

THREE BUCKET APPROACH - EQUITY

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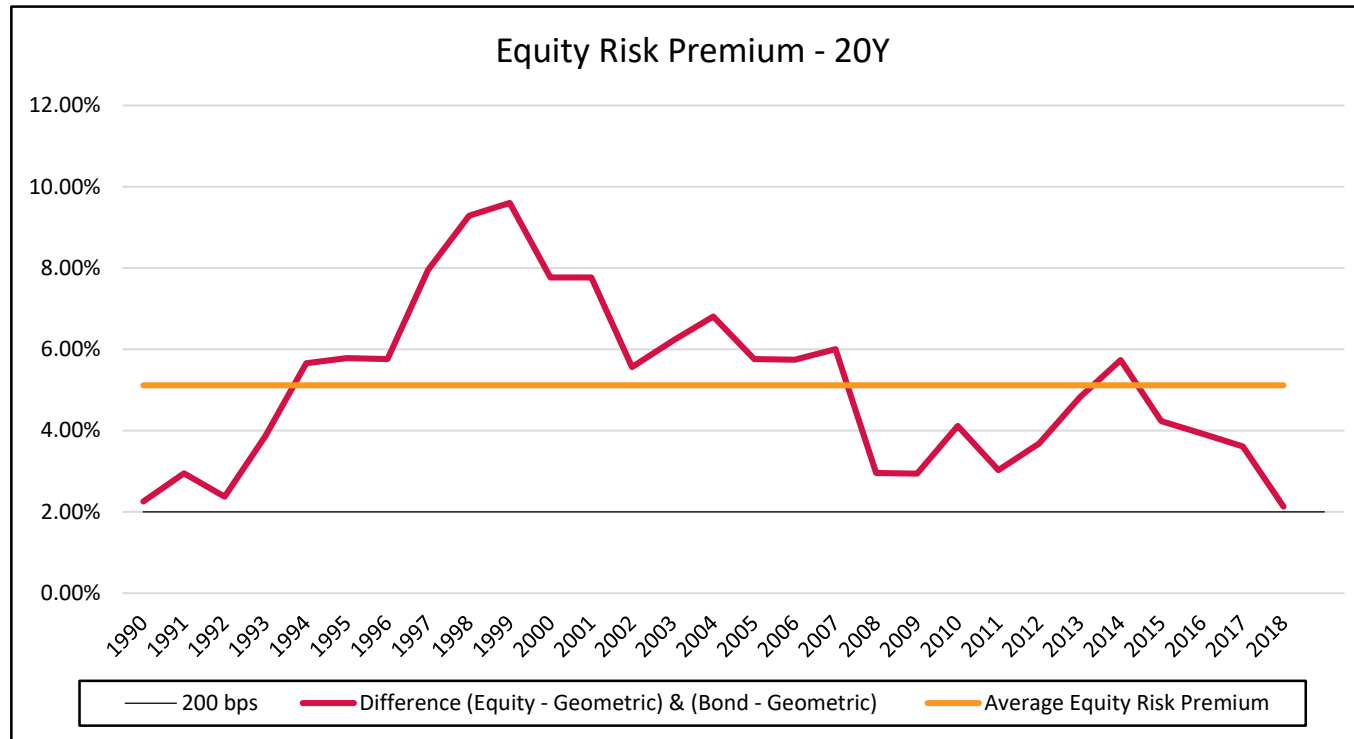


PURPOSE



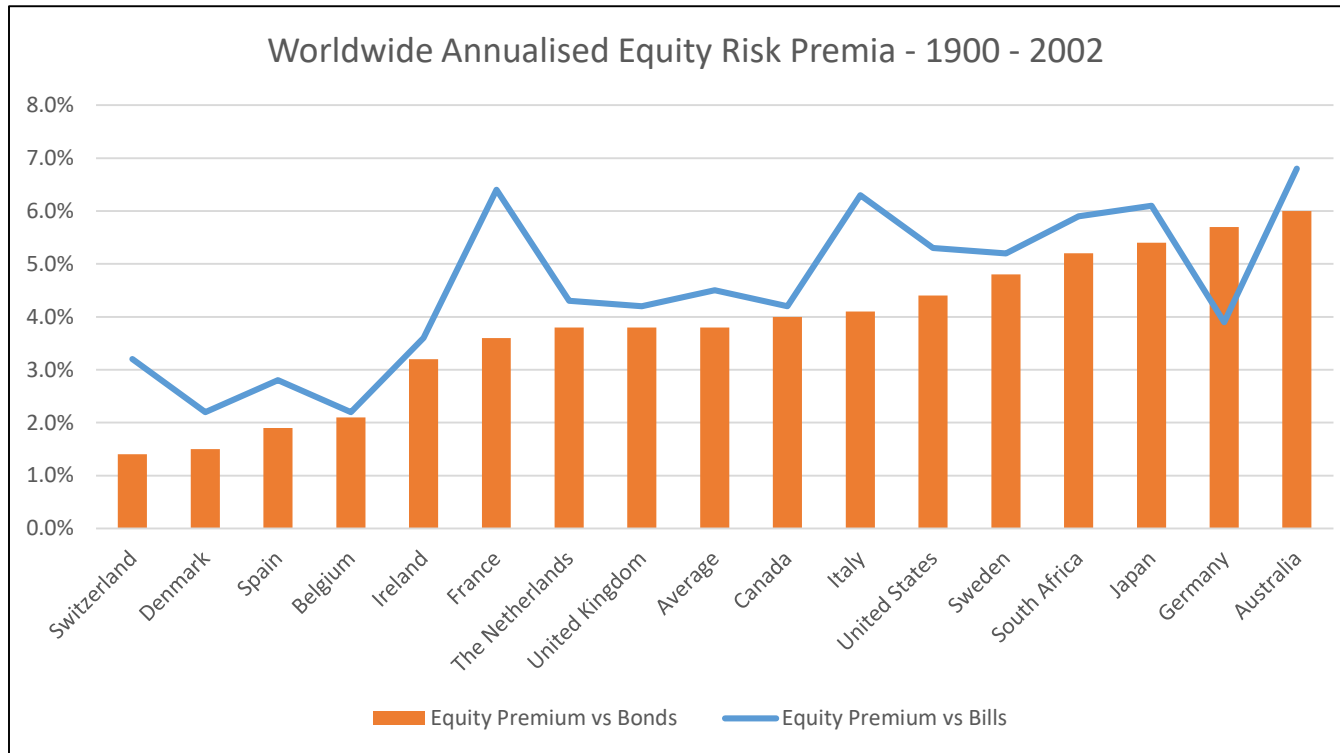
- Currently the Insurance Capital Standard (ICS) makes no allowance for the spread over the risk free rate that is produced by equities
- This is despite the fact that it is widely accepted that equities earn more than risk-free assets over the long term
- This spread is commonly referred to as the equity risk premium and has been widely discussed in academia by financial economists and other experts

US EQUITY RETURNS



- This graph shows the annualised difference between the 20 year returns of the S&P 500 and the US 10 year bond rates
- Note that the excess returns over bonds that equities earn is consistently above 2% with the arithmetic average being 5.1%

INTERNATIONAL EQUITY RETURNS



Source: Dimson, Elroy and Marsh, Paul and Staunton, Mike, *Global Evidence on the Equity Risk Premium* (August 1, 2003). *Journal of Applied Corporate Finance*, Vol 15, No 4, pages 27–34; LBS Accounting Subject Area Working Paper No. IFA 385. Available at SSRN: <https://ssrn.com/abstract=431901>

- The graph above shows the arithmetic average of annual equity risk premiums in different developed markets against short-term and long-term risk-free securities.
- It is clear that this experience is not unique to the US



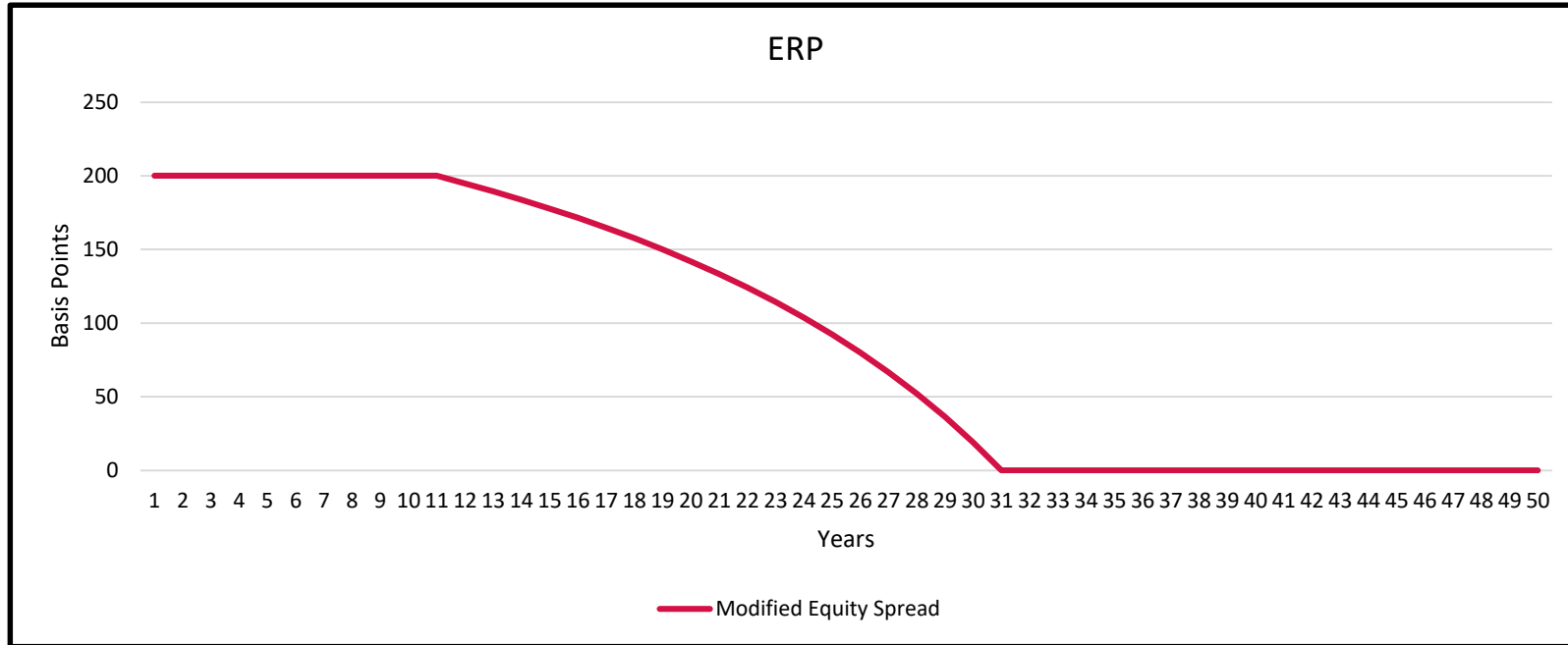
- Many insurance liabilities are very long tailed with cashflows extending substantially more than 20 years
- For such liabilities it is common to invest in equities to capture the expected ERP. Particularly because there are few other assets exist that can be used to hedge such long term obligations
- A reasonable equity risk premium should therefore be recognized in the valuation of long term liabilities
- We take the view that liabilities should be valued based on a prudent estimate of what the insurer can reasonably expect to earn on the supporting assets, NOT an arbitrage-free pricing approach

INCORPORATION INTO THE MIDDLE BUCKET



- Allowance for the long term equity risk premium can organically be included in the three bucket framework without compromising the integrity of the regulatory framework. As an example:
 - A 2% spread is assumed on supporting equity assets
 - At each yearend i in the projection of the liability, a factor to modify the equity spread is be calculated.
 - The factor is $\min\{1, \left(\frac{X_i}{Y}\right)\}$ where X_i the proportion of liability cash flows more than 20 years into the future from yearend i and Y is the percentage of equities
 - If all cash flows occur within the first 20 years, no spread is recognised
 - If all cash flows occur after the first 20 years, the full spread is recognised
 - In between these two extremes the equity spread would be modified by a factor between 0 and 1
 - In any case, the assumed spread grades from its initial value (≤ 200 bps) to zero.
- There is **no judgment** in this approach. It is completely rule-based

AN EXAMPLE



- This is a graphical representation of how the modified spread on equities might grade from its initial value of 200 bps to zero.
- This spread could then be added to the forward rate to derive a new set of discount rates that allows for the equity risk premium

QUESTIONS



THANK YOU!



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BETTER LIVES

