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Credit risk pricing via Epstein-Zin pricing kernel

We present an equilibrium framework for credit risk pricing based on the Epstein-Zin preferences where the default time of the firm is modeled as the first hitting time of a default barrier by an unobservable process, representing the firm's value. Our goal is to extend the results of Duffie and Lando on term structures of credit yield spreads under incomplete accounting information to a setting where investors' preferences are also taken into account. The observed variables are the state variables, aggregate consumption and volatility, and the default indicator process. The drift of the firm's value is assumed to be a function of aggregate consumption. The state variables and the firm 's value are modeled as affine diffusion processes. Using the framework of Eraker and Shaliastovich (2008), we obtain the dynamics of our system with respect to an equivalent equilibrium pricing measure. In a specific example , the price of a zero-coupon bond is expressed in terms of a solution of a system of second order parabolic partial differential equation (PDE) which is solved via numerical techiques Finally, the joint implications of investor's preferences and imperfect information on the credit yield spreads are analyzed.

Joint work with Deniz Sezer(UCalgary)