long-term loans. Note however, this would depend on the specific insurer and that banks commonly use internal models.

**FIGURE 7: COMPARISON OF CAPITAL CHARGE FOR COMMERCIAL REAL ESTATE LOANS**



**INTERNAL MODEL APPROACH**

In practice, many large banks and insurers use internal models to calculate capital requirements. These are proprietary models and firms only report aggregate exposures. This makes it difficult to estimate the capital that firms hold for specific exposures.

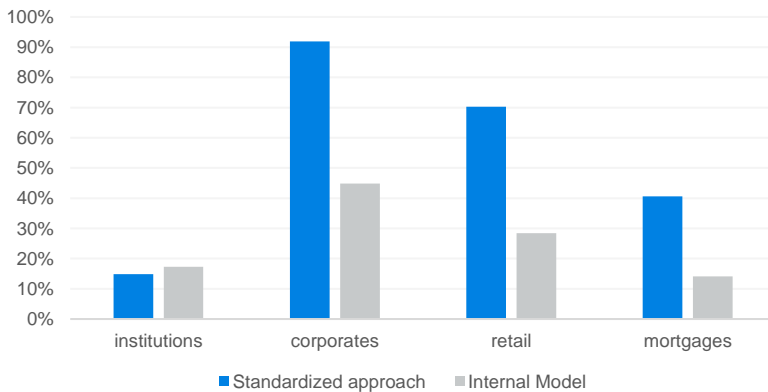
The impact of internal models for insurers is not straight forward. When compared to the standard formula, internal models may specify higher stand-alone capital requirements for certain risk exposures. However, a well-diversified portfolio can lead to risk mitigation and result in a lower capital requirement compared to the standard formula. Furthermore, insurers may apply certain<sup>13</sup> offsets of part of the spread volatility of ‘held to maturity’ investments (such as bonds and loans) which reduces the required capital for spread risk.

<sup>12</sup> Effects of guarantees on expected capital charges are not taken into account.

<sup>13</sup> Dynamic Volatility Adjustments and the Matching Adjustment.

In 2019, UK life insurers benefited substantially from increased diversification benefits in (partial) internal models.<sup>14</sup> The total diversification benefit to insurers using the standard formula was 18%, whereas the total diversification benefit to insurers using internal models was 30%. In practice, we see that insurers often have lower capital requirements due to their internal model compared to the standard formula, but we also have seen cases of higher capital requirements.

**FIGURE 8: RISK WEIGHTS UNDER BASEL III FOR DIFFERENT TYPES OF ASSETS**



For banks, internal models may lead to significantly lower capital requirements for credit risk. This is shown in Figure 7. The average reported credit risk RWA density of Eurozone Banks calculated with the standardized approach is around twice the density of the internal model approach, for similar counterparties. While the underlying exposures may not be fully comparable, and there may be a selection bias, these are striking results. This points to a large difference in the perception of the riskiness of these assets

according to banks' own estimates and the view of the regulator. Basel IV will limit the benefits of internal models however (see Chapter 4), for this reason.

Due to the variety of insurers using internal models, both in terms of the setup of their internal models and their balance sheet composition, it is difficult to draw definite and general conclusions about the capital requirements for the assets investigated. Banks are more transparent in their reporting and generally have lower capital requirements when applying internal models. However, based on our experience in the insurance sector, we would expect that insurers that use a DVA or MA and have a well-diversified portfolio may have lower capital requirements than banks for certain asset classes. However, this does not automatically generalize to all insurers.

## CONCLUDING REMARKS

Pillar 1 regulatory capital requirements for similar assets may vary between insurers and banks. However, it should be noted that, under the Pillar 2 framework, institutions are also required to make their own assessment of the riskiness and appropriateness of certain assets and of the overall level of risk capital they should hold. The attractiveness of certain asset classes for institutions not only depends on the capital requirements, but also on the expected return. Factors such as target capital ratios, funding costs, liquidity of the investments, distribution channels and cross-sell opportunities all contribute. Investments should fit within the risk appetite of the institution. In the end, it is the relative attractiveness of loans compared to other investments that matters.

The introduction of Basel IV and the prolonged low interest rate environment may impact the potential attractiveness of the asset classes considered. The next section explores the impact of current trends in the market on the investment strategy of insurers and banks.

## 4. Outlook

Regulatory and industry developments are changing the perspectives insurers and banks have on risk and return. These have the potential to challenge the status quo and have institutions rethink the attractiveness of certain asset classes. The COVID-19 epidemic has increased the uncertainty in the markets and it remains to be seen what the long-term implications on the banking and insurance sectors will be. In this section, we dive deeper into the impact of the upcoming Basel IV regulation for banks and the renewed search for yield in the insurance sector. Lastly, we discuss the implications and how firms can adapt to this new world.

### BASEL IV

Regulators are of the opinion that the use of internal models under Basel III led to a divergence of capital requirements across banks and hindered comparability. Therefore, in December 2017, the Basel Committee on Banking Supervision published the revision to the Basel III framework, commonly referred to as Basel IV. This package includes a more risk

<sup>14</sup> Source: <https://uk.milliman.com/-/media/milliman/pdfs/2020-articles/articles/9-16-20-uk-europe-life-sfcr-report-2019-v1.ashx>.

sensitive standardized approach for credit risk and operational risk. In addition, it constrains the use of internal models, both in terms of calculation and in terms of portfolios that these models may be applied to. The reforms limit the benefits of internal models by introducing an output floor; the aggregate RWAs of a bank are floored at 72.5% of the RWAs calculated by the standardized approach. An EBA impact study from 2019 found that European banks are expected to hold significantly more capital: Tier 1 capital requirements are expected to increase by 24% on average, leading to a total capital shortfall of EUR 135 billion. Basel IV disproportionately affects larger banks and banks from Northern Europe. These banks to a larger extent rely on internal models to assess the risk and their holdings are safer compared to the standard approach.

Basel IV is planned to be phased in from 2023. However, due to the adverse impact of COVID-19 on banks, the EU implementation has become more uncertain, both in terms of timing and in terms of form. As it stands, Basel IV requires banks to reevaluate their businesses and their balance sheet composition and increases the rationale for fee earning activities.

### SEARCH FOR YIELD

Insurers are searching for yield by increasing their position in non-traditional asset classes such as residential mortgages, commercial real estate loans, and other loan types. This is partly a reaction to the low interest rate environment and the need to generate sufficient returns to meet guarantees, and partly driven by private equity firms that have acquired life insurers and are accustomed to investing in these asset classes.

For an insurer, alternative asset classes often provide a higher expected return given the illiquid nature of the investments. Some of these investments have a sufficiently long duration that matches better with the insurance liabilities compared to more traditional investments. In addition, these assets classes can help insurers to diversify their investment portfolio, which is beneficial under Solvency II.

### IMPLICATIONS AND OPPORTUNITIES

Against this backdrop, we see opportunities for both banks and insurers. Insurers can diversify their asset portfolio by exploring assets that banks originally were primarily active in. The assets such as those considered in this paper may allow for additional diversification benefits and may provide attractive spreads. Furthermore, for an insurer having a well-diversified portfolio with effective long-term guarantee measures (DVA and MA), capital requirements for these assets need not be higher than those for banks. However, this should be considered together with other factors such as funding, risk appetite, etc.

With Basel IV on the horizon, some banks may want to reconsider the composition of their portfolio. For various assets capital requirements may increase and consequently, banks may find that certain assets become less attractive to hold. As a result, the EU could see a shift in the direction of the US banking model, where banks originate loans, but not always hold these until maturity and corporations rely to a larger extent on bond financing. Some European banks may consider an “originate to distribute”<sup>15</sup> model for selected parts of their portfolios, leveraging on their strong client relationship, expertise in credit risk management and in-depth sector knowledge. In this way, these banks could optimize their balance sheet and generate fee income. Insurers and pension funds, amongst others, would be prime candidates to act as (co-) investors in loan portfolios.

### CONSIDERATIONS

Given the continuous search for yield, insurers may want to consider giving alternative investments a more prominent role in their asset strategy. Insurers should include these asset classes as part of their strategic asset allocation exercises and ALM studies. Part of the investment case should be how to acquire these loans. Investing in portfolios from banks could be a logical approach. Given the history of the credit crisis, insurers may be wary of taking over existing portfolios from banks due to the information asymmetry. Therefore, co-investing in new loans would be a viable consideration for insurers. An alternative could be setting up own distribution channels. For example, in the Netherlands several insurance companies originate mortgages and have become sizeable players in the mortgage market.

Insurers interested in alternative assets may want to ensure that these assets fit within their capital and risk model frameworks. Important attention points are the correlation with other risks and the effectiveness of the long-term guarantee measures.<sup>16</sup> Furthermore, these insurers may think about expanding their knowledge and expertise of private debt investments and credit risk.

<sup>15</sup> Banks originating loans and selling these loans to third parties.

<sup>16</sup> Refer to Chapter 2 for a definition on long-term guarantee measures.

Banks on the other hand need to be aware of insurers' renewed interest in alternative investments. Having a solid understanding of the perspective of insurers and their investment needs is key. Hence banks may benefit from familiarizing themselves with the Solvency II framework and its opportunities. This opens the door for closer cooperation that can be mutually beneficial for both parties.

Current economic circumstances require both institutions to broaden their view and search for new opportunities that ensure stable and sound capital generation in the long run. As a result, the roles of banks and insurers in financing European economy may evolve. This paper has provided several considerations that both insurers and banks can benefit from in their long-term strategy.



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