Invesco Vision Case Study 12: Portfolio analysis with regulatory considerations

US Risk-Based Capital (RBC)
National Association of Insurance Commissioners (NAIC)

In this example, we are evaluating a portfolio within the context of economic risk as well as US Risk-Based Capital (RBC) charges. To better understand the extent of efficiency for the portfolio, we are also creating efficient frontiers within both frameworks.

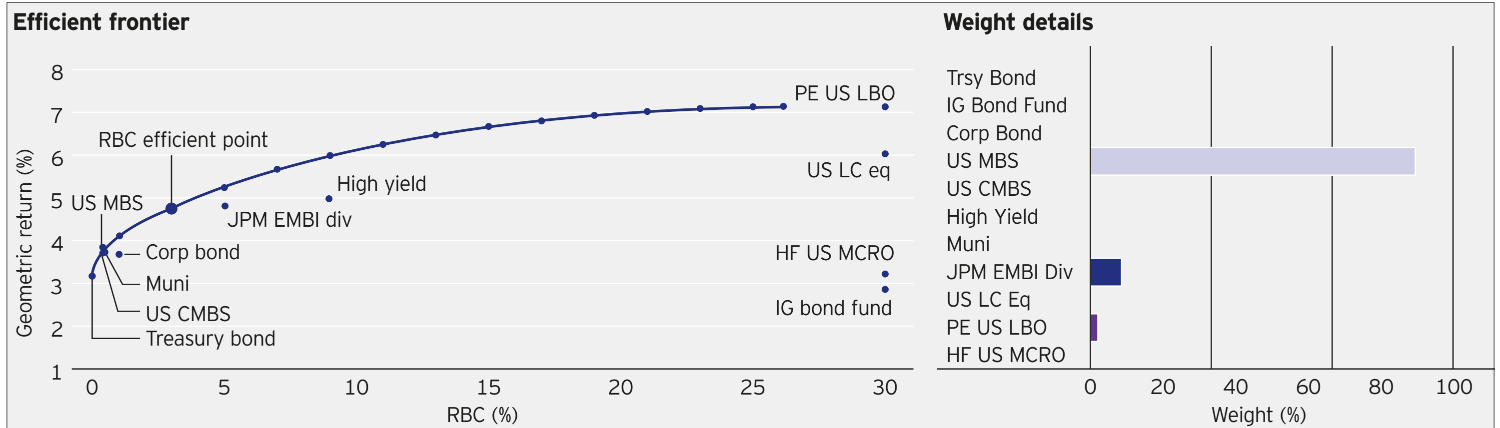
Looking at the upper panel of Figure C12a, an RBC-efficient, low-risk portfolio would consist almost entirely of agency mortgage backed securities. However, this is a very concentrated portfolio; intuitively, a more diversified asset allocation should be the goal. Supplementing the analysis with an economic efficient frontier will tell us what a more diversified portfolio could look like.

The lower panel in Figure C12a shows the result of an optimization based on economic risk. Here we see a more diversified allocation with meaningful investments in high yield bonds, emerging market debt and private equity. However, these asset classes entail significantly higher RBC requirements, and insurers have limited capital budgets for their investment portfolios. Considering this, along with the first figure, it is clear that trade-offs must be made to balance both economic and RBC perspectives.

Figure C12b plots a representative insurance portfolio that is commonly seen in practice. Note this portfolio falls between the economic and RBC frontiers, highlighting the trade-offs mentioned above that are typically made in the real world. But can this portfolio’s efficiency be improved?

One important aspect of the RBC framework in the US is its punitive treatment of commingled fund investments. This is true even for high-quality bond funds. One could argue that a portfolio of investment grade bonds held via a mutual fund should be assigned the same capital charge as an identical portfolio held via a direct separate account, but absent a fund-level NAIC designation, the RBC framework assigns an equity capital charge to the bond mutual fund. This is one reason insurers strongly prefer direct separate account investments whenever possible. Figure C12b also shows the improvement in RBC efficiency when the initial portfolio’s bond fund investment is moved to a direct separate account implementation.

Figure C12a: Portfolio construction with regulatory considerations – Risk-based capital (RBC)
Efficient frontiers based on RBC (top) and economic risk (bottom)



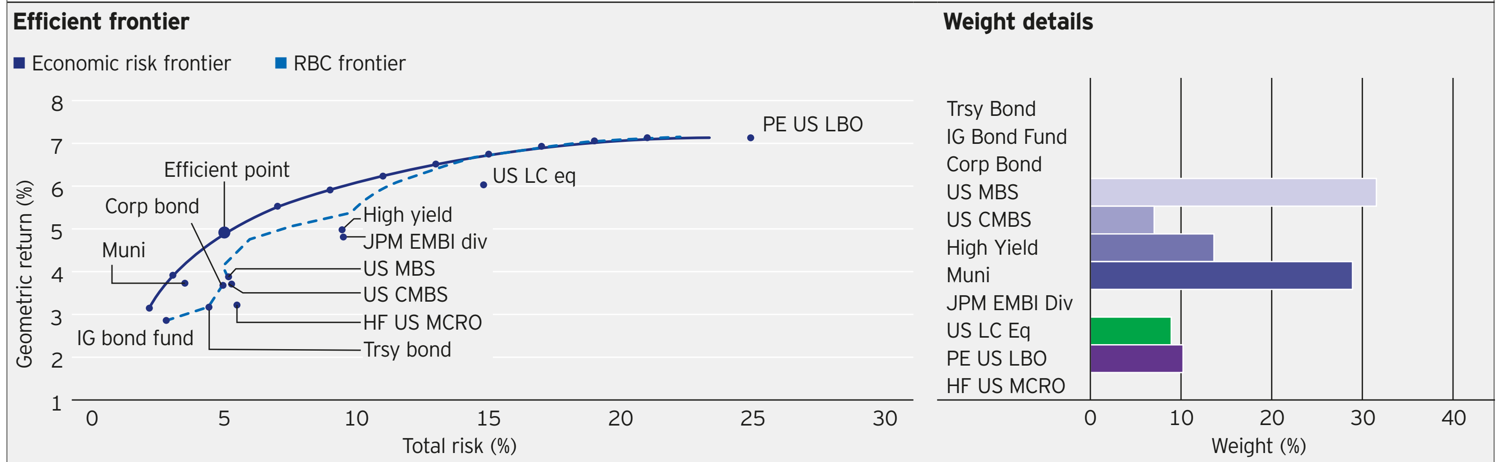
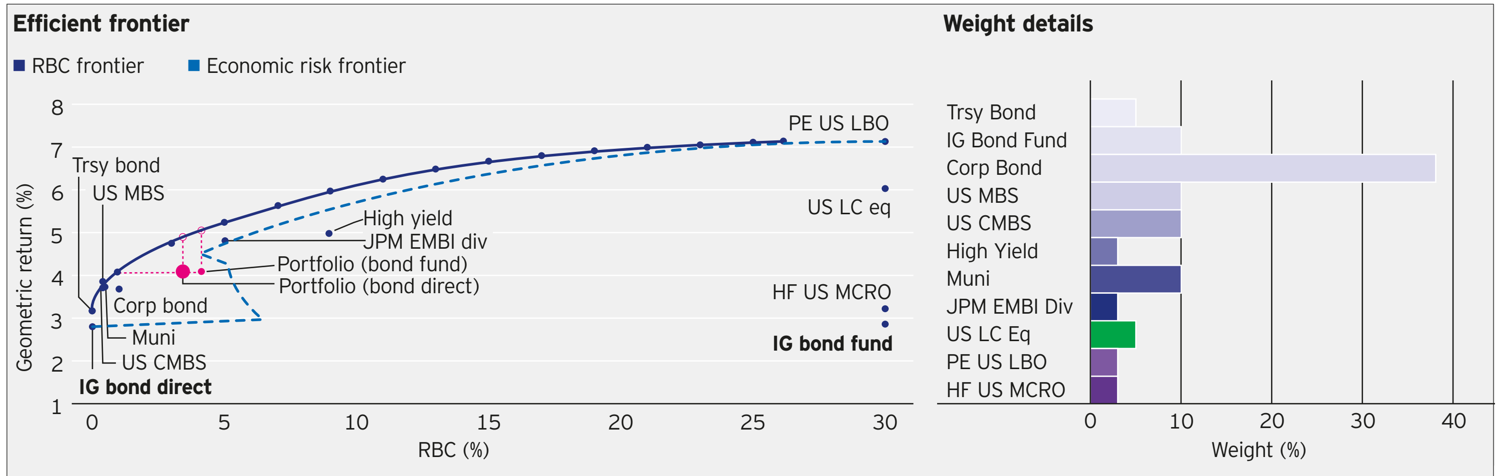


Figure C12b: Hybrid RBC/economic risk portfolio
RBC impact of fund-based versus direct investment – Investment grade bond



Important information

This document has been prepared only for those persons to whom Invesco has provided it for informational purposes only. This document is not an offering of a financial product and is not intended for and should not be distributed to retail clients who are resident in jurisdiction where its distribution is not authorized or is unlawful. Circulation, disclosure, or dissemination of all or any part of this document to any person without the consent of Invesco is prohibited.

This document may contain statements that are not purely historical in nature but are "forward-looking statements," which are based on certain assumptions of future events. Forward-looking statements are based on information available on the date hereof, and Invesco does not assume any duty to update any forward-looking statement. Actual events may differ from those assumed. There can be no assurance that forward-looking statements, including any projected returns, will materialize or that actual market conditions and/or performance results will not be materially different or worse than those presented.

The information in this document has been prepared without taking into account any investor's investment objectives, financial situation or particular needs. Before acting on the information the investor should consider its appropriateness having regard to their investment objectives, financial situation and needs.

You should note that this information:

- may contain references to amounts which are not in local currencies;
- may contain financial information which is not prepared in accordance with the laws or practices of your country of residence;
- may not address risks associated with investment in foreign currency denominated investments; and
- does not address local tax issues.

All material presented is compiled from sources believed to be reliable and current, but accuracy cannot be guaranteed. Investment involves risk. Please review all financial material carefully before investing. The opinions expressed are based on current market conditions and are subject to change without notice. These opinions may differ from those of other Invesco investment professionals.

The distribution and offering of this document in certain jurisdictions may be restricted by law. Persons into whose possession this marketing material may come are required to inform themselves about and to comply with any relevant restrictions. This does not constitute an offer or solicitation by anyone in any jurisdiction in which such an offer is not authorised or to any person to whom it is unlawful to make such an offer or solicitation.