Abstract

The thesis investigates the effectiveness of several hedging strategies and inspects whether advanced econometric models contribute to lower portfolio risk and offer advantages over simple constant hedges. Focused on the German bond market, Euro-Bund and Euro-Bobl futures traded at Eurex are employed to determine which hedging strategy performs best in the fixed-income framework. The hedge ratio is estimated with the OLS, VAR, VECM, and GARCH models, as well as with the duration-based approach. The hedging effectiveness is subsequently measured in terms of percentage variance reduction of a portfolio's returns relative to an unhedged bond, while also considering risk-return trade-off. The analysis showed that the hedging strategies are, in almost all cases, effective in risk minimization though the degree of variance reduction does differ. The duration method decreases the variance by as much as 99% while mostly resulting in low or negative returns. Relative to other constant strategies, the time-varying hedge ratio, estimated by the GARCH, limits the variance least, nonetheless, mostly it provided a variance reduction of at least 65% while also delivering one of the highest returns. Whereas the dynamic strategy did not outperform constant hedges in terms of risk protection, the choice of hedge ratio eventually depends on an investor's risk appetite and potential costs of portfolio rebalancing when employing a dynamic approach.

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