An empirical test of agency cost reduction using interest rate swaps

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Abstract

This paper tests a model based on Wall’s (Wall, L., 1989. Journal of Banking and Finance 13, 261–270) hypothesis of agency cost reduction using interest rate swaps. We find a significant positive relationship between the risk of the firm and the reduction of agency costs measured by the continuously compounded excess return (CAR) of the firm. Our findings are consistent with Wall’s hypothesis and other theories of swap transactions and in explaining the existence and growth of the swap market. © 2000 Elsevier Science B.V. All rights reserved.

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1. Introduction

The growth in the interest rate swap market during the previous fifteen years has been tremendous. Before 1982 interest rate swaps were non-existent. In 1997 interest rate swaps took place on over 22 trillion dollars of notional debt
worldwide, with much of that debt denominated in US dollars (as shown in Table 1). The growth and popularity of swaps have to be attributed to the benefits to both parties from executing interest rate swap arrangements. The popularity of swaps as the derivative of choice used by non-financial corporations to manage their exposure to interest rate risk is documented by Bodnar et al. (1995, 1996). Bodnar et al. find in their survey of derivatives usage that interest rate swaps are far more common than other hedging techniques, such as forwards, futures, and options. In their 1994 study, Bodnar et al. (1995, p. 106) conclude the following: “The dominance of swaps as a vehicle for interest rate risk management stands out clearly.” Phillips (1995, p. 119) finds a similar result: “The interest rate swap is preferred above all other interest rate risk management vehicles by a 2-to-1 margin.”

One of the benefits of interest rate swaps is a reduction of agency costs. This benefit of an interest rate swap is described by Wall (1989). The purpose of this paper is to empirically test the benefits of swap transactions to the firm based on Wall’s (1989) hypothesis that swaps may reduce financing costs by reducing agency costs to high-risk firms. This research documents strong support for Wall’s hypothesis by testing the relationship of the benefits of an interest rate swap (as proxied by the cumulative excess returns of the firm after the swap transaction) and the risk level of the firm (as measured by the firm’s total standard deviation). The results are also consistent with the asymmetric information hypothesis as high-risk firms reduce their credit risk, obtain better credit ratings and decrease their interest expense.

Section 2 of this paper contains a brief review of the literature on interest rate swaps. The subsequent section describes Wall’s (1989) hypothesis in an agency cost framework and develops the model to test it. The following part discusses the test and its results. This section is followed by our conclusions.

Table 1
Amount of notional principal outstanding with swaps (in billions) for the sample period\(^a\)

<table>
<thead>
<tr>
<th>At the end of year</th>
<th>World (in US$)</th>
<th>US$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1987</td>
<td>682.9</td>
<td>541.5</td>
</tr>
<tr>
<td>1988</td>
<td>1010.2</td>
<td>728.2</td>
</tr>
<tr>
<td>1989</td>
<td>1502.6</td>
<td>1011.2</td>
</tr>
<tr>
<td>1990</td>
<td>2311.5</td>
<td>1272.7</td>
</tr>
<tr>
<td>1991</td>
<td>3065.1</td>
<td>1506.0</td>
</tr>
<tr>
<td>1992</td>
<td>3850.8</td>
<td>1760.2</td>
</tr>
<tr>
<td>1993</td>
<td>6177.3</td>
<td>2457.0</td>
</tr>
<tr>
<td>1994</td>
<td>8815.6</td>
<td>3230.1</td>
</tr>
<tr>
<td>1995</td>
<td>12,810.7</td>
<td>4371.7</td>
</tr>
<tr>
<td>1996</td>
<td>19,170.9</td>
<td>5827.5</td>
</tr>
<tr>
<td>1997(^b)</td>
<td>22,115.4</td>
<td>5827.5</td>
</tr>
</tbody>
</table>

\(^a\) Source: International Swap Dealers Association Confidential Market Survey.

\(^b\) First half of 1997.
which support Wall’s agency hypothesis and find that higher risk firms benefit more from interest swap transactions than do lower risk firms.

2. Overview of interest rate swaps

Many reasons have been given for the use and growth of the swap market. Researchers have suggested that firms can benefit from interest rate swaps due to one or more theories: comparative borrowing advantages, the mispricing of credit risk, the hedging of interest rate exposure, information signaling, the reduction of default risk, obtaining an optimal debt level, financing new capital investments, and agency cost reduction. A comprehensive review of the role of interest rate swaps in corporate finance is detailed by Kuprianov (1994). However, empirical tests of the benefits to the firm from arranging interest rate swaps are just now becoming more prevalent in the literature. This is partly due to the lack of public information about swap transactions and the participants, especially before disclosure of swap transactions were required.

The actual benefits of interest rate swaps are considered by Bicksler and Chen (1986) to be based on the theoretical principle of comparative advantage. Marshall and Bansal (1992) favor the comparative advantage theory in their research. The mispricing of credit risk is also offered as another theoretical explanation for interest rate swaps (e.g., Smith et al., 1988; Arak et al., 1988; Wall and Pringle, 1989; Litzenberger, 1992). The methods used by floating- and fixed-rate lenders to evaluate credit risk may lead to credit risk mispricing. However, Sun et al. (1993) empirical test results suggest that the market does price credit risk. Duffie and Huang (1996) swap valuation model demonstrates that credit risk asymmetry results in only a few basis points of notional principal. They find that a spread of 100 basis points due to credit risk results in less than a basis point in the coupon swap market. The market price of credit risk is very small. If market price of risk is small, then higher risk firms benefit more from an interest rate swap compared to lower risk firms.

Kuprianov (1993) provides a description of the growth and development of interest rate swaps, swap dealers, swap market conventions, and swap transactions. Smith et al. (1988) demonstrate the methods that financial managers can use in order for interest rate swaps to hedge interest rate exposure. The increased use of interest rate swaps as a hedging tool has helped the swap markets grow. Hedging has a cost to the firm and offers benefits to the firm. However, it is difficult to measure and analyze the cost–benefit effects of interest rate swaps from publicly available financial statements. The survey by Bodnar et al. (1996) finds that swap contracts are the most common interest rate derivative contract used and indicates that more firms swap floating-rate for fixed-rate debt than fixed-rate for floating-rate, although both are common.
This survey is consistent with Fenn et al. (1996) which finds that 58% of their sample firms were on the pay-fixed side of the swap.

Information signaling due to asymmetric information can lead firms to be active in the swaps markets. Arak et al. (1988), Wall and Pringle (1989) and Titman (1992) hypothesize that if a firm possesses information about itself that will lower its risk premium in the credit markets in the future, but it wants to borrow at a fixed rate now, it can benefit from the use of interest rate swaps. The firm would borrow short term, then use interest rate swaps to obtain fixed-rate borrowing that it needs to lower its financing costs. After the information is revealed in the market, and the firm receives a credit rating upgrade, the firm benefits from lower interest rates. However, previous studies show that there is no statistically significant stock price reaction to the announcement of rating upgrades and the reactions do not differ by initial credit rating (Hand et al., 1992; Nayar and Rozell, 1994).

The existence of asymmetric information may be the cause of agency costs. The theory of asymmetric information is similar to Wall’s (1989) agency cost reduction theory. Wall develops a framework for predicting the mutual benefit to firms using interest rate swaps and shows analytically that high-risk firms preferring fixed rates can reduce agency costs by using interest rate swaps. The capital markets fear that high-risk firms may borrow long term at fixed rates and then engage in asset substitution. Therefore, high-risk firms pay a premium for long-term fixed rates. A high-risk firm borrowing short term will reduce these agency costs because short-term borrowing increases monitoring and reduces the risk of asset substitution. A high-risk firm can reduce its agency costs and obtain fixed-rate terms by borrowing short-term and swapping for fixed rates. A reduction of agency costs will not necessarily result in a credit ratings upgrade, but could materially benefit the firm through credit risk improvement.

Wall’s agency cost reduction theory can be tested empirically. Higher risk firms should experience bigger benefits from interest rate swaps than lower risk firms. The empirical results in this research provide strong support for Wall’s theory in explaining the benefits of interest rate swaps due to increased market discipline and monitoring.

The financial profiles of swap users have been described in recent studies. Samant’s (1993) results show that fixed-rate payers compared to non-swap users have more divergent earnings estimates, more leverage, greater profitability, and more growth options. In other words, fixed-rate payers show higher agency costs. He also shows that floating rate payers do not have characteristics that are significantly different than non-swap users which demonstrate lower agency costs. Fenn et al. (1996) find that swap users are larger and use more short-term debt than non-swap users. They also find that the greater the proportional amount of short-term debt used the larger the notional value of interest rate derivatives.
Interest rate swaps can be used to address capital structure situations. A firm could adjust its long-term debt structure up or down to reach and to maintain its optimal level, according to Wall and Pringle (1989) and Smith et al. (1988). A firm that borrows long term to obtain a fixed rate could find itself committed to a level of debt that may not be optimal over the length of the loan. Then the firm can swap some fixed-rate debt for floating rate. On the other hand, using interest rate swaps, a firm can borrow short term to maintain an optimal debt level on its books and swap for a more cost effective fixed-rate debt.

In summarizing the theoretical arguments about interest rate swaps, Litzenberger (1992) makes several observations: (1) interest rate swaps are not redundant financial products, (2) interest rate swaps do not display the volatile cyclical behavior evidenced by corporate bond spreads, and (3) firms do not pay-up to do swaps with highly rated counterparties. These three characteristics cannot all be explained by any one theory or any combination of the theories given above. Litzenberger notes that credit rating differences have no observable impact on swap spreads, which implies that fixed/floating interest rate swaps are mispriced, although Duffie and Huang (1996) believe this can be attributed to very small values. Further, Litzenberger theorizes that the growth in the use of swaps may also be attributed to their usefulness in signaling events favorable to the firm, although no empirical test of the impact of signaling with interest rate swaps has been done.

3. Hypothesis and model

Wall (1989) states that a high-risk firm that prefers long-term fixed-rate debt can reduce its agency cost by borrowing short term and entering into an interest rate swap agreement for a fixed rate. In this line of reasoning, one would expect high-risk firms to benefit from the use of swaps due to a reduction of agency costs. This hypothesis cannot be tested directly because the reduction of agency costs is not directly observable, but an approximation for the reduction of agency costs can be calculated and the theory can be tested using this proxy.

In this study, we use as a proxy measure for a reduction in agency costs the continuously compounded excess return (CAR) of the firm employing an interest rate swap. Four measures of risk are considered: (1) the firm’s default risk, as measured by the firm’s bond rating; (2) the firm’s total risk, as measured by the standard deviation of the firm’s stock returns; (3) the firm-specific risk as measured by the residual standard deviation in a single index market model; and (4) the firm’s market (systematic) risk, as measured by the firm’s beta in the market model. For this sample, too few firms in this study have credit ratings available for meaningful statistics. Because of this limitation, credit ratings are not used as the measure of risk in this study. Of the three remaining risk measures, the firm’s total standard deviation measures the firm’s total risk and
is the appropriate measure of risk to be used in this study. The residual standard deviation is the unexplained variation in the market model using market risk. This unexplained variation is firm-specific risk, and the greater the residual standard deviation, the greater the firm-specific risk. Between total standard deviation and residual standard deviation, total standard deviation is a better measure of a firm’s total risk.

The relationship between market risk and the CARs is unclear. The firm’s beta measures the market risk each firm has. If swaps are a significant event which changes the financing or operational structure of the firm, there should be no relationship between the firm’s beta and the event period cumulative abnormal returns. A significant relationship between the two would indicate that any excess returns (CARs) were due to the firm’s market risk, however, the single index market model has been used to control for systematic market effects. A change in a macroeconomic factor that affects or changes systematic risk and return would change the relationship between the pre- and post-event returns. Interest rates are one of those macroeconomic factors. Because of this, the relationship between market risk and the benefits of a swap transaction is unclear. We anticipate no relationship between the firm’s CAR in the event period and its beta value.

The empirical model used in this study to test the relationship between firm-specific risk and the benefits of interest swap usage is a simple ordinary least squares regression (OLS) of the form

\[ y_i = \alpha + \beta_1 x_i + \varepsilon_i, \]

where \( y_i \) is the continuously compounded CAR computed by the market model for the \( i \)th firm, the independent variable, \( x_i \), the measure of risk (either the standard deviation of total returns, the residual standard deviation of the market model, or the beta of the market model for the \( i \)th firm during the estimation period), and \( \varepsilon_i \) is the error term. Wall’s hypothesis predicts a positive relationship between the risk of the firm and the reduction in agency costs, proxied by the firm’s CAR, due to interest rate swaps. For a cross sectional sample of firms using interest rate swaps, the hypothesis that will be tested is as follows:

\[ H_0: \beta_1 = 0, \] the firm’s risk does not explain the CAR after a swap has been arranged.

\[ H_a: \beta_1 > 0, \] the firm’s risk has a positive relationship with the CAR after a swap has been arranged.

In other words, a significant, positive beta coefficient from the regression model in Eq. (1) indicates that the firm with the greatest risk benefits more from using interest rate swaps due to a greater reduction of agency costs.

Data for this study are collected from the Disclosure database of financial statements for the years 1986–1991 for firms listed on the New York Stock
Exchange and American Stock Exchange. The disclosure and placement of interest rate swap information for this time period in financial statements is not standardized. The entire financial statement of every company on the Disclosure database was searched for interest rate swap information. From financial footnotes and other text fields of annual and quarterly financial statements during the time period, over 800 firms were identified that reported the use of swaps in their financial statements. However, swap transaction event dates were found for only 27 firms out of those 800 firms. Three of these 27 firms either did not have data on the daily return files from the Center for Research in Security Prices (CRSP), or had contemporaneous events near the swap date and were omitted from the sample. In most cases, the type of swap and the side of the swap transaction were not identified for this sample. Recent studies such as Fenn et al. (1996) and Bodnar et al. (1996) have larger samples than this study. This study’s sample is smaller because its methodology requires the date of the contract which is not a mandatory disclosure item under SFAS 105 and SFAS 119 and is generally not disclosed. Fenn et al. do not require the actual date for the interest rate swap, rather they use end-of-the-year financial statement data. The requirement of the interest rate swap dates severely limits the number of companies in the sample.

The 24 firms with interest rate swap dates were then subject to a multi-newspaper index search which included The Wall Street Journal, Washington Post, and New York Times for the period of one year before, the year of, and one year after the interest rate swap date to determine if there was any article written on their interest swap activity. None of the interest rate swap firms in the sample had any announcement of their swap transaction. The only source of information of a swap transaction was the firm’s own financial reports.

The sample of companies represents many industry types. The 24 companies in the final sample are classified in 19 different two-digit SIC codes. The event dates are distributed evenly over the years in the study. This time period covers several general market periods. Thus, there is no reason to suggest that the findings are affected by any market, industry or time period specific event.

The CRSP equally weighted index is used with daily returns for each of these firms to compute each firm’s regression parameters for the market model with a

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1 SFAS 105 was issued in 1990 which required disclosure of face principal and notional principal amount of off-balance sheet items that may result in an accounting loss. SFAS 119 requires detailed disclosure of a firm’s derivative activities in the firm’s annual report. This became effective in 1994, after the end of this sample period.

2 For example, we searched the 1997 Disclosure database following the steps defining our sample. In the 1996 quarterly and annual financial statements there were 822 companies trading on the NYSE or AMEX markets which were found to contain information about interest rate swaps. However, even after SFAS 105 and SFAS 119 only 3 companies reported the 1996 date of their swap transaction. Only 2 of those companies were listed on CRSP.
220-day estimation period \( (t = -250 \text{ to } t = -31) \) before the event date. These parameters are the model’s intercept, beta, and the total standard deviation for each firm. The market model is

\[
A_{it} = R_{it} - (\hat{\alpha}_i + \hat{\beta}_i R_{mt}),
\]

where \( A_{it} \) is the abnormal return or prediction error, \( R_{it} \) the return of the \( i \)th firm on day \( t \), \( \alpha_i \) the estimated intercept, \( \beta_i \) the estimated coefficient for the firm’s market risk from the estimation period, and \( R_{mt} \) is the return for the market on day \( t \). The abnormal returns per firm are then computed as continuously compounded CARs for the event interval of interest. The average continuously compounded CAR model is as follows:

\[
\text{CAR}_t = (1/n) \sum_{i=1}^{n} A_{it}^{-c},
\]

where \( A_{it}^{-c} \) is the continuously compounded CAR for the \( i \)th firm for the specified interval and \( \text{CAR}_t \) is the average continuously compounded CAR of all the firms over \( t \) days. The continuously compounded CAR is the total change in excess return for the entire interval selected.

Continuously compounded CARs are computed for several different periods. The event of the interest rate swap by the firm was not announced in the media. Various periods of time after the interest rate swap transaction are examined to allow for the length of time it would take for the information about a swap transaction to become general knowledge to the market. The average continuously compounded CARs (total excess returns) for the periods \( t = 1 \) to \( t = 20 \), \( t = 1 \) to \( t = 60 \), \( t = 1 \) to \( t = 90 \), and \( t = 1 \) to \( t = 120 \) are computed for each firm where the numbers 1–120 are the number of trading days after the swap arrangement. The CAR is then used in the regression with the measure of firm risk to test Wall’s agency hypothesis.

A comparison sample is constructed in order to help validate the results due to the small sample and the long length of the CAR period. A comparison sample was constructed by matching the firm in the sample of interest rate swap firms with another firm that did not have a swap transaction reported. The first criterion for selecting a comparison firm was the comparison firm had to be in the same four digit SIC code as the interest rate swap firm. The second criterion for selecting a comparison firm was the standard deviation. All the firms in the same industry as the interest rate swap firm had their residual standard deviation calculated for the same estimation period as the interest rate

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3 This approach was suggested at the discussion of this paper when it was presented at the 1994 Midwest Finance Association meeting and by Larry Wall.
A significant and positive CAR indicates that interest rate swaps have a favorable impact on firm value (a proxy for reduction in agency costs). This finding would be consistent with several theories of interest rate swaps, including the signaling hypothesis suggested by Litzenberger (1992). But the main purpose of this paper is to test Wall’s (1989) hypothesis that high-risk firms using swaps can reduce agency costs. The reduction of agency costs is predicted to be different depending upon the risk of each individual firm. High-risk firms will benefit from interest rate swaps more than low-risk firms from the standpoint of agency cost reduction. The relationship between firm risk and reduction of agency costs leads to a cross-sectional test of the impact of interest rate swaps. This test is more important in the examination of Wall’s analytical framework for interest rate swaps than the impact on firm value measured by the CARs themselves.

4. Tests and results

The event method is used in order to measure the impact of interest rate swaps on firm value. The average CARs for the sample firms are reported in Table 2 per time period. The average CARs for the interest rate swap sample are significant at better than the 0.10 level for the two longest periods. Firms in our sample that entered into interest rate swaps experience a large average increase in shareholder wealth in the four months (t = 1–90 trading days) following the transaction (approximately 10% excess return). This finding is consistent with all the theories predicting that interest rate swaps are beneficial to the firms that use them, as well as with the asymmetric information hypothesis.

To examine whether there is a varying impact on firm value due to firm risk, a cross sectional test is run. The hypothesis is that high-risk firms benefit more
than low-risk firms from agency costs reduction through the use of interest rate swaps. According to the hypothesis, there is a significant positive relationship between the risk of the firm and its continuously compounded CARs.

Two OLS regressions are run using each firm’s CAR as the dependent variable. One regression model uses the firm’s total standard deviation as the independent, explanatory variable. The other regression model uses the firm’s beta as the independent, explanatory variable. Results are reported in Table 3. The total standard deviation is a measure of firm’s total risk. It is the better measure of the risk reflecting the agency cost of the firm’s credit risk. This item is regressed on the changes in agency costs, as measured by the CARs per firm, due to an interest rate swap.

As shown in Table 3, there is strong support for the Wall’s agency theory prediction and the asymmetric information theory. For CAR lengths of $t = 1$

<table>
<thead>
<tr>
<th>Period length</th>
<th>Mean CARs sample firms (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$t = 1–20$</td>
<td>−1.30</td>
</tr>
<tr>
<td>$t = 1–60$</td>
<td>4.13</td>
</tr>
<tr>
<td>$t = 1–90$</td>
<td>9.96*</td>
</tr>
<tr>
<td>$t = 1–120$</td>
<td>10.00*</td>
</tr>
</tbody>
</table>

*Significant at the 0.10 level or better.

Table 3

**Panel A:** Regression results of risk (Total Standard Deviation) explanatory power of the reduction of agency costs (CARs) when using interest rate swaps $\text{CAR}_{it} = \alpha + \beta_1(\text{STD})_i + \varepsilon_i$

<table>
<thead>
<tr>
<th>Sample Firms</th>
<th>Constant</th>
<th>Total STD</th>
<th>R-Square</th>
<th>Comparison Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAR20</td>
<td>0.0808</td>
<td>3.15</td>
<td>0.1308</td>
<td>−0.0171</td>
</tr>
<tr>
<td>CAR60</td>
<td>−0.2571*</td>
<td>11.80**</td>
<td>0.3318</td>
<td>−0.0206</td>
</tr>
<tr>
<td>CAR90</td>
<td>−0.3130*</td>
<td>14.53*</td>
<td>0.2796</td>
<td>−0.0623</td>
</tr>
<tr>
<td>CAR120</td>
<td>−0.3302*</td>
<td>15.65*</td>
<td>0.2716</td>
<td>−0.0512</td>
</tr>
</tbody>
</table>

**Panel B:** Regression results of risk (Beta) explanatory power of the reduction of agency costs (CARs) when using interest rate swaps $\text{CAR}_{it} = \alpha + \beta_1(\text{Beta})_i + \varepsilon_i$

<table>
<thead>
<tr>
<th>Sample Firms</th>
<th>Constant</th>
<th>Beta</th>
<th>R-Square</th>
<th>Comparison Firms</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAR20</td>
<td>−0.0241</td>
<td>0.0244</td>
<td>0.0256</td>
<td>−0.0732</td>
</tr>
<tr>
<td>CAR60</td>
<td>−0.0248</td>
<td>0.0686</td>
<td>0.0366</td>
<td>−0.2572**</td>
</tr>
<tr>
<td>CAR90</td>
<td>−0.0623</td>
<td>0.1260</td>
<td>0.0685</td>
<td>−0.3051**</td>
</tr>
<tr>
<td>CAR120</td>
<td>−0.0564</td>
<td>0.1313</td>
<td>0.0623</td>
<td>−0.3250**</td>
</tr>
</tbody>
</table>

*Significance at the 0.05 level.
**Significance at the 0.01 level.
to \( t = 60 \) and longer, the coefficients for the standard deviation, \( \beta_1 \), are positive and significant at the 0.05 and 0.01 levels. Higher risk firms using interest rate swaps have higher total excess returns. The lack of support in the shortest CAR time period (1, 20 days) may be explained by the lack of information about the firm’s interest rate swap. Given sufficient time, more than one month, information about a swap arrangement, or the improved credit-risk position of the firm, does become known to the financial markets and leads to large, positive, continuously CARs, which would result from the reduction of agency costs priced in the market. It is also important to note that while these results support the agency hypothesis, they are also consistent with other theories of interest rate swap, especially asymmetric information as firms improve their credit ratings.

When looking at the comparison sample results in Table 3, there is no relationship between the standard deviation and the CARs. The absence of a significant, positive relationship in the comparison sample when one is found in the interest rate swap sample, lends support to the agency hypothesis of Wall. The difference in the samples indicates and that these test results are not due to market phenomena or small sample size. For each of the CAR periods the coefficient for the comparison sample standard deviation has no explanatory power of the CARs. Similar results are obtained with a comparison sample matched on industry, beta and alpha.

In Panel B of Table 3, using beta for risk in the swap and comparison sample, there is no relation for any CAR period with systematic risk of the firms in the swap sample. This is not surprising considering that a swap is a firm-specific transaction and will not change the firm’s systematic risk in the short run. In contrast, there are several significant positive relationships between the betas of the comparison sample firms and their CARs. For firms that did not have any known swap activity, the firm’s market risk is related to the excess returns. Because the standard deviation is a measure of firm-specific risk (swap arrangements are very firm specific), there is a strong theoretical case for using standard deviation as a measure of risk when looking at the benefits of swaps. This position is strongly supported by the results of the tests.

5. Conclusions

The purpose of this study is to measure the benefits of interest rate swaps to firms in the context of an agency cost framework. It is shown with the longer-term post-event CARs that using interest rate swaps has a positive impact on firm value. This impact is not found in the comparison sample. This increase in firm value is hypothesized to be positively related to the specific risk of the firm due to a reduction in agency cost. As predicted by Wall’s theory and the asymmetric information theory, higher risk firms benefit more from interest
rate swaps than lower risk firms. However, previous studies (Hand et al., 1992; Nayar and Rozeff, 1994) find no abnormal returns from credit rating upgrades. We find a significant positive relationship between the firm-specific risk of firms using interest swaps and their continuously CARs. This finding supports Wall (1989) agency theory explanation of the relationship between the risk of a firm and the benefit from a reduction in agency costs by using an interest rate swap and asymmetric information hypotheses. Wall posits that the benefit is larger for high-risk firms because of their higher agency costs.

This finding cannot exclude other hypotheses because the data do not reveal the fixed-rate versus floating-rate borrowers. The time frame of the sample period was before data on a firm’s swap usage were required to be more widely reported with SFAS 105 and 119. While Wall’s hypothesis is strongly supported in these empirical results, other theories such as the signaling hypothesis, are strongly supported by this research. The post-swap CARs are significantly large and positive for the entire sample. Interest rate swaps reveal favorable long-term information to the market. Larger risk firms benefit from this event more than lower risk firms, as predicted by Wall. If interest rate swaps are priced with little impact of credit risk spreads, then high-risk firms will benefit more from interest rate swaps than low-risk firms.

References