# THE EFFECT OF CORPORATE STRATEGY AND REGULATION ON THE RISK OF ELECTRIC UTILITIES

*Scott W. Geiger*
*Howard Rasheed*
University of South Florida

*James J. Hoffman*
Texas Tech University

*Robert J. Williams*
University of North Alabama

*Very little is known about the influences of corporate strategy and regulation on the risk of regulated firms. The current study addresses this gap by examining the relationship among the level of diversification, the regulatory environment, and risk levels of regulated electric utility companies. Results suggest that both the regulatory environment and level of diversification impact firm risk. Specifically, the regulatory environment in which a firm operates moderates the relationship between diversification and risk. Electric utilities operating in the least favorable regulatory environments benefited the most from diversification in terms of risk reduction, while electric utilities in the most favorable regulatory environments experienced increases in risk from diversification. These findings extend previous studies by showing how both the regulatory environment and corporate strategy impact the risk of regulated utilities.*

As the electric utility industry braces itself for deregulation, many important changes will take place. One of the most vital of these changes involves utilities learning to operate in a competitive environment. The literature has illustrated the differences between operating in competitive and regulated markets (Mahon & Murray, 1981). The transition to a deregulated market requires different skills and capabilities from managers than those used in a regulated market (Mahon & Murray, 1980, 1981). In addition, returns are not guaranteed in competitive markets as they are in the regulated electric utility industry. While it may seem as if utilities

are ready for impending deregulation, the majority of utilities have few executives with experience in a competitive environment (Almquist & Piotroski, 1999).

Diversification by utilities into unregulated environments, however, has provided a useful mechanism for some firms to seek new opportunities and learn how to operate successfully in competitive environments (Smith & Zeithaml, 1996). Thus, the study of utility diversification may provide valuable insight in regards to post-deregulation firm outcomes. Since the early 1990s many electric utilities have chosen to expand their activities into unregulated (or much less regulated) businesses such as real estate, insurance, investment, shipping and unregulated electric businesses, to name a few (Russo, 1992a). The result of such activity has provided many firms with growth opportunities and valuable knowledge gains that should be useful as deregulation occurs. For example, PG&E corporation has pursued domestic growth within the unregulated side of the electric industry and achieved over half its second-quarter 1998 revenues from unregulated business (Kranhold, 1998). Western Resources, on the other hand, has pursued a strategy of acquiring consumer oriented companies, whether related or unrelated to the industry, and owns over 80% of Protection One, the second largest home security company in the U.S. (Kranhold, 1998). However, the outcomes of such diversification have been mixed, with some moves resulting in heavy losses and increased risk. LG&E Energy Corporation, for instance, moved into the electricity trading businesses and "got burned" as electricity prices rose quickly during the hot summer months. The result was a $225 million second-quarter loss in 1998 (Kranhold, 1998).

The extent to which electric utilities play a major role in serving all businesses requires that more research be aimed at understanding the strategic implications of these firms operating outside the regulated environment. Furthermore, research is needed that focuses on organizational outcomes when regulated firms diversify outside of the regulated environment. Specifically, the implications of risk for regulated firms diversifying outside of their regulated environments may prove insightful to both managers choosing strategies at the corporate level, as well as regulators determining appropriate actions necessary to balance the needs of the public and the needs of the regulated firm.

The present study addresses this issue by examining the relationship among diversification, regulatory environment, and risk levels of regulated electric utility companies. A review of the literature is provided first, followed by a hypothesis regarding the relationship between diversification, the regulatory environment and risk. Next, the methodology used to test the hypothesis is presented. Finally, results and a discussion of the theoretical, methodological, and managerial implications from the study are presented.

## Diversification and Risk

Beginning with the work of Rumelt (1974), the topic of diversification has been broadly covered in the strategic management literature (Dess, Gupta, Hennart, & Hill, 1995). Early researchers such as Rumelt (1974) classified firms according

to their level and type of diversification, and compared the profitability of these firms based on this classification. More recent studies have emphasized the tradeoff between risk and return when examining the impact of diversification (Bettis, 1981; Bettis & Hall, 1982). In addition, research by Lubatkin, Merchant, and Srinivasan (1993) suggests that risk may be a more relevant outcome measure when evaluating the effects of diversification on the firm.

A few research efforts have examined the effects of diversification strategies on the risk of the firm. For example, Chang and Thomas (1989) found the relationship between diversification and risk-return insignificant, suggesting diversification does not lead to risk or return benefits. Moreover, Hill and Hansen (1991) found increased diversification to have a negative impact upon lagged-performance and lagged risk, suggesting that diversification is a low risk-low return strategy. Montgomery and Singh (1984) also examined the relationship between diversification strategy and risk and found unrelated diversifiers to have significantly higher risk than other types of firms. In another study of diversification, Barton (1988) found support for Montgomery and Singh's (1984) results that unrelated diversifiers have significantly higher risk compared to other firms.

Lubatkin and O'Neill (1987) also examined the effects of diversification on risk; however, their results differed from prior studies. In their study of 169 mergers they found a significant reduction in post-merger risk for related diversifiers, but did not find a significant increase in post-merger systematic risk for unrelated diversifiers. Chatterjee and Lubatkin (1990) also found that related mergers lead to a significant decrease in risk, while unrelated mergers lead to small and insignificant changes in risk. However, when controlling for target firm risk they found that unrelated mergers actually lead to a significant decrease in risk. Moreover, in a study of 400 diversified firms Amit and Livant (1988) found that unrelated diversifiers had lower firm risk. Bettis and Mahajan (1985) also found unrelated diversifiers to have lower firm risk. However, Lubatkin et al. (1993) found that unrelated diversification leads to greater firm risk.

Thus, the results from prior research regarding the relationship between diversification and risk are mixed (Amit & Livant, 1988; Barton, 1988; Bettis & Mahajan, 1985; Chatterjee & Lubatkin, 1990; Lubatkin & O'Neill, 1987; Lubatkin et al., 1993; Montgomery & Singh, 1984). However, most studies have found a significant relationship between diversification and the risk level of the firm. Thus, we offer the following proposition.

*Proposition 1*: Diversification significantly impacts the risk level of the firm.

The reason for the mixed findings discussed above may stem from the fact that prior studies have not considered the impact of the firm's environment on risk. Over the years, numerous studies have suggested not only the importance of firm strategy, but also the environment in which the firm operates (Bettis, 1981; Christensen & Montgomery, 1981; Hannan & Freeman, 1977; Hrebeniak & Joyce, 1985; Irwin, Hoffman, & Geiger, 1998; Lawless & Finch, 1989). Given this research, and the fact that firms in regulated environments face constraints not faced by those in unregulated environments (Russo, 1992a, 1992b), it can be

theorized that the environment in which a firm operates will also affect the risk of the firm. Thus, the following section discusses regulation in the utility industry and develops a proposition regarding the relationship between the regulatory environment and firm risk.

### Regulatory Environment and Risk

In essence, public utility companies are monopolies. Monopolies are necessary to achieve the economies of scale essential in public utility operations. However, unrestricted monopoly power is socially undesirable and therefore public utilities are regulated (Crew & Kleindorfer, 1979). In the United States, regulation by commission occurs at the state level. Thus, under this system of regulation, state regulators have numerous statutory obligations and face complex political problems. Mainly, commissions seek to control the prices of utilities in order to protect the public (Posner, 1974). If done properly, this should result in utility companies providing adequate service at reasonable rates while remaining economically efficient (Crew & Kleindorfer, 1979).

In order to determine what are reasonable rates, state regulators use a rate of return framework such as the one illustrated in the following formula:

$$R = OC + (RB - AD) \times RR,$$

where $R$ = revenue allowed, $OC$ = operating cost, $RB$ = value of rate base (assets of the utility used in producing output), $AD$ = accumulated depreciation, and $RR$ = rate of return allowed.

Based on this formula, utilities file for rates and the commission determines total revenues of the utility. From total revenues, rates are then determined based on estimates such as demand and the number of customers. The allowed rate of return ($RR$) is used to prevent companies from earning more than a fair rate of return. For example, if a utility is allowed a 12% return on equity and actually achieves a 15% return on equity, the commission may require the utility to refund excess earnings to the customers.

Because of the importance of the allowed rate of return, it is usually the most controversial element in the rate-making process. What makes it even more controversial is that different state commissions use different procedures to estimate the elements of the revenue framework such as costs, rate base, and rate of return (Kolbe, Read, & Hall, 1984). For example, some commissions base their cost estimates in a historical context while others use forecasts when determining costs. In addition, conditions are likely to change during the period in which rates are set, and thus, the firm is likely to earn more or less than the allowed rate of return. If the rates set by the commission do not yield an acceptable rate of return, the company must file for another rate case in order to increase rates and returns. On the other hand, if the rates yield a rate of return that exceeds the allowed rate of return, some commissions may require a refund as mentioned above, while others may apply over-earnings towards future necessities.

However, different state commissions use different procedures to estimate the elements of the revenue and earnings framework. Thus, the regulatory environment within which electric utilities operate can vary greatly from state to state. While state regulatory agencies help firms by protecting them from market and competitive forces (Mahon & Murray, 1981), they also have a great impact on the environment within which the firm operates (Russo, 1992a). For example, regulation in some states may prohibit firms from receiving adequate and timely revenue relief if environments or economic conditions change (Rajagopalan, 1997). However, some state regulatory bodies may be very adept at providing quick and fair revenue relief in times of change. This is important since research that has examined the impact of the regulatory environment on the firm has found that firms operating within an environment of greater regulatory intensity face more stringent regulation (Reger, Duhaime, & Stimpert, 1992), and thus are more constrained financially (Geiger & Hoffman, 1998; Russo, 1992b). Research has also found that in stable environments the volatility of earnings for firms should be low and in unstable environments the volatility of earnings should be greater (Amit & Wernerfelt, 1990). In general, regulatory environments that preclude firms from receiving timely or appropriate rate relief should be more financially constraining and less favorable than those that do provide stable rate relief (Rajagopalan, 1997). Thus, it is expected that firms which operate in more favorable regulatory environments should be subject to less risk than firms that operate in less stable regulatory environments. This leads to the next proposition.

*Proposition 2:* The more favorable the regulated environment, the lower the risk of the firm.

Given that firms in less favorable regulatory environments are expected to be subject to more risk than firms in more favorable regulatory environments, it can be theorized that firms in less favorable environments should benefit more from diversification outside of the regulated environment. For example, if a utility firm faces greater financial constraint than other utility firms in different regulatory environments, it could be expected that the firm would experience greater decreases in risk from diversification than those firms which diversify away from more favorable regulatory climates. As a result, one might expect a greater decrease in risk from diversification for firms in the least favorable regulatory environments, and a more moderate decrease or perhaps even an increase in risk from diversification for firms in more favorable regulatory environments. Thus, it can be theorized that the regulatory environment faced by the firm will moderate the relationship between diversification and risk. This leads to the following hypothesis.

*Hypothesis 1:* The regulatory environment moderates the relationship between diversification and risk such that the greater the constraint imposed by regulation, the greater the decrease in risk from diversification outside the regulated environment.

## Methods

### Population and Sample

The population for this study is all investor-owned electric utility companies in the United States. The sample collected consists of 62 firms of which 55 have diversified businesses outside of the regulated environment. The data was collected from four primary sources, the Goldman Sach's Electric Utility Diversification Survey (1994), Value Line Investment Survey (1994, 1995), annual reports, and the Compustat database. Data was needed from all sources and therefore only firms listed in all sources were included in the sample. This sample size compares favorably to other studies examining the electric utility industry (Rajagopalan, 1997; Russo, 1992a,b).

### Measures

**Dependent Variable.** Total risk of the firm equals the sum of systematic risk and business risk. Systematic risk represents the covariability of a firm's returns with the total returns of the market. Business risk (unsystematic risk) is a measure of the variation in a firm's returns attributable to firm-specific forces such as the level of R&D investment pursued (Amit & Wernerfelt, 1990). Management scholars argue that managing not only systematic risk, but also business risk, is central to competitive strategy and organizational evolution (Bettis, 1983; Child, 1972; Lubatkin et al., 1993). Because of this, the reduction of total risk should be beneficial to the organization, its stockholders, and other stakeholders such as suppliers and customers (Amit & Wernerfelt, 1990). Thus, the measure of risk examined in this study is total firm risk.

Total risk (TR) was determined using the Value Line "Financial Strength Rating." This rating ranges from 1 to 9, with 1 representing the lowest level of financial risk. The rating includes analysis of key financial variables as well as analysts' judgments regarding risk factors such as managerial competence. This index was found to have high convergence with the market model measure of total risk derived from the CRSP Daily Stock Returns File as evidenced by a correlation of .61 between the two variables. These results are consistent with Lubatkin et al. (1993), who also found consistency between the two measures. Furthermore, they suggest that the Financial Strength Rating is an appropriate method for measuring total risk because it takes into account not only financial data, but also organizational and managerial data allowing for a more comprehensive measure of total risk.

**Independent Variables.** The independent variable diversification (DI) was based on the percentage of utility diversified assets outside of the regulated environment and was obtained from the Goldman Sach's Electric Utility Diver-

sification Survey (1994).[1] The diversification level of firms was measured based on assets because utility companies are capital intensive and asset levels play a large part in the determination of the allowed returns of firms. Thus, this provides a measure that reflects the extent to which utilities have invested resources into unregulated business environments. The use of assets as a basis for diversification has been utilized in previous studies (Daniels & Bracker, 1989; Sambharya, 1995).

Previous research has operationalized regulation intensity in the electric utility industry as the ratio of regulatory commission expenses to stockholder equity (Russo, 1992b). This measure captures the extent to which firms expend resources in an effort to present and defend themselves in rate cases, reviews, and audits. However, utilities choose how much or how little to spend on regulatory affairs. Some firms may choose to expend large amounts of resources in the regulatory process, while others may choose to expend very little in the process. Thus, in using such a method, it is likely that two companies in the same state (that actually operate in the same regulatory environment) will have very different measures of regulatory intensity.

Alternatively, previous research has also utilized a readily available Value Line rating to measure the regulatory climate of electric utilities (Rajagopalan, 1997). Using this Value Line Regulatory Climate rating, utilities in the same state are considered to face the same regulatory climate and receive the same rating for this variable. Thus, this measure of regulatory environment (RE) was preferred over the measure used by Russo (1992b). This Value Line index is based on judgments made by analysts regarding factors associated with the stability, adequacy and fairness of returns allowed to the company on overall plant and common equity by state regulatory commissions in which the electric utility operates. Ratings range from below average to above average (1–3), where 3 represents the most favorable climate within which to operate. Firms operating in below average climates will be subject to less favorable regulatory decisions regarding issues such as cost recovery and allowed earnings (profitability). On the other hand, firms operating in average and above average climates will be subject to more favorable regulatory decision making.

**Control Variables.** It is expected that firm size (FS) will impact a firm's level of risk, as larger firms tend to have greater levels of diversification (Montgomery & Singh, 1984). Thus, to separate the effects of size and diversification, size will be controlled for in the analyses. As has been done in previous studies, size was measured as the natural log of total firm revenues (Grant & Jammine, 1988).

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[1]Product-market diversification was also measured using Rumelt's (1974) diversification classification scheme. To insure the reliability of the Rumelt measures, data were gathered independently by two separate researchers. Strong consensus was achieved as the initial classifications matched for 60 of the 62 ratings (97%). Consistency was also found between the Rumelt measures and assets outside of the regulated environment diversification measures ($r = .77$). In addition, results obtained with the Rumelt measures mirrored those obtained using percentage of diversified assets outside the regulated environment, providing us with confidence in our results.

Level of firm debt may also impact the risk of the firm. Thus, leverage (LE) was calculated using debt to assets (Lubatkin & O'Neill, 1987). It is expected that the greater the debt level, the greater the risk of the firm.

In line with Bromiley (1991), it is expected that as performance increases, the risk of the firm will decrease. Thus, firm performance was controlled for in the analyses. To control for performance, return on equity (ROE) was included in the analyses. This variable was chosen because of its particular importance to utility companies (Morin, 1994), and its use in many previous diversification studies (Lubatkin et al., 1993; Russo, 1992b). State laws require regulators to allow utilities an opportunity to earn a fair rate of return equal to that of other firms with comparable risks. When done properly, this fairly compensates investors for risks assumed and enables utilities to raise funds for capital projects. The rate of return allowed to regulated utilities is based on ROE (Morin, 1994).

## Data Analysis

Data from the 62 utility companies were analyzed using multiple linear regression. This method is appropriate because of the expected relationship of the dependent variable with the multiple independent variables (Cohen & Cohen, 1983). To determine the effects of regulation and diversification on risk, both the diversification and regulatory environment variables were regressed on total risk. The variables size, leverage, and performance were also included as control.

$$Y_i = B_0 + B_1X_1 + B_2X_2 + B_3X_1X_2 + control\ variables + \varepsilon,$$

where $Y_i$ is the risk for firm $i$, $X_1$ represents the regulatory environment, $X_2$ represents the level of diversification and $X_1X_2$ represents the moderating effect between the regulatory environment and diversification. In the regression model, the control variables were entered in the first stage, regulatory environment and diversification were entered in the second stage, and the interaction of diversification and regulatory environment was entered in the third stage. To test for a lagged relationship, all independent variables represented 1994 data, while the dependent variable was measured as the average of 1994 and 1995 data.

## Results

Examination for multicollinearity among the independent variables was necessary to perform the analyses. A visual inspection of the correlation matrix suggested that multicollinearity may exist. To test for the existence of multicollinearity, procedures recommended by Belsley, Kuh and Welsch (1980) were used. Condition indexes were developed to determine if a high condition index contributed greatly to the variance of two or more variables. The collinearity diagnostics performed revealed that no component associated with a high condition index contributed substantially to the variance of more than one variable. Thus, the collinearity diagnostics performed suggested that no multicollinearity problems existed.

### Table 1
### Descriptive Statistics for Dependent and Independent Variables

| Variable | Mean | SD | Correlations | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| | | | 1 | 2 | 3 | 4 | 5 |
| 1. TR | 3.77 | 1.47 | | | | | |
| 2. FS | 3.21 | .42 | .23* | | | | |
| 3. LE | .36 | .05 | .41** | .14 | | | |
| 4. ROE | 11.22 | 1.94 | -.31** | .01 | .06 | | |
| 5. RE | 2.02 | .56 | −.42** | .11 | −.02 | .28* | |
| 6. DI | .10 | .12 | −.25** | −.09 | −.12 | .07 | .39** |

*Note:* $N = 62$. TR = Total risk, FS = Firm size, LE = Leverage, ROE = Return on equity, RE = Regulatory environment, DI = Diversification.
*$p < .05$. **$p < .01$.

Summary statistics for all variables are provided in Table 1 and the presentation of the model results are reported in Table 2. Consistent with prior research, the correlation matrix suggests that performance as measured by ROE had a significantly negative relationship with total risk (Bromiley, 1991). This negative correlation may have resulted from the failure of regulators to fairly compensate utilities for their levels of risk. Thus, firms with less risk may in fact be overly compensated during the rate of return regulation process. In addition, debt-to-assets was significantly correlated with risk in the predicted direction.

The research hypothesis suggests that the regulatory environment of the firm moderates the relationship between diversification and risk such that the less favorable the regulation, the greater the reduction in firm risk from diversification. In the regression analysis, the main effect of the regulatory environment was negative and significant ($p < .01$). In addition, the main effect of diversification was negative and significant ($p < .05$). The effect of the interaction was positive and also significant ($p < .05$). Moreover, the addition of the interaction term to the regression equation provided a significant increase in $R^2$ of .058 ($p = .015$). These results support the research hypothesis presented in this study and are also consistent with the results of prior studies (Bettis & Hall, 1982; Christensen & Montgomery, 1981) that have examined the effect of the environment on the relationship between diversification and firm outcomes.

Figure 1 shows that differences in risk exist between levels of diversification for firms in the least favorable regulatory environment. In the moderate regulatory environment only slight differences in risk exist between levels of diversification. Lastly, in the most favorable regulatory environment, large differences in risk exist between levels of diversification. However, in this instance, firms with less diversification experienced lower levels of risk than more diversified firms. This

may suggest that firms in more favorable regulatory environments achieve lower levels of risk within the regulatory environment, while firms in less favorable environments are subject to regulation that creates higher levels of firm risk. In turn, firms in favorable regulatory environments experiencing low levels of risk may find difficulty in maintaining these low risk levels outside of the regulated environment. Alternatively, firms in less favorable environments experiencing greater levels of risk may find it less difficult to decrease their risk profile outside of the regulated environment. Lastly, firms in moderate regulatory environments experiencing average levels of risk may find that diversification will only have a slight impact on the risk of the firm.

### Table 2
### Results of Regressing Diversification, Regulatory
### Environment and Control Variables on Total Risk

| Independent Variables | $b$ | |
| --- | --- | --- |
| Stage 1 | | |
| FS | .608+ | |
| LE | .125** | |
| ROE | −.254** | |
| Stage 2 | | |
| FS | .739* | |
| LE | .119** | $\Delta R^2 = .123, p < .005$ |
| ROE | −.178* | Adj $R^2 = .387$ |
| RE | −.933** | |
| DI | −.004 | |
| Stage 3 | | |
| FS | .601+ | |
| LE | .127** | $\Delta R^2 = .058, p < .02$ |
| ROE | −.155* | Adj $R^2 = .440$ |
| RE | −1.462** | |
| DI | −.078* | |
| DI x RE | .053* | |

*Note:* $N = 62$. Beta coefficients are unstandardized. FS = Firm size, LE = Leverage, ROE = Return on equity, RE = Regulatory environment, DI = Diversification.
$+p < .10.$ $*p < .05.$ $**p < .01.$

### Discussion

Research involving the strategic behavior of firms in regulated industries has been sparse in the strategic management literature (Ramaswamy, Thomas, & Litschert, 1994). In response to the absence of research involving regulated firms,

the current study examined the relationship among diversification, regulatory environment and the risk of the firm. It has been argued in this study that some of the inconsistency in past diversification research may have occurred because past research has not examined the impact of the environment on firm risk. In their landmark article, Hrebeniak and Joyce (1985) contend that strategic choice and environmental determinism are not opposite ends of a spectrum, but are independent variables that must be studied to explain organizational behavior. However, most previous studies of diversification have not considered the impact of the environment on risk. The purpose of the current study has been to extend the work on diversification and risk by examining diversification in a regulated environment.

## Figure 1
### Interaction Between the Regulatory Environment and Diversification and their Effects on Risk
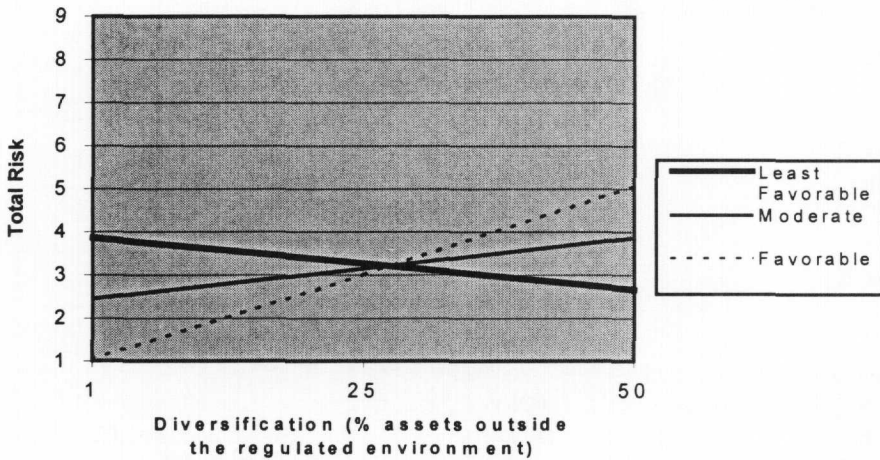


*Note:* Figure 1 is based on the following formula.

$$Y = constant + b1 \times RE + b2 \times DI + b3 \times RE \times DI$$
$$Y = 5.349 + (-1.462 \times RE) + (-.0779 \times DI) + (.0533 \times RE \times DI)$$

| % Assets Diversified | Regulatory Environment | | |
|---|---|---|---|
| | Least Favorable | Moderate | Favorable |
| | 1 | 2 | 3 |
| 1 | 3.86 | 2.45 | 1.05 |
| 25 | 3.27 | 3.14 | 3.01 |
| 50 | 2.66 | 3.86 | 5.06 |

Findings from this paper suggest that diversification strategy and regulatory environment may be individually insufficient variables in explaining firm risk for electric utilities. However, the interaction between these variables is a significant determinant of risk. Thus, the results from this study suggest that the benefit of electric utility diversification is moderated by the firm's regulatory environment. Specifically, firms facing the least favorable regulation benefited the most from diversification. Conversely, firms associated with the most favorable regulatory environment did not benefit from diversification and actually experienced a large increase in firm risk. Firms facing moderate regulation did not realize benefits from diversification and experienced a moderate increase in risk.

Results from this study have several theoretical and managerial implications. First, the results provided in this study suggest that the relationship between diversification and risk can be industry or environment specific. Thus, previous studies that pooled data from numerous industries may have ignored important effects of the industry environment. Moreover, even in regulated industries firms are able to use corporate strategy to control outcomes such as firm risk. This also suggests that while the behavior of regulated firms may be unique and different from unregulated firms, regulation is an important variable deserving more attention from the strategic management field.

A practical implication for managers is that the regulatory environment is important and should be considered when evaluating strategic choices. Firms facing the toughest or most stringent regulatory environments may benefit the most from investing outside the reach of regulators while firms in less stringent regulatory environments may benefit more from expansion within the industry due to the lower risk enjoyed within the regulated environment. Thus, managers may be well served to evaluate both the current and target environments and base diversification decisions on these differences. For example, when measuring risk using the common risk measure beta (firm risk relative to the market), it is possible to compare the risk levels of electric utilities to the overall market. Thus, data regarding the beta of the sample firms were also gathered. It is important to note that the average beta of the firms in this study was .68 while the beta measure for the overall market is 1.0. Thus, utilities pursuing new areas of business may find themselves diversifying into riskier business environments.

These findings also have implications for managers in regards to their approach towards regulators. Firms in all three regulatory environments may receive benefits from continually investing resources to maintain positive regulatory relations. This is especially true for firms in the poorest regulatory environments. However, as demonstrated by Murray (1978), the process of dealing with regulators often involves negotiating outcomes. Thus, firms less skilled at dealing with regulators may be better off investing resources outside the reach of regulators. An interesting question resulting from this implication is whether or not some regulated firms are able to outperform other regulated firms based on their ability to negotiate with regulators and thus achieve a sustained competitive advantage in a regulated market. Future studies may prove useful in addressing

such a question. Future studies may also wish to examine what factors lead to diversification in the utility industry. Understanding the reasons for diversification may be a helpful tool in understanding the outcomes of diversification.

Overall, it is hoped that this paper will serve as a foundation for future research efforts in the area of regulation, diversification, and risk. Future studies are needed that examine risk profiles of firms in other regulated industries. In addition, future research should examine the relationship between diversification and risk for firms in unregulated industries. Other studies examining the relationships between diversification, the environment, and risk may be useful in substantiating the results found in this study. It is also hoped that this study will provide managers and regulators with insight regarding the impact of a firm's diversification level and regulatory environment position on the risk profile of the firm.

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## Biographical Note

**Scott W. Geiger**
Department of Management
University of South Florida
140 Seventh Ave. South
St. Petersburg, FL 33701-5016
Email: geiger@bayflash.stpt.usf.edu

**Dr. Geiger** is an Assistant Professor of Management in the College of Business, University of South Florida. Dr. Geiger's research interests include corporate diversification, regulated industries, and business ethics. His research has appeared in journals such as *Organizational Behavior* and *Human Decision Processes*, the *Journal of Business Ethics*, and the *Journal of Business Research*.

**Howard Rasheed** is an Assistant Professor of Management in the College of Business, University of South Florida. Dr. Rasheed's research interests include electronic commerce, small and entrepreneurial business, corporate strategy, and international business. In addition to numerous proceedings, his work has appeared in the *Journal of Business Strategies*.

**James J. Hoffman** is a Professor of Management in the College of Business at Texas Tech University. He is currently doing research in the areas of business strategy in declining industries, top management teams, and international management. Dr. Hoffman's research has appeared in journals such as the *Academy of Management Journal*, the *Journal of Management*, and the *Journal of Business Research*.

**Robert J. Williams** is an Assistant Professor of Management in the College of Business, University of North Alabama. Dr. Williams' publications have appeared in the *Academy of Management Journal*, *Human Relations*, *Journal of Business Ethics*, and *Journal of Business Research*. His research interests include top management teams, corporate strategy, and business ethics.