*Research Note*

# Federal Tax Law Trumps Indian Canon: Implications for the Gaming Industry

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**Abstract**

On November 27, 2001, the Supreme Court ruled in *Chickasaw v. United States* that Native American gaming (NAG) firms are subject to federal excise and occupational taxes. Prior to the decision, these firms had been exempt from all federal taxation. We hypothesize that *Chickasaw* improves the competitive position of publicly traded gaming firms and their suppliers by leveling the playing field for publicly traded firms. Consistent with this argument, we find that the stock prices of publicly traded gaming firms and their suppliers reacted positively to the announcement of the *Chickasaw* Supreme Court and Tenth Circuit decisions. We also hypothesize that Nevada casinos are relatively insulated from competition because they offer a unique experience that is not easily replicated by NAG firms. Consistent with this argument, we find smaller stock price reactions for firms with Nevada operations.

**Keywords**

corporate finance; financial accounting; other legal issues

## Introduction

Historically, the Native American sector of the gaming industry has been exempt from federal taxation. That changed on November 27, 2001, when the Supreme Court ruled in *Chickasaw v. United States* that Native American gaming (NAG) firms are subject to the same excise and occupational taxes that publicly traded gaming firms already paid to the federal government. The *Chickasaw* decision was viewed by many commentators as a significant blow to the long-held Indian Canon of Construction, which states that ambiguities in federal legislation and treaties should be interpreted in favor of Native Americans. This decision and the lower court decisions that preceded it also created significant uncertainty about the future tax treatment of NAG, with some legal commentators going so far as to suggest that the same reasoning used by the Supreme Court in *Chickasaw* could be used to support the eventual imposition of a federal income tax on NAG profits (see, for example, Hall 2004).

A variety of legal scholars have examined the impact of the *Chickasaw* decision on the NAG industry (see, for example, Cowan 2004, 2005; Hall 2004; Jackson 2003; Jensen 2008; Light 2007), concluding that the decision increased both the cost structure of NAG firms and the tax uncertainty they face. In contrast, we are unaware of any research that examines the *Chickasaw* decision's impact on the publicly traded gaming firms with which NAG firms compete. Studying those effects is the purpose of our paper.

We test two hypotheses. First, we predict that by increasing the cost structure of NAG firms, the *Chickasaw* decision will benefit publicly traded gaming firms and their suppliers. This competitive advantage will be evidenced by an increase in market values around the time that key *Chickasaw*-related court decisions are announced. Second, we predict that the *Chickasaw* decision will have a smaller impact on gaming firms with operations in Nevada than on other gaming firms because the unique Nevada gaming environment insulates Nevada gaming firms from direct competition by NAG firms.

Using a sample of twenty-nine publicly traded gaming firms and their suppliers, we find support for both of our hypotheses. First, we find a significant positive stock price reaction to *Chickasaw* and related decisions, which we interpret as evidence that *Chickasaw* improved the competitive position of publicly traded gaming firms vis-à-vis their Native American competitors. Second, we find evidence that the stock price reaction is smaller for firms with gaming operations in Nevada. In fact, although positive, the

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stock price reaction of firms with Nevada operations is not statistically significant.

Our study contributes significantly to the existing literature. A large number of studies have examined how operating strategy affects the profitability of gaming firms (see, for example, Lucas 2013; Lucas and Singh 2008). We extend the literature on the determinants of profitability by showing that the tax position of competitors is also a significant determinant of firm value.

Our paper proceeds as follows. The next section discusses Federal taxation of NAG. The "Hypothesis Development" section presents our two hypotheses. The "Sample, Method, and Results" section describes our sample, explains our research design, and presents our results. The "Summary and Conclusion" section summarizes and concludes.

## Federal Tax Provisions and NAG

As there are no constitutional constraints that prevent federal taxation of NAG, taxation decisions rest with Congress and reflect a weighing of political, fairness, and equity considerations (Cowan 2004). Congressional attitudes about taxation of NAG vary over time with variation in the economic status of Native Americans relative to the general population, the federal government's perceived need for additional revenue, and the profitability of NAG ventures (Spilde and Taylor 2014).

Tribes simultaneously act as governments and commercial enterprises, implying possible federal tax analogies to not only the U.S. states' lotteries and the for-profit gaming firms with which NAG competes but also to nonprofit organizations who are taxed on income derived from commercial ventures unrelated to charitable mission (Cowan 2004). These various analogies, of course, have markedly differing implications for tax policy. At various points in time, each has been used to support arguments about taxation of NAG.

Federal legislation, in turn, is interpreted by the courts. Here, a general doctrine is particularly relevant to the discussion that follows. The "Indian Canon of Construction" implies that when there is ambiguity in a treaty or federal law, a court's interpretation should favor Native Americans. In the past 170 years, when the canon has been applied, the court ruling has favored Native Americans (Hall 2004). However, the canon is not always applied. In particular, courts have ruled congressional intent to be unambiguous, even when intent is arguably unclear (Hall 2004, 496). Thus, despite the Indian Canon of Construction, there is uncertainty about how the courts will interpret ambiguous legislation.

In the two subsections that follow, we discuss a key Supreme Court decision about the taxation of NAG, *Chickasaw Nation v. United States*. We also discuss the lower court decisions that immediately preceded it. As these cases hinge on an interpretation of the Indian Gaming Regulatory Act (IGRA), we begin with a summary of IGRA's major provisions, as well as a discussion of the uncertainty that surrounded its implementation.

### *IGRA*

Passed by Congress on October 17, 1988, IGRA was a response to a perceived need to regulate growth in NAG following the failed attempts of several states to prohibit gambling on Native American lands within their borders. IGRA provides that

> Indian tribes have the exclusive right to regulate gaming activity on Indian lands if the gaming activity is not specifically prohibited by Federal law and is conducted within a State which does not, as a matter of criminal law and public policy, prohibit such gaming activity.

IGRA defines three categories of gaming: Class I gaming consists of ceremonial and social games played by tribal members. Class I gaming typically generates only small amounts of revenue. Class II gaming includes bingo, pull tabs, lotto, punch boards, certain card games, and video display card games. Class III gaming includes all other games, that is, most casino gaming. IGRA permits Class III gaming on tribal land held in trust by the federal government provided there is (1) an agreement or "compact" with the state; and (2) gambling is legal in the state.

IGRA also established the National Indian Gaming Commission (NIGC), comprised of three members of Native American tribes, to regulate Class II and Class III gaming. Class II games are subject to state law regarding hours of operation and wager/pot size limits. Other regulation is as established by NIGC. In addition, NIGC must approve Class III compacts.

IGRA was a compromise bill that pleased neither Native American tribes nor the states that oppose NAG. While expanding permissible NAG, the "compact" requirement created a role for state regulation and implicit taxation. Thus, IGRA left many issues unresolved (Light 2007). States expressed concern that (1) the tax-exempt status of NAG created an unfair advantage vis- à-vis privately owned gaming firms; (2) NAG imposed infrastructure and service costs (e.g., road construction and police protection in the areas of the state adjacent to tribal casinos) on state and local governments; and (3) NAG imposed negative societal externalities on society, such as causing an increase in compulsive gambling (Davis and Otterstrom 1996). Although Connecticut and Arizona signed compacts with local tribes, other states refused to negotiate (Oleck 1993). In an attempt to force negotiation, several tribes sued in federal court. A 1996 Supreme Court ruling concluded that tribes cannot sue to force negotiation, but IGRA nonetheless permits the Secretary

of the Interior to determine compact terms when there is a stalemate between a state and a Native American tribe.

### Chickasaw Nation v. United States *and Preceding Decisions*

Following the passage of the IGRA, NAG became a significant source of revenue for Native American tribes. By 1999, there were more than 260 casinos and gaming establishments. From 1988 to 1997, revenues from NAG grew from $212 million to $6.7 billion in constant 1997 dollars (National Indian Commission on Gaming 1999a, 1999b).

But IGRA left many questions about the federal taxation of NAG unresolved. One of these was the applicability of existing Internal Revenue Code (IRC) provisions 4401 and 4411 to NAG. Section 4401 of the IRC specifies a 0.25 percent excise tax on all state-authorized wagers, and Section 4411 provides for a related $50 per year, per employee occupational tax. States (e.g., state lotteries) were exempt from these taxes, but for-profit businesses were not. For the purpose of these two taxes, was NAG analogous to a state lottery or a for-profit business? In light of the increasing competition NAG posed to the for-profit sector of the gaming industry and the size of the potential tax revenue, it is not surprising that questions about the applicability of the excise and occupational taxes to NAG were eventually litigated.

The *Chickasaw Nation*'s pull-tab lottery became the test case. To raise revenue, the *Chickasaw Nation* tribe operated a pull-tab lottery, which is similar to a scratch-off lottery ticket. The Internal Revenue Service informed the tribe that it owed federal excise and occupational taxes on pull-tab revenue. In contrast, the *Chickasaw Nation* believed it was exempt from excise and occupational taxes under IGRA.

The tribe paid the amount owed and then filed a claim for reimbursement. The IRS denied the claim, and the tribe sued in federal court. The government won. Concurrently, the *Choctaw Nation*, which had a similar pull-tab lottery, filed suit for similar reasons. As was true of the *Chickasaw* litigation, the trial court decision went against the tribe. The two tribes combined their cases and the combined case was heard by the Tenth Circuit Court of Appeals, who affirmed the trial courts' decisions on April 5, 2000. In a case that was also concurrent with the *Chickasaw* litigation, similar issues were litigated by the Shakopee tribe over gaming at their Little Six, Inc., gaming venture. In the *Little Six* case, the Ninth Circuit Court held on April 24, 2000 that federal excise and occupational taxes did *not* apply to NAG. Thus, the federal circuit courts were split. The *Chickasaw* and *Choctaw* tribes' combined case proceeded to the Supreme Court. The Supreme Court agreed to consider the issue and announced its ruling on November 27, 2001.

The IGRA treats NAG as analogous to a state lottery for the purposes of "withholding and reporting." As state lotteries are exempt from excise and occupational taxes, the tribes argued that they should also be exempt. The legislation contained a reference to the excise tax that could be argued to support the tribe's position and under the Indian canon would support the tribe's position.

Instead, the Supreme Court relied on the federal tax Canon of Construction, which says that tax exemptions must be clearly specified to be valid. Thus, in the Supreme Court's *Chickasaw* decision, federal tax canon trumped Indian canon. Tribes must pay both federal excise and occupation taxes on NAG revenues. In principle, the argument used to support payment of federal excise and occupational taxes on NAG revenues could also be used to support payment of federal income taxes on NAG profits (Hall 2004). Thus, the Supreme Court's *Chickasaw* decision created as much uncertainty about future tax policy as it resolved.

In early 2002, the Supreme Court remanded the *Little Six* case to the Ninth Circuit. A decision consistent with the Supreme Court's *Chickasaw* decision was announced on February 19, 2002. We do not consider this date in any subsequent analysis because the Supreme Court's *Chickasaw* ruling implicitly mandated that the Ninth Circuit reverse its original *Little Six* ruling to conform the outcome to the higher court ruling. The dates of the Tenth Circuit combined *Chickasaw* and *Choctaw* appeals decision, the Ninth Circuit Court *Little Six* decision, and the eventual Supreme Court *Chickasaw* ruling are summarized in Exhibit 1.

## Hypothesis Development

In this section, we develop two hypotheses that explore the impact of the *Little Six, Choctaw*, and *Chickasaw Nation* decisions on the publicly held gaming companies that compete with NAG enterprises. We predict that these decisions are associated with (1) an increase in the market value of publicly traded gaming firms due to the Supreme Court's conclusion that NAG is subject to the same federal excise and occupational taxes already paid by publicly traded gaming firms, and (2) cross-sectional differences in the magnitude of the increase based on the regional competitiveness of non-NAG firms relative to NAG firms.

### *Federal Taxes on NAG and the Market Value of Non-NAG Firms*

Tax-advantaged treatment of NAG firms is analogous to tax-advantaged treatment of nonprofits. Prior to 1954, income earned by a nonprofit from a commercial venture was not subject to federal tax provided the income was used to support the organization's charitable mission. That changed with the imposition in 1954 of the Unrelated Business Income Tax (UBIT), which subjects nonprofit income that is unrelated to a charity's exempt purpose to the same federal taxes faced by for-profit organizations. The UBIT was motivated by the argument that in the absence of

**Exhibit 1:**
**Announcement Dates for Key Federal Court Decisions about the Applicability of Federal Excise and Occupation Taxes to Native American Gaming Enterprises.**

| Informational Event Tested | Date | Action |
|---|---|---|
| Event 1 | April 5, 2000 | Tenth Circuit Court: *Choctaw v. United States* and *Chickasaw v. United States* decision is announced |
| Event 2 | April 24, 2000 | Ninth Circuit Court: *Little Six v. United States* decision is announced |
| Event 3 | November 27, 2001 | U.S. Supreme Court: *Chickasaw Nation v. United States* decision is announced |

the tax, charities would enjoy an unfair advantage over their taxable competitors. Supporters of federal taxation of NAG make similar arguments, and those arguments are the basis for our first hypothesis.

In particular, the *Chickasaw* decision is argued to level the playing field with respect to excise and occupational taxes. In our setting, the excise and occupational taxes imposed by the *Chickasaw* decision increase the cost structure of the NAG sector of the industry relative to the non-NAG sector, which already incurs the burden of federal excise and occupational taxes. An increase in the cost structure of competitors is good news for non-NAG gaming firms. Accordingly, we expect the decision to be associated with higher future profitability and higher future cash flows for the non-NAG segment of the industry. In addition, if investors believe that there is a positive probability that the reasoning used by the Supreme Court in the *Chickasaw* decision will be used in the future to argue for the imposition of other taxes on NAG such as a federal corporate income tax, then there will be an upward revision in the expected future profitability of NAG competitors that exceeds the direct competitive effects of the excise and occupational taxes on the cost structure of NAG firms. Thus, the *Chickasaw* decision implies higher expected future cash flows for NAG's competitors, and we predict the following hypothesis:

> **Hypothesis 1 (H1):** In response to the Tenth Circuit *Choctaw*, Federal Circuit *Little Six*, and Supreme Court *Chickasaw* decisions, there is an increase in the market value of non-NAG firms.

However, the contemporary approach to tax planning (Scholes et al. 2015) points out that an analysis of the impact of NAG tax policy on non-NAG firms is not complete unless it also includes considerations such as the tax implications for other parties to a transaction, implicit taxes paid in the form of lower before-tax returns to tax-favored transactions and organizations, and the impact of the tax policy on organizational cost structures. Consequently, we also consider this broader set of factors.

Here, again, the analogy to the UBIT is relevant. Ceteris paribus, in the absence of the UBIT, a nonprofit's cash flows will be higher than those of competing for-profit firms because the nonprofit pays no tax on unrelated business income. The level playing field argument that underlies our first hypothesis is that if both nonprofit and for-profit firms reinvest their cash flows, the nonprofit will grow faster because a larger amount is available to reinvest. But, the for-profit firm can issue equity, an option not available to the nonprofit (Knoll 2007). Supporters of the level playing field view also argue that without the UBIT, nonprofits are at an advantage in acquiring real assets. The higher the expected future cash flows, the higher the price an organization will pay for an asset such as a piece of property. If by virtue of their tax-exempt status, nonprofits can generate higher cash flows than their competitors from the same asset, they will be able to outbid their competitors. However, this argument assumes that (1) the nonprofit and the for-profit firm are equally efficient, and (2) the two have comparable discount rates (Knoll 2007). In reality, neither of these assumptions is likely to hold.

Similar to nonprofits, NAG firms are unlikely to be able to raise capital as efficiently as their for-profit competitors. Also similar to nonprofits, most NAG firms are unlikely to share the operating efficiencies of their for-profit competitors. Higher operating costs for NAG firms may occur because the NAG firms have multiple motivations for operating casinos. For example, a NAG firm may desire a higher labor mix irrespective of the impact on operating profit. In addition, it is unclear how the investment policy of NAG firms will respond to lower after-tax operating cash flows because a significant portion of those cash flows are paid as "dividends" to Native American tribal members and Native American governance organizations. Will investment policy become more aggressive to increase the likelihood of preserving expected future "dividends"? Alternatively, will investment expenditures be reduced to preserve near-term "dividend payouts" to stakeholders? For these reasons, we view the null hypothesis that there is no non-NAG market response to be a credible alternative.

### *The Competitive Position of Non-NAG Firms as a Moderating Factor*

Our second hypothesis examines how the predicted increase in the market value of non-NAG firms varies across firms

with the nature of the firm's competitive environment. We predict that the market reaction will be smaller for firms that are relatively insulated from competition by NAG firms. These firms will benefit less from an increase in the cost structure of NAG firms because NAG firms are not their direct competitors.

We argue that Nevada gaming firms are relatively insulated from competition by NAG firms because the Nevada gaming experience cannot be easily emulated. First, Nevada contains many large casinos. Large casinos are more profitable and more financially stable than small casinos (Greenless 1988), so are better able to deter new entrants and survive economic downturns. In addition, NAG firms are less likely to have access to sufficient capital to compete with larger Nevada casinos.

Second, Nevada gaming firms already offer diverse gaming experiences, implying that there are no significant market niches that Nevada gaming firms do not already fill. Nevada gaming firms range from small establishments scattered throughout the state to large casinos on the Las Vegas strip with hundreds of games and thousands of slot machines. In contrast to the lavishness of the Las Vegas strip, large casinos in the Reno-Sparks area are relatively austere. Lake Tahoe operations fall somewhere in between the Las Vegas and Reno-Sparks extremes. Similarly, gaming mix (i.e., the ratio of slot machines to table games and the ratio of "other" games to crap games) varies across the state.

Finally, Nevada gaming firms—particularly those on the Las Vegas strip—have expanded their scope of operations from gambling and traditional nightclub entertainment to all forms of family entertainment, including historical theme parks, amusement parks, shopping malls, and theaters that feature Broadway touring productions. NAG firms lack the first mover advantages possessed by the large Las Vegas casinos that offer a full complement of entertainment services.

Atlantic City also contains large casinos with many entertainment options. However, the nature of gaming regulation in New Jersey limits the diversity of Atlantic City operations. Ten of the twelve large hotel-casinos are concentrated in a two-mile strip on the boardwalk in Atlantic City, and all twelve are within five miles of each other. These casinos are virtually identical, with regulatory-mandated minimum casino sizes and minimum number of hotel rooms. In contrast to Nevada, the gaming experience in New Jersey is very homogeneous, and many market niches are unfilled.

Thus, we predict the following hypothesis:

**Hypothesis 2 (H2):** The higher the percentage of a non-NAG firm's revenue from operations in Nevada, the smaller the market reaction to the *Chickasaw* decisions.

## Sample, Method, and Results

This section discusses our sample, research design, and research results.

### Sample Firms

Our sample consists of twenty-nine publicly traded gaming firms and gaming suppliers for which sufficient market data are available to test our two hypotheses. Market data are obtained from the Center for Research in Security Prices (CRSP), which covers all firms whose equity trades on the New York Stock Exchange (NYSE), the American Stock Exchange (AMEX), or the National Association of Security Dealers Automated Quotation Service (NASDAQ). One of the firms, Mirage Resorts, does not have data available for the third event, the Supreme Court decision. So, tests using this event are based on data for the remaining twenty-eight firms.

We include gaming suppliers because we think their fortunes are more closely tied to those of publicly traded gaming firms than to NAG enterprises. We say this because IGRA restricts the location of NAG facilities to tribal lands held in trust by the federal government. As discussed earlier, NAG lacks the access to capital necessary to create destination resorts. This restricts NAG expansion to population centers that are close to tribal trust land. In other words, NAG faces expansion constraints that are not binding on its publicly traded competitors. Thus, gaming suppliers benefit less from a tax policy that advantages NAG enterprises than from a tax policy that levels the playing field between publicly traded gaming firms and NAG enterprises.

### Method and Results

*H1: Test of the firm value hypothesis.* We conduct an event study to test our first hypothesis, which predicts that the three court decisions affecting NAG tax liability for excise and occupational taxes are associated with an increase in the market value of NAG's publicly traded gaming competitors and gaming suppliers. The usefulness of event study methodology is well established in the hospitality literature. Previous event studies that focus on the hospitality industry have examined a variety of topics including the wealth effects of initial public offerings (Canina 1996), the expected success of acquisitions (Canina 2001; Ma, Zhang, and Chowdry 2011), and the impact of terrorism (Chang and Zeng 2011). In addition, two prior papers have used event study methodology to examine the impact of hospitality-related legislation on hospitality firm value. Chen and Bin (2001) examine the effects of state and federal gaming legislation adopted during the period 1993-1997 on the returns of U.S. gaming stocks. More recently, Johnson, Singh, and Ma (2015) examine the effect of the Travel Promotion Act on hospitality returns.

We determine the market reaction to the three court decisions by calculating daily abnormal returns (ARs), which are the difference between actual and expected returns:

$$AR_{it} = R_{it} - \left[a_i + \beta_i \times R_{mt}\right]. \quad (1)$$

Actual return is the return for firm $i$ on day $t$, $R_{it}$. The expected return is the term in brackets. $R_{mt}$ is the return on an equal-weighted market portfolio on day $t$. The parameters $\alpha_i$ and $\beta_i$ are estimated from the market model in Equation 2:

$$R_{it} = \alpha_i + \beta_i R_{mt} + e_{it}, \quad (2)$$

where $R_{it}$ is the return for the $i$th gaming firm on day $t$, $\alpha_i$ is the intercept for the $i$th gaming firm, $\beta_i$ is the slope coefficient for the $i$th gaming firm, $R_{mt}$ is the return on an equal-weighted market portfolio on day $t$, and $e_{it}$ is the error term with mean zero.

Generally speaking, in event studies, we want the parameters of the model to be estimated over a short time period before the event occurs, so as not to be confounded by structural changes in the firm. But the period needs to be far enough away from the event so as not to be confounded by the market's anticipation of the wealth effects of the event. This involves a trade-off. We chose to estimate parameters using the 255 trading days of returns ending forty-six days prior to the first event, for events Numbers 1 and 2. We did this so that tests of Event 2 would not be influenced by the returns during Event 1. For Event 3, we used 255 trading days of returns ending forty-six days prior to the third event. No other events occurred during the estimation period for Event 3.

We examine ARs for the three-day window that includes the event day and the trading day immediately before and after the event. We compute the three-day cumulative abnormal returns (CARs) for each firm as

$$\mathrm{CAR}_i = \sum_{t=-1}^{+1} \mathrm{AR}_{it}, \quad (3)$$

where $\mathrm{CAR}_i$ is the cumulative abnormal return for firm $i$, $\mathrm{AR}_{it}$ is the abnormal return for firm $i$ on day $t$, and $t = 0$ is the day the court decision is announced.

To determine the average overall impact of the litigation on the industry, we calculate the three-day cumulative average abnormal return, CAAR, by summing across the twenty-nine firms in the sample (twenty-eight firms in the case of the Supreme Court decision) and dividing by the number of firms in the sample for the event as below:

$$\mathrm{CAAR} = \sum_{i=1}^{29} \frac{\mathrm{CAR}_i}{29}, \quad (4)$$

where CAAR is the cumulative average AR for the twenty-nine firms in the sample, and $\mathrm{CAR}_i$ is the three-day cumulative AR for firm $i$ around the event.

To examine whether each informational event had a significant average return effect on the industry, a test of the null hypothesis that the three-day CAARs across firms equal zero is performed by a Patel $Z$-Statistic and a portfolio time series Crude Dependence Adjusted (CDA) test statistic. We provide both statistics for the following reasons. The Patel $Z$-Statistic is the most commonly used statistic in the event study literature. The CDA is a contemporary test statistic that adjusts for cross-sectional dependence arising from the fact that each firm's events occur on the same days. Bloom (2011) and Brown and Warner (1980, 1985) argue that under these circumstances, the CDA test is the most appropriate and reliable test of significance.

Our first hypothesis predicts a positive reaction to the first event, the Tenth Circuit Court of Appeals combined *Choctaw* and *Chickasaw* decision that imposed excise and occupational taxes on NAG firms and the third event, the Supreme Court decision that affirmed the Tenth Circuit's ruling. In contrast, we predict a negative reaction to the lower court's *Little Six* ruling, which concluded that the Shakopee tribe was not liable for excise and occupational taxes.

Results that examine the significant of the CAARs for the three court decisions are reported in Exhibit 2. The stock market response to the Tenth Circuit *Chickasaw* decision, 2.90 percent, and the Supreme Court *Chickasaw* decision, 2.80 percent, are significant and positive at the 4.03 and 8.61 percent levels, respectively, when significance is assessed using the CDA test statistic. In contrast, the stock market reaction to the *Little Six* decision, 33.83 percent, does not differ significantly from zero when significance is assessed using either the Patel $Z$-Statistic or the CDA test. The combined reaction to the two *Chickasaw* decisions, 5.7 percent (2.9% + 2.8%), seems large relative to the 0.25 percent excise tax on gaming revenue and the $50 per gaming employee, per year occupational tax. But these magnitudes are consistent with expectations of an even higher future NAG tax burden. These results are also consistent with an argument that NAG's primary competitive advantage vis-à-vis publicly held gaming firms are its tax-advantaged status.

*H2: Test of the Nevada strategy hypothesis.* Our second hypothesis predicts that the firm value effect for gaming firms will be smaller, the larger the percentage of the firm's revenue derived from Nevada operations. We hypothesize that the Nevada gaming experience is unique and not easily emulated. As a result, Nevada gaming firms are relatively insulated from competition by other gaming firms. To test our hypothesis, we regress the three-day *Chickasaw* decision CARs on the variable, *Percent Nevada*, which equals the percentage of the firm's revenue from operations in Nevada:

$$\mathrm{CAR}_i = \alpha_i + \beta_i \times \mathrm{Nevada} + e_{it}. \quad (5)$$

## Exhibit 2:

**CAAR Over a Three-day Event Window Around the Event.**

| Event Tested | Number of Firms[a] | 3-Day CAAR[b] | Positive/ Negative[c] | Patel Z-Statistic[d] (*p* Value) | Portfolio Time Series CDA[e] (*p* Value) |
|---|---|---|---|---|---|
| Event 1 | 29 | 2.90% | 19/10 | 2.596 (.0047) | 1.747 (.0403) |
| Event 2 | 29 | 0.69% | 17/12 | 1.106 (.1344) | 0.417 (.3383) |
| Event 3 | 28 | 2.80% | 17/11 | 2.255 (.0121) | 1.365 (.0861) |

*Note.* For all of the events, the estimation period for the Capital Asset Pricing Model was 255 days of daily return data for the firms with the equally weighted market index. For Events 1 and 2, the estimation period ended forty-six days before Event 1. For Event 3, the estimation period ended forty-six days before Event 3. CAAR = cumulative average abnormal return; CDA = Crude Dependence Adjusted.

a. Number of the firms used in the event analysis.

b. Three-Day CAAR is the average abnormal return for the event firms over the three-day event window, day before the event day of the event, and day after the event. Abnormal returns are calculated using an equal-weighted market index.

c. The number of firms experiencing a positive abnormal return relative to the number of firms experiencing a negative abnormal return for the event period.

d. The Patel *Z*-Statistic tests the Hypothesis that the Three-Day CAAR = 0 for a two-tailed test. The Patel *Z* is the most commonly used test statistic in event studies. It is a parametric, standardized Normal test that assumes that excess return data are normally distributed and cross-sectionally independent.

e. The CDA Statistic tests the Hypothesis that the Three-Day CAAR = 0 for a two-tailed test. CDA is the crude dependence adjustment portfolio time series test. It is the most appropriate test for use in this study because all of the events happen to the firms at the same time. Therefore, cross-sectional dependence is likely (see Bloom 2011).

## Exhibit 3:

**Multiple Regression Results of Factors Influencing Individual Company Cumulative Abnormal Return.**

| | Coefficients | *t* Statistic | *p* Value |
|---|---|---|---|
| Intercept | 0.038787 | 2.971173 | .006311 |
| Percent Nevada | −0.0571 | −1.74849 | .092178 |
| $R^2$ = .1052 | Adjusted $R^2$ = .0708 | | |

Results are reported in Exhibit 3. The results support our second hypothesis that Nevada gaming operations are less affected by the competitive position of NAG firms. The coefficient on $\beta_i$, −0.571, is negative and significant. In untabulated results, we split the sample into subsamples with versus without Nevada operations. We find that the firm value effect for the three firms in our sample with Nevada operations is positive but insignificant.

## Summary and Conclusion

A series of federal court decisions in 2000 and 2001 significantly impacted the tax treatment of NAG. These decisions culminated in the Supreme Court ruling, *Chickasaw v. United States*, which imposed on NAG firms the same excise and occupational taxes that publicly traded gaming firms already paid to the federal government. This decision was viewed by many commentators as a significant blow to the long-held Indian Canon of Construction, which states that ambiguities in federal legislation and treaties should be interpreted in favor of Native Americans. These decisions also led to speculation about the future tax treatment of NAG, with some legal commentators going so far as to suggest that the rulings paved the way to eventual imposition of a federal income tax on NAG profits.

Our study examines the impact of the *Chickasaw* and related earlier decisions on publicly traded gaming firms and their suppliers. We take a two-pronged approach. First, we examine the impact of the federal court decisions on firm value. Consistent with higher taxes resulting in a higher cost structure for NAG firms, we find that publicly traded gaming firms and their suppliers experience significant stock price increases around the time of the announcement of the court rulings. Second, we explore variation across firms in the magnitude of the market reaction. Specifically, we examine how the firm value effect varies with variation in the competitive position of publicly traded gaming firms. Consistent with Nevada gaming firms operating in a unique environment that is difficult for NAG firms to emulate, we find that the firm value effect is smaller for firms with operations in Nevada. In fact, although positive, the firm value effect for Nevada firms is not significantly different from zero.

Our results have potential implications for managers and investors in the gaming industry. It is widely believed that financial markets provide information useful for managerial and investor decision-making (Bond, Edmans, and Goldstein 2012; Fama and Miller 1972; Hayek 1945). The message from our results is clear. Government policies toward NAG have a significant impact on the market values of publicly traded gaming firms and their suppliers.

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