Betting on the Future: Dominant Local Beliefs on Gambling and Financial Misreporting

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ABSTRACT – We investigate whether dominant attitudes toward gambling are associated with intentional financial misreporting (i.e. fraud). Gambling and aggressive accounting are both risky behaviors based on expectations of future success. We predict that in places where gambling is more socially acceptable, managers will be more willing (i.e., feel less socially constrained) to engage in aggressive financial reporting and other risky ventures that increase the likelihood the firm will misreport. Consistent with this prediction, we find that intentional financial misreporting is more common in areas where gambling is more socially acceptable. In addition, we predict and find that the association between gambling acceptance and intentional misreporting is stronger for: (a) firms where management has greater equity incentives to take risks (i.e. greater vega) and (b) firms that were able to barely meet or beat the consensus analyst forecast.

1. Introduction

Risk taking is a natural part of running a successful business. Not surprisingly, prior research has consistently found that senior executives tend to be risk takers. For example, Graham, Harvey, and Puri (2013) find that CEOs have greater risk tolerance than the lay population, and MacCrimmon and Wehrung (1990) find that the most successful executives are the biggest risk takers. Although risk taking is generally good, executives sometimes take it too far by intentionally going beyond the bounds of legality, thereby risking their reputations and potentially their freedom. In particular, we still know relatively little about the forces that lead some executives to take the gamble of fraudulently reporting their firms' financial performance. To explain this phenomenon, prior studies have focused on managers' financial *incentives* to commit fraud by investigating the link between managers' equity incentives and misreporting (e.g. Armstrong, Larcker, Ormazabal, and Taylor, 2013) or managers' *opportunity* to commit fraud by investigating the link between corporate governance and fraud (e.g., Cornett, Marcus, and Tehranian, 2008). In this study, we consider whether social norms regarding gambling (i.e. *attitudes*) affect the likelihood of fraudulent financial reporting (hereafter fraud).[1]

Gambling has become increasingly common to the point that it has gained wide acceptance in the United States (Gibson and Sanbonmatsu, 2004). Since the Indian Gaming Regulatory Act passed in 1988, casinos have sprung up on Indian Reservations around the country. Additionally, state sponsored gambling lotteries have become pervasive across the United States. Their impact has become so large that in 2009 eleven states collected more

[1] In terms of the fraud triangle, which is typically used to explain fraud, some progress has been made in understanding the *incentives* and *opportunities* that lead to fraud, but very little research has examined the third piece of the fraud triangle: *attitudes* that lead to fraud (Hogan, Rezaee, Riley, and Velury, 2008; Trompeter, Carpenter, Desai, Jones, and Riley, 2013). This study endeavors to shed some light on this important, but under-researched area.

revenue from lotteries than income taxes.[2] Furthermore, in the past decade, poker has gained great popularity and respectability with an estimated 50-60 million recreational players in the United States, and a number of television channels now broadcast poker tournaments.[3] As gambling becomes more socially acceptable and a gambling culture emerges (e.g. Shiller, 2000), its influence is likely to have significant economic impact on the financial markets (Kumar, Page, and Spalt, 2011). In particular, we believe analyzing gambling's influence may help provide a better understanding of the attitudes that lead managers to commit financial statement fraud.

Gambling and the financial markets intersect when managers assume undue risk in order to generate superior performance (Fisher, 1906, Teweles, Harlow, and Stone, 1969, Borna and Lowry, 1987). Consistent with this argument, Warren Buffet recently explained, "Gambling involves, in my view, the creation of a risk where no risk need be created."[4] Since social norms influence human behavior (Sunstein, 1996; Cialdini and Goldstein, 2004; Hilary and Hui, 2009), greater social acceptance of gambling may lead managers to feel less constrained from taking unnecessary risks in an attempt to maximize firm value (i.e. undue risk). Given managers' generally high risk tolerance (Graham, Harvey, and Puri, 2013), we predict that in areas where gambling is more socially acceptable, financial reporting fraud will be more common for two reasons. First, managers may feel less constrained in their report decisions and take unduly aggressive financial reporting positions in order to increase firm value. Second, managers may similarly feel less constrained to avoid high risk projects, which, if unsuccessful, will put pressure on managers to manipulate financial reporting to mask the undesirable results.

[2] http://blogs.reuters.com/david-cay-johnston/2011/07/15/u-s-lotteries-and-the-state-taxman/
[3] "The Pot Has Never Been Bigger -- or More Respectable", *Los Angeles Times*, February 5, 2004.
[4] http://blogs.wsj.com/marketbeat/2010/06/03/buffett-gambling-and-speculating-heres-the-difference/

To be clear, we do not believe that greater societal acceptance of gambling causes management to fraudulently report, but rather, we expect that otherwise risk-seeking managers who live in areas where gambling enjoys greater acceptance will feel less constrained by societal norms to avoid taking undue risk. Additionally, we expect that in areas where gambling is more acceptable, managers are more likely to be surrounded by others who similarly feel less societal constraints when faced with the decision to take undue risk. This can facilitate the collusion necessary to commit financial statement fraud.

To test our hypotheses, we utilize a measure of geographic variation in gambling acceptance developed by Kumar, Page, and Spalt (2011), which they found is a powerful predictor of local lottery sales and the initial adoption of state lotteries. They also found that geographic variation in gambling norms impacts investors' portfolio choices, corporate decisions, and stock returns. Using this measure, we find that the level of societal acceptance of gambling is positively associated with the probability of having a restatement that was a result of intentional misreporting (i.e. fraud).

We also investigate whether the relation between societal acceptance of gambling and fraud is greater when executives have greater incentive to misreport. Consistent with compensation-based risk taking incentives playing a role in misreporting, Armstrong Larcker, Ormazabal, and Taylor (2013) find that firms are more likely to misreport when the sensitivity of top managers' portfolio value to stock return volatility (i.e., vega) is high. Thus, we expect that the relation between societal acceptance of gambling and misreporting should be even greater when managers have greater equity incentives to take risks (i.e., greater incentives to misreport). We interact vega with the level of gambling acceptance and find this interaction is positive and

significant, suggesting that misreporting is increasingly more likely when both gambling is more socially acceptable and management has greater risk taking incentives.

Next, we examine whether the association between misreporting and gambling attitudes increases when management is under greater pressure. One of the primary pressures managers feel is the need to meet performance benchmarks. For example, Graham, Harvey and Rajgopal (2005) find that CEOs believe that company earnings is the most important metric considered by outsiders and the consensus analyst earnings forecast is a primary benchmark that management feels pressure to achieve. If managers in areas of high gambling acceptance are more likely to take aggressive financial reporting positions, then their firms should be more likely to achieve earnings benchmarks. Consistent with this prediction, we find a positive and significant interaction between gambling acceptance and the likelihood of meeting or just beating the consensus analyst forecast. In other words, when a firm is headquartered in an area where gambling enjoys greater acceptance and the firm was able to meet or just beat the consensus analyst forecasts, then the firm is increasingly more likely to have misreported.

Finally, we perform an ex-post analysis to see if our measure of gambling attitudes is able to distinguish between intentional and unintentional misreporting. We do this to ensure our results are due to risk taking and not some unobservable factor that leads to poor reporting quality in general (regardless of managerial intent). Using a sample of restatements firm-years (due to errors or fraud), so as to hold low reporting quality constant across the sample, we find that fraud is more likely to occur than errors in places where gambling is more socially acceptable, consistent with our intentional risk taking argument.

This paper adds to the emerging literature that investigates the influence of culture on economic outcomes and provides a broader understanding of the attitudes that can lead to

misreporting (i.e. why executives misreport). The factors that lead some managers to commit fraud while other managers avoid the temptation to do so are largely unknown. This study addresses a potential societal factor that could constrain management's tendency to take undue risk – society's outlook on gambling. This study provides evidence that society's move toward a greater acceptance of gambling could carry economic costs as it may inadvertently make managers feel less inhibited to take undue risks that ultimately increases the likelihood of misreporting.

This paper is organized as follows: the next section discusses prior literature and develops our hypotheses; the third section explains our sample selection and research method; the fourth section presents the results; and the final section concludes the paper.

2. Literature review and development of hypotheses

Despite years of research, we still have a fairly limited understanding of the factors that lead managers to commit financial statement fraud (Trompeter, Carpenter, Desai, Jones, and Riley, 2013). Prior research has primarily focused on management's ability (i.e., opportunity) to commit fraud and management's incentive to commit fraud (Trompeter, Carpenter, Desai, Jones, and Riley, 2013). With respect to management's ability to commit fraud, prior literature has found that fraud is more common for firms with weaker governance, such as firms with poor internal controls, CEOs who are the chairman of the board, CEOs with long tenure, and firms with fewer independent directors on the board (Beasley, 1996; Cornett, Marcus and Tehranian, 2008; Hogan, Rezaee, Riley, and Velury, 2008; Trompeter, Carpenter, Desai, Jones, and Riley, 2013).

With respect to management's incentive to commit fraud, numerous studies have investigated the link between managerial equity incentives and fraud. Prior research primarily

finds a positive relation between equity incentives and misreporting (see table 1 of Armstrong Larcker, Ormazabal, and Taylor, 2013 for summary of prior literature). However, Erickson, Hanlon and Maydew (2006), Efendi, Srivastava and Swanson (2007) and Armstrong, Jagonlinzer and Larker (2010) find no evidence of a link between the sensitivity of management's wealth to stock price fluctuations (i.e., portfolio delta) and misreporting. Armstrong Larcker, Ormazabal, and Taylor (2013) reconcile prior mixed results by considering the effects of portfolio delta and portfolio vega (i.e., the sensitivity of management wealth to changes in risk) concurrently. The authors find a positive relation between vega and misreporting and that the correlation between vega and misreporting subsumes the correlation between delta and misreporting.

While management's opportunities and incentives certainly play a role in financial misreporting, personal characteristics likely play a role as well. Schrand and Zechman (2012) find that overconfident executives are more likely to have intentional misstatements in their financial statements because their optimistic bias leads them to report a rosier picture in the financial statements than actually exists, which results in a slippery slope towards intentionally misreporting. Davidson, Dey and Smith (2013) consider whether CEOs who exhibit a low regard for the law and a lack of self-control increases the likelihood of management fraud. The authors find that CEOs' prior legal infractions and the ownership of luxury goods are positively associated with the likelihood that the CEOs will misstate their firms' financial statements.

With respect to societal factors that affect the likelihood of fraud, prior research has also found that firms headquartered in areas with strong religious social norms are less likely to commit financial statement fraud (McGuire, Omer and Sharp, 2012; Dyreng, Mayhew, and Williams, 2012). We extend the emerging literature that investigates the link between societal factors and fraud by considering whether societal gambling attitudes affect the likelihood that

management will commit financial statement fraud. Kumar, Page and Spalt (2011) find that gambling attitudes do affect investor and corporate decisions. The authors show that in regions of the country that exhibit greater acceptance of gambling, investors are more likely to hold lottery type stocks, the magnitude of the lottery stock premium is greater, and the initial day return following an initial public offering is larger. In addition, employees are more likely to have broad-based stock option plans.

We expect that local gambling attitudes will also influence the likelihood of corporate misreporting for several reasons. As previously discussed, prior research has established that executives tend to be risk takers. Anecdotal evidence also suggests this to be the case. In a well-known story about the early days of FedEx, the company once owed a $24,000 fuel bill but only had $5,000 in cash on hand. One of the company's founders took the cash to a Las Vegas casino and subsequently won $27,000, which was used to pay the bill and keep the company in business (Frock, 2009). Based on what we know about the profile of top executives, it is not surprising that they are willing to take gambles with respect to their company's future success. However, sometimes managers need assistance in knowing when *not* to take gambles. While corporate governance mechanisms are designed to help with this, social pressures likely play a role as well. We expect that when social norms are less tolerant of gambling, executives will feel a social (and perhaps personal) constraint to reign in unduly risky behavior. More specifically, committing financial statement fraud generally requires collusion among top executives (e.g. Kenneth Lay, Andrew Fastow and Richard Causey at Enron; and Bernard Ebbers, Scott Sullivan, and David Myers at WorldCom). If the executives feel that others in the organization would not approve of decisions that appear to be gambles, it would likely deter executives from promoting such risky ventures. However, in areas where gambling is more widely accepted, executives will not only

be less constrained by societal norms, but they will also be more likely to find like-minded individuals at the company willing to assume undue risk – particularly when the potential reward is high. Indeed, Hilary and Hui (2009, p. 458) conclude, "It would seem natural to expect that the culture of an organization is generally aligned with the local environment of the firm."

In fact, top managers often make decisions that seem unduly risky to outsiders. Examples include taking an aggressive position with respect to financial reporting (e.g., Enron's use of mark-to-market accounting) or other business decisions that appear to be unnecessarily risky (e.g., Lehman Brothers' heavy use of leverage to invest in mortgage-backed securities, Disney's acquisition of Pixar, and Google's acquisition of YouTube).[5] While these decisions posed significant risk, there was an opportunity for great reward. Indeed, Enron executives were richly rewarded for Enron's perceived success until they were ultimately convicted of fraud. Lehman Brothers' executives likewise reaped huge financial rewards in the years leading up to its bankruptcy and allegations of misreporting (due to its use of Repo 105 transaction).[6] However, most would argue that Disney's acquisition of Pixar and Google's acquisition of YouTube have largely been successful ventures in the short- and long-run. Consistent with these examples, we believe that a direct and indirect correlation exists between gambling attitudes and misreporting. In the first example, Enron's aggressive reporting decisions led directly to its misreporting. In the other examples (e.g., Lehman Brothers), management made risky business decisions that did not go as well as planned, which can lead indirectly to misreporting by putting additional pressure on managers (Bens, Goodman, and Neamtiu, 2012).

Whenever executives take a significant gamble with a business decision, there is higher likelihood that the firm will outperform as well as a higher likelihood that the firm will

[5] See Faille (2012), http://dealbook.nytimes.com/2008/02/19/reviewing-disneys-pixar-gamble/, "Google's YouTube Gamble is Vindicated", *Financial Times*, January 1, 2010.
[6] See bankruptcy examiners report - http://jenner.com/lehman/.

underperform relative to previously anticipated results (i.e., lower risk of status quo). Risk, by definition, increases volatility and the likelihood the company's performance will be different than expected. The risk does not need to be as dramatic as the examples cited above. The decision could be a new product line, a new market, or a new advertising campaign that may not line up with company's current strategy. Executives are "betting" their new course of action will yield better firm performance than the status quo and potentially reap abnormal returns. In areas where executives are more likely to assume undue risk (i.e., gamble), there will be more firms that outperform the status quo and there will be more firms that underperform the status quo (i.e., higher volatility). Indeed gambling and related activities such as speculation are associated with high levels of trading volume, high return volatility, and low average returns (e.g., Scheinkman and Xiong, 2003; Hong, Scheinkman, Xiong, 2006; Grinblatt and Keloharju, 2009; Dorn and Sengmueller, 2009). Furthermore, Kumar, Page, and Spalt, (2011) find that local gambling attitudes are, in fact, correlated with individuals' risk preferences and market outcomes.

Building off of arguments in Kumar, Page, and Spalt, (2011), we expect that in areas where gambling enjoys greater acceptance, management will be more likely to take greater risks with respect to financial reporting and other business decisions. Whether managers assume greater risks with respect to financial reporting or whether managers assume greater risk with respect to their other business decisions, local gambling attitudes will be correlated with misreporting. In areas where managers are more likely to take aggressive financial reporting positions, misreporting will increase. In cases where other risky decisions (e.g., acquisitions) do not meet management or market expectations, management will face pressure to take aggressive accounting positions in order to conceal unsatisfactory performance. This pressure will lead to greater incidences of misreporting. Formally we hypothesize:

H1: Firms headquartered in regions with greater gambling acceptance are more likely to have a financial restatement due to financial statement fraud.

We also expect that the pressure to misreport will be exacerbated when executives have financial incentives to misstate the company's true financial position. As previously discussed, prior research generally finds a positive relation between equity incentives and misreporting. When executives' personal wealth is sensitive to the firm's stock price, executives have an incentive to misreport if reporting accurately would cause the stock price to tumble. Skinner and Sloan (2002) find that firms that miss consensus analyst forecasts get penalized with a 5.05 percent drop in stock price. Thus, it would appear that if executives' equity portfolio was highly sensitive to stock price, then they would have an incentive to artificially inflate earnings in order to avoid disappointing the market.

Armstrong, Larcker, Ormazabal, and Taylor (2013) however explain that the sensitivity of executives' portfolio to stock price (i.e., delta) has two countervailing forces with respect to misreporting. Clearly, misreporting would lead to higher stock prices, and consequently increased personal wealth for top managers, if misreporting led the firm to meet or exceed the consensus forecast (i.e., "reward effect") when reporting accurately would not. However, if top managers stand to lose significant wealth if the fraud is detected, then they may not be willing to misreport given such huge downside risk (i.e., "risk effect"). For example, if the CEO has a considerable amount of stock options that are firmly in-the-money (i.e., high delta), then his portfolio already has high intrinsic value and he has a disincentive to take on a risky proposition like misreporting that may lead to a loss of a considerable wealth if the fraud is detected. For risk-averse managers, the downside risk of misreporting may subsume the upside risk. On the other hand, if a CEO possesses a generous amount of at-the-money options (i.e., low delta), there is little downside risk in terms of loss of intrinsic wealth, but there is substantial upside risk. In

this second scenario, the CEO has high vega (i.e., sensitivity of the CEO's wealth to changes in risk). In the first scenario, the CEO has low vega.[7]

We expect that the relation between gambling acceptance and financial statement fraud is stronger when managers have stronger compensation incentives to take risks (i.e. higher vega). When gambling acceptance is high and vega is high, a higher percentage of executives will not only feel less constrained in their financial reporting choices, but also will have greater incentives to take risk. Formally we hypothesize:

> H2: The relationship between gambling acceptance and financial statement fraud is greater when managers have greater equity incentives to take risks.

We also examine whether the pressure to meet or beat analyst earnings forecasts interacts with local gambling acceptance to explain financial statement fraud.[8] If companies are more likely to gamble with financial reporting, they are likely doing so to achieve certain performance benchmarks. As previously noted, Graham, Harvey and Rajgopal (2006) find that CEOs believe the consensus analyst earnings forecast is one of the primary benchmarks that management wants to achieve, and Skinner and Sloan (2002) find that firms that miss consensus analyst forecasts get penalized with a large drop in stock price. If managers in areas of high gambling acceptance are more likely to take aggressive positions relative to financial reporting, then firms that meet or just beat the consensus analyst forecast should be increasingly more likely to have misreported. Formally we hypothesize:

> H3: The relationship between gambling acceptance and financial statement fraud is greater when firms meet or just beat the consensus analyst forecast.

[7] These scenarios are consistent with the examples in footnote 2 of Armstrong, Larcker, Ormazabal, and Taylor (2013).

[8] Because fraud firms sometimes do not end up reporting restated (i.e. corrected) numbers, and because Compustat often overwrites misstated numbers with restated numbers when available, finding clean data for cross sectional tests to explain fraud is quite challenging (Brazel, Jones, and Zimbelman 2009). Thus, we have chosen to focus on cross sections that are market based, and thus should not be affected by these issues.

3. Sample construction and variable measurement

3.1 Sample construction

Our tests require data on financial misreporting, county-level demographic information, executive compensation and equity holdings, and firm performance. We construct our sample by collecting intentional financial misreporting data from the GAO database and *Audit Analytics* (Badertscher, 2011; Hennes, Leone, and Miller, 2008), county-level demographics from the U.S. Census Bureau and the American Religion Data Archive (ARDA) (Kumar, Page, and Spalt, 2011), executive compensation and equity holdings from Execucomp, and firm performance data from the Compustat Industrial File. Our initial sample of 28,823 firm-years consists of all observations from Execucomp from 1994 to 2008.[9] We exclude 5,956 observations from regulated industries (financial services, insurance, and utilities). We also exclude observations missing necessary variables giving a final sample of 20,152 firm-year observations (2,386 individual firms). Table 1 reports our sample selection method.

[Insert Table 1 here]

3.2 Variable measurement

Measure of misreporting

To capture financial statement fraud (i.e. intentional misreporting), we follow Badertscher (2011) by first identifying firm-years with accounting restatements based on the U.S. Government Accountability Office reports on financial restatements (GAO 2002, 2006) and *Audit Analytics* database. Since restatements can be the result of a) unintentional errors or b) intentional misrepresentations (i.e. irregularities) (Hennes, Leone, and Miller 2008), we focus on instances where the restatement was due to intentional misreporting. Thus our dependent

[9] Our sample begins in 1994 as that is the earliest date information on accounting irregularities is available and ends in 2008 to allow time for irregularities to be detected.

variable (*Irregularity*) equals one if the firm's annual financial statements during that firm-year were intentionally misstated; zero otherwise.[10] This approach allows us to create a comprehensive list of intentional misstatements covering the time period of 1994 to 2008. In our final sample of 20,152 firm-years, 2,353 observations have restatements (both unintentional and intentional) and of these 425 are due to intentional misrepresentations.

Measure of gambling acceptance

Our measure of gambling acceptance comes from Kumar, Page, and Spalt (2011). This measure uses geographic variation in religious views on gambling as a proxy for the acceptability of gambling in various regions of the U.S. Specifically, it uses differences in the beliefs of Catholics and Protestants towards gambling to measure the acceptability of gambling within counties. Kumar, Page, and Spalt (2011, p. 672) note "a strong moral opposition to gambling and lotteries has been an integral part of the Protestant movement since its inception, and many Protestants perceive gambling as a sinful activity." In contrast, "the Roman Catholic Church maintains a tolerant attitude towards moderate levels of gambling and is less disapproving of gambling activities (p. 672)." Consistent with these teachings, in a phone survey of 2,631 U.S. Residents, Welte, Barnes, Wieczorek, and Tidwell (2004) find that Catholics were much more likely to have gambled in the past than Protestants. Similarly, Halek and Eisenhauer (2001) conclude that adherents of religions that are less tolerant of gambling are likely to conform to their group's expectations and are less likely to gamble.

As a result of these differences in religious beliefs, Kumar, Page, and Spalt (2011) argue that the acceptability of gambling in an area will be increasing in the ratio of Catholics to

[10] Specifically, following Badertscher (2011) we identify intentional misstatements using the fraud indicator variable in *Audit Analytics* and using irregularities identified by Hennes, Leone, and Miller (2008) in the GAO database.

Protestants (*CPRatio*).[11] Importantly, they show that this measure is a powerful predictor of county-level lottery sales. The authors find that per capita lottery sales are higher in areas with higher concentration of Catholics versus Protestants. In addition, they find that areas with higher concentrations of Catholics generally adopted state lotteries prior to areas dominated by Protestants. These results are consistent with prior research, which finds that the popularity of state lotteries is affected by the dominant local religion (Berry and Berry, 1990; Martin and Yandle, 1990; Ellison and Nybroten, 1999).

Further validating this measure, Kumar, Page and Spalt (2011) find that gambling attitudes also help explain investors' behavior and corporate decisions. The authors show that in regions of the country that exhibit greater acceptance of gambling, investors are more likely to hold lottery type stocks, the magnitude of the lottery stock premium is greater, the initial day return following an initial public offering is larger, and employees are more likely to have broad-based stock option plans. Since we are interested in studying *attitudes* towards gambling, this measure is well suited for our purposes. Following Kumar, Page, and Spalt (2011), *CPRatio* is calculated as the proportion of Catholics and Jews in a county divided by the proportion of Protestants and Mormons in the county using the ARDA database.[12]

An alternative approach to capture gambling attitudes would be to use actual spending on gambling by individuals or local areas. As Kumar, Page, and Spalt (2011) explain, the main problem with using that approach is that spending by individuals is unobservable and data on spending at the local level either has a very limited times series or it is often not disaggregated

[11] The authors find that those of the Jewish faith are more closely aligned with Catholics on their views of gambling while Latter-Day Saints (i.e. Mormons) are more closely aligned with Protestants. Kumar, Page, and Spalt (2011) also find support for their hypotheses using a ratio of Catholics and Jews to Protestants and Mormons. We feel this measure is more complete and use it for the tests in this paper.

[12] Similar to Kumar, Page, and Spalt (2011) we examine whether the effects we document reflect the level of religiosity by including *Religiosity* as a control variable in all regressions and by examining religiosity as the main dependent variable. Contrary to the results documented using *CPRatio,* we find that when *Religiosity* is the main dependent variable, it is negatively and insignificantly related to *Irregularity* in all multivariate tests.

beyond the state level, which makes the data quite noisy. Given these problems, we have not chosen to use that approach. However, we note that Kumar, Page, and Spalt (2011) validated the gambling measure using actual lottery sales.

4. Research Design

4.1 Hypothesis 1

Our first hypothesis states that firms headquartered in regions with greater gambling acceptance are more likely to have a restatement due to financial statement fraud. To test this hypothesis we use the following linear probability model (OLS), where we regress indicators of financial statement fraud on our proxy for gambling acceptance and control variables:[13]

$$Irregularity_t = \beta_0 + \beta_1 CPRatio_t + \beta_i Controls + \varepsilon_t \quad (1)$$

where *Irregularity* is an indicator variable coded 1 if the firm had a restatement due to intentional misreporting in year *t*; zero otherwise. *CPRatio* is our proxy of gambling acceptance in the country where the firm is headquartered (as described previously). We expect the coefficient on *CPRatio* to be positive and significant indicating that firms are more likely to intentionally misreport in areas where gambling enjoys greater acceptance. *Controls* is a vector of control variables that are described below (all variables are defined in Appendix A).

Consistent with Kumar, Page, and Spalt (2011), we control for a series of variables to help ensure that we are capturing local gambling attitudes rather than other underlying constructs such as general risk aversion. McGuire, Omer and Sharp (2012) find that firms in religious areas are less likely to engage in misreporting. As such, we control for religiosity (*Religiosity).* Since

[13] Since our dependent variable is dichotomous, we could use non-linear estimation (e.g. logistic regression). However, to be consistent with recent research (e.g., Cornelli, Kominek, and Ljungqvist, 2013; Atanassov 2013; Becker, and Milbourn 2011), we use OLS for ease of interpreting marginal effects and interaction terms. When using logistic regression, inferences are qualitatively similar (Norton, Wang, and Ai 2004).

Catholics are more likely to concentrate in urban areas and Protestants are more likely to concentrate in rural areas, we include a variable that measures the proportion of county population that lives in urban areas (*Urban*) as well as the total county-level population (*Population*). Several other factors could also be correlated with our proxy for gambling attitudes include marital status, education, gender, ethnicity, and age (Kumar, Spalt, and Page 2011). As such, we control for the proportion of county households with a married couple (*Married*), the proportion of county-level population over the age of 25 with a bachelor's degree or higher (*Education*), the ratio of male to female residents in a county (*MaleFemale*), the proportion of county residents who are non-white (*Minority*), and the median age of county residents (*Age*).

As Armstrong, Larcker, Ormazabal, and Taylor (2013) find that equity portfolios provide management with incentive to misreport, we control for average total cash compensation received by the top five executives during the year (*CashComp*), the average sensitivity of the top five executives' equity portfolio to a 1% change in stock price (*Delta*), and the average sensitivity of the top five executives' equity portfolio to a 0.01 change in stock volatility (*Vega*). As overconfidence has been associated with fraud (Schrand and Zechman, 2012) and gambling (Golec and Tamarkin, 1995), we control for whether company management appears overconfident (*Overconfidence).*

To be consistent with prior literature (e.g. Armstrong, Larcker, Ormazabal, and Taylor 2013), we control for additional variables previously associated with misreporting. These additional control variables include firm size (*Size*), growth opportunities (*BM*), leverage (*Leverage*), firm age (*FirmAge*), accounting performance (*ROA*), stock performance (*Returns*), capital intensity (*Capital*), intangible assets (*Intangibles*), the amount of external financing

(*Financing*), whether the firm had a large acquisition that year (*Acquisition*), and interest coverage (*InterestCov*).[14]

Finally, regressions are run with year and industry fixed effects using the 17 industries identified in Fama and French (1997) to address omitted variables that are not captured by the other controls. All continuous variables are winsorized at the top and bottom 1% to alleviate the effect of outliers, standard errors are clustered by firm to address serial correlation in the residuals, and variance inflation factors for all variables in the models are below 10, indicating that multicolinearity is unlikely to be a problem (Kennedy 2008).

4.2 Hypothesis 2

Hypothesis 2 predicts the relationship between gambling acceptance and financial statement fraud will be stronger when managers have greater equity incentives to take risks (i.e. when vega is higher). To test this hypothesis we use the following OLS regression:

$$Irregularity_t = \beta_0 + \beta_1 CPRatio_t + \beta_2 Vega_t + \beta_3 CPRatio * Vega_t + \beta_i Controls_t + \varepsilon_t \quad (2)$$

Where *Irregularity*, *CPRatio*, *Vega*, and *Controls* are the same as defined in equation (1). If the prediction of H2 is correct, we expect the interaction of *CPRatio* and *Vega* to be positive and significant.

[14] We also ran our tests controlling for other recognized determinants of fraud, such CEO and Chair duality and CEO tenure (Cornett, Marcus, and Tehranian 2008), revenue growth and total accruals (Brazel, Jones, Zimbelman 2009), whether the firm is audited by a big 4/5/6 audit firm, book-tax differences and firm bloat (Badertscher 2011), and the standard deviation of cash flows and whether the firm had a loss in the current or prior two years (McGuire, Omer, and Sharp 2012). Results were unchanged after including these additional control variables but were not tabulated in order to be parsimonious.

4.3 Hypothesis 3

Hypothesis 3 predicts the relationship between gambling acceptance and financial statement fraud will be stronger when the firm was able to meet or just beat the consensus analyst forecast. To test this prediction we use the following OLS regression:

$$Irregularity_t = \beta_0 + \beta_1 CPRatio_t + \beta_2 MeetJustBeat_t + \beta_3 CPRatio * MeetJustBeat_t + \beta_i Controls_t + \varepsilon_t \quad (3)$$

Where *Irregularity*, *CPRatio*, and *Controls* are the same as defined in equation (1). Consistent with Bhojraj, Hribar, Picconi, and McInnis (2009), we measure whether a firm was able to meet or just beat the consensus analyst forecast. *MeetJustBeat* equals 1 if the firm has EPS in year *t* that is between $.0.00 and $0.01 of median analyst forecast, and 0 otherwise. If this prediction is correct, we expect the interaction of *CPRatio* and *MeetJustBeat* to be positive and significant.

5. Results

5.1 Descriptive Statistics

Table 2 provides descriptive statistics for our proxy of gambling acceptance (*CPRatio)* and control variables. Panel A presents results for the full sample. The mean *CPRatio* (1.13) is similar to the mean *CPRatio* (1.29) presented in prior research (Kumar, Page, and Spalt 2011). Also, our demographic controls have means similar to those reported in Kumar, Page, and Spalt (2011). In addition, Panel A indicates that the firms in our sample on average are profitable (*ROA* = 0.05). Finally, we note that the mean *Delta* (4.59) and *Vega* (3.26) are consistent with mean *Delta* (4.46) and *Vega* (2.96) in prior research (Armstrong, Larcker, Ormazabal, and Taylor 2013).

Table 2, Panel B provides univariate comparisons of firm-year observations that are identified as having an *Irregularity* to those that do not. As predicted by H1, irregularities occur more frequently in areas where gambling acceptance is greater (difference is significant at p-value < 0.01). Also, *Irregularity* observations occur for firms with higher *Leverage, InterestCov, Overconfidence, CashComp*, *Vega,* and *Delta*.

[Insert Table 2 here]

5.2 Regression Analysis

H1 predicts firms headquartered in regions with greater gambling acceptance are more likely to have financial statement fraud. The results in Table 3 provide support for this hypothesis.[15] When regressing *Irregularity* on *CPRatio* and numerous control variables there is a positive and significant coefficient on *CPRatio* (coefficient 0.89; p-value < 0.00).[16] This is consistent with higher gambling acceptance being associated with an increased incidence of financial statement fraud. Also, the results indicate that when *Leverage* and *InterestCov* are high, there is a higher likelihood of a firm committing fraud. Finally, consistent with prior research, firms are more likely to commit fraud when management has high *Overconfidence* (coefficient = 0.0058, p-value = 0.04) and high *Vega* (coefficient = 0.0040, p-value = 0.02) (See Armstrong, Larcker, Ormazabal, and Taylor, 2013 and Schrand and Zechman, 2012).

[Insert Table 3 here]

H2 predicts that the relation between gambling acceptance and fraud will be stronger for firms whose top management team has greater financial incentives to take risks (*Vega)*. Table 4 shows results relating to this hypothesis. The results indicate that when firms operate in an area

[15] To improve readability, we multiply the coefficient estimates of *CPRatio* in Tables 3 through 6 by 100, consistent with Kumar, Page, and Spalt (2011).

[16] We also regress *Irregularity* on *CPRatio* without controls except for industry and year fixed effects. As predicted, the coefficient on *CPRatio* is positive and significant (p-value = 0.02).

with higher gambling acceptance and higher compensation incentives for the top management team to take risks (*CPRatio*Vega*), they are more likely to have a restatement due to financial statement fraud. The coefficient on *CPRatio*Vega* is positive and significant (coefficient = 0.34, p-value = 0.05). Overall, therefore, this result supports H2.

[Insert Table 4 here]

H3 predicts there will be more financial statement fraud in areas with both higher gambling acceptance and the pressure to meet or just beat the consensus analyst earnings forecast. Column 1 of Table 5 shows the results for this prediction when comparing firm-year observations that just meet or beat the consensus analyst forecast to all other observations in the sample. Column 2 shows results from an alternative specification, where observations are dropped if firms exceeded or missed the forecast by a large margin (i.e. firms who meet or missed the forecast by more than $0.02). We restrict the sample in this way to reduce the influence of firms that were not likely to be managing earnings to meet analysts' forecasts (Kinney, Burgstahler, and Martin 2002). The results in both columns support our prediction. The interaction of *CPRatio*MeetJustBeat* is positive and significant in Column 1 (coefficient = 0.92, p-value =0.06) and Column 2 (coefficient = 1.23, p-value = 0.02). These results are consistent with firms being more likely to have committed fraud when gambling is more socially acceptable and the firm was near a benchmark.

Overall, our results provide evidence consistent with each of our hypotheses and indicate that the acceptance of gambling within a geographic area is associated with fraudulent financial reporting.

[Insert Table 5 here]

5.3 Further Analysis

We also perform an ex-post analysis to see if our measure of gambling attitudes is able to distinguish restatements due to irregularities from restatements due to errors. We do this to determine whether our findings are due to undue risk taking or some unobservable factor that leads to lower reporting quality in general (regardless of intent). We examine a sample consisting only of restatements years, so as to hold low reporting quality constant across the sample. In this setting, our dependent variable (*Irregularity)* equals 1 if the restatement is due to intentional misreporting and 0 if the restatement was due to an unintentional error. If our measure is able to distinguish between irregularities and errors we expect the coefficient on *CPRatio* to be positive and significant. In results reported in Table 6 we find *CPRatio* is positive and significant (coefficient = 0.06; p-value = 0.02), consistent with gambling attitudes helping to explain the occurrence of financial statement fraud, but not the occurrence of unintentional financial statement errors.

Furthermore, to ensure that our results are generalizable, when we drop firms headquartered in Nevada from any of our analyses, all of our results remain unchanged, suggesting that our results are not solely driven by this one gambling-friendly state.

6. Summary and conclusion

We examine whether geographical variations in gambling norms impact the likelihood of fraudulent financial reporting. Prior literature shows that individuals who fill upper management are more likely to take risks than the lay population. In areas where gambling enjoys greater acceptance, management may feel less socially constrained to take undue risks that may seem like gambles to outsiders. However, risk by definition subjects the company to greater earnings

volatility. If management is willing to take on excess risks, then some risks will not pay off, which will put pressure on management to misreport in order to conceal the results that are lower than expected. We expect that greater risk-taking will lead to a greater number of firms with pressure to misreport and that will account for an increased level of misreporting.

Our results indicate the firms headquartered in areas with a higher acceptance of gambling are more likely to restate their financial statements due to fraud. In addition, we consider two settings where misreporting should be even greater. First, we consider whether the relation between gambling acceptance and fraud is stronger for firms where management has a greater financial incentive to misreport. Since Armstrong, Larcker, Ormazabal, and Taylor (2013) find a strong association between misreporting and top executives' financial risk taking incentives (vega), we interact gambling acceptance with vega and find that the association between gambling acceptance and misreporting is driven by firms with high vega. In other words, firms are increasingly more likely to misreport when they have added financial incentive to do so.

Finally, we look at firms that were able to meet or just beat the consensus analyst forecast. We expect that the association of gambling attitudes and misreporting will become stronger when firms are close to meeting this common performance benchmark. Consistent with our expectations, we find a positive and significant interaction between firms that were able to meet or beat analysts' forecasts and gambling acceptance. This suggests that misreporting is even more common when gambling is more socially acceptable and firms are close to meeting a performance benchmark.

Taken together, these results suggest that societal factors play a role in whether firms misreport. Prior fraud research has primarily investigated whether managerial *incentive* or

opportunity contribute to misreporting. However, recent research has considered how societal factors play vital roles in the financial markets. This study adds to this emerging field of study and addresses how *attitudes* towards gambling can affect the likelihood of misreporting.

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Appendix A

Variable Definitions

Irregularity	Accounting restatements from the GAO (2002, 2006) database that Hennes et al. (2008) identify as arising from accounting irregularities. The GAO database contains accounting restatements announced between January 1999 and September 2005. This sample is extended by including additional accounting irregularities identified by Audit Analytics from October 2005 to December 2008.
CPRatio	Ratio of Catholics and Jew to Protestants and Mormons in the county where a firm is headquartered.
Size	Natural logarithm of market value of equity.
BM	Ratio of book value of equity to market value of equity.
Leverage	Total liabilities divided by total assets.
Firm Age	Number of years the firm appears on Compustat.
Capital	Net plant, property, and equipment scaled by total assets.
Intangibles	Ratio of research and development expense and advertising expense to sales.
ROA	Net income scaled by average total assets.
Acquisition	Indicator variable for whether an acquisition accounts for 20% or more of total sales.
Financing	Amount raised from stock and debt issuances during the year scaled by total assets.
InterestCov	Ratio of interest expense to net income. If net income for the year is negative or interest expense is more than twice net income, InterestCov is set to 2.
Returns	Buy-and-hold returns over the year.
Overconfidence	Equal to 1 if the firm meets the requirements of at least 2 of 4 criteria following, 0 otherwise. 1) the residual from a regression of total asset growth on sales growth, adjusted for the industry median, is greater than zero ; 2) net acquisitions from the statement of cash flows, adjusted for the industry median, are greater than zero; 3) Debt to equity ratio, adjusted for the industry median, is greater than zero; and 4) if the firm has convertible debt or preferred stock. See Schrand and Zechman 2012 for additional details.
CashComp	Natural logarithm of one plus the average total cash compensation received by the top five executives during the year (Armstrong et al. 2013).
Delta	Natural logarithm of one plus the average sensitivity of the top five executives' equity portfolio to a 1% change in stock price (e.g., Core and Guay, 2002).
Vega	Natural logarithm of one plus the average sensitivity of the top five executives' equity portfolio to a 0.01 change in stock volatility (e.g., Core and Guay, 2002).
Religiosity	Number of religious congregations in the county in which the firm is headquartered, as reported by the Religious Congregations and Membership Study (RCMS) divided by the total population of the county. Population is determined per the U.S. Census, times 1,000. For observations falling in each calendar year, data from the 1990 and 2000. RCMS is linearly interpolated and extrapolated.
Population	Total county-level population in millions.
Education	Proportion of county-level population over the age of 25 with a bachelor's degree or higher.
MaleFemale	Ratio of male to female residents in a county.
Married	Proportion of county households with a married couple.
Minority	Proportion of county residents who are non-white.
Urban	Proportion of county population that lives in urban areas.
Age	Median age of county residents.
Industry	Fama and French 17 industries.
MeetJustBeat	Equal to 1 if the firm has EPS that is between $.0.00 and $0.01 of median analyst forecast, and zero otherwise.

All variables are measured at the end of year t.

Table 1
Sample Construction

	Firm Years
Number of Observations in ExecuComp (1994 - 2008)	28,823
Regulated Firms (SIC 6000 - 6999, 4900 - 4999)	(5,956)
Missing necessary variables	(2,715)
Final Sample	20,152

Our sample contains 2,353 firm-year restatement observations. 425 of these firm-year restatement observations are identified as irregularities. Irregularities are defined as accounting restatements from the GAO (2002, 2006) database that Hennes et al. (2008) identify as arising from accounting irregularities. The GAO database contains accounting restatements announced between January 1999 and September 2005. This sample is extended by including additional accounting irregularities identified by Audit Analytics from October 2005 to December 2008.

Table 2

Descriptive Statistics

Panel A - Full Sample

Variable	Mean	Median	Q1	Q3	Std. Dev.
Irregularity	0.02	0.00	0.00	0.00	0.14
CPRatio	1.13	0.96	0.44	1.72	0.85
Size	7.12	6.96	6.02	8.10	1.61
BM	0.49	0.40	0.24	0.62	0.40
Leverage	0.50	0.51	0.35	0.64	0.22
Firm Age	22.66	17.00	9.00	36.00	15.85
Capital	0.29	0.23	0.12	0.40	0.22
Intangibles	0.07	0.02	0.00	0.08	0.14
ROA	0.04	0.06	0.02	0.10	0.11
Acquisition	0.05	0.00	0.00	0.00	0.22
Financing	0.12	0.04	0.01	0.14	0.19
InterestCov	0.67	0.26	0.06	1.27	0.78
Returns	0.15	0.07	-0.19	0.36	0.57
Overconfidence	0.49	0.00	0.00	1.00	0.50
CashComp	6.29	6.23	5.85	6.66	0.61
Delta	4.59	4.56	3.67	5.51	1.39
Vega	3.26	3.24	2.37	4.13	1.28
Religiosity	0.63	0.54	0.44	0.65	0.30
Population	1.44	0.91	0.50	1.63	1.70
Education	0.32	0.31	0.26	0.39	0.09
MaleFemale	0.96	0.97	0.93	0.99	0.04
Married	0.48	0.49	0.44	0.54	0.09
Minority	0.30	0.29	0.17	0.43	0.15
Urban	0.94	0.98	0.94	1.00	0.12
Age	35.00	34.84	33.20	36.62	2.48

This table presents summary statistics for the sample used in this paper. The sample covers the time period from 1994 - 2008 and contains 20,152 firms-year observations (2,386 firms). Panel A reports descriptive statistics for the full sample. Panel B compares the means and medians of firm-years with accounting irregularities to firm-years without accounting irregularities. See Appendix A for variable definitions. ***,**,* signify the coefficient is significant at 0.01, 0.05, and 0.10, respectively.

Table 2 Continued

Panel B - Comparison of Means and Medians for Irregularity and Non-Irregularity Samples

	With Irregularity (n=413)		Without Irregularity (n=19,727)		Difference in Means		Difference in Medians	
Variable	Mean	Median	Mean	Median				
CPRatio	1.35	1.29	1.12	0.95	0.23	***	0.34	***
Size	7.50	7.31	7.12	6.95	0.38	***	0.36	***
BM	0.49	0.39	0.49	0.40	0.00		-0.01	
Leverage	0.56	0.56	0.50	0.51	0.06	***	0.05	***
Firm Age	21.23	15.00	22.69	17.00	-1.46	*	-2.00	***
Capital	0.22	0.15	0.29	0.23	-0.07	***	-0.08	***
Intangibles	0.07	0.03	0.07	0.02	0.00		0.01	***
ROA	0.02	0.04	0.04	0.06	-0.02	***	-0.02	***
Acquisition	0.08	0.00	0.05	0.00	0.03	**	0.00	***
Financing	0.12	0.07	0.12	0.04	0.00		0.03	***
InterestCov	0.92	0.56	0.66	0.26	0.26	***	0.30	***
Returns	0.15	0.00	0.15	0.08	0.00		-0.08	*
Overconfidence	0.64	1.00	0.48	0.00	0.16	***	1.00	***
CashComp	6.44	6.35	6.28	6.23	0.16	***	0.12	***
Delta	4.96	4.78	4.58	4.56	0.38	***	0.22	***
Vega	3.84	3.76	3.24	3.23	0.60	***	0.53	***
Religiosity	0.58	0.50	0.63	0.54	-0.05	***	-0.04	***
Population	1.41	1.23	1.44	0.90	-0.03		0.33	***
Education	0.34	0.34	0.32	0.31	0.02	***	0.03	***
MaleFemale	0.96	0.96	0.96	0.97	0.00		-0.01	
Married	0.47	0.50	0.49	0.49	-0.02	**	0.01	
Minority	0.32	0.33	0.3	0.29	0.02	***	0.04	***
Urban	0.95	0.98	0.94	0.98	0.01	***	0.00	**
Age	35	35.23	35	34.84	0.00		0.39	

Table 3
Analysis of Gambling Attitudes and Irregularities

		Dep. Var. = Irregularity		
Variable	Prediction	Coefficient		P-value
Intercept		0.1036		0.32
CPRatio	+	0.8864	***	0.00
Size	?	0.0041	**	0.04
BM	-	0.0085		0.13
Leverage	+	0.0289	***	0.01
Firm Age	-	-0.0003	**	0.02
Capital	?	-0.0361	***	0.00
Intangibles	?	-0.0358	***	0.01
ROA	-	-0.0041		0.80
Acquisition	+	0.0066		0.28
Financing	+	-0.0095		0.20
InterestCov	+	0.0065	**	0.03
Returns	+	-0.0013		0.57
Overconfidence	+	0.0058	**	0.04
CashComp	+	-0.0070		0.11
Delta	+	0.0003		0.82
Vega	+	0.0040	**	0.02
Religiosity	-	0.0028		0.80
Population	?	-0.0019	**	0.04
Education	?	-0.0074		0.77
MaleFemale	+	-0.0342		0.61
Married	-	-0.0210		0.55
Minority	?	0.0044		0.82
Urban	+	-0.0072		0.77
Age	-	-0.0017	*	0.08
Industry FE		Yes		
Year FE		Yes		
Observations		20,152		
Adjusted R^2		0.02		

This table shows the results for the prediction that firms headquartered in regions with greater gambling acceptance are more likely to have a financial restatement due to financial statement fraud. The dependent variable is CPRatio, the proxy for gambling attitudes. See Appendix A for variable definitions. ***,**,* signify the coefficient is significant at 0.01, 0.05, and 0.10, respectively. Our tests of hypotheses are one-tailed. All other tests are two-tailed. Standard errors are clustered at the firm level.

Table 4
Anlaysis of Whether Gambling Attitudes
and Vega Predict Irregularities

		Dep. Var. = Irregularity		
Variable	Prediction	Coefficient		P-value
Intercept		0.1312		0.22
CPRatio	+	-0.2122		0.71
Vega	+	0.0003		0.91
CPRatio*Vega	+	0.3481	**	0.05
Size	?	0.0039	**	0.04
BM	-	0.0084		0.13
Leverage	+	0.0290	***	0.01
Firm Age	-	-0.0003	**	0.02
Capital	?	-0.0358	***	0.00
Intangibles	?	-0.0364	***	0.00
ROA	-	-0.0065		0.69
Acquisition	+	0.0068		0.27
Financing	+	-0.0101		0.18
InterestCov	+	0.0063	**	0.03
Returns	+	-0.0014		0.54
Overconfidence	+	0.0057	**	0.05
CashComp	+	-0.0073		0.09
Delta	+	0.0003		0.85
Religiosity	-	0.0012		0.91
Population	?	-0.0020	**	0.04
Education	?	-0.0110		0.67
MaleFemale	+	-0.0409		0.54
Married	-	-0.0212		0.54
Minority	?	0.0033		0.86
Urban	+	-0.0076		0.76
Age	-	-0.00182	*	0.07
Industry FE		Yes		
Year FE		Yes		
Observations		20,152		
Adjusted R^2		0.02		

This table predicts that firms headquartered in regions with greater gambling acceptance and that have top management teams with high levels of Vega are more likely to have a financial restatement due to financial statement fraud. The dependent variable is Irregularity and the variable of interest is CPRatio, the proxy for gambling attitudes, interacted with the Vega for a firm's top management team. See Appendix A for variable definitions. ***,**,* signify the coefficient is significant at 0.01, 0.05, and 0.10, respectively. Our tests of hypotheses are one-tailed. All other tests are two-tailed. Standard errors are clustered at the firm level.

Table 5

Anlaysis of Whether Gambling Attitudes Predict Irregularities When Firm Meets or Just Beats Analyst Earnings Forecasts

		1			2		
		Full Sample			Within |$0.02| of forecast		
		Dep. Var. = Irregularity			Dep. Var. = Irregularity		
Variable	Prediction	Coefficient		P-value	Coefficient		P-value
Intercept		0.1038		0.32	0.1630		0.36
CPRatio	+	0.7604	**	0.01	0.6033		0.23
MeetJustBeat	+	-0.0043		0.51	-0.0101		0.16
CPratio*MeetJustBeat	+	0.9222	*	0.06	1.2292	**	0.02
Size	?	0.0040	**	0.04	-0.0006		0.86
BM	-	0.0087		0.12	0.0087		0.49
Leverage	+	0.0290	***	0.01	0.0318		0.11
Firm Age	-	-0.0003	**	0.02	-0.0004	*	0.09
Capital	?	-0.0362	***	0.00	-0.0536	***	0.00
Intangibles	?	-0.0353	***	0.01	-0.0409		0.15
ROA	-	-0.0054		0.74	-0.0072		0.85
Acquisition	+	0.0065		0.29	0.0262	*	0.06
Financing	+	-0.0094		0.20	-0.0028		0.83
InterestCov	+	0.0065	**	0.03	0.0110	*	0.08
Returns	+	-0.0010		0.65	-0.0015		0.74
Overconfidence	+	0.0058	**	0.04	0.0087	*	0.09
CashComp	+	-0.0068		0.12	-0.0004		0.96
Delta	+	0.0004		0.79	0.0043		0.11
Vega	+	0.0040	**	0.02	0.0051		0.12
Religiosity	-	0.0029		0.79	-0.0003		0.99
Population	?	-0.0019	**	0.04	-0.0041	***	0.00
Education	?	-0.0078		0.76	-0.0276		0.49
MaleFemale	+	-0.0332		0.62	-0.0582		0.61
Married	-	-0.0217		0.53	-0.0295		0.60
Minority	?	0.0044		0.82	-0.0039		0.90
Urban	+	-0.0069		0.78	-0.0220		0.61
Age	-	-0.0017	*	0.08	-0.0024		0.17
Industry FE		Yes			Yes		
Year FE		Yes			Yes		
Observations		20,152			6,500		
Adjusted R^2		0.02			0.03		

This table predicts that firms headquartered in regions with greater gambling acceptance and that are close to analyst earnings forecasts are more likely to have a financial restatement due to financial statement fraud. The dependent variable is Irregularity and the variable of interest is CPRatio, the proxy for gambling attitudes. Column 1 examines the prediction based on the full sample. Column 2 examines the prediction based on observations that have EPS within $0,02 (absolute value) of analysts median forecast. See Appendix A for variable definitions. ***,**,* signify the coefficient is significant at 0.01, 0.05, and 0.10, respectively. Our tests of hypotheses are one-tailed. All other tests are two-tailed. Standard errors are clustered at the firm level.

Table 6.
Analysis of Whether Gambling Attitudes Predict Irregularities

		Dep. Var. = Irregularity		
Variable	Prediction	Coefficient		P-value
Intercept		1.1232		0.13
CPRatio	+	5.1998	**	0.02
Size	?	0.0304	**	0.04
BM	-	0.0363		0.27
Leverage	+	0.1827	**	0.02
Firm Age	-	-0.0012		0.25
Capital	?	-0.1218	*	0.09
Intangibles	?	-0.1423		0.27
ROA	-	0.0139		0.90
Acquisition	+	0.0644		0.17
Financing	+	-0.0378		0.52
InterestCov	+	0.0156		0.40
Returns	+	-0.0181		0.16
Overconfidence	+	0.0360		0.11
CashComp	+	-0.0184		0.48
Delta	+	-0.0126		0.36
Vega	+	0.0236		0.16
Religiosity	-	0.0179		0.82
Population	?	-0.0156	**	0.04
Education	?	-0.1338		0.48
MaleFemale	+	-0.7079		0.16
Married	-	-0.0052		0.98
Minority	?	-0.1268		0.37
Urban	+	0.0466		0.80
Age	-	-0.0150	*	0.06
Industry FE		Yes		
Year FE		Yes		
Observations		2,353		
Adjusted R^2		0.10		

This table shows the results for the prediction that firms headquartered in regions with greater gambling acceptance are more likely to have a financial restatement due to financial statement fraud than a restatement due to accounting errors. The dependent variable is Irregularity and the variable of interest is CPRatio, the proxy for gambling attitudes. See Appendix A for variable definitions. ***,**,* signify the coefficient is significant at 0.01, 0.05, and 0.10, respectively. Our tests of hypotheses are one-tailed. All other tests are two-tailed. Standard errors are clustered at the firm level.