

On the Valuation and Analysis of Risky Debt: A Practical Approach Using Rating Migrations

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Abstract

This paper is concerned with the valuation and analysis of risky debt instruments with arbitrary interest and principal payments subject to default risk. We use a discrete risk-neutral present value model with expected payments for risk-neutral investors and risk-free spot rates for the valuation. The expected payments include the potentiality of default by weighting promised payments the risk-neutral default probabilities. The required risk-neutral default probabilities are derived from prices of zero bonds, the current term structure and risk-neutral recovery rates. Based on this debt valuation, we calculate various key figures for analyzing risky debt from the point of view of risk-averse investors (e.g., promised and expected yields, yield spreads, Z-spreads, risk premia). These key figures incorporate the default risk of specific risky debt instruments and therefore lead to improved valuation judgments and valuation results compared to other valuation procedures in theory and practice. Our approach is well-suited for practical applications since the parameters required are easily available from observable data.

Keywords: risky debt, risky debt valuation, expected yield, credit risk model

JEL Classification : G12, G21, G31, G32

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