

Paper Number: PA051036

Paper Title: The Use of Interest Rate Swaps by Nonprofit Organizations: Evidence from Nonprofit Healthcare Providers

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Summary of Research

We examine and explain derivative financial instrument usage among US nonprofit healthcare providers. The topic of derivative financial instrument utilization by nonprofit entities has received only limited attention in the research literature. Since very little is known about the risk management activities of nonprofit organizations, the impact of these activities on the ability of nonprofit organizations to raise capital may have significant public policy implications. We examine the financial statements and other informational disclosures from nearly 200 nonprofit healthcare providers, and we utilize existing financial theories to determine the nature and extent of derivative financial instrument usage.

Description

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Large US nonprofit provider organizations rely extensively on the proceeds of public municipal debt issues to finance their extensive and rapidly growing facilities, capital equipment, and information infrastructure needs (Sandrick, 2002). Fluctuating municipal bond market interest rates exposes long term debt issuers to two basic forms of interest rate risk – fair value risk and cash flow risk (Chen, 2003). Interest rate swaps are derivative financial instruments that are used by many issuers of long term debt to manage the risks associated with fluctuating bond market interest rates. An interest rate swap is a contractual agreement between two counter parties under which each agrees to make periodic payments to the other for an agreed period of time based upon a notional amount of principal.

We hypothesize that nonprofit health care providers will act like investor owned corporations with respect to the use of interest rate swaps. These organizations operate in competitive market settings and rely on earned revenues for the financial survival. Nonprofit healthcare organizations generate the large majority of their operating cash flows from earned revenues. Few generate as much as five percent of their total revenues from philanthropic contributions. Consequently, we hypothesize that their financing and interest risk management behavior will approximate that of large investor owned corporations. We expect that nonprofit health swap users would be larger and more highly leveraged organizations when compared with nonprofit health providers that do not use interest rate swaps. However, since there is no existing literature that predicts the impact of the absence of individual residual claimants and the lack of access to equity financing might have on the debt financing and related risk management decisions of nonprofit organizations, our study adds to the corporate finance literature by addressing these questions.

The contemporary finance literature (e.g. Wall and Pringle, 1989 and Li and Mao, 2003) advances five primary hypotheses that explain the use of interest rate swaps. We empirically test these hypotheses on a sample of large nonprofit healthcare organizations. All of the sample organizations have public debt, while only a portion use interest rate swaps.

Information asymmetry hypothesis

H1A: Fixed rate payers (i.e., those making fixed payments in a swap contract) will have more private information (information asymmetry) than floating rate users (i.e., those making floating payments in a swap contract) or nonusers (i.e., those not using swap contracts).

Suppose that a firm has private information that its future borrowing costs will decline due to improved performance that the market does not expect. This firm would not want a long-term fixed rate loan; however, they also desire to mitigate the interest rate risk of a floating-rate short-term loan. Titman (1992) argues that the firm will exploit its private information, borrow using short-term floating-rate debt, and enter into a fixed paying interest rate swap. Thus, fixed rate payers will have more private information than floating rate payers or nonusers.

Following Saunders (1999) and Li and Mao (2003), we have two proxies for information asymmetry--SIZE and GROWTH. Information asymmetries are associated with smaller firms. We measure SIZE as the natural log of total assets. Firms with private information (i.e., information asymmetries), are also expected to have higher than expected growth, as the market does not anticipate the improved financial performance. We measure GROWTH as the percentage change in revenues.

Agency costs hypothesis

H2A: Fixed rate payers will have higher agency costs than floating rate users or nonusers.

Wall (1989) suggests that agency costs affect the use of interest rate swaps. Firms that desire a long-term fixed interest rate pay a premium due to the costs associated with long-term debt, namely, underinvestment and asset substitution. These costs can be mitigated by issuing short-term floating debt and enter a swap as a fixed rate payer. In this way, the firm can lock in a long-term interest rate and avoid the monitoring costs associated with refinancing short-term debt.

We have four proxies for agency costs--DEBT, CURLIAB, FREECASH, and FRLTD. Firms with more debt are subject to more monitoring costs. Debt usage is measured as the ratio of total liabilities to total assets (DEBT). Firms with more short-term debt have to continuously enter the debt market with additional agency costs. Short-term debt usage is measured as the ratio of current liabilities to total liabilities (CURLIAB). Firms with a large amount of discretionary funds available are more likely to experience the asset substitution agency problems associated with a long-term debt issue. Undistributed free cash flow (FREECASH) is used to proxy discretionary funds. FREECASH is measured as cash flows from operations less cash flows for capital expenditures scaled by total assets. Firms with high agency costs would borrow with floating-rate debt to reduce these costs. These firms will enter interest rate swaps as fixed-rate payers to eliminate their exposure to interest rate risk. We measure the amount of floating-rate long-term debt (FRLTD) as the ratio of long-term floating-rate debt to total liabilities.

Comparative advantage hypothesis

H3A: Floating rate payers will have a comparative advantage over floating rate users or nonusers.

Bicksler and Chen (1986) suggest a comparative advantage theory of interest rate swaps. A firm with a high rating will be able to borrow at a lower interest rate than a firm with a low rating. The low rated company will have to pay a premium due to the increase likelihood of default. A high (low) rated firm should borrow with a long-term (short-term) fixed (floating) rate loan and enter into an interest rate swap as a floating-rate (fixed-rate) payer. This allows both firms to arbitrage the quality spread and lower the borrowing costs. We use the Standard and Poor's bond rating as the proxy for quality.

Downsizing hypothesis

H4A: Fixed rate payers are expected to downsize its debt relative to floating rate users or nonusers.

Wall and Pringle (1989) suggest a downsizing hypothesis of interest rate swap use. Suppose that a firm determines that its optimal debt level has decreased, and that it needs to significantly reduce its debt in the future. This firm will not want to be locked into a large amount of long-term debt, since it is costly to repurchase this debt. However, it does not want the interest rate risk associated with short-term debt.

Thus, the firm may issue short-term floating rate debt and enter into an interest rate swap as a fixed payer. The firm will lock in a fixed interest rate and have more control to reduce its debt load in the future by simply not refinancing the short-term debt. Following Saunders (1999), we measure DOWNSIZE as a dummy variable, with a value of one if total liabilities decrease by more than 10% and zero otherwise.

Project completion hypothesis

H5A: Fixed rate payers will make more capital expenditures than floating rate users or nonusers. Saunders (1999) expounds a project completion hypothesis for interest rate swap usage. Most firms use floating-rate short-term debt to finance capital projects. However, once the project is complete, the company will want to lock in a long-term interest rate. Thus, the project completion theory predicts that once the project is complete, the firm would enter into an interest rate swap as a fixed payer. We use capital expenditures as a proxy for project completion, and measure PROJCOMP as the change in net property, plant and equipment plus current year depreciation scaled by current year net property, plant and equipment.

Our sample includes many of the nation's largest providers of healthcare services as well as some of the largest private issuers of public tax exempt debt. We find that a large proportion of our sample nonprofit healthcare provider organizations use interest rate swaps to manage the risks associated with interest rate volatility and synthetically refinance a portion of their long-term debt in order to lower their cost of borrowing.

We use logit analysis to test the five hypotheses. The results provide support for the project completion hypothesis, limited support for the information asymmetry hypothesis, mixed results for the agency costs hypothesis and no support for the comparative advantage or downsize hypothesis. However, the significance of the overall models provides support for the predictive ability of the combined hypotheses. In his tests of swap usage by public corporations, Saunders (1999) also finds mixed results for the hypotheses. He finds support for the information asymmetry and comparative advantage hypotheses, limited support for the agency cost hypothesis, and no support for the downsizing and project completion hypotheses.

Future researchers may find several useful extensions of our research. Our research sample was drawn from large nonprofit healthcare organizations. Determining the extent of derivative financial instrument activities among small and medium healthcare provider organizations would be an interesting inquiry. Other nonprofit organizations such as colleges, universities, and voluntary health and welfare organizations share a common governance structure with nonprofit healthcare organizations but are less capital intensive enterprises. Finding the differences and similarities in interest rate derivative usage across different nonprofit organizations may yield useful developments in finance theory.