



Corporate hedging and the cost of debt



Jun Chen^{a,1}, Tao-Hsien Dolly King^{b,*}

^a College of Business, St. Ambrose University, Davenport, IA 52803, United States

^b Belk College of Business, University of North Carolina at Charlotte, Charlotte, NC 28223, United States

ARTICLE INFO

Article history:

Received 17 February 2014

Received in revised form 20 September 2014

Accepted 20 September 2014

Available online 5 October 2014

JEL classification:

G30

G32

Keywords:

Hedging

Cost of debt

Financial risk

Agency costs

Information Asymmetry

ABSTRACT

For a large sample of U.S. firms from 1994 to 2009, we empirically examine the impact of corporate hedging on the cost of public debt. We find strong evidence that hedging is associated with a lower cost of debt. The negative effect of hedging on the cost of debt is consistent across industries, and remains economically and statistically significant under various controls and econometric specifications. A cross-sectional analysis based on propensity score matching suggests that hedging initiation firms experience a drop in cost of debt, while suspension firms sustain a jump. We confirm our findings after employing an extensive array of models to address potential endogeneity. The influence of hedging on cost of debt is mainly through the lowering of bankruptcy risk and agency cost, and the reduction in information asymmetry. Finally, hedging mitigates the negative effect of rising borrowing costs on capital expenditure and firm value.

© 2014 Elsevier B.V. All rights reserved.

1. Introduction

Hedging is a widely used corporate policy around the world. The survey by Rawls and Smithson (1990) shows that financial executives rank risk management as one of their most important duties. Howton and Perfect (1998) document that 61% of the Fortune 500/S&P 500 firms, and 36% of a randomly selected sample use currency and interest rate derivatives. Based on a sample of 7319 firms from 50 countries, Bartram et al. (2009) find that more than 60% of the firms use currency, interest rates, or commodity derivatives. A well-known benefit of hedging is that hedging helps smoothen firm performance, resulting in lower volatility of net income and cash flows. In the seminal paper, Stulz (1984) presents the optimal hedging policies for risk-averse managers and value-maximizing shareholders. Subsequently, several motivations for hedging are developed in the literature: reduction in bankruptcy costs (Smith and Stulz (1985)), lower likelihood of financial distress (Smith and Stulz (1985)), lower taxes (Smith and Stulz (1985)), mitigation of agency costs associated with underinvestment and risk-shifting problems (Froot et al. (1993); Bessembinder (1991); Campbell and Kracaw (1990)), and less information asymmetry (DeMarzo and Duffie (1991)). Empirical studies suggest a positive relation between hedging and firm value (Carter et al. (2006); Allayannis and Weston (2001)). Recent studies provide further evidence that hedging affects the level and volatility of shareholder returns (Bartram et al. (2011); Gay et al. (2010); Nelson et al. (2005); Guay (1999)). For example, Gay et al. (2010) show that the cost of equity for derivatives users is lower than that of non-users by 24 to 78 basis points (bps). Bartram et al. (2011) document lower idiosyncratic volatility and systematic risk for hedging firms based on an international sample.

* Corresponding author. Tel.: +1 704 687 7652.

E-mail addresses: chenjun@sau.edu (J. Chen), tking3@uncc.edu (T.-H.D. King).

¹ Tel.: +1 563 333 6393.

Literature provides support for the positive effects of hedging policy on overall firm and shareholder values, however, research examining the effects of hedging on bondholders is surprisingly lacking. Our paper fills this gap in the literature by answering three important questions: (a) Does hedging reduce the cost of debt? (b) If so, how does hedging reduce the cost of debt? (c) Is hedging a positive factor in firm investment and value if it lowers the cost of debt? Such research is important because debt financing is a major capital source for firm operations and we are among the first to look at this specific question. We focus on the public bonds when measuring a firm's cost of debt for the following two reasons. First, while we recognize that firms use a variety of debt sources, capital from public bonds is worthy of keen attention because of its strong representation in the long-term capital. In a recent study, Colla et al. (2013) highlight the dominant role of bond capital in a firm's debt structure based on a large sample of U.S. firms from 2002 to 2009. More than 64% of the firms rely on senior bonds and notes for financing. The median (mean) ratio of senior bonds and notes to total debt is 0.208 (0.382), which is larger than any other alternatives, such as drawn credit lines, term loans or capital leases. In addition, Rauh and Sufi (2010) find that bonds make up 19% of capital structure, while bank loans make up around 13%. Second, the cost of public bonds represents the long-term capital cost that is used, along with the cost of equity, to estimate firm value on an on-going basis. Public bonds are generally of long-term maturity with an average of 10 to 13 years. On the other hand, private debt such as 364-day facility, revolver, and term loan is mainly for short-term financing, funding for unexpected events, and debt repayment. Long-term capital sources including equity and bonds are the main funding support for corporate investments in capital expenditure and R&D. In recent literature, several papers use the cost of public bonds as the measure of cost of debt (e.g., Kisgen and Strahan (2010); Cremers et al. (2007); Klock et al. (2005); Reeb et al. (2001)). Our second question focuses on how hedging affects the cost of debt. Given the literature on hedging premium, the reduction in bankruptcy risk and earnings volatility should result in a significantly lower cost of debt. Minton and Schrand (1999) suggest that lower earnings variability is associated with a lower weighted average cost of capital. In addition, the lessening of underinvestment problem, risk-shifting hazard, and/or information asymmetry should lead to a lower cost of debt. Finally, we add to the literature by documenting that hedging creates value in cases where the cost of debt is rising.

Based on sample data from Mergent's Fixed Income Securities Database (FISD), TRACE, and EDGAR, we examine the use of Foreign Currency Derivatives (FCDs), Interest Rate Derivatives (IRDs) and Commodity Derivatives (CDs) in 2,612 U.S. companies that have valid bond transaction data from 1994 through 2009. Our findings indicate that hedging reduces the cost of debt. We find that on average, bond yield spreads for hedging firms are 49.1 bps lower than those for non-hedging firms. Using multivariate regressions, we confirm a negative and significant impact of hedging on the cost of debt. Hedging results in a significant drop of 40.8 bps in the cost of debt after controlling for firm-level and bond-level variables, and a drop of 24.1 bps (or \$2.23 million saving in the cost of debt) after adding market factors. By dividing the sample into investment- and speculative-grade subsamples, we find that hedging leads to more than double the reduction in the cost of debt for speculative-grade issuers (45.2 bps) compared with that for investment-grade ones (19.2 bps). Regression results confirm that speculative-grade firms enjoy a larger drop in the cost of debt from hedging than investment-grade firms. Such finding suggests that hedging is more valuable for the firms with greater credit risk. We also categorize the sample into industry groups and find that the impact of hedging remains robust across industries.

In a novel experiment, we examine the difference in the impact of hedging on the cost of debt using firms that initiate hedging and those that suspend hedging during the sample period. By matching each hedging initiation or suspension firm with a control firm based on propensity score matching (PSM), we find that when yields are falling hedging initiation firms experience greater declines in the cost of debt than the control firms. At the same time, when yields are rising the cost of debt goes up significantly more for the hedging suspension firms than the control firms. These findings provide strong support for the hedging effect on the cost of debt.

To address the potential issue of model misspecifications and to capture the effect of time-varying firm characteristics, we employ the firm fixed effect model and find that the impact of hedging on the cost of debt remains negative and significant. Moreover, we acknowledge that it is possible that the observed relation is subject to endogeneity, that is, hedging strategy can be self-selected, or that firms with a low cost of debt are more likely to hedge. To address these concerns, we perform an extensive set of robustness tests including the lagged variables regression, Heckman treatment effect model, propensity score matching, instrumental variables (IV) estimation, simultaneous equations model (SEM), and dynamic panel GMM model. After addressing the possible issues of unobservable factors, self-selection bias, reverse causality, and dynamic endogeneity, the negative and significant association between hedging and cost of debt remains strong. This suggests that the impact of hedging on cost of debt is substantial and cannot be attributed to endogeneity.

We further explore the sources of hedging benefits in reducing the cost of debt. Using multivariate analyses, we find that the interaction term of hedging and the proxy of financial risk have a significant and negative effect on the cost of debt. In other words, hedging benefit is stronger for firms with higher financial risk than those with lower financial risk. The result suggests that hedging reduces the probability of financial distress, resulting in a lower cost of debt. This finding provides evidence for the financial risk hypothesis. Additionally, we show that the interaction term of hedging and the information asymmetry proxy have a significantly negative impact on the yield spread. The result suggests that opaque firms that hedge enjoy a larger drop in the cost of debt than transparent firms. This finding supports the information asymmetry hypothesis by implying that hedging helps bondholders attain more precise assessment of firm value and operational performance, and hence shrinks the "transparency spread". Lastly, we find that the interaction term of hedging and the agency cost proxy has a significant impact on the cost of debt, indicating solid support for the agency cost hypothesis.

Given the strong effect of hedging on the cost of debt, another important and interesting issue is the economic value of hedging policy. Hedging creates value by ameliorating the effects of rising rates. Our results indicate that for a similar rate increase, the effects on investment, firm value, and stock returns for hedging firms are about half as severe as those for non-hedging ones. In other words,

Download English Version:

<https://daneshyari.com/en/article/5093499>

Download Persian Version:

<https://daneshyari.com/article/5093499>

[Daneshyari.com](https://daneshyari.com)