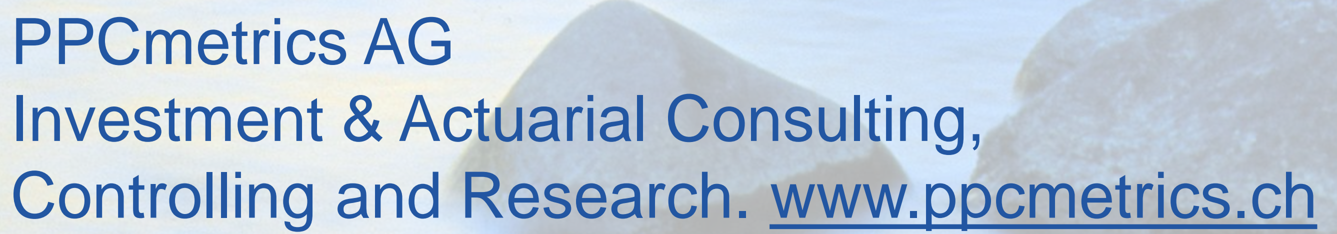
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Is there a substitute for high-grade bonds?

With interest rates expected to remain near zero, pension funds are looking for alternatives to fixed income instruments. Many see sovereign bonds as offering risk but no returns, argue **Lukas Riesen** and **Samuel Müller**

Investment Grade Bonds

What can we expect from investment-grade bonds in the long run? The concept of yield to maturity is an inadequate approach to examine bond portfolio returns, because institutional investors and, especially, pension funds reinvest coupons and nominal repayments.

Without reinvestments, the remaining time to maturity of the fixed-income portfolio would steadily decline, and with it the duration. Typically, the amount reinvested amounts to 10-35% a year, depending on the duration. Thus, each year a significant amount is being reinvested at different interest rate levels.

For pension funds with a long-term investment horizon, short-term price swings are of less importance. Bond returns over the long run are more important. From a long-term perspective, reinvested income becomes more important and must therefore be incorporated in the analysis of the expected return from bonds.

Assuming three yield scenarios over a time horizon of 10 years, we estimate the resulting annual returns for a bond portfolio. To show the sensitivity of the portfolio duration, we show the results for bond portfolios with durations of three, seven and 10 years.

The yield scenarios are defined as follows:

- Popular Assumption: Increase of 1.5% in year three, as well as in year four. After that, the yield remains at 3.55% for a 10-year bond (+3%);
- Steady Increase: Increase of 0.3% a year; yields reach a level of 3.55% for a 10-year bond in year 10;
- No Change: Yields remain at today's level.

The first scenario shown in the table is based on the widely discussed scenario of a yield increase in three years. The average annual return is higher for shorter durations. Although the range of returns is surprisingly narrow (between 1.15% and 0.79% a year, on average).

Every yield increase leads to losses in the bond portfolios. However, any reinvestments compensate for the losses in the Steady Increase scenario. The more slowly the reinvestments are made, the more significant the losses. Nevertheless, even the longer duration bond portfolio results in a positive average return over a 10-year time horizon.

Is there a case for long duration bonds? The third scenario, No Change, shows that average annual return is negative for the bond portfolio with a three-year duration. This is because of current negative yields for bonds at the short end of the curve. Longer duration produces a much higher (positive) return.

The choice of portfolio duration is of secondary importance in the case of a slow or steady interest increase – the annual returns over 10 years are almost the same (see columns one and two of table). However, portfolio duration makes a big difference if yields remain low over 10 years (see column three of table). For a fixed income portfolio of €200m, the difference amounts to almost €40m over 10 years.

To make matters worse, it is questionable whether – in this particular state of the economy – other asset classes will be able to compensate the loss. It is hard to imagine that stocks and other asset classes will perform well enough to contribute to a positive overall return.

Alternatives to bonds

The modest outlook for bond returns make alternatives with comparable characteristics to government bonds more attractive.

With their relatively stable cash flows and attractive potential for diversification, infrastructure investments are widely considered an alternative to bonds. However, a recent case from Norway reminds investors that infrastruc-

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ture investments might be more exposed to regulatory risk than presumed – even in countries with an investor-friendly reputation. A Norwegian court unexpectedly approved the exercise of influence over gas pipeline tariffs by the Norwegian government, with harmful consequences for investors.

This case shows that investments in infrastructure have much more tail risk than those in government debt. If a liability hedge can mimic liability cash flow, infrastructure investments can therefore at least complement bonds, but not substitute them.

Another alternative frequently mentioned is high-dividend equities. However, while regular bonds provide fixed cash flow, the distribution of dividends depends on a company's ability to generate positive, stable cash flow and the willingness to distribute these to shareholders.

Moreover, the holder of a bond is aware of the time at which the nominal is due for repayment, while the holder of a stock is dependent on the future market price. Consequently, high dividend stocks can only cover running expenses if a pension fund disposes of sufficient liquidity reserves or if it is willing and able to sell stocks at unfavourable times to raise the required liquidity. The characteristics of high-dividend equities are much closer to regular equities than to bonds. Only pension funds with the necessary financial risk capacity are able to absorb the potential losses arising from the higher return potential.

High-yield bonds, senior secured loans or similar assets have the same characteristics as depicted above. They can only partially act as substitutes for investment-grade bonds. If the stream of cashflows from liabilities should be replicated as closely as possible, there is no substitute for high-grade bonds.

Average annual return (over 10 yrs)

Years	Popular assumption	Steady increase	No change
3	1.15%	0.56%	-0.19
7	1.13%	0.55%	1.00%
10	0.79%	0.21%	1.55%

Source: PPCmetrics

Moreover, there is no clear evidence that supports the presumption that other assets' correlation has effectively caught up with investment-grade bonds. That is, they should have earned more credit for hedging liabilities. Reducing the fixed-income allocation and shifting to alternatives with higher risk than bonds always implies an increase in total risk.

To sum up, pension fund managers face a difficult balancing act between sacrificing liability-hedging properties and seeking higher returns. Pension funds with a high risk capacity are in a better position to adjust duration or to switch to asset classes offering higher expected returns. The substitution of investment-grade bonds with other asset classes weakens the correlation between assets and liabilities and increases investment risk.

Unfortunately, for pension funds with a low risk capacity or with little tolerance for risk, there is almost no substitute for investment-grade bonds. Pension funds with an appropriate risk capacity or a high risk tolerance can reallocate their assets to avoid negative yielding bonds.

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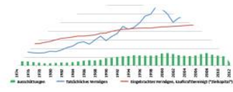

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