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VALUATION

Risk and Valuation of Collateralized Debt **Obligations**

Darrell Duffie & Nicolae Gârleanu

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prioritization scheme is simple subordination: Senior CDO notes are paid before

mezzanine and lower subordinated notes are paid, and any residual cash flow is paid to an equity piece. CDOs form an increasingly large and important class of fixed-income securities. Our analysis may provide useful approaches to valuation and diagnostic measures of risk.

We concentrate on cash flow CDOs-those for which the collateral portfolio is not subjected to active trading by the CDO manager. The implication of this characteristic is that the uncertainty regarding interest and principal payments to the CDO tranches is determined mainly by the number and timing of defaults of the collateral securities. We do not analyze market-value CDOs, those in which the CDO tranches receive payments based essentially on the marked-to-market returns of the collateral pool as determined largely by the trading performance of the CDO manager.

In our analysis of the risk and market valuation of cash flow CDOs, we illustrate the effects of correlation and prioritization for the market valuation, "diversity score" (a measure of the risk of the CDO collateral pool that has been used for CDO risk analysis by rating agencies), and risk of CDOs in a simple jump diffusion setting for correlated default intensities. The main issue is the impact of the joint distribution of default risk of the underlying collateral securities on the risk and valuation of the CDO tranches. We also address the efficacy of alternative computational methods and the role of diversity scores.

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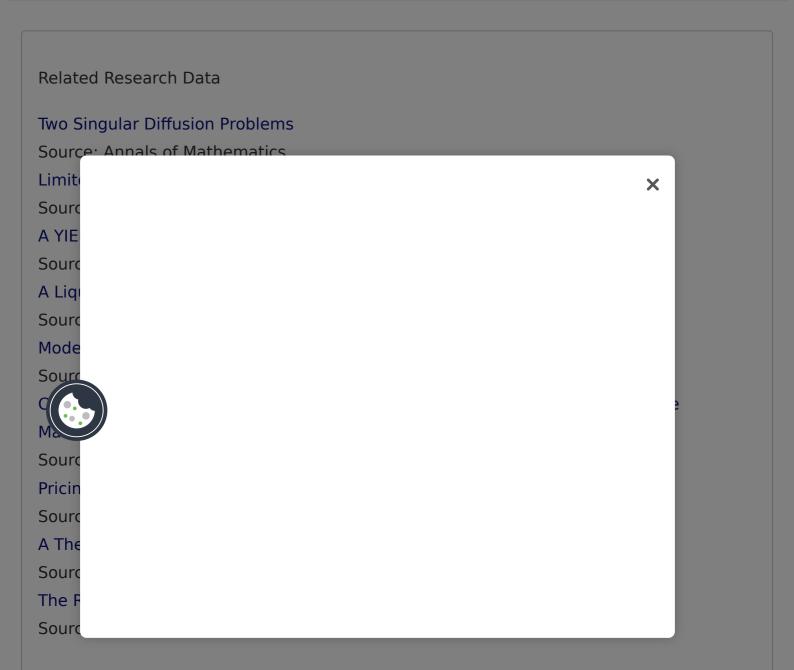
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Regarding alternative computational methods, we show that if (risk-neutral) diversity scores can be evaluated accurately, which is computationally simple in the framework we propose, these scores can be used to obtain good approximate market valuations for reasonably well-collateralized tranches.

This work was supported in part by a grant from the Gifford Fong Associates Fund at the Graduate School of Business, Stanford University. We are grateful for discussions with Ken Singleton of Stanford University, Reza Bahar of Standard and Poor's, and Sergio Kostek of Morgan Stanley Dean Witter. Helpful comments and research assistance were provided by Jun Pan. We are also grateful for several helpful suggestions for improvement by Kazuhisa Uehara of the Fuji Research Institute Corporation.



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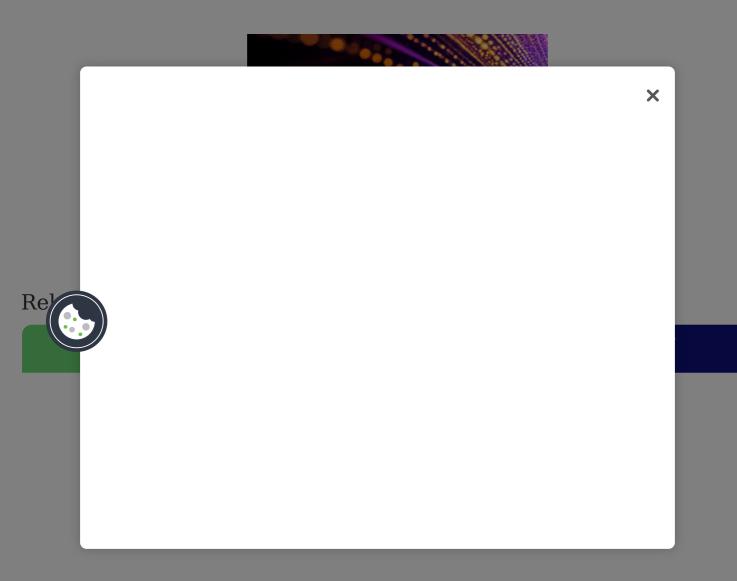
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