

# Investing in Private Markets:

## A Road Map for Insurance Companies

In the late 1960s, it became clear, especially to American endowments, that investing in low-risk portfolios that were tilted toward fixed-income securities was a suboptimal strategy. Though this approach made it easy to set a fixed spending rate, real returns were so low that some endowments saw their capital bases shrink. Since then, many endowments have perfected more sophisticated strategies that often rely upon private markets to outpace inflation and preserve capital.

The issues that confronted US endowments were not as problematic for insurers at the time; yield compression over the past 40 years allowed insurance companies to invest conservatively and still remain competitive. As many other investors have discovered, today's market dynamics are forcing insurance companies to consider incorporating private markets to boost returns. While it may not be sensible for insurers to invest in alternative asset classes as heavily as endowments or sovereign wealth development funds, many portfolio managers are looking outside of traditional asset classes to find sufficient returns.

In addition to preferring the straightforward, low-cost nature of fixed-income investing, insurance companies historically avoided private markets, which they perceived to be inefficient. With few, if any, visible transactions, the difficulty of accessing data that were robust and trustworthy made it hard to judge and model—let alone implement—alternative investments and to capture the risk premia they offer. Today, however, there is a broader array of data available to model these asset classes.

These data are allowing more portfolio and risk managers to model investment duration, implement asset-liability management (ALM) techniques, and develop risk management tools.

Beyond the challenges of modeling duration and risk characteristics, regulatory hurdles have affected how insurers view private markets. The incongruous patchwork of international rules, and the difficulties that some regulators have had promulgating new guidelines in a timely manner, have led some insurers to avoid alternative asset classes altogether.

Our experience working with insurers leads us to conclude that with the right framework they can benefit from an increased allocation toward alternative investments. Although this paper serves only as a primer, we attempt to quantify these benefits. As a baseline, we reference a traditional insurance portfolio for a client we recently worked with (the “Client Portfolio”). The expected returns of that portfolio when shifting 10% of its existing assets into specific alternative investment strategies (the “Enhanced Portfolio”) are higher than those for the Client Portfolio by 60 basis points (20%), with expected volatility lower by 20 basis points (nearly 5%).

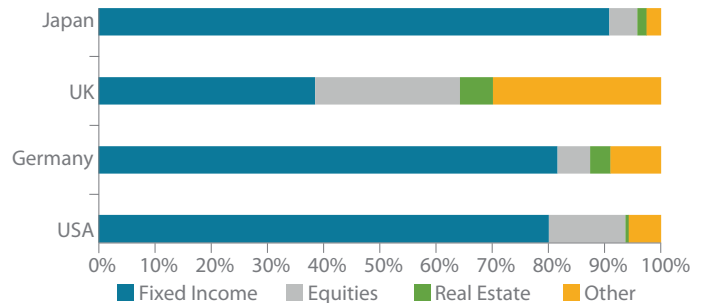
## Historical Allocations

Insurance companies have allocated significantly less toward alternative investments than have other institutional investors. Although investment preferences vary from country to country and across the insurance business lines, in general, private markets represent less than 10% of most companies’ portfolios. A considerable part of this allocation is often in direct real estate.

### USA

With more than US\$6 trillion of assets under management, American insurance companies make up one of the largest investor segments in the world.<sup>1</sup> In aggregate, the 4,500 or so companies in this group invest about 80% of their assets in fixed-income-related instruments, 14% in equities and slightly

**FIGURE 1 | PORTFOLIO COMPOSITION BY COUNTRY**



Source: StepStone, NAIC, British Insurance Association, GDV.  
 Note: Fixed Income includes Corporate, Gov-related, Mortgages, Structured Credit & other fixed income. Other includes Alternative Investments and, in the UK, Unit Trusts.

more than 6% in alternative and private market investments (including real estate) (Figure 1). This portfolio would have generated a gross annual return of 4–6% over the last 12 years, in US dollar terms (Figure 2).<sup>2</sup>

Across the various types of insurance companies, the asset allocation varies significantly. Life insurance companies, for example, which have a market share of 65%, allocate about 4% to equities, whereas property and casualty (P&C) insurers, which have a market share of 30%, allocate significantly more to equities (some of them 30% and more).<sup>3</sup>

### EUROPE

With slightly more assets under management than its American counterpart (US\$6.2 trillion), Europe’s insurance industry also employs a more varied approach to asset allocation. While life insurance companies generally invest more conservatively than P&C insurers, similarly to the US and the rest of the world, large differences exist in Europe. German insurers, for example, are often more defensive, investing about 6% in equities. By comparison, British companies tend to be more opportunistic, allocating about 26% to equities. With current allocations, the average European insurer (life and non-life) would have earned an annual return of 4.5–6.5% in euro terms over the last 12 years (Figure 2).<sup>4</sup>

<sup>1</sup> NAIC Capital Markets Special Report 2019.

<sup>2</sup> StepStone analysis based on aggregated asset allocation of the US insurance sector and historical returns of the invested asset classes.

<sup>3</sup> Supra note 1; market share based on AUM.

<sup>4</sup> StepStone analysis based on aggregated asset allocation of the European insurance sector and historical returns of the invested asset classes.

## ASIA

Insurance companies in Asia have nearly US\$5 trillion in assets under management.<sup>5</sup> Most of these assets are invested in domestic bonds. Equity positions, as in Europe, vary markedly from country to country, ranging from 25% in Singapore to about 5% in Taiwan and Japan.<sup>6</sup> Over the last couple of years insurers in some markets have begun investing beyond their borders. For example, Taiwanese companies have gradually increased their exposure to foreign asset classes from 35% in 2008 to 55% in 2015. A similar move was observable in Japan, where gross annual returns have also increased.

While the market environment has changed significantly over the past decade, insurance companies' asset mix has remained somewhat static (**Figure 3**). Although the data that underlie this figure are based on American companies, the same general conclusion holds for insurers in other parts of the world.

Historically, the lack of exposure to alternative risk premia was easy to justify. The yield compression in fixed-income securities over the past 37 years created capital gains for insurance companies that obviated the need for non-traditional yield enhancements. In the US, Treasury yields have fallen by nearly 1,200 basis points since 1981. Over the same period US corporate bonds have generated gross annual returns of approximately 8.6%. Other developed markets look similar: since 1989 the 10-year Bund yield has fallen more than 700 basis points to -0.3%, and 30-year Japanese bonds are yielding below 1%.

## YIELD COMPRESSION

Going forward, the traditional asset mix is unlikely to generate the 4–6.5% annual returns that international insurers have grown accustomed to. For example, between 2004 and 2017, the Client Portfolio would have generated a 5.2% annual return, in US dollar terms; narrowing yields are responsible for two-thirds of this return (**Figure 4**). In today's environment we would expect this same portfolio to earn about 3.0% per year in US dollar terms.<sup>7</sup>

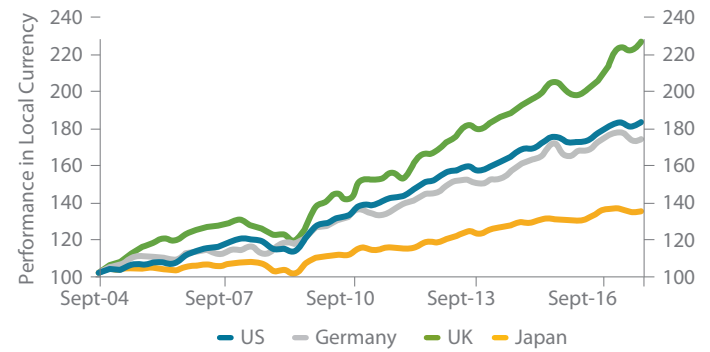
The yield compression in fixed-income markets allowed insurance companies to remain competitive by building asset portfolios with relatively low volatility. But now that returns from fixed-income investments are at an all-time low, and with underwriting markets growing more competitive, insurers see their ability to generate higher returns on the asset side of the balance sheet as a competitive advantage.

<sup>5</sup> Bouvet, Leanne and Kirjanas, Pavel "Global Climate 500 Index 2016: Insurance Sector Analysis," *Asset Owners Disclosure Project*, July 2016.

<sup>6</sup> Kong, Nancy and Lee, Yongho, "Allocating Overseas: What Asia Insurers Can Learn From Insurers in Developed Markets," *PineBridge Investments*, May 2017.

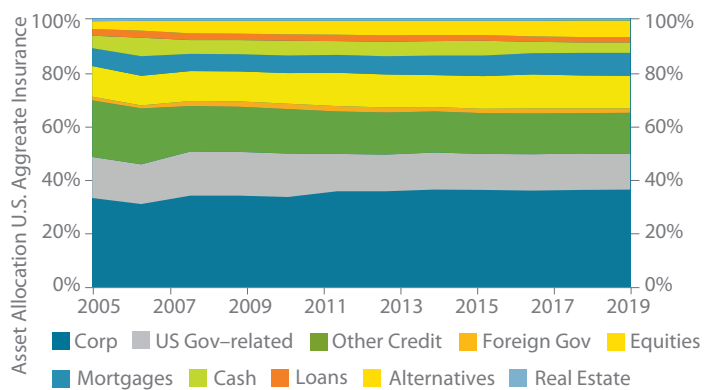
<sup>7</sup> StepStone analysis.

**FIGURE 2 | TOTAL INSURANCE INDUSTRY PERFORMANCE BY COUNTRY**



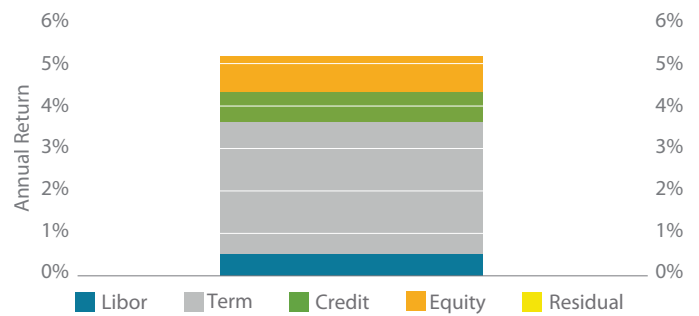
Source: StepStone.

**FIGURE 3 | AMERICAN INSURERS' ASSET ALLOCATION**



Source: StepStone & NAIC.

**FIGURE 4 | DECOMPOSITION OF RETURNS OF CLIENT PORTFOLIO (2004-2021)**



Source: StepStone.

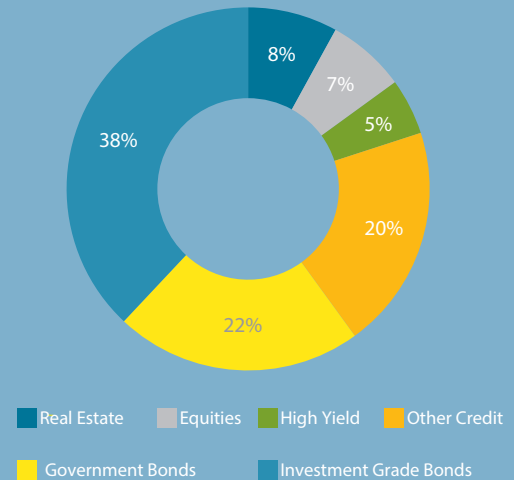
## Case Study: European Life Insurer

To help illustrate the shortcomings of a traditional insurance portfolio in a low interest rate environment, we constructed what we believe to be a fair representation of a typical global life insurance company's holdings—the Client Portfolio.

As seen in **Figure 5**, traditional assets dominate the Client Portfolio.

We then constructed a private markets portfolio (Private Markets Portfolio) that would help optimize the client's risk-adjusted returns (**Figure 6**). Because the Client Portfolio relies heavily on fixed-income investments, regarding the allocation to alternatives primarily as a bond enhancement strategy is appropriate, and explains the 55% allocation to cash-yielding private debt strategies. Still, the Private Markets Portfolio benefits from the idiosyncrasies of the other alternative asset classes: in addition to providing diversification benefits, real estate and infrastructure are treated favorably under the Solvency II framework we followed; private equity helps to implement the equity allocation more efficiently; and liquid alternatives accelerate deployment speed and capture additional risk premia.

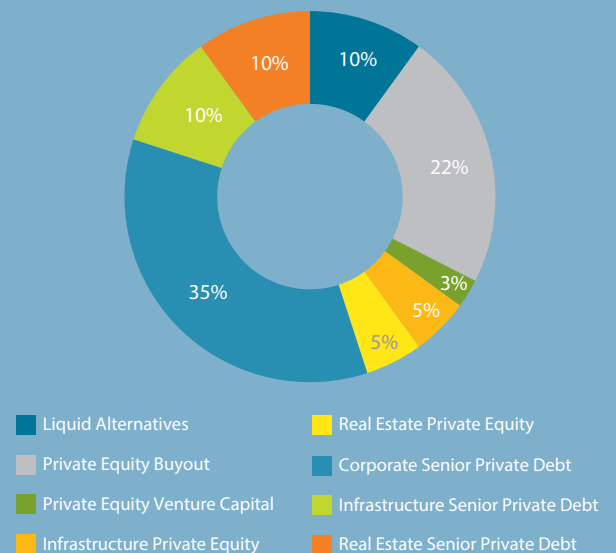
**FIGURE 5 | CLIENT PORTFOLIO**



Source: StepStone.

Note: Investment-grade bonds include Corporate and Municipal bonds. Other Credit includes MBS, ABS, Mortgages, Loans, etc.

**FIGURE 6 | OPTIMAL PRIVATE MARKETS PORTFOLIO**



Source: StepStone.

Based on the client's investment policy statement, risk/return objectives, and available solvency capital, we determined that replacing 10% of the Client Portfolio with the Private Markets Portfolio would help increase return potential, keep volatility in check, reduce expected shortfalls, and shorten duration, as seen in **Table 1**.<sup>8</sup>

We also investigated merely replacing 20% of the fixed-income exposure in the Client Portfolio with private debt.<sup>9</sup> As seen in **Figure 7**, this produced the following results:

- » Yields rose by 28% from 2.9% to 3.7% and volatility fell by 16% from 3.9% to 3.3%;
- » Duration fell from 6.2 to 5.4 years, due to the floating structure of corporate debt; and

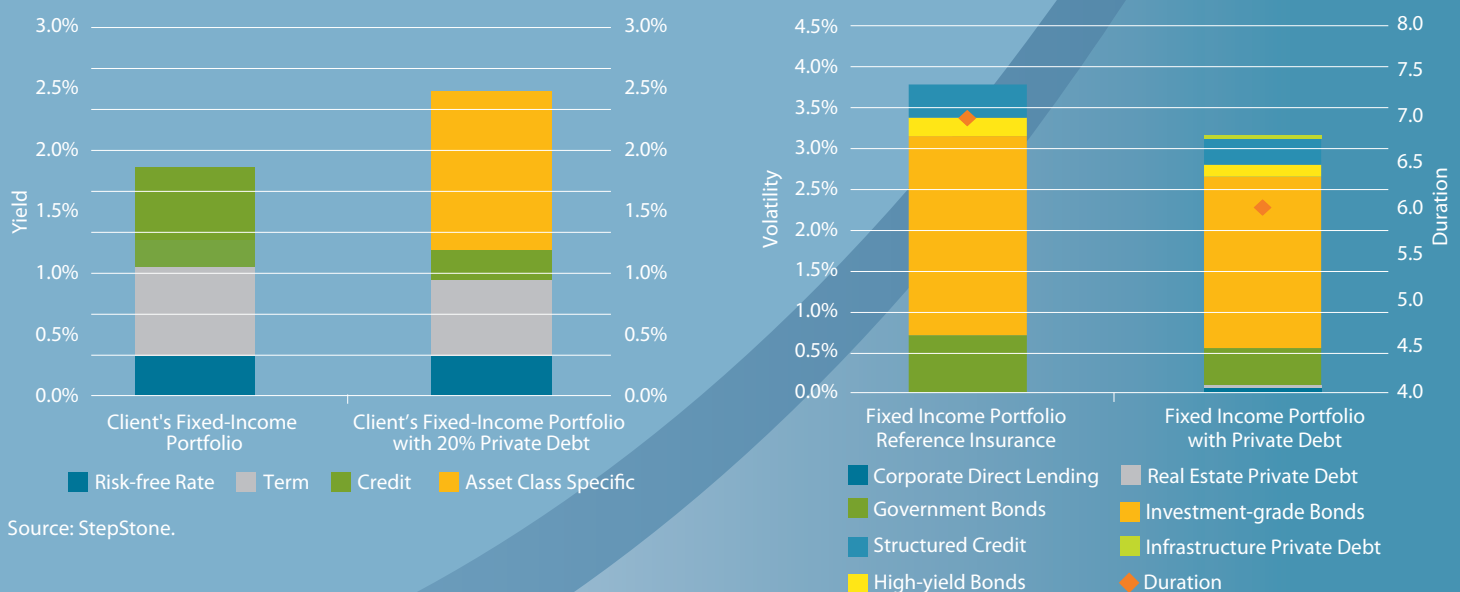
**TABLE 1 | SUMMARY OF RESULTS**

	Client Portfolio	Private Markets Portfolio	Enhanced Portfolio
Estimated return	3.0%	8.7%	3.6%
Volatility	4.3%	7.7%	4.1%
VaR <sub>95</sub>	(4.0%)	(4.0%)	(3.1%)
Duration (years)	6.2	1.8	5.9

For illustrative purposes only. Target returns are hypothetical and are neither guarantees nor predictions or projections of future performance. Future performance indications and financial market scenarios are no guarantee of current or future performance. There can be no assurance that such target estimates will be achieved or that the investment will be able to implement its investment strategy, achieve its investment objectives or avoid substantial losses. Volatility calculated using unsmoothed returns. Unsmoothing was realized using an AR(1) process. Smoothed volatility would be 5.4% for the Private Markets Portfolio and 4.0% for the Enhanced Portfolio.

- » The structure of the yield drivers changed, term risk fell, credit remained stable, and the idiosyncratic return (including the illiquidity premium) nearly doubled.

**FIGURE 7 | DECOMPOSITION OF YIELD DRIVERS**



Source: StepStone.

<sup>8</sup> To implement the 10% private markets allocation 3% of Investment-grade Bonds, 3% of Equities, 3% of Government Bonds and 1% of High-yield Bonds are being replaced. The details of the process we used to arrive at this recommendation are the subject of a forthcoming paper.

<sup>9</sup> In this example, we replaced 7.0% of positions in Government Bonds, 6.5% of positions in Investment-grade Bonds, 3.5% in Other Credit and 3.0% of positions in High-yield Bonds with a 14.0% allocation to Corporate Direct Lending, 3.0% to Infrastructure Private Debt, and 3.0% to Real Estate Private Debt.

## Why Private Markets?

As the benefits of alternative investments have become increasingly accepted, family offices, endowments, pension funds, and other institutional investors have gradually increased their allocations to private markets. Many insurance companies have already taken note: a 2020 survey by Goldman Sachs Asset Management reported that insurers planned to increase their allocations toward private markets by as much as 28%.<sup>10</sup> We believe there are several factors driving this trend.

### ENHANCED RETURN POTENTIAL

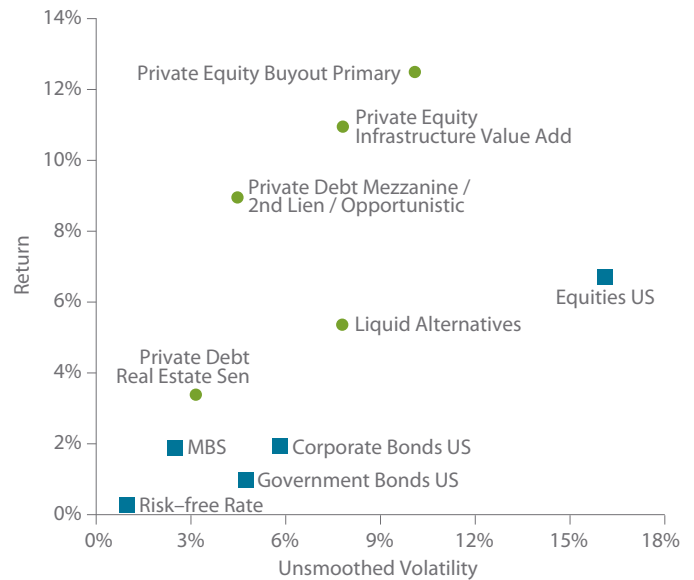
Private markets are typically more illiquid than public markets. In exchange for this, investors expect to be compensated through higher returns. As seen in **Figure 8**, the benefits of the illiquidity and asset class specific premia are more than theoretical: between 2005 and 2017, private markets generated higher returns than their public counterparts.

### MATCHING LONG-TERM LIABILITIES

Insurance companies seek to account for all possible outcomes when managing assets and cash flows. Consequently, their assets must be sufficiently large to meet expected and unanticipated claims, and they must be able to deal with any adverse effects resulting from asset liability mismatches. This implies that insurers are required to maintain higher capital reserves when making riskier investments. As a result, the capital required to protect policyholders must be part of the investment calculus.

ALM is a key component of the investment decision-making process. A dynamic liability-driven investment process is often implemented to further support the fundamental idea of the ALM concept. The investment management starts by determining the minimum-risk investment position. This allows the insurer's liabilities to be represented by common financial instruments, primarily government bonds with matching durations. Consequently, the minimum-risk portfolio ensures

**FIGURE 8 | PUBLIC VS PRIVATE MARKET PERFORMANCE (2005-2021)**



Source: StepStone.  
Note: Benchmarks defined in glossary.

the market values of assets and liabilities move in parallel if interest rates change.

Based on this framework, insurance companies are natural buyers of assets with longer investment horizons. This is especially true for life insurance companies. Private market investments are therefore well positioned to meet the asset liability requirements while capturing the inherent illiquidity and asset class specific premia. In addition, private markets may reduce opportunity costs when reinvesting available cash into public market instruments.

Because accessing data on private markets remains a challenge, many investors continue to rely on qualitative inputs. Those who can obtain private data sets may be able to develop more sustainable strategic asset allocation (SAA) and ALM models.

<sup>10</sup> Goldman Sachs Asset Management Insurance Survey, April 2021.



## GREATER PORTFOLIO DIVERSIFICATION

Not only are return expectations higher for private markets than their public counterparts, but the fact that some asset classes are uncorrelated with traditional investments can diversify systemic risk, generating a higher expected return for any given level of volatility. These diversification benefits are partly the result of a phenomenon known as smoothing.<sup>11</sup> As seen in **Figure 9**, smoothing has very little impact on the correlation between public and private market volatility. For example, leveraged buyouts and direct lending strategies are negatively correlated to government bonds, have a low correlation to corporate bonds, and a limited, albeit higher, positive correlation to equities.

## SOLVENCY REQUIREMENTS

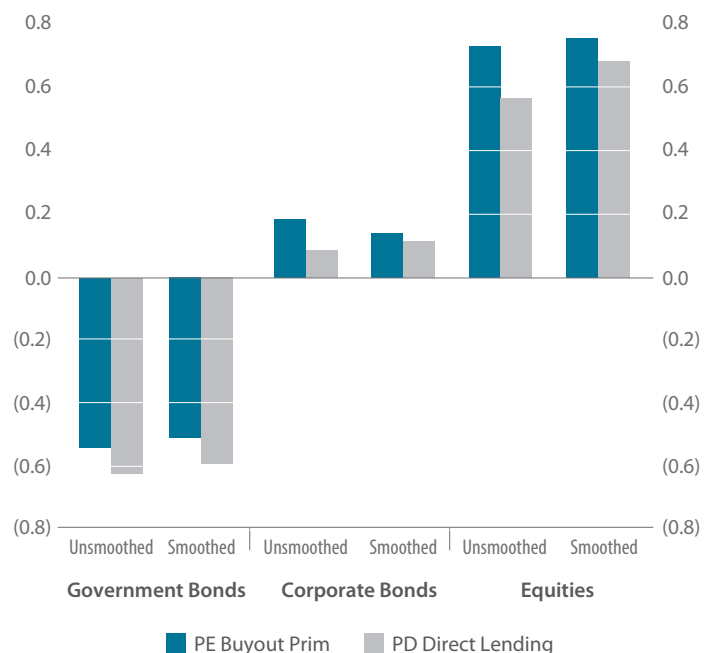
Although all solvency rules require insurance companies to maintain an adequate margin of safety and meet basic reporting requirements, the rules vary from one jurisdiction to another. For example, the US relies on the static, risk-based capital (RBC) approach set forth by the National Association of Insurance Commissioners (NAIC). The EU’s Solvency II guidelines, on the other hand, use a dynamic, principle-based approach. Asian countries, such as Japan and South Korea, closely follow the US’s RBC regime, but are poised to adopt elements of Solvency II. Switzerland’s Solvency Test has its own subtleties.

While each set of rules treats alternative investments differently, most regimes do not require insurance companies that invest in private markets to hold any more capital than investments in traditional asset classes would require—especially if these companies can provide position-level look-throughs.

### Solvency II

Solvency II stipulates that solvency capital requirements (SCR) can be calculated based on a standard formula or a proprietary model.<sup>12</sup> Although using Solvency II’s standard formula provides a robust accounting of risk, companies that use a proprietary model are often able to reduce their SCR. Because proprietary models are intrinsically more considerate of each company’s idiosyncrasies, it is often appropriate to

**FIGURE 9 | DIVERSIFICATION IS NOT DUE TO STALE PRICING**



Source: StepStone, Burgiss, 2017.

use less conservative risk buffers than the standard model otherwise applies.

Position look-throughs allow insurers to apply an SCR factor that reflects the risk of the underlying investment more fairly even under the standard formula. For example, suppose an insurance company was invested in private equity real estate. By default, Solvency II would classify such a holding as private equity and apply an SCR factor of 49% (+/- a 10% adjustment factor). A look-through, however, would allow the insurer to more accurately classify the holding and use the 25% SCR factor that applies to real estate. Full position look-throughs using separately managed accounts (SMAs) are useful for insurers seeking to minimize their SCR. The SCR factor for corporate direct lending, for example, can be as low as 10%, and in the mid-teens for qualified infrastructure debt.

<sup>11</sup> Smoothing occurs due to stale pricing. It often results in overstated risk-adjusted returns, which can lead portfolio managers to overweight more volatile sectors.

<sup>12</sup> Solvency II consists of three pillars: Pillar I defines the SCR; Pillars II and III address risk assessment, management, and reporting. We focus solely on Pillar I.

## NAIC Risk-based Capital

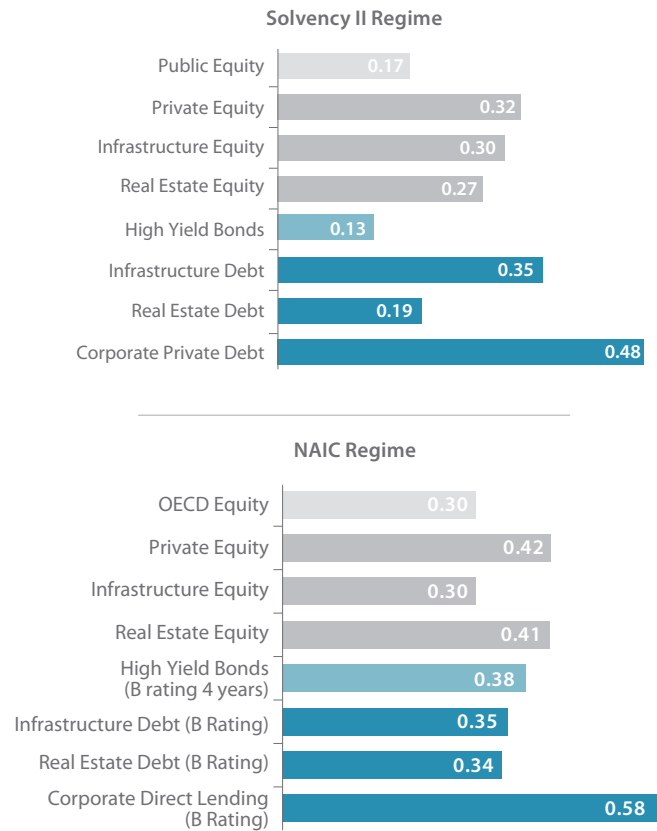
The NAIC uses a series of schedules to define the RBC requirements associated with each asset class.

As seen in **Table 2**, when comparing the RBC charges for traditional investments to those for alternatives, it is clear that the NAIC neither encourages nor discourages private markets in general.<sup>13</sup> In our opinion, this neutrality appears to be particularly supportive of private markets when you consider that the NAIC does not levy an additional liquidity charge beyond what is usually included in a company’s liquidity rating.

## Regulatory Capital Efficiency

Even when done in isolation, comparing an investment’s solvency capital to its expected return can be a valuable exercise and helps to further illustrate why insurance companies are increasing their allocations to private markets. As a result, one can judge how much solvency capital is required for an investment with a certain risk-adjusted return expectation. For example, a ratio of 0.5 would indicate an expected risk-adjusted return of half of the solvency capital to be reserved. The higher the ratio, the more effective the investment. This information is especially valuable when determining an insurer’s SAA. **Figure 10** illustrates the average capital efficiency for several types of investments under the Solvency II (top) and NAIC (bottom) regimes. In most cases, private markets generate higher returns for each unit of solvency capital.

**FIGURE 10 | EFFICIENCY RATIOS**



Source: StepStone calculation based on current yields and assumed modified duration. NAIC based on pretax example of a US life insurance company based on forward-looking returns. **Actual results may vary.**

**TABLE 2 | SUMMARY OF THE NAIC RBC SCHEDULE FOR PRIVATE MARKETS**

Asset Class	Life Insurance**		P/C & Health Insurance	
	Direct & Indirect Investments		Direct Investments	Fund/Indirect investments
Private Equity	30%		20%	20%
Private Debt*				
Investment grade	0–1.3%		0.3–1%	20%
Non-Investment grade (BB-B)	4.6–10%		2–4.5%	20%
Below B	23–30%		10–30%	20%
Not rated	30%		30%	20%
Real Estate	23%		20%	20%
Hedge Funds	30%		20%	20%

Source: StepStone summary of private market RBCs taken from Schedules D and BA and core assets. \*The credit rating must be received by either a NAIC-registered securities valuation office or by a SEC-regulated ratings agency. \*\*Pretax.

<sup>13</sup> Like traditional credit investments, indirect private debt investments (i.e., via funds) are usually suboptimal from an RBC perspective; private debt investments without a credit rating are subject to the maximum RBC charge.



## Accounting Considerations

The International Financial Reporting Standards (IFRS) provide much of the basis for private market investments for accounting standards in many countries including the US, the UK, Japan, Switzerland, and Germany. The IFRS 9, which went into effect 1 January 2018, is particularly important.

The new standard allows the costs associated with loans and debt securities to be measured at amortized cost if the reporting entity does not intend to sell the assets before they reach maturity. This requirement applies to most private debt investments including direct lending. In other cases, including private equity investments, the financial asset should be classified as fair value through other comprehensive income or profit-and-loss measures. IFRS also defines income recognition, which is for many insurance companies a key consideration for earnings presentation. Depending on the accounting standard, the possibility of income recognition of cash yielding debt instruments in the profit-and-loss accounts presents a major advantage compared to non-cash yielding strategies.

Statutory accounting frameworks for insurance companies often apply comparable principles. However, statutory accounting treats the value of an insurance company as if it were in liquidation rather than a going concern. For example,

in the US, under the NAIC's Statutory Accounting Principles (SAP), debt securities (including private debt) may be valued at amortized cost as long as the NAIC rating is at least a 2 (investment grade) for P&C and health insurers, or at least a 5 (equivalent to a CCC- Rating by S&P) for life insurers. Private equity assets should be carried at fair value.

The less-frequent valuation periods of private markets investments provides lower accounting volatility relative to investments in public markets. Low accounting volatility is important for an insurer's balance sheet.

## Strategic Asset Allocation

StepStone's SAA process follows a risk premium framework that decomposes each asset class into sets of common and idiosyncratic factors. The common factors, which include the risk-free rate, term, credit and equity risk, contribute to the returns of public and private markets alike. The idiosyncratic factors on the other hand, can only be harvested by investing in private markets.

As seen in **Figure 11**, we follow a four-step process when setting an investor's SAA. The results of applying this process to an insurance company are presented in the Case Study.

**FIGURE 11 | SUMMARY OF STEPSTONE'S SAA PROCESS**



For illustrative purposes only.

Further details will be available in our separate SAA paper.

Compared with other institutions, insurance companies are usually subject to more constraints, which have greater influence on the SAA process. Some of the factors that insurers should consider when beginning to define their SAA include:

- » The general need to protect against interest rate risk and match future liability payments results in a natural tilt toward long-duration and buy-and-hold investments.
- » The need to meet the required minimum return leads to a natural preference for low-risk, low-volatility investments in the senior space of the capital structure and a balanced exposure to risk premia.<sup>14</sup>
- » Running cash yields are quite important, especially when mitigating the J-curve. Private debt is often a good fit for this purpose.
- » The fact that liquidity is generally less of an issue for life insurers allows them to capture attractive illiquidity premia within the various private market segments. Because each private market instrument offers a different deployment and repayment pace, the portfolio can be adjusted to fit specific requirements.
- » An insurer's underwriting activities can limit or even prohibit investments in similar businesses such as insurance-linked securities or mortgages.
- » Regulatory requirements such as the insurer's risk budget based on Solvency II and RBC calculations, which support or hinder specific asset classes compared with one another.
- » For private debt, some accounting standards allow booking investments at amortized cost. This can trigger an increase of the allocation target of such investments.

In some cases, insurers that include private markets in their portfolios may find that:

- » Depending on the risk budget and return target, absent any constraints, the optimal private market portfolio for an insurer will be tilted toward corporate private debt and

private equity; investors with greater risk appetites can complement these exposures with venture capital.

- » Due to their diversification qualities, the allocation to infrastructure and real estate increases when regulatory constraints such as solvency capital are applied.

## INVESTMENT STRUCTURE

Investors have historically used funds-of-funds (FOFs) or invested with several fund managers to access alternative investments. Though both approaches can reduce idiosyncratic risk, each has its drawbacks. FOFs, for instance, include a double layer of fees, lack transparency, and are inflexible. Investors who use multiple managers, on the other hand, could face overlap risk, since each manager may have rather broad investment guidelines; this approach is also harder for investors to handle.

Our experience working with insurance companies leads us to conclude that these concerns are often best addressed using SMAs, which can offer several benefits including:

- 1 **Transparency**—complete information on all positions in the investor's account is particularly useful when using position look-throughs to calculate solvency requirements.
- 2 **Governance and Control**—immunity from the actions of other investors and the possibility to steer the portfolio based on the investor's needs.
- 3 **Deployment**—more efficient portfolio ramp, higher investment percentage, and evergreen structures often resulting in higher money multiples.
- 4 **Flexibility**—investment objectives can be tailored specifically to each client and adapted based on future market conditions.

These benefits can be especially potent when constructing SMAs composed of multiple private market asset classes and investment strategies.

<sup>14</sup> Set by local regulators, the technical rate is the discount rate used to calculate the present value of future benefits, and represents the growth rate guaranteed to customers by insurers. The required minimum return is defined by the technical rate.

## Conclusion

Most insurance companies have historically allocated less than 10% to private markets, most of which has often been to direct real estate. However, with yields as low as they can go, many insurers are looking to follow the example laid out by large American endowments. But unlike endowments, insurance companies must also address many internal and regulatory constraints to maximize the effectiveness of their private market exposure.

When investing in private markets, insurance companies are faced with a set of additional challenges, such as illiquidity, fees, overall program complexity, portfolio construction requirements, need for private data, market coverage, and investment sourcing, as well as execution capabilities. It is up to insurers to master these issues using a sound SAA framework.

We believe insurance companies will find that the benefits of investing in private markets outweigh the challenges of doing so, particularly when traditional portfolios are not generating the returns required to match liabilities. This is also true when regulatory capital requirements are taken into account. The key is to manage costs and complexity in a thoughtful way. SMAs, in our experience, can be helpful in this regard.

In sum, private market portfolios are a critical complement to more liquid public investments. There's a clear tendency of private market investments to generate higher returns, diversify risk, mitigate inflation, and reduce basis risk when attempting to match long-term liabilities. These benefits are often best captured by tailoring integrated, multi-asset class private market portfolios instead of investing in a number of different private market products.

## BENCHMARKS USED

<b>Government Bonds US</b>	Bloomberg Barclays US Treasury Total Return Unhedged USD (LUATTRUU)
<b>Government Bonds Germany</b>	Bloomberg Barclays Germany Govt All Bonds Total Return (BCEG1T)
<b>Government Bonds Europe</b>	The BofA Merrill Lynch Euro Government Index (EG00)
<b>Government Bonds Japan</b>	Bloomberg Barclays Series-E Japan Gov All > 1 Yr Bond Index (BEPAGA)
<b>Government Bonds UK</b>	Bloomberg UK Sovereign Bond Index Gilts Total Return Index Value Unhedged GBP
<b>Corporate Bonds US</b>	Bloomberg Barclays US Corporate Total Return Value Unhedged USD (LUACTRUU)
<b>Corporate Bonds EU</b>	The BofA Merrill Lynch Euro Corporate Index (ER00)
<b>Corporate Bonds JP</b>	Bloomberg Barclays Asian-Pacific Japan Corporate Total Return Index Value Unhedged JPY (LJC1TRJU)
<b>High-Yield Bonds</b>	Credit Suisse High Yield Index (DLJHVAL)
<b>MBS</b>	JP Morgan MBS Bond Index (JPAGMBS)
<b>Real Estate</b>	SWX IAZI Investment Real Estate Performance Index (IREALC)

<b>Equities US</b>	S&P 500 Index (SPX)
<b>Equities Japan</b>	MSCI Japan Net Return JPY Index (M7JP)
<b>Equities UK</b>	MSCI UK Net Total Return Local Index (NDDLUK)
<b>Equities World</b>	MSCI AC World Total Return USD
<b>Liquid Alternatives</b>	Hedge Fund Research HFRI Composite Index
<b>Private Equity Buyout</b>	Burgiss Private iQ Private Equity Buyouts
<b>Private Equity Venture</b>	Burgiss Private iQ Venture Capital
<b>Private Equity Infrastructure</b>	JPM Morgan Asset Management Research Proprietary Index constructed from cash flows of approximately 50 mature infrastructure assets in the US and EU-15 countries selected from a broader pool of over 200 assets.
<b>Private Equity Real Estate</b>	Gilberto-Levy Index
<b>Private Debt Direct Lending</b>	SAA Private Debt Direct Lending
<b>Private Debt Infrastructure</b>	JP Asset Management Regression Based Price Model for Project Finance Loans / Burgiss Private iQ
<b>Private Debt Real Estate Senior</b>	Gilberto-Levy Index

This document is for information purposes only and has been compiled with publicly available information. StepStone makes no guarantees of the accuracy of the information provided. This information is for the use of StepStone's clients and contacts only. This report is only provided for informational purposes. This report may include information that is based, in part or in full, on assumptions, models and/or other analysis (not all of which may be described herein). StepStone makes no representation or warranty as to the reasonableness of such assumptions, models or analysis or the conclusions drawn. Any opinions expressed herein are current opinions as of the date hereof and are subject to change at any time. StepStone is not intending to provide investment, tax or other advice to you or any other party, and no information in this document is to be relied upon for the purpose of making or communicating investments or other decisions. Neither the information nor any opinion expressed in this report constitutes a solicitation, an offer or a recommendation to buy, sell or dispose of any investment, to engage in any other transaction or to provide any investment advice or service.

**Past performance is not a guarantee of future results. Actual results may vary.**

On September 20, 2021, StepStone Group Inc. acquired Greenspring Associates, Inc. ("Greenspring"). Upon the completion of this acquisition, the management agreement of each Greenspring vehicle was assigned to StepStone Group LP. Each of StepStone Group LP, StepStone Group Real Assets LP, StepStone Group Real Estate LP and StepStone Conversus LLC is an investment adviser registered with the Securities and Exchange Commission ("SEC"). StepStone Group Europe LLP is authorized and regulated by the Financial Conduct Authority, firm reference number 551580. StepStone Group Europe Alternative Investments Limited ("SGEAIL") is an SEC Registered Investment Advisor and an Alternative Investment Fund Manager authorized by the Central Bank of Ireland and Swiss Capital Alternative Investments AG ("SCAI") is an SEC Exempt Reporting Adviser and is licensed in Switzerland as an Asset Manager for Collective Investment Schemes by the Swiss Financial Markets Authority FINMA. Such registrations do not imply a certain level of skill or training and no inference to the contrary should be made.

In relation to Switzerland only, this document may qualify as "advertising" in terms of Art. 68 of the Swiss Financial Services Act (FinSA). To the extent that financial instruments mentioned herein are offered to investors by SCAI, the prospectus/offering document and key information document (if applicable) of such financial instrument(s) can be obtained free of charge from SCAI or from the GP or investment manager of the relevant collective investment scheme(s). Further information about SCAI is available in the SCAI Information Booklet which is available from SCAI free of charge. Manager references herein are for illustrative purposes only and do not constitute investment recommendations.

---

StepStone Group (Nasdaq: STEP) is a global private markets investment firm focused on providing customized investment solutions and advisory and data services to our clients. StepStone's clients include some of the world's largest public and private defined benefit and defined contribution pension funds, sovereign wealth funds and insurance companies, as well as prominent endowments, foundations, family offices and private wealth clients, which include high-net-worth and mass affluent individuals. StepStone partners with its clients to develop and build private markets portfolios designed to meet their specific objectives across the private equity, infrastructure, private debt and real estate asset classes.



# Global Offices

## BALTIMORE

100 Painters Mill Road, Suite 700  
Owings Mills, MD 21117

## BEIJING

Kerry Centre  
South Tower, 16th Floor  
1 Guang Hua Road, Chaoyang District  
Beijing, China 100020

## CHARLOTTE

128 S. Tryon Street, Suite 880  
Charlotte, NC 28202

## CLEVELAND

127 Public Square, Suite 5050  
Cleveland, OH 44114

## DUBLIN

Newmount House  
22-24 Lower Mount Street  
Dublin 2, Ireland

## HONG KONG

Level 15  
Nexus Building  
41 Connaught Road Central  
Central, Hong Kong

## LA JOLLA

4225 Executive Square, Suite 1600  
La Jolla, CA 92037

## LONDON

2 St James's Market  
London SW1Y 4AH

## LUXEMBOURG

124 Boulevard de la Pétrusse  
L-2330 Luxembourg

## MIAMI

270 S. Ocean Boulevard  
Manalapan, FL 33462

## NEW YORK

450 Lexington Avenue, 31st Floor  
New York, NY 10017

## PALO ALTO

228 Hamilton Avenue, 3rd Floor  
Palo Alto, CA 94301

## PERTH

Level 24, Allendale Square  
77 St George's Terrace  
Perth WA 6000, Australia

## ROME

Via Crescenzo, 14  
00193 Rome, Italy

## SAN FRANCISCO

Two Embarcadero Center, Suite 480  
San Francisco, CA 94111

## SÃO PAULO

Av. Brigadeiro Faria Lima 3355, 8th Floor  
Itaim Bibi, São Paulo, Brazil 04538-133

## SEOUL

Three IFC Level 43  
10 Gukjegeumyung-ro  
Youngdeungpo-gu, Seoul 07326 Korea

## SYDNEY

Level 40, Gateway Building  
1 Macquarie Place  
Sydney NSW 2000, Australia

## TOKYO

Level 1 Yusen Building  
2-3-2 Marunouchi  
Chiyoda-ku, Tokyo 100-0005, Japan

## TORONTO

77 King Street West TD North Tower  
Suite 2120, P.O. Box 44  
Toronto, ON, Canada M5K 1J3

## ZURICH

Klausstrasse 4  
CH-8008 Zurich, Switzerland



For more information regarding StepStone's research,  
please contact us at [research@stepstonegroup.com](mailto:research@stepstonegroup.com)

[www.stepstonegroup.com](http://www.stepstonegroup.com)