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MAXIMIZING SHAREHOLDER WEALTH: UNDERSTANDING SYSTEMATIC RISK IN THE RESTAURANT INDUSTRY

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ABSTRACT

Investors describe the uncertainty of a business's success or failure as risk, and managers must monitor this risk because it affects a companies' cost of capital, market value and ultimately shareholder wealth. Using regression analysis, this study reexamined how the systematic (market related) risk of a company's common stock is linked to corporate behavior and financial performance. The results suggest that properly investing excess cash flow in operating assets and high asset turnover may lower systematic risk and, depending on a company's stage of development, director turnover may increase systematic risk.

Key Words: systematic risk, restaurant industry, operating leverage, financial leverage

INTRODUCTION

The significance of beta to a firm's value has resulted in researchers investigating the relationship between beta and a firm's financial variables for various industries (see Table 1) and for restaurant companies in particular (Borde, 1998; Gu & Kim, 2002; Shin & Kim, 2007). Large or small, restaurants are risky businesses with many forms of operating and financial risks impacting their ability to stay in business. Among the risks are: changes in consumer tastes and discretionary spending patterns; changes in general economic conditions; public safety conditions or concerns such as outbreak of mad cow disease or the SARS epidemic; demographic trends; the cost of food products, labor and energy; competition; and governmental regulations.

These risks put investments in restaurants at considerable risk, resulting in many business failures, despite the fact that the restaurant industry is booming. According to Angelo and Vladimir (1998), 50% of new restaurants went into bankruptcy after one year, and 85% of them went into bankruptcy after three years. Sales in the restaurant industry were $42.8 billion in 1970, increased to $185.1 billion in 1986, to $308.2 billion in 1996. In 2006 sales reached $537 billion marking the fifteenth consecutive year of real sales growth for the industry (National Restaurant Association, 2007). Sales are expected to reach $565 billion in 2007 and represent 4% of the U.S. gross domestic product. One important reason for this steady growth is people tend to eat out more as their incomes increase and their personal time becomes a valued commodity (National Restaurant Association, 2007).

Therefore, managing risk requires a focused and dedicated management team that understands the determinants or causes of uncertainty. This would enable them to implement policies and strategies that would help reduce risk, and thereby maximize firm value and shareholders wealth (Brenner & Smidt, 1978).

Risk and Return

Total risk of a security can be partitioned into two parts: nondiversifiable risk and diversifiable risk. Diversifiable risk, or unsystematic risk, represents the risk associated with random events (such as strikes, regulatory actions) that can be eliminated through diversification of investments. Nondiversifiable risk, or systematic risk, is the shareholder-specific risk closely tied to market factors (such as economic, political, and social events) that can not be eliminate through diversification. Therefore, systematic risk is a stock's volatility due to the market's volatility; or the covariance with the overall market's movement. Systematic risk is donated as β (or beta) (Goetzmann, 2006).

The concept that investment return should increase as risk increases is a basic tenant of financial management. To maximize a company's share price, management must learn to assess two key determinants: risk and return. Each financial or operational decision presents certain risk and return characteristics, and the varying combinations of these factors has an impact on share price. Risk, or the chance of financial loss, significantly affects a business' investment opportunities and the wealth of its owners, while return is the total gain or loss experienced on an investment over a given period of time.

The basic theory that relates risk and return for all investors is the capital asset pricing model (CAPM). The CAPM links systematic risk (beta) and stock return and determines the expected return a potential investor requires on an investment (Fama, 1976). The higher the systematic risk, the more an investor expects. The formula used to describe the CAPM relationship is:

$$Ke = R_f + \beta (R_m - R_f) \quad (1)$$

Where
K_e = investor's required rate of return
R_f = risk-free interest rate
β = beta coefficient
R_m = return on the market portfolio
$(R_m - R_f)$ = market risk premium

The Beta Coefficient

Systematic risk, or the beta coefficient, is a market sensitivity index; it measures the volatility of a given stock relative to the market (e.g. the Standard & Poor's 500 Stock Composite Index). This tendency of an individual stock to move with the market constitutes risk, because the market fluctuates, and these oscillations cannot be diversified away (Huo & Kwansa, 1994).

Some stocks have virtually no systematic risk. These stocks are not influenced as much by the general market, but rather company specific factors; for example, the food service industry has a low beta and is relatively isolated from market ups and downs. Other stocks, such as high technology companies, have high betas and their stock returns are strongly influenced by the general market. As indicated market related risk results from factors that systematically affect all firms, such as recession, inflation, and high interest rates (Hartviksen, 2004).

Deriving Beta from Return Data

Beta is derived by regressing a stock's historical returns on overall market returns. The quantified slope of the linear regression is generally positive. A steep slope indicates greater volatility to market variations, while a shallow slope indicates less exposure to the market. For example, a stock with a beta of 2.0 will be twice as responsive to the market as a stock with a beta of 1.0.

Company Characteristics and Restaurant Risk

Financial distress, potential insolvency and reduced shareholder wealth are the ultimate results of mismanaged risk, and studies have identified factors that may help managers and investors predict a company's financial troubles, leading to a better understanding of the company's risk. Weston and Brigham (1990) proposed that both asset structure (operating leverage) and

financial structure (financial leverage) are factors that affect a firm's systematic risk (beta). Generally hospitality firms are fixed-asset intensive and highly-leveraged (Huo & Kwansa, 1994).

Operating leverage is the percentage of fixed costs in a company's cost structure. Generally, the higher the operating leverage (higher fixed costs than variable costs), the more a company's income is affected by fluctuation in sales volume (Huo & Kwansa, 1994). For example, a restaurant company with higher operating leverage will generate greater operating income in times of sharply increasing sales than will a company with a lower operating leverage (higher variable costs). Conversely, a restaurant company with lower operating leverage will perform better when sales revenue decreases. The more significant the volume of sales, the more beneficial the investment in fixed costs becomes, which means the company does not have to pay as much additional money for each unit produced or sold. However, the down side to this high operating leverage is if a high percentage of a firm's costs are fixed, they do not decline as demand decreases, this can increase the company's business risk (Huo & Kwansa, 1994).

Financial leverage is the additional variability in earnings due to the use of debt. The greater the degree of financial leverage, the greater the fluctuations (positive or negative) in earnings per share. The common stockholder therefore, is required to endure greater variations in returns when the firm's management chooses to use more financial leverage rather then less (Huo & Kwansa, 1994).

In identifying the determinants of systematic risk or beta, previous studies have examined the relationship between beta and liquidity, debt leverage, operating efficiency, profitability dividend payout, firm size, sector analysis and growth using multiple regressions with beta as the dependant variable (see Table 1).

- In the hotel industry, seven variables were examined as important factors of systematic risk: leverage, growth, firm size, liquidity, efficiency, profitability, and dividend payout

ratio. Leverage ratio and growth were positively related to systematic risk, while firm size had a negative relationship with systematic risk. Correlations between the other variables and systematic risk were not found (Kim, Gu, & Mattila, 2002).

- Current ratio, leverage ratio, assets turnover ratio, and profit margin ratio were investigated as potential determinants of systematic risk in 35 U.S casinos. Only asset turnover was negatively related to a firms' systematic risk; no relationship was found with any of the other variables (Gu & Kim, 1998).
- Systemic risk (beta) was compared with liquidity, dividend payout ratio, leverage, return on assets, and growth opportunities for 55 companies in the restaurant industry (Borde, 1998). The levels of liquidity and growth opportunity were found to be positively related to systematic risk while dividend payout ratio and return on assets were negatively related. Leverage ratio was almost irrelevant with risk, which was not expected as leverage is generally believed to be related positively with risk (Borde, 1998).
- A study of 72 restaurant firms using liquidity, dividend payout ratio, leverage, return on assets, and growth opportunities found systematic risk had a negative relationship with assets turnover but had a positive relationship with liquidity (Gu & Kim, 2002).
- Shin and Kim (2007) investigated systemic risk (beta) with liquidity, dividend payout ratio, leverage, return on assets (profitability), and growth opportunities in the restaurant industry. They concluded liquidity, return on assets, and growth opportunities were related to a firm's systematic risk (beta). Dividend payout and leverage were not statistically significant and therefore unsuitable factors in explaining beta.

Although their research did not relate to systematic risk, Barber, Ghiselli, Deale and Whitham (2007) studied the relationship between company financial performances on CEO turnover in the restaurant industry. They concluded that negative stock and accounting

returns can be a good predictor of turnover. The assumption was that a board of directors would act (relatively) quickly to avoid the risk of further financial or market deterioration due to poor executive and company performance.

INSERT TABLE 1 ABOUT HERE

A number of these studies have examined the relationship of certain financial determinants and beta, using different time periods and number of restaurants. This current research is to follow the studies performed by Borde (1998), Gu and Kim (2002) and Shin and Kim (2007) on restaurant firms' systematic risk (beta) determinants. There are various reasons that support this study's reexamination of restaurant beta determinants.

First, according to the study by Brode (1998) the 52 restaurant companies used had a mean annual growth in EBIT of 5.1% percent during the period 1992 - 1995, while in the study by Gu and Kim (2002), which used 75 restaurant firms, had a mean negative annual growth in EBIT of 18.7% from 1996 - 1999. In the study by Shin and Kim (2007), they sampled 42 restaurant companies and reported a mean annual growth of EBIT that was a negative 42.7% during the period 2001 – 2005. In contrast, the 64 restaurant companies in this study reported a mean annual growth in EBIT of 4.1% during the period 2000 – 2005. The fact that all three of the previous studies examined different time periods and had different sample sizes could be one of the main reasons in explaining the differences and warrants further analysis.

Second, the restaurant industry has continued to undergo restructuring since 1995. According to Gu and Kim (2002), 40% of the restaurant firms tested by Borde (1998) were non-existent by their study in 1999, due to either bankruptcy or mergers. This current study contained an updated sample and only included 14 (or 27%) of the original restaurant companies used by Borde (1998). Finally, Borde (1998), Gu and Kim (2002) nor Shin and Kim (2007) considered the possible effect of executive manager turnover on systematic risk.

As a result of their findings on beta determinants, this study used only the 4 ratios found by Borde (1998), Gu and Kim (2002) and Shin and Kim (2007) as identifying factors that affect systematic risk in restaurant companies. In addition four new variables – return on equity (ROE), interest coverage, earnings before income tax, depreciation and amortization (EBITDA) as a percentage of revenue and Executive Management and Director Turnover were used in this study. No previous studies were found that tested these new variables.

These new variables were chosen for the following reasons. First, return on equity has not been previously used to model the potential impact on risk, yet return on equity plays an important role between return and risk (Arditti, 1967; Bromiley, 1991). Bromiley (1991) concluded that low performance results in a company's income stream becoming more risky and thereby lowers future performance.

Second, it has been suggested that interest coverage has an impact on the amount of risk a company may take (Bromiley, 1991), which in turns influences the markets perception of the company's market risk. Again, Bromiley (1991) proposed that wasted or unused resources - "slack" could result in potential low performance, and suggested two measures. The first is the debt-to-equity ratio, which reflects a lack of potential slack, and the second is the interest coverage ratio, calculated as the ratio of income before taxes and interest charges to interest charges, which indicates the presence of potential slack. Firms with additional resources can take advantage of opportunities and have more strategic options available than firms without additional resources. For example, a corporation with larger income relative to interest charges is in a better position to take on additional debt to grow and expand the company than a corporation with lower income relative to interest charges.

Third, EBITDA is commonly used as a key measure of financial health, particularly by lenders to determine debt service capabilities. In a study conducted by Baker and Ruback (1999) it was found to provide the most precise estimate of value depending upon the industry.

Finally, there were no studies found that considered Executive Management and Director Turnover and the impact on risk (beta). However, in a study by Barber et al. (2007), they determined that a change in executive leadership is a significant event in the life of a company and that financial performance impacts CEO turnover in restaurant companies.

As discussed earlier, financial distress, potential insolvency and reduced shareholder wealth are the ultimate results of mismanaged risk, and studies have identified factors that may help managers and investors predict a company's financial troubles, leading to a better understanding of the company's risk. Therefore, this study has selected key executive turnover as a possible determinant of risk (beta) because of the instability turnover can cause in the market and resulting perception of financial risk.

METHODOLOGY

To examine how the market related risk of a company's common stock is linked to corporate behavior and financial performance this study used data for the six years beginning 2000 through 2005. The companies included were derived from the March 4, 2006 Nations Restaurant News Stock Index of 73 publicly-traded U.S. restaurant and other food service related companies ("NRN Companies"). Using proxy statements (DEF 14A) filed with the Securities and Exchange Commission, data on the composition of boards of directors and executive management were gathered. Company financial determinants were collected from the Mergent-online database and beta from Value Line Research. Value Line beta is calculated by regressing the weekly changes in the price of the stock against weekly percentage changes in the NYSE over a 5 year period; no adjustments are made for dividends in this calculation.

The variables used in the beta determinant model were selected according to whether they measured profitability (ROE or ROA), liquidity (Quick Ratio), debt management (debt to assets, leverage, and interest coverage) and asset management (asset turnover). To increase the explanatory power of the beta determinant model, the four new variables discussed earlier were used. The first variable was return on equity which was calculated using net income divided by the average stockholders equity for the period.

The second variable, interest coverage, is a calculation of a company's ability to meet its interest payments on outstanding debt. Interest coverage is equal to earnings before interest and taxes for a time period, divided by interest expenses for the same time period. The lower the interest coverage, the larger a company's debt burden and the greater the financial risk to investors. The Third variable was change (or turnover) in Executive Management and Boards of Directors. Executive Management and refers to those in a position to influence the strategic, operational and financial decisions of a company and included the following individuals: Chairman/CEO, CEO, COO/President and CFO ("Executive Management"). The final variable was Earnings Before Income Tax, Depreciation and Amortization as a percentage of revenue for a given period.

Turnover was determined by tracking Executive Management for each of the NRN Companies during the sample period and computing a simple percentage change. For example, turnover across top 5 officers of a firm was measured by comparing the Executive Management of the firm across year's t and t-1. If an officer appears in t on the DEF 14A but never appears again in the DEF 14A as an employee of the firm, we assume that the officer has quit and we hence code turnover as 1/5 or 0.2.

Data Analysis

After reviewing the data, a number of companies were removed from the sample because of U.S. bankruptcy filings and/or because they issued stock under an initial public offering and complete public information was not available. There were no mergers or acquisitions during this sample period that would have impacted this analysis. As a result, data were available for 64 companies (average) during the sample period ("NRN Sample Companies").

Testing of the NRN Companies life cycle and size followed the method used by Barber et al. (2007), which grouped the companies according to gross revenue (using quartiles as the grouping points). For example, group one companies had the lowest gross revenue, and the 25% quartile separated it from Group 2, the next largest, etc. This was done in order to examine the relationship between turnover and company size.

This follows in part the research of Hanks, Watson, Jansen, & Chandler (1993) in which companies can be clustered according to annual sales, growth rate and organizational structure. Although their research did not address public companies, it is commonly accepted that once public, the expectations of investors, lenders and the market in general may create new growth and organizational demands for company Directors, Executive Management and other key employees – which undoubtedly affects turnover. Support for using gross revenue as a surrogate for company size was assessed via correlation; the relationship between gross revenue and market capitalization for all NRN Companies was highly significant, $r = .9425$ ($p<.0001$).

The data were analyzed using statistical procedures including descriptive statistics, correlation analysis, and regression (SAS release 9.1 TS level 02M0), similar to the studies by Borde (1998), Gu and Kim (2002) and Shin and Kim (2007). The descriptive analysis focused on variable means. Beta was a dependent variable, while liquidity, leverage, ROA, ROE, EBITDA

of revenues, interest coverage, asset turnover and executive management and director turnover were the independent variables.

The study's methodology examined the relationship between beta, the market-derived measure of risk described above, and various company-specific financial characteristics using regression analysis. A common problem associated with regression using cross-sectional or time series data is that the regression model may be impacted by heteroscedasticity, which violates the constant residual variance assumption of regression. This can be avoided by using the weighted least-squares (WLS) regression procedure, as suggested by Kleinbaum, Kupper, and Muller (1988) and Borde (1998). The weights are the reciprocals of the absolute values of the residuals from a first-path ordinary least-squares regression. Using this method, the OLS regression model shown below is estimated first.

$$RISK(beta) = \alpha_0 + \alpha_1 Liq_i + \alpha_2 Lev_i + \alpha_3 ROA_i + \alpha_4 ROE + \alpha_5 EBITDA\%_i + \alpha_6 Intcov_i + \alpha_7 Astrn + \alpha_8 Turn + U$$

Where:

α_0 = intercept

Liq = liquidity, defined as the average ratio of cash plus short-term securities to total assets for firm j over the study period.

Lev = leverage, defined as the average ratio of common equity to total assets for firm j over the study period.

ROE = represents Earnings from Continuing Operations divided by average Total Equity and is expressed as a percentage.

ROA = operating returns, defined as the average ratio of net income to total assets for firm j over the study period.

EBITDA% = Earnings Before Interest, Tax, Depreciation, and Amortization divided by total revenues.

Intcov = calculated by dividing a company's earnings before interest and taxes (EBIT) of one period by the company's interest expenses of the same period:

Astrn = take the total revenue and divide it by the average assets for the period studied.

Turn = Turnover was determined by tracking Executive Management for each of the NRN Companies during the sample period and computing a simple percentage change.

After the OLS regression model was determined, two WLS models were derived. The first model included all eight independent variables to establish the initial assessment and role of each variable in the model. The second model followed the forward selection regression method as proposed by Stevens (1986). This was done to refine the model so only significant variables were remaining.

The forward selection procedure considers the first variable to enter the model as the one with the largest correlation with the dependant variable. If the variable is statistically significant, then the second variable with the largest semi partial correlation with the dependent variable is considered. If the second variable is significant, then a third variable with the next largest semi partial correlation is considered until all independent variables are considered. At some stage, a given variable will not make a significant contribution to the prediction of the dependent variable and the procedure is terminated. This study followed the cutoff significance value used by Borde (1998) and Gu and Kim (2002) of 0.05

RESULTS & DISCUSSION

Table 2 presents summary statistics for the NRN Companies. The mean systematic risk (beta) for all NRN Companies is 1.20 with a range of -0.20 to 3.06. Group four had the highest mean beta (1.5) and group one the lowest mean beta (0.89).

INSERT TABLE 2 ABOUT HERE

Correlations among the variables are presented in Table 3. Return on assets has the highest negative correlation with beta, while interest coverage has the highest positive correlation. High positive inter-predictor variable correlations were also found between EBITDA

and ROA (0.64, p<.0001), ROE (0.32, p=.0099), as well as between asset turnover and ROE (0.26, p=.0419) liquidity (-0.28, p=.0287) and EBITDA (-0.35, p=.0059). Therefore, multicollinearity among independent variables was checked for in the regression model.

INSERT TABLE 3 ABOUT HERE

The WLS regression model results are presented in Table 4. Asset turnover is the dominant determinant of restaurant beta as indicated by its highest statistical significance level (t-value=-1.74, p<.01). The direction of the asset turnover beta (-0.282) is consistent with previous studies (Gu & Kim, 1998; Logue & Merville, 1972), suggesting that by efficiently managing assets, turning assets over quickly can lead to a lower restaurant beta. The other significant variable in the model is liquidity (t-value=-1.92, p<0.01). The direction of liquidity is negative, confirming the relationship found by Logue & Merville (1972) and Moyer & Chartfield (1983) that a higher ratio can indicate less risk. Although the variables, executive turnover and directors turnover are not significant at the 0.05 level in the model, their positive direction was expected. The greater the turnover rates among these two groups, the greater the impact on a company's stock price, and ultimately beta.

To check for the presence of multicollinearity variance inflation factors (VIF) were determined. Variance inflation factors below 10 generally indicate multicollinearity is not a major concern (Neter, Wasserman, and Kutner, 1989). Similarly, VIF greater than 4 is an arbitrary, yet common cut-off criterion for deciding when a given independent variable displays high multicollinearity (Mertler & Vannatta, 2002). Table 4 presents the VIF with no variable above 10 and only one variable, Director Turnover was close to 4.0 (3.98); therefore it appears that multicollinearity may not be a problem.

INSERT TABLE 4 ABOUT HERE

Table 5 presents the results of the forward selection WLS regression model for the NRN companies and by the company's stage of development. The NRN companies' stage of development followed the method used by Barber et al. (2007), which grouped the companies according to gross revenue (using quartiles as the grouping points). The variance influence factor (VIF) values are well below the cutoff of 10, with two variables just under the VIF of 4.0 as suggested by (Mertler & Vannatta, 2002), indicating that there is no serious concern about multicollinearity issues in this regression model (Neter, Wasserman, and Kutner, 1989).

INSERT TABLE 5 ABOUT HERE

For the sample of NRN companies, liquidity (β=-0.152) and asset turnover (β=-0.179) were the only significant variables to enter the model, with asset turnover the most significant. In the smaller companies (groups one and two), director turnover significantly affected beta. This suggests that the relationship between turnover and beta may be related to factors associated with firm size and/or life cycle. In other words, director turnover has affected the systematic risk of smaller restaurant firms than larger firms.

Despite the need to grow these companies in size beyond their geographic niche, shareholders and stock markets are not tolerant of poor accounting and market returns, particularly when these smaller companies may be more dependent on the right leadership. This supports previous studies where logistic regression found a relationship between turnover and poor market and accounting returns (Barber, et al., 2007; Conyon & Florou, 2002).

In the largest companies (group four), ROA was the significant predictor of beta. These companies have large and usually diverse asset mix. Managing and operationalizing these assets to generate the highest returns may result in these companies facing a smaller probability of failure and therefore helps lower risk.

CONCLUSION

This study reexamined determinants of systematic risk (beta) of 64 restaurant firms from 2000 through 2005. Using the WLS regression analysis, restaurant firms' systematic risk correlated negatively with assets turnover and negatively with liquidity. The findings suggest that efficient use of existing restaurant assets is the key to risk reduction and firm value enhancement. The results of this study confirm Borde's (1998) and Shin and Kim (2007) regarding liquidity and Gu and Kim (2002) regarding asset turnover.

These results indicate that if a firm has the ability to meet short-term financial obligations, this could lower risk. Given the goal of restaurant firm executives is to maximize the wealth of their shareholders; they may take consider these findings when formulating corporate strategies. If restaurant firms can not avoid retaining too much cash and near-cash assets in excess of their short-term liabilities and investing this excess in efficient operating assets, they should consider distributing this excess to shareholders as dividends (Borde, 1998; Gu & Kim, 1998).

Managing for value is not a mysterious process. However, it does require a long-term focus on returns, not quarter to quarter changes in earnings per share. The “value manager” perspective is characterized by the ability and willingness to act on opportunities to create incremental value, while recognizing that each new investment project earning an appropriate return above the company’s opportunity cost of capital should be accepted. Focusing on shareholder value is not a one-time task to be done only when outside pressures emerge.

As discussed earlier, Barber et al. (2007) determined that turnover of Executive Management and Directors impacted a company’s financial performance. This study disclosed an interesting finding relating to turnover and beta. Turnover of directors was a significant predictor of beta, suggesting that the relationship between turnover and beta may be related to factors associated with firm size and/or life cycle. This was the case for smaller companies

within groups one and two. Directors at these stages of growth and development are critical "strategists" in steering a company through the hazards of the initial stages of "post-listing" market share development and brand identification. Until the companies mature and gain market share, with resulting efficiencies gained in operations with greater net income, perceived risk by the market may be expected. Therefore, high director turnover at the early growth stage may signal poor financial performance for the company, thereby impacting the market perception of the company's financial health and its resulting beta.

As mentioned earlier, the different sample sizes and different time periods may be the reason that this study differed from the other studies exploring risk in the restaurant industry. The restaurant industry is ever changing and dynamic, with new restaurants opening and many older ones either closing or merging with competitors.

In summary, the results of this study confirm the need to manage financial ratios. The linkage between financial variables and beta ultimately impacts shareholder wealth and the viability of the company. This study confirmed the results of other research that liquidity, ROA and asset turnover are significant predictors of beta (Borde, 1998; Logue & Merville, 1972; Moyer & Chartville, 1983 and Gu & Kim, 1998). It also demonstrated that beta can be impacted differently by each of these predictors, depending on the company's stage of growth (life cycle). The other seemingly important variables, interest coverage, ROE, leverage and EBITDA were not important predictors of beta.

REFERENCES

Angelo, R. & Vladimir, A. (1998) *Hospitality today, an introduction*. Orlando, FL: American Hotel and Motel Association.

Arditti, F. (1967). Risk and the Required Return on Equity. *The Journal of Finance*, 22(1).19-36.

Baker, M. & Ruback, R. (1999). Estimating Industry Multiples. Harvard University and Harvard Business School. Retrieved November 5, 2007 http://www.people.hbs.edu/mbaker/cv/papers/EstimatingIndustry.pdf

Barber, N., Ghiselli, R., Deale, C. & Whitham, R. (2007) Executive Manager Turnover in the Foodservice Industry: Is There a Relationship to Key Financial Performance Measures? Presented at the 12th Annual Graduate Conference, University of Houston, Houston Texas.

Brenner, M. & Smidt, S. (1978). Asset Characteristics and Systematic Risk. Financial Management, (Winter), 33-39.

Bromiley, P. (1991). Testing a Causal Model of Corporate Risk Taking and Performance. *The Academy of Management Journal*, 34(1). 37-59.

Borde, S. (1998). Risk diversity across restaurants. *Cornell Hotel & Restaurant Quarterly*, 64-69.

Borde, S., Chambliss, K & Madura, J. (1994). Explaining Variation in Risk Accorss Insurance Companies. Journal of Financial Services Research. 8(3). 177-191.

Conyon, M. J., & Florou, A. (2002). Top executive dismissal, ownership and corporate performance. *Accounting and Business Research, 32*(4), 209-225.

Fama, E., 1976, Foundations of finance (Basic Books, New York).

Goetzmann, W. (2006). An Introduction to Investment Theory. Yale School of Management. Accessed January 7, 2007. http://viking.scom.yale.edu/will/finman/540/

Gu, Z., & Kim, H. (1998). Casino firms' risk features and their beta determinants, *Tourism and Hospitality Research, 4*, 357-365.

Gu, Z., & Kim, H. (2002). Determinants of restaurant systematic risk: A reexamination. *The Journal of Hospitality Financial Management, 10*(1), 1-13.

Harviksen, K. (2004). Measuring the Beta using Historical Stock Prices. Published Lakeside Univeristy. Accessed January 24, 2007. http://foba. lakeheadu.ca/hartviksen/2039/historica

Huo, YH & Kwansa, F. (1994**).** Effect of Operating and Financing Leverage on Firm's Risk The Journal of the International Academy of Hospitality Research. 8. 1-13.

Jensen, M. (1986). Agenct costs of free cash flow, corporate finance, and takeovers. American Economic Review, 76, 323-329.

Kim, H., Gu, Z., & Mattila, A. S. (2002). Hotel real estate investment trusts' risk features and beta determinants, *Journal of Hospitality & Tourism Research, 26*(2),138-154.

Kleinbaum, D.G., Kupper, L. L., & Muller, K. E. (1988). *Applied regression analysis and other multivariable methods.* Boston, MA: PWS-KENT Publishing Company.

Logue, L. & Merville, J. (1972).Financial policy and market expectations. *Financial Management.* 1(3). 37-44.

Mertler, C. A., & Vannatta, R. A. (2002). *Advanced and multivariate statistical methods: practical application and interpretation* (2nd ed.). Los Angeles: Pyrczak.

Moyer, R. C., & Chatfield, R. (1983). Market power and systematic risk. *Journal of Economics and Business, 35*(1), 123-130.

National Restaurant Association. (2006). Restaurant industry forecast. Retrieved Sep 20, 2006, from http://www.restaurant.org.

Neter, J., Wasserman, W., & Kutneer, M. H. (1989). *Applied Linear Regression Models (2nd ed.).*

Shin, Y. & Kim, W. (2007, January). Risk Analysis of the Restaurant Industry. Paper presented at the 12th Annual Graduate Education and Graduate Student Research Conference. Pages 223 – 230. Houston, Texas.

Stevens, J. (1986). *Applied multivariate statistics for the social sciences,* Hillsdale, NJ: Lawrence Erlbaum Associates.

Weston, J.F. & Brigham. E.F.(1990). Essentials of Managerial Finance, 9th Edition. Orlando, Fl.: The Dryden Pres.

Table 1. Summarized Results of Previous Research

Financial Determinants	Relationship to Beta	Researchers	Proposed Reason(s)
Liquidity	Positive	Jensen (1984)	High liquidity increases cost of free cash flow and raise risk of wasteful use of cash assets.
	Negative	Logue & Merville (1972); Moyer & Chartfield (1983)	High liquidity, suggests low short-term debt.
	Positive	Borde (1998)	Valuable resources are not being invested in high-earning operating assets.
	Not significant either way	Gu & Kim (1998)	
	Positive	Gu & Kim (2002)	Available resources not invested in operating assets (lost opportunities).
	Negative	Shin & Kim (2007)	If a firm has ability to meet short-term financial obligations, this could lower risk.
Debt Leverage	Positive	Kim, Gu & Mattila (2002); Borde, Chambliss & Madura (1994);Gu & Kim (2002)	Debt financing creates financial risk. Using less debt can reduce systematic risk.
ROA	Negative	Borde (1998); Logue & Merville (1972)	Ability to manage property profitably.
	Negative	Shin & Kim (2007)	Ability to manage property profitably.
Operating Efficiency (asset turnover)	Negative	Logue & Merville (1972);Gu & Kim (2002)	High efficiency in using revenues to generate revenues helps lower risk.
Dividend Payout	Negative	Borde (1998); Logue & Merville (1972)	Returns from dividend perceived by investors as more certain than through higher stock price
	Not significant either way	Gu & Kim (2002); Shin & Kim (2007	

Table 2. Descriptive Statistics of Variables for Six Years 2000 to 2005

	Mean					Std.
	Group				NRN Companies (n=64)	NRN Companies (n=64)
Variable	One (n=16)	Two (n=16)	Three (n=16)	Four (n=16)		
Beta	0.89	1.1	1.1	1.5	1.2	0.7
ROA	-3.5	2.1	6.8	3.1	2.0	12.9
ROE	11.6	0.4	11.3	12.2	9.0	31.9
Liquidity	0.7	0.8	0.8	0.4	0.7	0.6
Leverage	0.3	0.2	0.3	0.3	0.3	0.2
EBITDA/Revenue	4.1%	7.0%	15.2%	13.5%	9.8%	7.3%
Asset Turnover	1.9	1.5	1.4	1.5	1.6	0.5
Interest Coverage	-4.5	3.9	31.2	11.7	9.9	651.1
Executive Turnover	5.4%	5.0%	2.0%	5.3%	4.4%	0.1
Director Turnover	2.8%	2.0%	1.8%	2.5%	2.3%	0.1

Note: ROA = return on assets; ROE=return on investment; EBITDA=percentage of earnings before interest, taxes, depreciation and amortization over revenue.

Group	Minimum beta	Maximum beta
One	-0.20	2.28
Two	0.13	3.06
Three	0.39	2.85
Four	0.80	2.96

Table 3. Pearson Correlations Between Variables (n=64)

(n=64)	Beta	ROA	ROE	Liquidity	Leverage	EBITDA	Asset Turnover	Interest Coverage	Executive Turnover	Director Turnover
Beta	1.00									
ROA	-0.17	1.00								
ROE	-0.13	0.57*	1.00							
Liquidity	-0.04	-0.06	0.01	1.00						
Leverage	0.06	-0.11	0.13	-0.07	1.00					
EBITDA	-0.01	0.64*	0.32*	-0.09	-0.01	1.00				
Asset Turnover	-0.12	0.04	0.26**	-0.28*	-0.03	-0.35*	1.00			
Interest Coverage	0.10	0.12	0.03	0.11	-0.08	0.10	0.11	1.00		
Executive Turnover	-0.003	0.04	-0.03	-0.01	-0.09	0.01	0.10	-0.08	1.00	
Director Turnover	-0.03	-0.07	0.13	-0.01	0.22	-0.11	0.32	0.05	0.29	1.00

* Significant at p=.01. ** Significant at p=.05.

Table 4. WLS Regression Model With all Variables

(n=64)	Coefficient	t-statistic	VIF
Intercept	1.936	3.17**	NA
ROA	-0.003	-0.20	
ROE	0.0002	0.03	3.44
Liquidity	-0.278	-1.92*	3.19
Leverage	0.595	1.18	1.23
EBITDA	-0.009	-0.41	2.49
Asset Turnover	-0.282	-1.74**	2.14
Interest Coverage	0.0003	1.91*	1.10
Executive Turnover	0.062	0.18	1.43
Director Turnover	1.545	0.51	3.98

**=Significant at 0.01 level; *=Significant at 0.05 level. R^2=0.2683, Model F=3.30 (Significant at 0.05 level)

Table 5. Forward Selection WLS Regression Model for NRN Sample and by Proposed Life Stage

NRN Sample (n=64)	Coefficient	t-statistic	VIF
Intercept	1.707	11.62*	NA
Liquidity	-0.152	-2.03**	1.04
Asset Turnover	-0.17986	-2.97*	1.04
Group One (n=16)			
Intercept	1.313	8.50*	NA
Director Turnover	14.886	5.05*	3.78
Group Two (n=16)			
Intercept	6.040	13.27*	NA
ROA	-0.086	-7.47*	1.00
Asset Turnover	-2.877	-9.26*	2.68
Director Turnover	9.593	5.42*	3.43
Group Three (n=16)			
Intercept	2.470	28.16*	NA
Asset Turnover	-0.7931	-12.39*	1.01
Executive Turnover	7.895	19.59*	2.74
Group Four (n=16)			
Intercept	2.369	15.74*	NA
ROA	-0.0960	-6.46*	1.00

*=Significant at the 0.01 level. R^2 = 0.4018, Model F-statistic=6.49 (significant at the 0.01 level). Group one R^2 = 0.9074. Group two R^2 = 0.9954. Group three R^2 = 0.9959. Group four R^2 = 0.8741.