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FINANCING THE LEISURE INDUSTRY:
DETERMINANTS OF CAPITAL STRUCTURE

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ABSTRACT

The capital needed to finance the leisure endeavors is an issue that is paramount to our society. The economy has shifted toward a leisure base. The understanding of the capital structure is important because it is somewhat different. It is based more upon a discretionary decision of the consumer.

INTRODUCTION

A firm may finance its operations through equity or debt, or through instruments that combine features of equity, debt, and options. The use of debt provides leverage for the equity owners of the firm, increasing their risk and expected return. Simultaneously, it creates another set of interests in the firm as bondholders' preferences will differ from those of stockholders. A major issue in management, then, is deciding a combination of debt and equity financing that is consistent with the firm's objectives. This decision and the variables that influence it are of interest both for the theorist and for the practitioner of finance. This paper focuses on these issues as they relate to the leisure industry.

The growth of per capita income in the United States has led to increased demand for leisure goods and services, making the leisure industry a significant part of the economy and a large user of funds in the financial markets. This paper provides an overview and analysis of financing this industry. Section 2 defines leisure activities and the leisure industry. Section 3 reviews the sources of finance and the variables that influence finance, and Section 4 reviews the theory of financial structure. Statistical analysis of leisure industry finance in Section 5 reveals that the data support the conventional theory of financial analysis.

DEFINING THE LEISURE INDUSTRY

The leisure industry may be defined as the production and

distribution of leisure goods and the provision of leisure services. To identify leisure industry activities, one may begin simply by listing the ways people use their leisure time. Given the diversity of interests of the American public, however, the list quickly becomes quite long. Table 1 suggests the extent of leisure activities in the United States, excluding those related to eating, drinking, religious, and political/civic functions. From a list such as this, there emerges a group of activities that enable a clearer focus on the industry. In-home leisure activities may be categorized as: (1) audio-visual entertainment (radio, TV, VCRs, hifi/stereo, cameras, videorecording); (2) games and toys (including electronic games and personal computers); (3) reading (newspapers, magazines, books); (4) in-house sports and exercise; (5) hobbies, crafts, and do-it-yourself (including in-home entertainment). Out-of-home leisure includes: (1) participatory sports and outdoor activities; (2) spectator sports; (3) live theatre and entertainment (including bars and amusement parks); (4) musical activities; (5) motion pictures; (6) gambling and gaming, and (7) travel.

Table 2 presents the top ten recreational activities for men and women in the United States in 1985, with the percentages of participation. This table immediately calls attention to the importance of out-of-home sports activities in the American leisure industry, with water-related sports (swimming and fishing) leading the lists. Other top ten recreations include bicycling, jogging, softball, camping, and bowling, with seven of the top ten items occurring on both the women's and the men's lists. Women also prefer aerobics, hiking, and volleyball among their top recreations while men identify pool-billiards, weight training, and basketball.

Table 3 shows the sports in which three percent or more of the United States population 18 years and older participated in 1985. Consistently with Table 2, the top three activities are swimming, fishing, and bicycling. Twenty percent or more also participated in softball, camping, and jogging. The remaining sports include expected activities, and show that the percent participation in four sports--volleyball, tennis, roller-skating, and skiing--more than doubled during the past generation.

The data in Tables 2 and 3 suggest that major segments of the leisure industry are the production and distribution of sports equipment/supplies and provision of services to facilitate sports activities. Table 4, which presents consumer expenditures on selected types of leisure, shows that the sports and recreation activities in the earlier tables do generate substantial expenditures. Toys and sporting supplies is the third largest industry segment among those listed, following spending on food and alcohol in restaurants/carryouts and bars.

If one includes the two other segments in the list that represent sporting equipment--boats and pleasure aircraft, then the total is second only to restaurant/carryout food as the largest leisure expenditure. Following food, alcohol, and sports products is spending on magazines and newspapers. The cost per unit in this group suggests that the percentage of the population spending leisure in this segment is probably even greater than the percentages related to the "active" recreations listed

earlier. Similarly, reasonable estimates of expenditure per patron suggests that the live theatre-entertainment, spectator sports, and parimutuel betting segments of the industry are patronized by a proportion of the population similar to the "active" categories. While Table 4 includes cable television, it omits other television and radio listening (since consumers do not spend directly for these services, except for equipment). Reasonable estimates suggest that perhaps twice as many people watch television and listen to radio as those who participate in the active sports and recreations.

Table 4 also excludes travel expenditures other than hotels and motels. Sales in this industry (including hotels and motels) currently are estimated to run in the range of \$230 billion (30, p. 64), making it significantly larger than the industries included. Other leisure industry segments that Tables 1-4 omit are photographic equipment, supplies, and processing; motion picture production and distribution; casino and other non-parimutuel gambling; the music industry; and amusement parks and clubs. Even with this substantial understatement of the scope of the industry, spending in the segments listed in Table 4 represents about 8.5 percent of personal consumption expenditures in each of the years shown. Leisure clearly represents a major force in the United States economy.

Consistent with the above definition, this paper considers five major subgroups of the leisure industry: (1) leisure goods manufacturing; (2) leisure transportation; (3) leisure communications; (3) leisure goods distribution; and (4) leisure services. A precise listing of industry segments and those included in the statistical analysis is given in Section 5 below.

SOURCES OF FINANCE AND VARIABLES INFLUENCING LEISURE INDUSTRY FINANCE

This section discusses the following aspects of financing the leisure industry: sources of finance; variables that influence industry financing; and unique aspects of financing certain segments of the leisure industry. Any discussion of how households finance the consumption of leisure goods and services is beyond the scope of this paper.

SOURCES OF FINANCING

Like any other industry, leisure goods and services may be produced and delivered either through the private sector or by government. The types of finance available through the private sector are common equity, preferred equity, convertible securities, long-term debt (either bonds, notes, or mortgages), and short-term debt (including trade credit). In some segments of the leisure industry, equity financing also is provided through limited partnership interests, some of which are public and may be traded in financial markets.

Private sector financing may be provided either by the nonfinancial sector--individuals, partnerships, or corporations--or through financial institutions. The most important financial institutions for leisure industry finance are banks, insurance companies, pension funds, endowments and trusts, and mutual funds. Investment bankers (brokerage firms) are, of course, important in financing and marketing public issues.

Governments may finance leisure activities either through direct ownership of facilities and provision of services, through leasing of government-owned facilities, through government loans or loan guarantees, or through direct subsidies.

VARIABLES THAT INFLUENCE LEISURE CAPITAL

The types and sources of finance available to a particular firm or leisure activity depend upon a myriad of forces unique to the specific situation. The ultimate determinants of financial capital in any industry, however, are the risk and return characteristics of the product or service. Since economic feasibility implies financial ability, the key to a firm's decision to acquire assets is the net present value of potential investments. A firm's value depends directly on its ability to earn a high return on assets. To determine this value at a point in time, financial analysts consider the underlying variables that influence risk and return through their impact on demand, cost, and industry structure. These variables frequently are described as determining the "business risk" of the firm. Seven variables that are widely recognized as being among the most important determinants of business risk are discussed below.

(1) Technology. A recent Wall Street Journal article on leisure trends in the United States argues that from a sociological perspective twentieth century technological developments have had surprisingly little impact on leisure in America (13, p. 5D). Despite the obvious use of television and electronic games and the role of modern transportation technology in making travel more widely available, the author argues--comparing Muncie, Indiana, today with the famous Middletown sociological studies of the 1920's--that "things haven't changed that much." Tables 2 and 3 seem on their face to confirm this view. Among the top sports and recreations in those tables, only aerobics and frisbees are new (and some may argue that frisbees are going the way of the hula hoop). Advocates of this viewpoint note that even the advent of cable TV and video-cassettes have yet to bring the long-predicted demise of the motion picture theatre, and bowling remains a major attraction today, as it was a half century ago.

Notwithstanding the sociological argument, one should not draw the inference that technology has had no major economic and financial consequences for the leisure industry. The industry is characterized by dynamic economic and financial change. For example, television does represent a major leisure industry that did not exist fifty years ago--an industry created by technology. New technology has expanded the demand for leisure products and services in numerous industry segments. In the

ski industry, for example, snowpacking technology improved ski conditions, and snowmaking technology increased the length of the season, thereby increasing demand. Resorts in once remote areas from Hawaii to Vermont have experienced great demand growth due to modern transportation technology.

New technology may likewise contribute to a decrease in demand or a change in the risk profile of an industry segment. Electronic games provide a recent example. The introduction of computer games first led to enormous profits for the firms introducing the products, but the subsequent bust created great losses for these firms. The risk and return of firms such as Warner Communications, Coleco, Mattel, and Commodore underwent major changes in a short period of time, with significant financial implications.

(2) Competition and Barriers to Entry . Leisure firms are subject to both domestic and foreign competition. Firms that are successful in generating high and stable returns are those that succeed in finding ways to limit the inroads of competitors.

Traditional barriers to competition such as large capital requirements, technology, and regulation are not often available to firms in the leisure industry. They must rely on techniques such as creating proprietary products, patents or copyrights, and strong brand name recognition to keep competitors at bay, and even these tactics often have not worked. For example, Harley Davidson lost much of the motorcycle market to foreign competitors despite a strong brand image. Similarly, Kimball and Wurlitzer have lost musical instrument production to foreign firms. The story extends to sports products, where foreign competition threatens Voit with bankruptcy and already has transformed MacGreggor and Lionel from producers to distributors.

(3) Demand Growth and Customers Since leisure is an income-elastic luxury good, the tendency is for industry demand to grow faster than population and gross national product, but this generalization masks considerable differences within the industry.

The unpredictability of consumers' tastes and the tendency toward fads result in both instability and unpredictability of demand in some segments. This is especially true of movies, TV, toys/sporting goods, leisure attire, and music. In these segments, the product life cycle tends to be extremely short. In other segments of the industry, such as bowling, demand growth has been relatively slow but steady, as the percentage of the population participating has remained fairly constant. In still others, such as lodging, demand has experienced a relatively steady and rapid growth. Finally, some parts of the industry are relatively stagnant. While a few companies are able to experience continued demand growth and an expanding customer base in stagnant or declining markets, this normally is not the case.

The following data on growth rates of revenues of a sample of firms for the period 1979-1983 demonstrate the differences in annual growth rates between industry segments (31, p. 24):

Segment	Annual Growth Rate
Broadcasting (radio and TV)	12.3%
Cable and pay TV	45.1
Entertainment programming and distribution	9.8
Gaming (casino-hotels)	22.7
Recorded music	- 0.4
Theatrical exhibition	9.8
Theme parks	13.7

The more nearly a particular leisure good approaches a commodity, the more likely competition will enter to force profits to a minimal level. Thus, managers of leisure firms continually must strive to create new products and services that are in some way unique. The development of such products or services gives management greater flexibility in pricing while at the same time increasing unit sales growth.

From the individual company's perspective, not only demand growth but also the breadth of customer base is important to risk and finance. A company that relies on a single customer for a large proportion of its sales faces greater risk than one with a broadly diversified customer base.

(4) Suppliers and Resource Availability Availability of raw materials and supplies, and the number and reliance of suppliers, are other variables that are important to the risk/return evaluation of potential investments in the leisure industry. In some segments, these factors may be quite important. For example, as environmental restrictions increase, the available supply of land that may be developed for recreational facilities becomes more limited. In the camping, backpacking, resort, and skiing industry segments, much of the suitable land is controlled or restricted by federal, state, or local governments. Such limitations limit potential new competition and enhance the prospects for existing firms.

(5) Operating Leverage Operating leverage provides the link between changes in demand and changes in the firm's profits. It is defined as the relationship between a change in sales and the corresponding change in operating income. A high degree of operating leverage means that a small change in sales, ceteris paribus, will lead to a relatively large change in operating income. The basic determinant of operating leverage is the percentage of the firm's costs that are fixed: high fixed costs mean a high degree of operating leverage. High fixed costs generally are associated with highly automated, capital intensive industries. Except for airline transport, which is not included in this study, leisure firms are not in general highly capital intensive. However, for manufacturing firms to be competitive, they often must adopt highly automated capital intensive systems. In doing so, their operating leverage is increased.

(6) Other Cost Structure . The preceding variables focus attention on capital and raw materials, but in particular situations other costs may become important. If, for example, management chooses to maintain a

relatively low degree of operating leverage, then labor costs become more important in determining profitability.

(7) Unique Abilities of Management Finally, to estimate the value of any firm, the special qualities of management must be taken into account. The willingness of financiers to provide funds depends not only on the variables discussed above, but quite importantly on how management is able to deal with these forces.

The collective impact of these seven variables determines the firm's business risk and return through their impact on the level, growth, and variability of sales and costs. Some relate only to sales; others, to costs; and some to the competitive and technological context within which the firm operates. The point of emphasis is their effect on earnings before interest and taxes (EBIT).

Management's decision on how to finance the firm must take account of the potential return from the firm's assets and of the business risk inherent in operations. Assuming that the marginal rate of return before interest and taxes on new assets is equal to the return on existing assets, the EBIT return on assets may be taken as the firm's profit rate before financing costs (and taxes) are considered. The cost of financing, of course, must include the cost associated with additional risk incurred by debt financing as well as the direct interest cost. The decision to engage in debt financing, then, may be expected to vary positively with the EBIT return on assets and inversely with the firm's business risk. These risk and return characteristics are discussed more fully in Section 5.

UNIQUE ASPECTS OF LEISURE INDUSTRY SEGMENTS

Before analyzing overall leisure industry finance, the unique features of certain segments of the leisure industry deserve comment. For various reasons, these segments do not lend themselves to ordinary financial analysis.

Table 5 shows recent revenues for a group of these "special situation" segments. While the table shows that their revenues are rather small relative to the total leisure industry, they represent activities that attract a good deal of attention. Some of them, such as dance groups and orchestras, are cultural organizations that are not feasible economic enterprises because of insufficient demand, high costs, and the impossibility of growth in productivity.(2) Society, however, is unwilling to let these functions disappear; so an alternative means of financing them must be found. In practice, this financing comes from contributions by individuals and corporations and by various subsidies from governments.

Theatrical production provides a different type of financial challenge. The table shows that legitimate theatre is a three-quarters of a billion dollar enterprise. A fundamental financial difficulty is the exceptionally high risk associated with live theatrical productions. While the vast majority of productions result in substantial losses to

the investors, a few highly successful ones are quite profitable. The typical risk averse individual or institutional investor is not willing to accept such risk. The result is that theatre finance typically is provided by "angels." According to Vogel (31, p. 329),

Angels must indeed love theatre, because tax sheltering is much more effective in oil, real estate, and professional sport franchises than on Broadway, where depreciation aspects are limited. An angel must also have enough income to afford a tax loss (write-off); historically the odds against ever seeing a return on investment are over 2 to 1.

Often the angel is an individual, although the issuance of stock or partnership interests to a group of investors is also common; but, in either case, finance is not through traditional channels.

The other segments listed in Table 5 typically are privately held and do not publish information on financing. As the above quote suggests, tax shelter normally is an essential feature of investing in professional sports clubs franchises (as are the nonfinancial benefits of ownership, notably prestige). Typically, such franchises are owned by wealthy individuals who use the tax shelter to offset income from other businesses, or through limited partnerships with a similar objective. The exceptions to this general rule are stable franchises in major metropolitan areas, notably New York and Los Angeles, with very large television markets and revenues.

If nothing more, these unique situations demonstrate the diversity of financing arrangements in the leisure industry. They do not, of course, describe the typical finance of the industry. To provide further background against which to evaluate leisure industry finance, a discussion of the theory of financial structure is necessary.

THE THEORY OF CAPITAL STRUCTURE

Three alternative theories of the financial structure of the firm are considered in this section: (1) the optimal capital structure theory, (2) the leverage tax clientele theory, and (3) the conventional theory of financial analysis. The focal point of all theories of capital structure is what determines the amount of leverage and how leverage relates to the value of the firm. Leverage normally is measured by the ratio of total debt to total assets/liabilities, the ratio of total debt to equity (either common equity or total equity), or by the ratio of long-term debt to equity.

Optimum Capital Structure The modern theory of debt-equity combinations (capital structure) is adapted from the classic 1958 paper by Modigliani and Miller. (22) The conclusion of that paper is that debt finance is immaterial to the value of the firm. Specifically, MM

demonstrated that with perfectly competitive, frictionless capital markets, given its asset decision, the firm's value is independent of the debt to equity ratio (i.e., its capital structure). Fama and Miller extended the MM analysis to conclude that the values of individual securities issued by the firm are likewise independent of the capital structure, provided that the initial issuers are covered by complete protective covenants (called "me first" rules).

Subsequent work has relaxed the restrictive MM assumptions to take account of taxes, the presence of agency costs, the potential for bankruptcy, and market imperfections, concluding that, contrary to the original MM view, an optimum capital structure does exist for the individual firm.

If corporations are taxed, tax deductible interest payments mean that more debt increases the firm's value because of the existence of a tax shield. The amount of the increased value of the firm is equal to the present value of the tax shield multiplied by the corporate tax rate. MM in 1963 (24) concluded that the firm's optimum capital structure is to finance entirely by debt. However, if debt income is taxed at a higher rate than capital gains from stock, then personal tax liabilities at least partially offset the tax shield benefits. This led Miller in 1977 (20) again to conclude that leverage has no impact on firm value, so that no optimum capital structure exists. DeAngelo and Masulis (4) argued that if there are costs associated with leverage or there are investment tax shields, a unique optimal capital structure may exist. The condition for an optimum is that the marginal benefit from the corporate tax shield equals the marginal personal tax cost of holding debt.

Other writers have provided a number of reasons to support the view that additional costs lead to an optimal capital structure for the individual firm. The first is potential bankruptcy costs. (17, 26) Bankruptcy costs are more likely to be incurred by a leveraged firm. A higher proportion of debt increases fixed interest costs, increasing the probability that a decline in sales, and thus earnings, will make the firm unable to cover fixed costs. Thus higher debt implies a higher probability of bankruptcy (1, 18) and a lower value of the firm. Second, two types of agency costs may be encountered. One involves the separation of management and ownership. This cost is reduced by debt issuance because management's proportion of ownership is increased. The other, agency costs between stockholders and bondholders, increases with leverage. At some degree of leverage these bond agency costs will exceed the cost savings of ownership agency costs. The result is that, ceteris paribus the optimum capital structure exists at the point at which total agency costs are minimized. (12) Third, as a corporation issues more debt, the marginal cost will tend to increase because of greater perceived risk. Finally, the ability of management to obtain working capital, retain good employees, and manage effectively, especially in the event of economic difficulties, is reduced if the firm has a heavy debt burden. This suggests a reduction in expected earnings, and thus firm values, at higher debt levels.

The result of a model that combines taxes, agency, and risk cost elements is to predict an optimum capital structure for the firm. The tax shield provides a direct relationship between firm value and debt.

The other variables collectively imply a reduction in firm value at higher levels of debt. The optimum capital structure is that leverage ratio at which the marginal tax benefits are just equal to the marginal cost of the above variables.

While this model takes the firm's asset decision and the underlying business risk as given, a higher expected return on assets before interest and taxes would cause managers to be more willing to use debt finance. Conversely, greater risk would discourage the use of debt. The measure of risk used to define a risk class in these models is the variance (or standard deviation) of earnings before interest and taxes. A simple empirical test of this model is to determine how well variations in the leverage ratio are explained by: (1) before interest and tax (EBIT) return on assets; (2) variance of EBIT; (3) the tax rate, and (4) a measure of financial risk costs (agency costs, etc.). The theory predicts a positive relationship between the leverage ratio and both EBIT and the tax rate and an inverse relationship with the other two variables.

Leverage Tax Clienteles . The theory of capital structure based on investor clienteles takes an entirely different perspective. According to this view, investors will choose to invest in firms depending on their personal tax status. (14, 16) Kim (14) states that investors whose tax rates are higher than the corporate rate will prefer firms with no leverage (all equity) because they get greater tax benefit from personal leverage. Conversely, investors with low tax rates will prefer highly leveraged firms. Firms' managers, then, will decide upon a leverage policy that appeals to the tax clientele they wish to serve. The implication is that the distribution of firms' debt ratios will tend to be bi-modal, with one mode centered on zero and the other centered on a relatively high debt ratio.

Although a variety of efforts have been made to test this theory empirically (8), two simple tests suggest themselves. First, one may simply observe the distribution of debt ratios to see if the bimodal distribution actually exists. Second, if management appeals to a tax leverage clientele, they should appeal to this same tax clientele in their dividend policy. One would expect, then, that high leverage firms catering to low tax investors would also be high-dividend firms (assuming that dividends are taxed at ordinary rates and capital gains at a lower rate). Thus, this theory predicts a direct relationship between dividends and leverage.

Conventional Financial Analysis . The theory underlying traditional financial analysis is fundamentally similar to the optimum capital structure theory. Both accept the existence of an optimum capital structure that management seeks to achieve. This optimum balances the cost of additional debt, both in direct interest costs and costs associated with greater risk, against the marginal return from additional debt. In the traditional theory, lenders' preferences also play an important role in determining the firm's leverage (by virtue of their willingness to lend and the rates they will demand).

In the conventional analysis, the variables discussed in Section 3 above are the underlying determinants of the firm's ability to use debt finance. As a result, lenders and managers are thought to pay attention

to conventional measures of risk and return rather than the variance of earnings. The commonly recognized measures are operating leverage, earnings on assets before tax and interest, the interest rate, and the traditional financial ratios: (1) liquidity, (2) efficiency, (3) coverage, (4) profitability, and (5) leverage. The empirical test of the theory is to determine the relationship between leverage and each of these variables.

The following section discusses the financial structure of the leisure industry and discusses the results of testing each of these theories.

ANALYSIS OF LEISURE INDUSTRY FINANCE

The definition of the leisure industry in Section 2 led to the identification of five major subgroups within the industry, four of which are analyzed in this section: (1) leisure goods manufacturing; (2) leisure transportation; (3) leisure communications; (4) leisure goods distribution; and (5) leisure services. The data presented are based on a sample of 130 firms covering most segments of the leisure industry within each subgroup except transportation. Table 6 lists the four-digit SIC codes that are included. Total assets of the survey firms in 1986 were \$59.6 billion; total sales were \$54.4 billion, and earnings before interest and taxes were \$7.4 billion. This sales figure is about a fourth of the amount of 1985 leisure spending of the types reported in Table 4. Thus, the sample may be taken as broadly representative of the leisure industry.

Data were not collected on leisure transportation, in part because of the difficulty of segregating leisure-related transportation. (The production of recreational vehicles is included in leisure goods manufacturing.) Furthermore, not all four-digit SIC codes within the remaining four subgroups are represented in the sample. For some, the difficulty of obtaining identifiable data makes meaningful study impossible. Pleasure aircraft, for example, typically are manufactured by subsidiaries or divisions of general aircraft producers and full information is not published. For some parts of the leisure industry, such as live theatre discussed earlier, financing normally does not occur through traditional methods. Finally, the representativeness of the selected sample varies depending upon the segment. In retail distribution, for example, firms often are privately held small businesses that do not publish financial data. For restaurants, this factor and the sheer number of public firms led to the decision to exclude these firms (although a couple are included as hotels and motels).

Financial Characteristics of the Leisure Industry The major financial characteristics of the leisure industry as indicated by the survey firms are presented in Tables 7-10. Table 7 summarizes the sources and uses of finance for the sample firms. It shows that 53.1% of assets were financed with debt and 35.3% with common equity, giving a debt/equity ratio of 1.50. Other liabilities, primarily accumulated deferred expenses, and preferred equity accounted for the remaining 11.7%

of funds.

The communications subgroup relies most heavily on debt financing, largely reflecting the importance of debt finance to the emerging cable television companies. Cable television apparently is following the classical policy of hedging long term debt and long term assets. So far, these firms have not yet realized the potential sales associated with the cable being laid and frequently still are incurring losses. This shows up not only in their high leverage but also in the low return on assets (Table 9), low asset turnover (Table 8), and low net margin (Table 8).

Another striking feature of this table is the fact that the leisure firms have issued virtually no preferred stock. Otherwise the data are as might be expected. For example, the distribution firms with relatively high inventories rely primarily on short-term debt financing and have a large amount of common equity relative to debt.

Table 8 gives financial ratios for the survey firms, and Table 9 analyzes the composite data of these firms using the Dupont formula. First, these tables again show that the communications group stands out from the others. This group barely manages to offset its low net margin and turnover with exceptionally high leverage. The reason that investors are willing to accept this low return relative to the risk is their anticipation of high future profit growth that cable television offers. The expected total return based on the internal growth rate (return on equity times the retention ratio) over a five-year period for the communications segment is fifty percent greater than that of any other subgroup (18.4% compared with 12.2% for manufacturing, 12.8% for distribution, and 10.4% for services). The cost of this high expected future return is at present low return and greater risk. Second, the low asset turnover of the manufacturing group is mildly surprising. Third, the relatively high leverage of all the firms confirms the often expressed view that firms collectively have not improved their balance sheets during the current economic recovery as much as they traditionally have done. Fourth, the risk/return profile depicted by the industry through these data and the average beta coefficients indicate that the industry's equity is priced at about what market expectations would dictate. The average beta for all the firms is .95. The component betas are .99 for the manufacturing firms; 1.05 for the communications firms; 1.24 for the distribution firms; and .85 for the service firms.

Table 10 is a frequency distribution of the debt to asset ratios of the firms being studied. The median firm falls at about 60 percent of assets in the form of debt, slightly above the composite 53.1% debt ratio. Although not included in the table, the distributions for the subgroups reflect the higher debt ratios of the service firms and especially communications. The fact that half the firms have a debt ratio of over 60% of total capital suggests that the tax shelter of corporate debt is far from trivial for this industry. It may also raise a question of whether most of these firms have achieved an optimum level.

Empirical Tests of the Theories. Empirical tests for the optimum capital structure, leverage tax clientele, and traditional financial analysis theories were suggested in Section 4. The naive test of the optimum capital structure theory is to determine whether EBIT, the

variance of EBIT, the tax rate, and financial risk can explain variations in the firms' leverage ratios. Regressions were run with the debt ratio as the dependent and various combinations of these as the independent variables. Two variables used to include financial risk were the variance of after-interest earnings (earnings before taxes, earnings after taxes, and the ratio of earnings before taxes to earnings before interest and taxes) and the beta coefficient, which was chosen because it also takes account of portfolio risk. The variance of EBIT was estimated by computing the historical variance for each firm, using those firms with a minimum of five years of data. Because of the large variations in EBIT due to firm size, the coefficient of variation of EBIT (standard deviation/mean) was used as an alternative measure of risk. In addition to EBIT as the return variable, EBIT as a percent of total assets was also used. The basic result was that other than EBIT, none of these variables demonstrated any ability to explain variations in the firms' debt ratios. This was true not only for the debt to asset ratio, but also for the debt to equity and long-term debt to equity ratios.

At least for this simple formulation, the data for the leisure industry do not support the view that the typical firm has achieved an optimum capital structure. This should not be interpreted as disproving the optimum capital structure theory. Instead, it tends to confirm the previous conclusion of empirical studies, stated by Brigham as follows: "While the research has established that there are benefits to be had from going from zero to some positive level of debt, or from an extremely high debt ratio to a somewhat more moderate amount of debt, the research has not been able to pinpoint the optimal amount of debt." (3, p. 472) Clearly these firms with a debt ratio of greater than one (implying negative equity) are not at an optimum level, as may well be true of many others. On the other hand, the strong clustering in the .50 or .80 range of debt to assets suggests that the optimum may lie in this range.

Two tests were suggested in Section 4 for the tax leverage clientele theory: the bimodal distribution and consistency of the relationship between dividend policy and leverage policy. Table 10 shows that the debt ratios of the firms in this study do not demonstrate the bimodal distribution predicted by the leverage tax clientele theory. Virtually none of the firms surveyed are essentially all equity financed. A similar statement may be made about the subgroups. However, the very high ratios for the communications group and the absence of any all-equity firms may suggest that this entire industry seeks to appeal to a low-tax clientele. To test the relationship between dividend policy and leverage policy the correlation between dividends (also payout and dividend yield) and leverage was computed. The results show that the correlation is not significantly different from zero. Based on these simple tests, the data for leisure industry firms do not give strong support to the tax leverage clientele theory.

The final statistical analysis tests the variables suggested by the conventional theory of financial analysis. As indicated in Section 4, these are operating leverage, expected EBIT on assets, the interest rate on debt, and ratios measuring liquidity, efficiency, coverage, and profitability. These ratios normally are used by bond rating firms and by lenders in evaluating firms. The ratios are designed so that higher values imply a better risk-return profile for the firm. Since greater

leverage implies a deterioration in the risk-return profile, the ratios are expected to vary inversely with leverage. The specific variables used in the regression analysis and the hypothesized relationship with the leverage ratio are as follows:

(1) The leverage ratio should be inversely related to operating leverage since operating leverage increases risk. The ratio of net fixed assets to total assets (X1) is used as a proxy for operating leverage.

(2) The leverage ratio should be positively related to the expected return on assets, for which current EBIT as a percent of assets (X2) is used in the regression.

(3) The leverage ratio should vary positively with the rate of interest on debt that the firm pays because lenders will require higher interest to compensate for the greater risk. Interest expense as a percent of total debt (X3) is used to measure the interest rate.

(4) The leverage ratio should vary inversely with the current ratio (current assets/current liabilities) (X4), which is used to measure liquidity.

(5) The leverage ratio should vary inversely with the asset turnover ratio (sales/total assets) (X5), which is used to measure efficiency.

(6) The leverage ratio should vary inversely with the interest coverage ratio (EBIT/interest expense) (X6).

(7) The leverage ratio should vary inversely with the return on equity (X7).

The results of the multiple regression with the above seven independent variables and the ratio of debt to equity as the dependent variable are as follows:

$$\begin{aligned}
 Y = & 1.067 & -2.095(X1) & +5.994(X2) & +25.54(X3) & -.188(X4) \\
 & & (-2.34) & (4.00) & (4.48) & (-2.56) \\
 & & & -0.060(X5) & +0.00285(X6) & -2.903(X7) \\
 & & & (-1.74) & (.788) & (-12.36).
 \end{aligned}$$

The R-square for the regression is .614, indicating that these variables explain about 60 percent of the variations in the firms' debt to equity ratios. The figures in parentheses represent the t-statistics. All are significant at the ten percent level except the interest coverage ratio (X6). All the variables also have the expected sign in the relationship except the interest coverage ratio (X6). Similar results were obtained with long-term debt to common equity as the dependent variable, but as might be expected, the R-square was somewhat lower.

These regression results indicate that the data from the leisure industry lend better support to the conventional theory of financial analysis than the optimum capital structure theory or the tax leverage clientele theory. While this does not disprove these theories, it

suggests that, in assessing firms' decisions regarding capital structure, the market responds to those variables that academicians and practitioners have long recognized as important.

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TABLE 1

COMMON LEISURE ACTIVITIES

acting (amateur theatre)	handball	radios
aerobics	hang gliding	reading
archery	hiking	racing
amusement parks (fairs)	hockey	running
	horseback riding	rollerskating
backpacking	horse races	racquetball
baseball	hunting	
basketball		
bicycling	ice hockey	sailing
boating	ice skating	skiing
bowling		sewing
boxing		softball
	jacussis	soccer
cable TV	jogging	spelunking
camping		surfing
canoeing	kite flying	squash
card games	kayaking	swimming
cricket		
casino gambling		table tennis
	lacrosse	(ping pong)
dancing	lotteries	track
dunebuggying		trail hiking
dog races	marching bands	theatre
	motorboating	television (video)
electronic games	motorcycling	toys
exercising	mountain climbing	travel
	motion pictures	
football	musical instruments	
flying	(playing)	volleyball
frisbee	music (listening)	
fishing	orchestras	walking
		waterskiing
gambling	pets	windsurfing
gardening	picnics	weight-training
games (board games)	parachuting	weaving
gliding	pool (billiards)	whitewater rafting
gymnastics	pleasure cruises	windowshopping
golf	quilting	
		yachting

TABLE 2

TOP RECREATIONS (1985)
(PERCENTAGE OF GROUP PARTICIPATING)

MEN		WOMEN	
Activity	Percent	Activity	Percent
Swimming	42%	Swimming	40%
Fishing	41	Bicycling	33
Bicycling	29	Aerobics	31
Pool, billiards	27	Fishing	24
Weight training	26	Bowling	23
Jogging	25	Camping	21
Softball	25	Jogging	21
Camping	24	Hiking	18
Bowling	23	Softball	16
Basketball	22	Volleyball	14

Source: "Leisure Statistics," The Wall Street Journal, Monday, April 21, 1986, p. 5D, citing Gallup Organization, Inc., 1986.

TABLE 3
SPORTS PARTICIPATION
(PERCENTAGE OF RESPONDENTS PARTICIPATING)

	1959	1966	1980	1985
Swimming	33%	33%	37%	41%
Fishing	32	--	24	32
Bicycling	--	17	27	31
Bowling	18	27	24	23
Running/jogging	--	--	--	23
Camping	--	--	19	22
Softball	--	15	16	20
Volleyball	4	12	13	15
Motorboating	--	16	12	15
Basketball	--	15	18	14
Hunting	16	--	13	13
Golf	8	11	8	12
Ping pong/Table tennis	--	15	13	12
Tennis	4	9	14	12
Baseball	11	11	10	12
Canoeing/Rowing	--	6	7	10
Flying disk (Frisbee)	--	--	17	9
Rollerskating	4	5	12	9
Horseback riding	5	8	7	8
Skiing	3	5	6	7
Ice skating	6	7	7	5
Archery	--	4	3	3
Handball	--	3	4	3

Source: "Leisure Statistics," The Wall Street Journal, Monday, April 21, 1986, p. 5D, citing Gallup Poll Organization, Inc., 1986.

TABLE 4
LEISURE SPENDING
(\$ MILLIONS)

	1975	1980	1985
Food bought in restaurant/carryout	\$45,318	\$83,674	\$121,412
Alcohol bought in restaurant/bar	10,458	16,551	20,662
Toys and sports supplies	8,954	14,633	20,621
Magazines and newspapers	6,356	10,438	13,375
Hotels and motels	3,351	7,469	11,048
Cable TV	783	2,489	8,610
Boats	2,117	3,784	5,999
Flowers, seeds, potted plants	2,659	4,047	5,542
Live theatre and entertainment	787	1,786	2,977
Spectator sports	1,333	2,033	2,840
Parimutuel net receipts	1,662	2,095	2,605
Pleasure aircraft	308	530	838

Source: "Leisure Statistics," The Wall Street Journal, Monday, April 21, 1986, p. 5D, citing U.S. Department of Commerce, 1986.

TABLE 5
SELECTED ENTERTAINMENT SERVICE INDUSTRY SEGMENTS
1982 REVENUES

Segment	Revenues ('000)
1. Dance groups and artists	\$ 27,125
2. Symphony orchestras, opera companies, and chamber music groups	17,911
3. Commercial museums	293,355
4. Fairs	311,723
5. Producers of legitimate theatre	750,487
6. Professional sports clubs, managers, and promoters	1,128,428
7. Carnivals and circuses	196,271
8. Coin-op amusement devices	1,422,726

Source: Vogel, 1986, p. 22, 23.

TABLE 6
LEISURE INDUSTRY SEGMENTS

Segment	SIC Code(s)
A. Leisure Goods Manufacturing	
1. Books, magazines, newspapers	2711, 2721, 2731 2771, 2750
2. Audiovisual equipment (radio, TV, video, audio)	3651, 3652
3. Recreational vehicles	3716
4. Boats	3730, 3510
5. Motorcycles and bicycles	3750
6. Trailers and camping equipment	3792
7. Photographic equipment and supplies	3861
8. Musical instruments	3931
9. Toys, games, and sporting goods and equipment	3940
B. Leisure Communications Industries	4830
10. Radio and TV broadcasting	4891
11. Cable TV	
C. Leisure Goods Distribution	
12. Wholesale sporting and recreational goods	5040, 5099
13. Retail leisure goods	5730, 5999
D. Leisure Services	
14. Hotels and motels	7011, 7200
15. Photofinishing labs	7395
16. Motion picture production	7810
17. Theatres (live and motion pictures)	7830
18. Racetracks and racecourses	7948
19. Resorts and leisure clubs (beaches, swim, skin, golf, tennis, marinas)	7990
20. Professional sports clubs/leagues	7990
21. Theme and amusement parks	7990
22. Gaming establishments	7990
NOTE: The following segments are not included in the data in this study:	
23. Retail eating places	5812
24. Airline transportation	4511

TABLE 7

LEISURE INDUSTRY SURVEY FIRMS--COMPOSITE BALANCE SHEET

	ALL FIRMS	MFG	COMM	DIST	SERV
Current Assets	36.1%	52.6%	34.9%	62.2%	26.0%
Net Fixed Assets	35.1%	24.1%	18.6%	35.7%	45.5%
Other Assets	28.8%	23.4%	46.5%	2.2%	28.5%
Total Assets/Liab	100.0%	100.0%	100.0%	100.0%	100.0%
Current Liab	22.9%	23.8%	23.8%	34.0%	20.7%
Longterm Debt	30.1%	20.5%	44.2%	9.2%	32.6%
Total Debt	39.1%	44.4%	70.0%	49.2%	53.3%
Other Liabilities	11.0%	7.8%	12.7%	2.1%	12.9%
Preferred Equity	0.7%	0.1%	2.1%	0.0%	0.4%
Common Equity	35.3%	47.3%	15.2%	54.6%	33.5%

TABLE 8
RATIO ANALYSIS OF LEISURE INDUSTRY SURVEY FIRMS
COMPOSITE DATA

	ALL FIRMS	MFG	COMM	DIST	SERV
Liquidity:					
Current Ratio	1.58	2.21	1.35	1.83	1.26
Efficiency:					
Total Asset Turnover	0.91	1.26	0.78	1.78	0.72
Fixed Asset Turnover	2.61	5.23	3.92	4.99	1.58
Profitability:					
EBIT Margiun (Assets)	12.48%	15.95%	10.78%	15.06%	11.00%
OPER Margin (Sales)	10.81%	11.38%	12.08%	8.01%	10.52%
Net Margin (Sales)	5.38%	5.94%	2.55%	5.29%	5.75%
Return on Equity	13.93%	15.78%	12.23%	17.24%	12.37%
Coverage:					
EBIT/Interest Expense	3.29	5.84	2.92	11.51	2.41
OP Cashflow/Int Exp	3.03	4.68	1.88	9.20	2.66
Leverage:					
Debt/Common Equity	1.504	0.937	4.508	0.791	1.592
Debt/Assets	0.531	0.444	0.700	0.432	0.533
Lt Debt/Assets	0.301	0.205	0.442	0.092	0.326
Lt Debt/Common Equity	0.854	0.434	2.902	0.169	0.975

TABLE 9

DUPONT ANALYSIS OF LEISURE INDUSTRY SURVEY FIRMS
COMPOSITE DATA

	ALL FIRMS	MFG	COMM	DIST	SERV
Net Margin	5.38%	5.94%	2.55%	5.29%	5.75%
Asset Turnover	0.91	1.26	0.73	1.78	0.72
Leverage	2.84	2.11	6.57	1.83	2.99
Return on Equity	13.93%	15.78%	12.23%	17.24%	12.37%
Return on Assets	4.91%	7.47%	1.86%	9.42%	1.14%

TABLE 10

LEISURE INDUSTRY SURVEY FIRMS
FREQUENCY DISTRIBUTION OF
DEBT TO ASSET RATIOS

Range	Frequency
.00-.10	3
.10-.20	6
.20-.30	7
.30-.40	11
.40-.50	16
.50-.60	20
.60-.70	22
.70-.80	20
.80-.90	10
.90-1.00	10
1.00 and up	5