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The Long Term Debt Decision of U.S. Casino Firms

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1. Introduction

The purpose of this paper is to investigate the significant factors that affect the long-term debt decision of U.S. casino firms. Long-term debt is a major component of many casino companies' capital structure. For example, as of the end of the third quarter in 2009, MGM Mirage had $12.9 billion in long-term debt (approximately 74 percent of total debt) while Las Vegas Sands had $11.6 billion in long-term debt (approximately 84 percent of total debt) (CNBC, 2009). Thus, since long-term debt plays a critical role in casino financing, a study of how casino firms make their long-term debt decisions should be warranted.

Although a large body of work has been compiled about capital structure, very little work involving the hospitality industry has been completed and even less has been done with the casino industry specifically. Some preliminary capital structure work was completed by Kwansa, Johnson and Olsen (1987) for the hotel industry. Additionally, some comparative studies have been completed with the hotel industry and other types of industries (Gu, 1995/96; Sheel, 1994). Another study by Kim (1997) examined potential determinants for restaurant firms. Nevertheless, further investigation into this topic, particularly for the casino industry, appears to be warranted.

One of the major features of the empirical financial literature is an attempt to find a unifying theory of capital structure. However, as discussed by Myers (2001), despite some forty years of research, it is unreasonable to expect to find a "universal" capital structure theory soon, if ever. More importantly, however, is the notion that although the existing theories regarding capital structure cannot really be generalized, most studies empirically test them across a large, heterogeneous sample. As discussed by Myers (2001), testing in this manner can be uninformative, if not misleading. As Myers points out, some research will show support for two conflicting theories because each may be consistent with a particular subsample of a large cross sectional database.

Capital structure can differ greatly even within apparently homogenous industries. MacKay and Phillips (2005) find that leverage varies more within an industry than between industries. Additionally, much of the variation is firm specific. Another example applies to the seemingly homogenous hospitality industry. Dalbor and Upneja (2002) find a significant and negative relationship between long-term debt and growth opportunities for restaurant firms, which is consistent with findings by Barclay and Smith (1995). On the other hand, Upneja and Dalbor (2004) find a significantly *positive* relationship between long-term debt and

growth opportunities for U.S. lodging firms. Although this relationship was not expected a priori, there is some support for the direction and significance of this relationship (Wald, 1999; Mooradian & Yang, 2001; Tang & Jang, 2007).

Given the lack of capital structure research in the casino industry specifically and the emerging trend in the literature towards industry capital structure specificity, we continue our examination of the existing literature regarding the three major theories of capital structure as outlined by Myers (2001): Tradeoff theory, pecking order and free cash flow theory. This paper is organized as follows. Section two will review the relevant literature. Section three will present the hypotheses to be tested. Section four will present our model and a discussion of our data sample. Section five will present our results and section six will follow with a discussion of the results and potential topics for further research.

2. Review of Literature

According to Myers (2001), capital structure theories can be divided into three major areas: (1) the tradeoff theory; (2) the pecking order theory; and (3) the free cash flow theory. The tradeoff theory states that interest tax shields have value to the firm and will be used up to the point where the marginal tax benefits of debt equal the costs of potential financial distress. The pecking-order and free cash flow theories both involve the management and minimization of agency costs between shareholders and lenders and shareholders and managers. The literature has recently seemed to lend greater support to the latter two theories as opposed to the tradeoff theory.

Although the tradeoff theory was the first major attempt to explain capital structure, it may only explain a portion of the capital structure decision. For example, under the tradeoff theory, profitable firms would always take advantage of interest tax shields. However, as discussed by Myers (2001), there are many successful and profitable firms that have little or no debt in their capital structures (Microsoft and Starbucks are just two well-known examples). Additionally, Fama and French (1998) find no evidence that interest tax shields contribute to the value of the firm.

Nevertheless, although it appears that the tradeoff theory of tax benefits versus potential distress costs may not provide a comprehensive explanation of debt choice, it does play some role in the amount of debt issued. As an example, nondebt tax shields such as depreciation can serve as a substitute for tax savings from interest. Firms may not want to incur higher agency costs of debt because they can take advantage of

other types of tax shields (DeAngelo & Marsulis, 1980; de Miguel and Pindado, 2001). Depreciation expense is one of these tax shields and is often expressed as a percentage of assets (Titman & Wessls, 1988; Chang, 2009). European firms with a significant amount of depreciation were found to use less long-term debt by Wald (1999). These findings are consistent with earlier research conducted by DeAngelo and Marsulis (1980) and Mackie-Mason (1990).

However, the relationship between long-term debt and depreciation could be indeterminate. As previously discussed, DeAngelo and Marsulis (1980) show firms with nondebt tax shields use less debt. On the other hand, there is an argument proffered by Wald (1999) that firms with greater physical assets will show creditors that the firm is putting these assets to use and thus, there could be a positive relationship between long-term debt and depreciation (although land does not depreciate). Thus, while Bradley, Jarrell and Kim (1984) find a positive relationship between depreciation and debt, Mackie-Mason (1990) finds a negative one.

When examining the lodging industry specifically, there is also some contradictory evidence in regards to the relationship between depreciation expense and the use of long-term debt. Upneja and Dalbor (2001) use a sample of lodging firms (SIC 7011) for the years 1974 through 1997 and find a significantly negative relationship between depreciation expense (divided by total assets) and long-term debt. Dalbor and Upneja (2004) use a lodging sample for the years 1981 and 2000 and find a negative but insignificant relationship between the depreciation ratio to assets and long-term debt. This contradiction may be due to time sensitivity or else depreciation expense is related to investments in fixed assets which may be more of a proxy for growth opportunities in the lodging industry.

The pecking-order theory as put forth by Myers (2001) describes the preference of firms to minimize the various agency costs of debt and equity by first using retained earnings, then debt and finally, outside equity. Accordingly, as postulated by the pecking-order theory, risky firms (with fewer retained earnings) will use more debt. This may be from the fact that retained earnings are simply not available for use, and that the agency costs of new external equity are too high. Debt subsequently becomes the default financing choice. These costs may be too high as there may be an information asymmetry problem whereby shareholders worry that there is the potential for underinvestment—the failure to take advantage of positive net present value projects. This positive relationship between risk and debt is supported by the research of MacKay and Phillips (2005) and de Miguel and Pindado (2001).

The pecking-order theory and free cash flow theories can become enmeshed. The two theories both help explain the use of debt for firms with growth opportunities. Growth opportunities are generally expressed by comparing market values to book values in one form or another. Both of the theories hypothesize that the choice of financing is used to minimize the agency costs and are dependent upon the type of asset investment. Given that the market value of the firm is expressed as the book value and assets in place (tangible) and the market value of its growth opportunities (intangible assets), these intangible assets can play a significant role in the choice of financing.

If a firm has a significant amount of growth opportunities, there may be an information asymmetry problem for lenders. Accordingly, the agency costs of debt can become excessive. As discussed by Myers (2001), debt can serve to "put firms on a diet" by forcing firms to pay out cash in the form of interest and principal payments. Therefore, firms with growth opportunities will not want to incur the extra agency costs and will typically utilize less debt in their capital structures. Lenders may also be less confident about the true value of such intangible assets. The negative relationship between growth opportunities and debt was found by Kim (1997) and Barclay and Smith (1995; 1999).

On the other hand, Wald (1999) obtains mixed results for his sample. He finds a negative relationship between growth opportunities and debt for U.S. firms. On the other hand, he finds a positive relationship between debt and growth opportunities for Japanese, British, German and French firms. Interestingly enough, the Japanese sample contains high growth companies in construction and real estate development. Both of these types of firms are arguably similar to hotel companies. Additionally, Myers (2001) discusses survey research that finds high debt use by real estate development industries.

Some research has already been completed that investigates the relationship between debt and growth opportunities for the hotel industry. Mooradian and Yang (2001) find a highly significant relationship between leverage and market-to-book value ratios for REIT and non-REIT hotel companies. Moreover, Dalbor and Upneja (2004) find a significantly positive relationship between long-term debt and growth opportunities for U.S. lodging firms. This finding was confirmed by research conducted by Tang and Jang (2007).

Given the literature reviewed and discussed herein, it appears that growth opportunities are not homogeneous and may vary across industries. As previously mentioned, growth opportunities are typically measured as the excess of market value above book value (Barclay and

Smith, 1999). Firms heavily involved in real estate development such as hotels and casinos may have their growth opportunities more closely tied to future investment in fixed, tangible assets (as opposed to intellectual assets such as patents on pharmaceuticals). Accordingly, this may give lenders a greater level of comfort in terms of the ability to assess the true value of these growth opportunities, which could lower the agency cost of debt. This may explain the positive relationship between leverage and growth opportunities finding in hotel REITS and non-REIT hotels by Mooradian and Yang (2001). Given that casino development often involves hotel construction, we may expect that casino firms with greater growth opportunities will use more long-term debt.

Based on the foregoing reasoning, fixed assets (such as property, plant and equipment or PPE) should also be positively associated with long-term debt. It may be such that lenders are more able to assess asset values that are more readily observable and their values more easily recoverable in a bankruptcy proceeding. As discussed by Vilasuso and Minkler (2001), the capital structure of firms is also dependent upon asset specificity and that firms will increasingly rely on equity financing as assets become more difficult to the redeploy. A review of capital structure literature by Marsh (1982) finds that firms with more fixed assets use more long-term debt. Furthermore, a positive relationship between PPE and debt is found by Wald (1999), de Miguel and Pindado (2001) and Hovakimian, Opler and Titman (2001).

Investments in PPE can help a firm grow, but this growth could lead to “empire building”. The literature survey by Marsh (1982) finds a positive relationship between long-term debt and firm size. This directional relationship is hypothesized in Jensen’s free cash flow theory (1986). As firms grow, managers have more power as the number of assets under their control increases. Accordingly, there may be “free cash flow”—cash flows in excess of what is required to invest in positive net present value projects. Therefore, interest and principal payments can help alleviate this overinvestment problem for the firm. A number of papers have found a positive relationship between firm size and the use of debt including Chang (2009), Mackay and Phillips (2005), and Wald (1999). We would anticipate a similar finding for casino firms.

3. Hypotheses to be tested

Given the theories from the literature previously discussed, we have selected five research hypotheses related to the long-term debt of U.S. casino firms:

H_1: Casino firms with more nondebt tax shields (as measured by the ratio of depreciation expense to total assets) will use less long-term debt.
H_2: Long-term debt is positively related to casino firm risk.
H_3: Casino firms with more fixed assets (property, plant and equipment) will use more long-term debt.
H_4: Long-term debt is positively related to casino firm size.
H_5: Casino firms with more growth opportunities will use more long-term debt.

Based on the foregoing, we have selected a dataset from which to draw our observations and an appropriate methodology to test the hypotheses. The variables used and the data are discussed in the following section.

4. Data and methodology

The total sample for this study is all U.S. casino firms taken from the COMPUSTAT database for the years 1987 through 2008. A list of all casino firms used in shown in Table 1.

insert table 1 here

This list can be further divided into two subsamples by the North American Industry Classification System (NAICS): Code Number 713210 (Casinos excluding hotels) and Code Number 72110 (Casino hotels). It should be noted that not all firms are available for each year used because of bankruptcies, mergers, companies going private or de-listings. The maximum potential number of observations for the sample was 699. However, due to circumstances previously described, the number of observations used in the various regression models was less. Summary statistics for the entire sample are shown in Table 2.

insert table 2 here

As shown in the summary statistics, the average long-term debt to asset ratio is approximately 31 percent. The PPE ratio shows a mean value of 63 percent, indicating the fixed-asset intensity of the industry as a whole. The earnings to price ratio has a negative mean value, indicating many firms have net losses in some years. The average market value of equity to book value of equity is also negative; while the market value of equity is censored at 0, some firms have negative equity on their balance sheets.

The regression models used herein are based upon the three major capital structure theories identified by Myers (2001): tradeoff, pecking order and free cash flow. The static tradeoff model theorizes that firms

with more nondebt tax shields (such as depreciation) will borrow less as these serve as a substitute for the interest tax shields.

The pecking order model theorizes that firms have a preference for financing with retained earnings. However, risky firms tend to not perform as well and have less retained earnings available for use. Therefore, we hypothesize that risky firms will use more debt. Furthermore, the pecking order theory hypothesizes that firms with greater growth opportunities will not want to be constrained by debt covenants and borrow less. However, research previously discussed has found the opposite and we believe this is true for casino firms.

Finally, the free cash flow theory involves the use of debt to motivate firm managers to manage investments properly. Debt service payments can also act as a monitoring agent on firm managers. Moreover, it may be that larger firms are more able to afford the large fixed costs associated with issuing long-term debt. Accordingly, we hypothesize larger firms and those with more property, plant and equipment will use more long-term debt.

A summary of the variables and their associated calculations are shown in Table 2. The full regression model used to test the hypotheses is shown below:

$LTDR = \alpha_0 + \alpha DEP + \alpha_2 EOO + \alpha_3 PPE + \alpha_4 SIZE + \alpha_5 GO + \varepsilon_i$

LTDR = The ratio of debt maturing in more than three years to total assets.
DEP = The ratio of depreciation expense to total assets.
EOO = Firm risk as measured by the firm's estimated Ohlson's O score. The calculation of the variable is explained in the Appendix.

PPE = The ratio of property, plant and equipment (net) to total assets.
SIZE = Firm size as measured by the natural log of total assets.

GO = A growth opportunity variable measured five different ways:

- MVA/BVA is the ratio of the market value of assets to book value of assets. Market value of assets is calculated by taking the market value of equity and adding total assets.
- E/P is the ratio of earnings per share to annual closing price per share.
- MVE/BVE is the ratio of market value of equity to book value of equity.
- CAP EXP/SALES is the ratio of capital expenditures to total sales.

- CAP EXP/ASSETS is the ratio of capital expenditures to total assets.

ε_i = the error term in the regression.

We utilize a pooled cross-section regression model that examines the variables of interest across firms and over time. This is consistent with many papers in the financial literature including those already discussed in the literature review.

5. Results

The regression results for the entire sample are shown in Table 3. This sample, as previously discussed, contains casino firms and casino hotel firms. Variance inflation factors were calculated for all regressions and there were no factors about 1.4, indicating a lack of multicollinearity.

However, because we are using a sample of firms that continues from year to year, the possibility of serial correlation exists. As stated by Myers (2001), debt ratios are "lumpy" in that they often remain similar from year to year. Therefore, we added a lagged long-term debt ratio as an independent variable and ran the autoreg procedure in SAS. When using a lagged dependent variable as an independent variable, the normal Durbin-Watson statistic is no longer valid. We ran Durbin's h and t tests in SAS which indicated no serial correlation after adding the lagged debt ratio.

insert table 3 here

All models contain variables for depreciation, risk, PPE, size, lagged debt ratio and a growth opportunity variable. The first model shows a significant and positive relationship between long-term debt and risk. There is also a significantly positive relationship between firm size and long-term debt. The first model includes the ratio of market value of assets to book value of assets as a growth opportunity variable, but it is not significant.

The second regression model is very much the same as the first model, except that the growth opportunity variable in the second model is the ratio of earnings per share to price per share. The higher the ratio, the fewer growth opportunities are expected by the market for that particular firm. We find a highly significant and positive relationship with long-term debt, indicating that casino firms with *fewer* growth opportunities use more long-term debt. This finding also means that firms with greater growth opportunities use *less* long-term debt. This is consistent with general

financial literature, but is contrary to some findings in the lodging industry (Tang & Jang, 2007; Dalbor & Upneja, 2004).

The third regression model results are similar to the first two in terms of size and risk. This model utilizes the ratio of market value of equity to book value of equity as the growth opportunity variable, although it is insignificant. The fourth model utilizes the ratio of capital expenditures to sales as a growth opportunity variable, but it too is insignificant.

Finally, the fifth regression model utilizes the ratio of capital expenditures to total assets to represent growth opportunities. The relationship with long-term debt is highly significant and positive, which is different from what we find in model two. However, it should be considered that not all growth opportunities can be considered equal. Some firms (pharmaceutical firms, for example) may exploit growth opportunities through the buildup of intangible assets. The casino industry, much like the lodging industry, is quite fixed asset intensive. The growth opportunities in the casino business may be exploited through expenditures on long-term assets. The use of long-term debt to finance fixed assets is consistent with the literature explored by Walsh (1982).

The results for the entire sample fail to support the first hypothesis. The results also fail to support hypothesis three. Hypothesis two (firm risk) and hypothesis four (firm size) are supported by the results. In terms of growth opportunities, the results are indeterminate because of the signs of the E/P coefficient and the CAP EXP/ASSETS coefficients are both positive.

insert table 4 here

Table 4 shows results for Casinos (excluding hotels). The results are very similar to those in Table 3. The risk and size coefficients are positive and highly significant in all models. The E/P coefficient is positive as in the full sample, but only marginally significant for casinos. The MVE/BVE coefficient is insignificant. The main difference between the results in Tables 3 and 4 is that CAP EXP/ASSETS coefficient is not significant for casinos. Once again, some of the growth opportunity variables provide a conflicting story regarding growth opportunities and the use of long-term debt.

In terms of support of our research hypotheses, the results for the casino firms once again fail to support the first hypothesis. The results also fail to support hypothesis three. Hypothesis two (firm risk) and hypothesis four (firm size) are supported by the results. In terms of growth opportunities, our expectation of hypothesis five is marginally rejected because of the positive coefficient on the E/P variable.

insert Table 5 here

Table 5 displays the regression results for casino hotels. Once again, the risk and firm size coefficients are all positive and highly significant in all models. The results in this table are different from Tables 3 and 4 in terms of the depreciation coefficient. The first four models show negative and significant coefficients for the depreciation variable. The depreciation coefficient is negative and marginally significant in the last model. This finding appears to lend some support to the tradeoff theory in that casino hotels with more depreciation tend to use less long-term debt.

In terms of growth opportunities, casino hotels also display a contradictory story. The E/P coefficient is positive and highly significant, indicating firms with fewer growth opportunities use more long-term debt. On the other hand, the CAP EXP/ASSETS coefficient is positive and highly significant, indicating growth opportunities being positively associated with long-term debt.

In terms of support of our research hypotheses, the results for the casino hotel sample tend to support the tradeoff theory of the first hypothesis. The results once again fail to support hypothesis three. Hypothesis two (firm risk) and hypothesis four (firm size) are once again supported by the results. Similar to the results for the entire sample, the confirmation of hypothesis five is undetermined because the signs of the E/P coefficient and the CAP EXP/ASSETS are both positive.

5. Conclusions and Implications

The purpose of this research is to test the use of long-term debt by casino firms under the three major theories of capital structure. We examine long-term debt use for all casino firms and subsequently divide the sample into two subsamples, casino firms and casino hotel firms. The results are nearly identical for the sample as a whole and casino firms. The regression results show a positive relationship between risk and long-term debt (supporting the pecking order theory) as well as a positive relationship between firm size and long-term debt (supporting the free cash flow theory). However, we did not find significant relationships between depreciation expense and long-term debt and PPE investment and long-term debt for both the entire sample and the casino firms subsample. We are not surprised by the results for the depreciation expense coefficient as the tradeoff theory seems to be losing credibility among researchers as time goes on (Shyam-Sunder & Myers, 1999). We are surprised, however, by the lack of significance of the PPE coefficients in all the regression models.

We also ran regressions for a casino hotel subsample. The results were also very similar to the first two series of regressions. Both firm risk and firm size are positively related to long-term debt. One major difference was the significantly negative relationship between depreciation expense and long-term debt in the first four models, thus lending some credence to the trade-off theory of capital structure.

The common feature among all three sets of regression results is somewhat puzzling. In all three sets of regressions (with varying degrees of significance) there is a positive relationship between the earnings/price ratio and long-term debt. This indicates firms with fewer growth opportunities use more long-term debt. Conversely, two sets of regressions show a positive and highly significant relationship between the CAP EX/ASSETS ratio and long-term debt. Thus, this result indicates a positive relationship between long-term debt and future growth.

The conflicting results can be seen as one motivation for doing this paper. The growth opportunity explanation within the pecking order theory of capital structure appears to be unclear. Perhaps this is to be expected because as discussed by Myers (2001), capital structure theories are not really meant to be generalized across industries. Even within the hospitality industry there are differences. For example, Dalbor and Upneja (2002) find a negative relationship between a growth opportunities long-term debt for the restaurant industry while Tang and Jang (2007) find a positive relationship between growth opportunities and long-term debt for the lodging industry.

The use of the earnings to price ratio may also be an imperfect measure of growth opportunities. Firm earnings are accrual-based an affected by special charges, one-time gains and losses and changes in depreciation methods. They have also been the focus in recent years regarding manipulation (Enron, for example). Additionally, the earnings used in E/P ratios in the financial literature are historical while market prices typically reflect future prospects for earnings and/or cash flows.

There may be other factors involved in the relationship between the use of debt and growth opportunities. First, we have only examined the use of long-term debt. The fact that construction lending is short-term (the use of “bridge loans”, for example) may not be adequately addressed in the current research design. Furthermore, much like many other businesses, the casino business is cyclical and subject to economic fluctuations. For example, gaming revenue for metropolitan Las Vegas declined more than 23 percent from 2007 to 2009 (The Center for Economic and Business Research, 2010). This could impact a firm’s

ability and willingness to borrow funds. This can also vary from firm to firm and potentially confound results.

There are a number of potential issues to be explored here. One involves differences between hospitality industry sub-segments that could be worth investigating. There could also be discrepancies involving the time period of data being used. Finally, and perhaps most importantly, is the appropriate measure of growth opportunities. There is yet no consensus on which measure is best. Although research and development expenditures are often used as a proxy for firm growth in the mainstream financial literature, these types of expenditures are typically small or non-existent for many hospitality firms. Thus, capital expenditures are often used in place of research and development figures in hospitality research.

Since most hospitality firms are fixed asset intensive, further investigation into the true benefit of capital expenditures is warranted. In other words, do hospitality firms that spend on capital improvements really grow future earnings? If so, how much growth is there? These are just two questions that could be answered by future hospitality researchers.

Appendix

The Original O-score (probability) of bankruptcy is calculated in the following manner: First, we calculate the numerical value (NV) of the probability of bankruptcy. The second step is to calculate the O-score that represents the probability of bankruptcy.

NV = -1.249 - 0.211*SIZE +2.262*TLTA – 3.451*WCTA + 0.293*CLCA – 0.907*OENEG –1.08*NITA – 0.838*FUTL + 1.266*INTWO -0.96*CHIN

The O-Score ranges from 0 (extremely low probability of bankruptcy) to 1 (indicating a 100% probability of bankruptcy). The procedure for calculating the Revised O-score is based on the equation below.

$$\text{O-Score} = 1/(1 + e^{-NV})$$

An explanation of the variables is shown below.

Variable	Calculation
SIZE	Log of total assets
TLTA	Total Liabilities/Total Assets
WCTA	Working Capital/Total Assets
CLCA	Current Liabilities/Current Assets
OENEG	If total liabilities > total assets, OENEG = 1
	If total liabilities $\leq$ total assets, OENEG = 0
NITA	Net income or loss/Total Assets

FOTL	Funds received from operations/total liabilities
INTWO	If the firm has reported a net loss for the current period AND the previous period INTWO =1; O otherwise

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Table 1.
List of casino firms in complete sample.

Ameristar Casinos	Holly Holdings Incorporated
Anchor Gaming	Hollywood Casino Corporation
Archon Corporation	International Thoroughbred Breeders
Argosy Gaming Company	Isle of Capri Casinos
Aztar Corporation	JCC Holding Company
Ballys' Grand Incorporated	Kerzner International Limited
Black Hawk Gaming and Development	Lady Luck Gaming Corporation
Boardwalk Casino	Lakes Entertainment Incorporated
Boomtown Incorporated	Las Vegas Sands Corporation
Bouncebacktechnologies.com	Lottery and Waging Solutions
Boyd Gaming	Mandalay Resort Group
Caesars Entertainment	Melco Crown Entertainment
Caesars New Jersey	MGM Mirage
Caesars World	Mirage Resorts Incorporated
Capital Gaming International	Monarch Casino and Resort
Casino Magic Corporation	Nevada Gold and Casinos
Century Casinos	Oasis Resorts International
Colorado Casino Resorts	Pinnacle Entertainment
Concorde Gaming Corporation	Players International Incorporated
Diamondhead Casino Corporation	Rio Hotel and Casino Incorporated
Elsinore Corporation	Riviera Holdings Corporation
Empire Resorts Incorporated	Sahara Casino Partners
Full House Resorts	Sands Regent
Gaming Corporation of America	Showboat Incorporated
Gateway Casinos Income Fund	Southwest Casino Corporation
GB Holdings Incorporated	Station Casinos Incorporated
Global Casinos Incorporated	Stratosphere Corporation
Great Canadian Gaming Corporation	Thunderbird Resorts
Griffin Gaming and Entertainment	Trump Entertainment Resorts
Harrah's Entertainment	Wynn Resorts
Harvey's Casino Resorts	

Table 2.

Descriptive statistics for complete sample.

Variable[(1)]	N	Mean	Standard Deviation	Minimum	Maximum
LTDR	492	0.31	0.33	-1.48	1.62
Depreciation	567	0.05	0.02	0.00	0.17
EOO	567	0.55	0.30	0.01	0.99
PPE	567	0.63	0.22	0.00	0.97
SIZE	567	5.52	2.03	0.62	10.34
MVA/BVA	567	1.59	1.09	0.23	10.85
Earnings/Price	562	-0.31	2.32	-36.13	5.00
MVE/BE	568	-0.15	59.45	-1410.10	43.13
Cap. Exp. / Sales	684	2.47	39.00	0	931.91
Cap. Exp. /Assets	699	0.09	0.09	0	0.56

[(1)]LTDR is the ratio of long-term debt (debt maturing in more than three years) to total assets. Depreciation is the ratio of annual depreciation expense to total assets. EOO is Ohlson's Estimated O Score, a proxy for firm risk that measures the probability of bankruptcy. PPE is the ratio of property, plant and equipment (net) to total assets. Firm size is the natural log of total assets. MVA/BVA is a growth opportunity variable, measuring the market value of assets to the book value of assets. Earnings/Price is a growth opportunity variable, measured by net income per share divided by annual closing stock price. MVE/BE is a growth opportunity variable, measured by the ratio of the market value of equity to book value of equity. Cap. Exp/Sales and Cap. Exp./Assets are both growth opportunity variables, utilizing the ratios of annual capital expenditures to total sales and total assets, respectively.

Table 3.
Ordinary Least Squares Regression Results for the Entire Sample

Sample size	Intercept	DEP	EOO	PPE	SIZE	LAGDR	MVA / BVA	E/P	MVE / BVE	CAP EXP / SALES	CAP EXP / ASSETS	R^2 (%)
448	-0.379 (-5.21)***	-0.053 (-0.08)	0.333 (6.50)***	0.000 (0.00)	0.074 (9.31)***	0.201 (4.55)***	0.019 (1.49)					34.6
443	-0.335 (-5.39)***	-0.707 (-1.17)	0.370 (7.49)***	0.010 (0.15)	0.072 (9.59)***	0.215 (5.06)***		0.042 (6.23)***				39.2
449	-0.309 (-4.85)***	-0.598 (-0.95)	0.329 (6.52)***	0.018 (0.27)	0.070 (9.19)***	0.207 (4.74)***			-0.004 (-1.58)			34.9
511	-0.256 (-3.24)***	-0.383 (-0.49)	0.336 (6.00)***	-0.078 (-0.95)	0.071 (7.43)***	0.223 (5.25)***				-0.00 (-0.54)		25.4
524	-0.314 (-4.43)***	0.348 (0.48)	0.306 (5.69)***	-0.074 (-0.96)	0.066 (7.46)***	0.252 (6.11)***					0.534 (3.53)***	28.9

***Significant at 1 percent. **Significant at 5 percent. * Significant at 10 percent.

LTDR is the ratio of long-term debt (debt maturing in more than three years) to total assets. Depreciation is the ratio of annual depreciation expense to total assets. EOO is Ohlson's Estimated O Score, a proxy for firm risk that measures the probability of bankruptcy. PPE is the ratio of property, plant and equipment (net) to total assets. SIZE is the natural log of total assets. LAGDR is the long-term debt ratio, lagged one period. MVA/BVA is a growth opportunity variable, measuring the market value of assets to the book value of assets. E/P is a growth opportunity variable, measured by net income per share divided by annual closing stock price. MVE/BVE is a growth opportunity variable, measured by the ratio of the market value of equity to book value of equity. CAP EXP/SALES and CAP EXP/ASSETS are both growth opportunity variables, utilizing the ratios of annual capital expenditures to total sales and total assets, respectively.

Table 4.
Ordinary Least Squares Regression Results for Casinos (NAICS Code 713210)

Sample size	Intercept	DEP	EOO	PPE	SIZE	LAGDR	MVA / BVA	E/P	MVE / BVE	CAP EXP / SALES	CAP EXP / ASSETS	R^2 (%)
169	-0.541 (-4.83)***	1.204 (1.13)	0.366 (4.06)***	0.032 (0.27)	0.088 (5.93)***	0.198 (2.49)**	0.037 (1.60)					39.9
165	-0.425 (-4.20)***	0.451 (0.44)	0.371 (4.19)***	0.036 (0.32)	0.082 (5.50)***	0.219 (2.71)***		0.069 (1.79)*				38.9
173	-0.420 (-4.33)***	0.317 (0.33)	0.373 (4.28)***	0.317 (0.33)	0.084 (5.76)***	0.211 (2.71)***			-0.007 (-1.62)			39.9
187	-0.415 (-3.23)**	0.900 (0.66)	0.401 (3.69)***	-0.033 (-0.22)	0.086 (4.69)***	0.182 (2.23)**				-0.000 (-0.34)		27.6
195	-0.429 (3.67)***	1.753 (1.34)	0.341 (3.27)***	-0.033 (-0.23)	0.076 (4.19)***	0.238 (3.00)**					0.414 (1.44)	30.8

***Significant at 1 percent. **Significant at 5 percent. * Significant at 10 percent.

LTDR is the ratio of long-term debt (debt maturing in more than three years) to total assets. Depreciation is the ratio of annual depreciation expense to total assets. EOO is Ohlson's Estimated O Score, a proxy for firm risk that measures the probability of bankruptcy. PPE is the ratio of property, plant and equipment (net) to total assets. SIZE is the natural log of total assets. LAGDR is the long-term debt ratio, lagged one period. MVA/BVA is a growth opportunity variable, measuring the market value of assets to the book value of assets. E/P is a growth opportunity variable, measured by net income per share divided by annual closing stock price. MVE/BVE is a growth opportunity variable, measured by the ratio of the market value of equity to book value of equity. CAP EXP/SALES and CAP EXP/ASSETS are both growth opportunity variables, utilizing the ratios of annual capital expenditures to total sales and total assets, respectively.

Table 5.
Ordinary Least Squares Regression Results for Casino Hotels (NAICS Code 721120)

Sample size	Intercept	DEP	EOO	PPE	SIZE	LAGDR	MVA / BVA	E/P	MVE / BVE	CAP EXP / SALES	CAP EXP / ASSETS	R^2 (%)
272	-0.133 (-1.05)	-2.27 (-2.46)**	0.284 (4.67)***	-0.037 -0.32)	0.064 (6.77)***	0.156 (2.96)***	-0.003 (-0.21)					33.4
271	-0.176 (-1.63)	-2.282 (-2.84)**	0.368 (6.32)***	-0.056 (-0.52)	0.066 (7.67)***	0.178 (3.63)***		0.039 (6.49)***				42.0
269	-0.136 (-1.16)	-2.308 (-2.57)**	0.287 (4.70)***	-0.036 (-0.31)	0.064 (7.00)***	0.156 (2.98)***			-0.001 (-0.14)			33.8
317	-0.086 (-0.67)	-2.418 (-2.38)**	0.258 (4.20)***	-0.034 (-0.29)	0.058 (5.22)***	0.207 (4.31)***				-0.00 (-0.11)		26.6
322	-0.154 (-1.36)	-1.581 (-1.80)*	(0.253 (4.30)***	-0.080 (-0.72)	0.059 (6.24)***	0.214 (4.64)***					0.520 (3.13)***	30.4

***Significant at 1 percent. **Significant at 5 percent. * Significant at 10 percent.

LTDR is the ratio of long-term debt (debt maturing in more than three years) to total assets. Depreciation is the ratio of annual depreciation expense to total assets. EOO is Ohlson's Estimated O Score, a proxy for firm risk that measures the probability of bankruptcy. PPE is the ratio of property, plant and equipment (net) to total assets. SIZE is the natural log of total assets. LAGDR is the long-term debt ratio, lagged one period. MVA/BVA is a growth opportunity variable, measuring the market value of assets to the book value of assets. E/P is a growth opportunity variable, measured by net income per share divided by annual closing stock price. MVE/BVE is a growth opportunity variable, measured by the ratio of the market value of equity to book value of equity. CAP EXP/SALES and CAP EXP/ASSETS are both growth opportunity variables, utilizing the ratios of annual capital expenditures to total sales and total assets, respectively.