

Mathematical Model of Corporate Bond Portfolio and Effective Border Preview

Authors : Sergey Podluzhnyy

Abstract : One of the most important tasks of investment and pension fund management is building decision support system which helps to make right decision on corporate bond portfolio formation. Today there are several basic methods of bond portfolio management. They are duration management, immunization and convexity management. Identified methods have serious disadvantage: they do not take into account credit risk or insolvency risk of issuer. So, identified methods can be applied only for management and evaluation of high-quality sovereign bonds. Applying article proposes mathematical model for building an optimal in case of risk and yield corporate bond portfolio. Proposed model takes into account the default probability in formula of assessment of bonds which results to more correct evaluation of bonds prices. Moreover, applied model provides tools for visualization of the efficient frontier of corporate bonds portfolio taking into account the exposure to credit risk, which will increase the quality of the investment decisions of portfolio managers.

Keywords : corporate bond portfolio, default probability, effective boundary, portfolio optimization task

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