

## Solutions

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### Key points

- An insurer can benefit from conducting strategic asset allocation studies as part of its management of enterprise-wide risks and opportunities.
- In this overview, we outline key steps in developing a comprehensive AA framework, highlighting aspects where we believe we can add value.

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# Asset allocation analysis for insurers

In recent years, the Insurance Group at Wellington Management has seen a growing number of insurers express an interest in undertaking a strategic asset allocation (AA) study. The low-yield environment of the past few years, along with the core fixed income-centric nature of insurance portfolios and a widely anticipated future rise in interest rates, all seem to be contributing to this surge in interest. For our part, we believe that an insurer, like other institutional investors such as pension funds, endowments, and foundations, can benefit from conducting strategic AA studies as part of its management of enterprise-wide risks and opportunities.

We define the strategic AA study process as a method for creating an asset mix that seeks to strike an appropriate balance between expected risks (both business and investment) and return over a long-term investment time horizon. In this overview, we outline what we regard as the key steps in developing a comprehensive AA framework for an insurer, highlighting aspects where we believe we can add value.

### Overall philosophy

In our view, the appropriate asset allocation philosophy for insurers is simple: An organization's investment strategy must fit with its core business. This is a crucial point as insurers consider their total-enterprise risk exposures. We believe that a well-constructed investment strategy that dynamically adapts to the insurer's specific circumstances as these evolve should confer competitive advantage over time.

An insurer often has to deal with multiple competing priorities for its investment portfolio and core insurance business. These priorities can vary based on the insurer's line(s) of business, such as life, property and casualty, and/or health; where the organization stands in its life cycle; its tolerance levels for business and portfolio risk; the level of surplus assets; and a host of other factors. These numerous factors are typically weighted or prioritized differently by each company, often leading to different and perhaps conflicting portfolio strategies, even within a single line of business.

For a more detailed version of this paper, please contact your Relationship Manager.

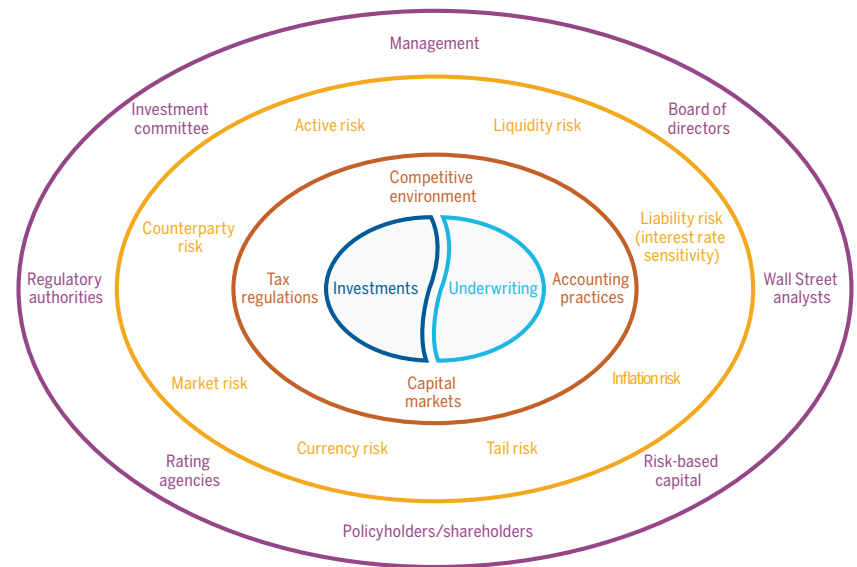
On 1 January 2015, we implemented changes to rationalize the corporate structure of the Wellington Management group. Wellington Management Company, LLP (a Massachusetts limited liability partnership) changed its name to Wellington Management Group LLP and transferred its advisory business and SEC registration to a new Delaware subsidiary, Wellington Management Company LLP. Similarly, other affiliates of the Wellington Management group changed their names and/or form of organization to better suit the evolution of our business worldwide. Our employees and partners have substantially the same roles and responsibilities under our new structure as they held prior to these changes.

In conducting an AA study for an insurer, we review portfolio decisions in concert with the organization’s overall financial positioning (underwriting results, trends, capital budgets, etc.) to provide a comprehensive review unique to that insurer. This holistic approach requires expertise in both investments and the insurance industry, which we believe Wellington Management is well positioned to provide.

An important component of our AA study process is our integrated risk-based capital (RBC) ratio module. We believe it is vital for decision makers to be able to see the impact of potential portfolio changes on RBC. Therefore, we analyze the drivers of change to RBC through modeling potential changes that the insurer is considering making within its reserve and surplus assets.

FIGURE 1 illustrates the complexity of developing an investment-portfolio strategy and integrating enterprise risks into the development process. We believe it is prudent to consider many of these factors in concert, rather than examining any one factor in isolation.

FIGURE 1  
A complex environment for setting investment-portfolio allocations



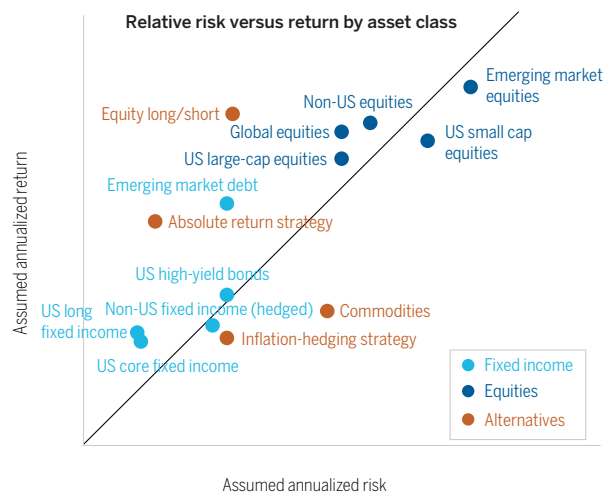
For illustrative purposes only | Source: Wellington Management

The main focus of this paper is on the portfolio-construction aspect of an AA study. However, in an Appendix we outline other key considerations in developing an integrated AA study framework, such as guideline construction, fees, and implementation issues.

## Inputs

AA studies often involve portfolio optimizations to produce various permutations in asset allocation for consideration. In order to conduct this analysis, it is necessary to make assumptions about risks, returns, and correlations for each asset class (**FIGURE 2**) so as to calculate potential overall portfolio performance over time. The potential returns based on these assumptions represent best estimates of the average (geometric) change in values of each asset class over a projected future period. The risk of an asset class is measured by the standard deviation of its assumed return.

FIGURE 2



Inflation-hedging strategy is 50% US Treasury Inflation-Protected Securities, 50% commodities. | Relative risk versus return by asset class is shown for illustrative purposes only. The graph does not display specific performance (historical or expected) but instead represents expectations of how an asset class may fare relative to other asset classes in a risk/return perspective, based on the Wellington Management Asset Allocation Strategies Group's five-year capital markets expectations as of February 2014. Actual outcomes may differ significantly. This chart does not represent an actual investment, but instead is based on expectations of future outcomes and historical results. Expectations are subject to numerous limitations and biases, including subjectivity. The relationships shown in the graph are not to be relied upon as investment advice or as a recommendation to buy or sell any security. | Source: Wellington Management

As part of the strategic AA study process, one must make assumptions about correlation factors between asset classes in calculating estimated return and standard deviation for the total portfolio. As key variables in determining the diversification benefits of adding new asset classes to a portfolio, correlations are necessary to help build an "optimal" portfolio, defined as the maximum return for a given level of risk as measured by standard deviation. We do not perform optimizations per se because of their numerous limitations; instead, we take a holistic approach that includes traditional mean-variance analysis, sensitivity analyses, and other kinds of assessment tools.

Correlations between asset classes can vary greatly over time. For instance, during the 2008 financial crisis, many cross-asset correlations rose sharply above both their longer-term historical averages and the assumptions on which many investors had based their asset allocations. As a result, diversification benefits in portfolios were reduced and portfolio risk levels rose sharply as volatility surged across asset classes.

We believe it is somewhat impractical for investors to set their strategic AA policy to prepare for another financial crisis of such magnitude — the largest in more than seven decades. But this historical episode highlights the importance of scenario analysis, in which an insurer can consider several “what-if” scenarios through the lens of actual historical events as well as stochastic analysis. After running a variety of scenarios, an insurer can investigate the more outlying or extreme potential outcomes, or “tail” events, to better understand their causes and evaluate possible ways of dealing with them, including potential hedging strategies.

These return, risk, and correlation assumptions can help in forecasting an organization’s potential financial results and in modeling a broad set of scenarios across a variety of financial environments.

### Risk-based capital (RBC) considerations

As mentioned earlier, we have included a module within our asset allocation process that calculates the potential impacts of various investment and business decisions on a company’s RBC ratio. The module draws from publicly available financial data, other public information obtained from insurance-company clients and prospects, and broader assumptions (based, for example, on industry-wide measures) in modeling client-specific portfolio strategies within a comprehensive framework.

Currently, the RBC module is built on the US-based National Association of Insurance Commissioners (NAIC) RBC models. To better assist our insurance clients who have global books of business, we are working on expanding the RBC module to include non-US RBC regulatory regimes such as the European Union’s Solvency II and Australia’s APRA LPS and GPS prudential standards.

While RBC may not be the sole driver or criterion for setting an insurer’s strategic asset allocations, we believe it is integral to the organization’s overall business and investment decision-making process. Furthermore, RBC is a meaningful indicator of an insurer’s financial strength and solvency — one often used by regulators and rating agencies as a key metric in analyses of enterprise risk (FIGURE 3).

FIGURE 3

### Integrated risk-based capital planning



Source: Wellington Management

An insurer's RBC reflects many decisions made across the organization in such areas as investment strategy, underwriting results, and surplus levels, as well as decisions made externally that can greatly affect the firm, such as regulatory rulings, rating-agency actions, and licensure status. Hence, we regard RBC modeling as a key step in the AA process.

We can help generate and analyze a wide range of potential outcomes for key financial metrics, including RBC, and form estimates of RBC based on investment and financial forecasts. This information may be useful to insurers' management teams as they consider portfolio allocations based on customized inputs and assumptions.

#### **Peer review**

In our AA studies for insurers, we typically include industry and peer analysis where possible; an example is shown in **FIGURE 4** (next page). An insurer is unlikely to adopt a competitor's strategy, but rating agencies, regulators, and other constituents often compare its investment strategy to those of competitors and/or industry averages as part of their evaluations. Thus, an insurer may find it highly useful to know how its investment strategies and allocations stack up against peer and industry averages.

#### **Value-added analysis**

While quantitative assumptions and analysis are essential in conducting an AA study, we believe that much of the study's value comes from a qualitative evaluation of the resulting data. Through the combined skills and knowledge of our asset allocation specialists and global insurance team, we believe we have a best-in-class approach to collaborating with clients to set their strategic AA framework within the insurance context. In addition to providing a framework for understanding the impact of AA decisions on an insurer's RBC, our modeling process can produce a range of potential outcomes for other key metrics, such as surplus levels and net gain/loss. We believe these capabilities will prove useful to insurers who want to prepare for the potential impact of varying economic and business cycles on the overall enterprise.

#### **Recommendations**

We engage with clients in a consultative manner, understanding that all portfolio-structuring decisions are ultimately made by the client. Our goal is to be a thought partner in the decision-making process and to assist the client in understanding and analyzing the many factors that go into making asset allocation decisions that are appropriate to its needs. ■

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**FIGURE 4**  
**Sample peer analysis**

	P&C insurer 1	Peer group average	P&C industry	P&C insurer 2	P&C insurer 3	P&C insurer 4	P&C insurer 5	P&C insurer 6	P&C insurer 7	P&C insurer 8	P&C insurer 9	P&C insurer 10	P&C insurer 11
Business focus	P&C min NPW			P&C min NPW	P&C min NPW	P&C min NPW	P&C min NPW	P&C min NPW	P&C min NPW	P&C min NPW	P&C min NPW	P&C min NPW	P&C min NPW
NAIC ownership structure	Mutual co			Stock co	Stock co	Stock co	Stock co	Stock co	Stock co	Stock co	Stock co	Stock co	Stock co
<b>Financial overview (US\$ mil)</b>													
Net total assets	3,526	2,110	1,734,365	2,236	2,346	2,038	1,516	5,340	1,501	1,540	1,258	1,939	1,384
Surplus as regards policyholders	1,186	1,066	665,059	850	1,367	2,031	514	2,086	1,198	260	812	1,030	514
Capital & surplus/assets (%)	33.5	52.1	38.3	38.0	58.3	99.7	33.9	39.1	79.8	16.9	64.6	53.1	37.2
Subtotal: cash & invested assets	3,380	1,954	1,491,257	2,173	2,031	2,029	1,491	5,266	1,481	1,406	1,249	1,219	1,192
Cash & invested assets/net total assets (%)	95.6	92.6	86.0	97.2	86.6	99.6	98.4	98.6	98.6	91.3	99.3	62.9	86.2
Cash & invested assets/C&S (%)	285.0	183.2	224.2	255.7	148.6	99.9	289.9	252.4	123.6	539.7	153.8	118.3	231.8
Adjusted capital	1,186	686	-	850	1,367	2,031	-	-	-	260	812	1,030	514
Auth control level risk-based capital	140	84	-	404	185	23	-	-	-	105	50	13	64
ACL risk-based capital ratio (%)	894.8	2,030.4	-	210.6	740.8	9,016.3	-	-	-	247.1	1,608.3	7,678.6	802.3
<b>Invested assets summary (%)</b>													
Bonds	78.4	72.5	68.6	54.7	90.0	60.7	97.4	77.1	63.0	83.3	10.3	92.8	96.1
Preferred stocks	-	1.0	0.8	0.8	-	-	-	-	1.1	1.0	7.3	0.0	-
Common stocks	12.1	5.3	18.5	21.4	0.0	-	-	2.3	0.1	5.6	23.6	0.0	0.0
Mortgage loans	5.8	2.1	0.6	-	-	21.3	-	-	-	0.0	-	-	-
Real estate	1.3	0.8	0.8	-	-	-	-	-	-	0.0	-	7.7	-
Cash & short-term	2.0	16.2	(4.9)	13.9	10.0	11.6	1.6	20.4	33.4	9.1	58.8	(0.6)	3.9
Contract loans	-	-	0.0	-	-	-	-	-	-	-	-	-	-
Other	0.5	2.0	4.5	9.2	0.0	6.4	1.0	0.2	2.5	0.9	0.0	0.0	-
<b>Bond classification (%)</b>													
US federal government	10.0	30.1	13.8	43.5	8.7	54.3	2.7	12.0	61.3	21.0	79.2	6.1	12.3
Foreign government	0.0	1.5	2.9	3.4	3.0	0.0	0.0	0.0	0.9	0.7	1.1	1.5	4.3
Municipal & agency	35.3	32.3	41.6	53.1	18.9	35.6	85.7	46.7	15.8	7.3	3.1	33.1	23.6
Corporates	31.7	29.1	31.1	0.0	67.0	9.3	6.2	35.4	5.8	55.3	5.9	49.3	57.2
Non-agency RMBS	0.3	0.9	2.1	0.0	1.7	0.8	0.0	0.3	0.0	1.8	2.7	1.2	0.1
Non-agency CMBS	8.9	2.1	3.1	0.0	0.0	0.0	3.6	0.5	9.0	6.2	0.0	1.5	0.0
Non-agency other LBASS	13.8	2.9	3.8	0.0	0.8	0.0	1.8	2.6	7.1	7.1	0.0	7.3	2.6
Affiliated/other	0.0	1.1	1.7	0.0	0.0	0.0	0.0	2.5	0.0	0.5	8.0	0.0	0.0
<b>Bond rating (%)</b>													
Class 1	81.0	85.5	83.7	99.7	51.6	96.8	100.0	86.3	97.3	63.2	95.8	84.6	99.0
Class 2	18.9	9.6	12.3	0.0	47.8	3.2	0.0	2.2	2.7	21.6	4.1	13.9	1.0
Class 3	0.1	1.3	1.7	0.0	0.3	0.0	0.0	2.4	0.0	5.9	0.0	0.6	0.0
Class 4	0.0	0.7	1.1	0.3	0.1	0.0	0.0	0.1	0.0	8.9	0.0	0.2	0.0
Class 5	0.0	0.1	1.0	0.0	0.2	0.0	0.0	0.1	0.0	0.3	0.0	0.2	0.0
Class 6	0.0	2.9	0.2	0.0	0.0	0.0	0.0	9.0	0.0	0.0	0.1	0.4	0.0
<b>Bond maturity profile (%)</b>													
< 1 year	11.1	23.1	16.5	7.8	23.3	0.1	2.3	24.6	42.0	14.2	87.5	17.9	11.8
1 – 5 years	41.9	29.0	38.8	10.3	37.4	11.2	54.8	25.9	11.6	40.2	2.7	48.3	47.5
5 – 10 years	27.2	19.7	29.3	6.0	25.7	8.0	30.5	26.3	15.0	26.6	5.0	29.9	24.0
10 – 20 years	10.0	12.5	9.8	15.0	10.1	47.6	10.8	12.0	10.2	10.0	0.5	3.6	5.6
> 20 years	9.8	15.6	5.7	60.9	3.5	33.0	1.6	11.1	21.2	9.0	4.2	0.2	11.1

Peer selection criteria: P&C Insurer 1's peers are P&C companies in the SNL-determined category of P&C minimum net premium written (NPW) with the closest amount of net admitted cash and invested assets for 2013Y. | Sample for illustrative purposes only; not representative of an actual peer analysis or specific company. | Source: SNL Financial, statutory filings as of 31 December 2013

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**Appendix: Steps in conducting an asset allocation study for an insurer**

- Review client's capital requirements/planning
- Review overall investment goals/objectives
- Determine impact/sensitivity to statutory surplus/liquidity changes on investment goals
- Determine investable universe
- Consider asset class and "risk assets" limits (i.e., reserve versus surplus assets)
- Review industry/peer data
- Consider investment-management constraints (e.g., gain/loss, social screens)
- Perform portfolio analysis — risk/reward (mean variance type)
- Review functional regimes assessment (e.g., growth, inflation, deflation)
- Assess liquidity, volatility, income, and return expectations
- Perform stress tests (e.g., impact of a catastrophic event on surplus and liquidity)
- Consider implementation issues
  - Overall portfolio structure (number of managers, number of accounts/companies, active versus passive)
  - Manager selection
  - RBC impact
  - Fee impact
  - Adding new managers versus expanding existing role (e.g., moving from core to core plus)
  - Tax impact
  - Turnover costs
  - Frequency of asset allocation projects moving forward
  - Potential investment-policy changes ■



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