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Review

Call feature and corporate bond yield spreads



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ABSTRACT

Callable bonds offer higher yields compared to non-callable bonds. In this paper, we examine the call spread in a global framework, while controlling for firm-level, bond-level, and country-level variables. Using an international sample of 13,936 bonds issued between 1991 and 2007, we find that callable bonds have a positive call spread, which is statistically and economically significant. Our empirical results hold after a battery of robustness checks. We also find that junk callable bonds have a higher call spread than investment-grade callable bonds, which is consistent with the signaling theory. The empirical results also show that highly leveraged firms have a higher call spread than firms with low leverage, a finding that is consistent with the risk-shifting arguments.

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1. Introduction

When issuing a bond, a firm has the choice between issuing a callable bond or a straight bond. A call provision grants the issuer the right to buy back its already issued bonds prior to the maturity date. In return for the opportunity to call back the bond, the issuer compensates the holder of a callable bond with an option premium. In other words, a callable bondholder writes a call option and receives the premium, but bears the risk to re-invest the proceeds at a lower rate should the issuer exercise its right to call the bond.

The writing of the call option entitles the bondholder to a call premium. Hence, the price the bondholder pays for a callable bond is always lower than that of an equivalent straight bond. More specifically, the price of a callable bond is equal to the price of an equivalent straight bond minus the price of the call option. Lower prices lead to higher yields offered by callable bonds over straight bonds. In return for the higher yields offered by callable bonds, investors stand ready to bear reinvestment risk, that is the risk of having to reinvest one's money at a lower return should the bond be called back.

The two strands of literature on callable bonds revolve around firms' motivations for issuing callable bonds and callable bond pricing. When issuing callable bonds, firms seek to: (1) hedge their interest rate risk (Güntay et al., 2004), (2) hedge investment risk (Chen et al., 2010), (3) benefit from their future positive information, i.e. signaling theory (Chen et al., 2010; Robbins and Schatzberg, 1986), (4) decrease risk-shifting activities (Barnea et al., 1980), and (5) circumvent underinvestment problems (Barnea et al., 1980; Chen et al., 2010).

Several theoretical and empirical papers have discussed the pricing of callable bonds. Berndt (2004) breaks down callable bond prices into three different components: a market interest rate component, a call option component, and a default and illiquidity risk component. Jarrow et al. (2010) develop a new reduced-form approach to value callable corporate bonds, which, according to them, fits callable bond prices well and outperforms the traditional structural approach (e.g., Acharya and Carpenter, 2002) and the reduced-form using American option pricing previously used by Duffie and Singleton (1999).

In this paper, we analyze the call spread across different bond ratings and for different levels of leverage. We define the call spread as the yield component that is due to the call provision after controlling for bond-, firm-, and country-specific variables. To the best of our knowledge, no paper has empirically focused on the call spread that issuers offer to callable bondholders.

Unlike previous research that looks mostly at bonds for the United States and/or denominated in U.S. dollars, we test our hypotheses in a global framework (an international sample of 13,963 bonds) and we use bonds denominated in different currencies.¹ We further match the currency of denomination of the treasury security, used as a benchmark, to that of the bond for which the spread is being computed.

The aim of our study is, therefore, to quantify the call spread in a global context and to compare the call spread between high-rated and low-rated bonds and between bonds issued by high-leveraged firms and by low-leveraged firms. This is, to our knowledge, the first study that attempts to do so. Previous empirical studies either use the call provision as a control variable in their credit spread specifications or include it in their robustness check analysis. Qiu and Yu (2010), using U.S. bonds issued between 1976 and 1991, find the callable dummy to be positive and statistically significant in their

¹ Berndt (2004) considers only one firm when testing his model. Jarrow et al. (2010) and Qiu and Yu (2010) look at bonds issued by U.S. firms. Qi et al. (2010) look at only Eurobonds denominated in U.S. dollars. Ball et al. (2013) compute credit spread using U.S. treasury securities irrespective of the currency denomination of the bond.

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