The Price of Reputation: Executive Compensation of Sin Companies

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Abstract

This paper studies whether managers take social reputation into account when they negotiate compensation contracts with their hiring firms. We argue that managers working in sin industries are vulnerable to reputation loss due to the negative social norm and thereby are offered higher pays as the compensation. We provide a theoretical prediction and confirm it with empirical evidence. We define sin companies as those operating in the industries of alcohol, gambling, and tobacco, and show that sin-company managers, compared with their peers in non-sin companies, receive about 0.65 million dollars more annually in total compensation, which represents about 24% premium in pay. Moreover, there is also greater asymmetry in the pay-for-performance sensitivity for sin industry firms – sin-company managers experience larger pay increases upon positive performances, but smaller pay reductions upon negative performances. Lastly, we show that the pay premium received by sin-company managers is particularly large when the company is located in a religious area, consistent with the notion that such pay premium compensates for the negative social reputation.

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1. Introduction

How human behavior is altered by the desire for social approval has been widely studied in behavioral economics literature. In an experimental study, Ariely, Bracha, and Meier (2009) provide evidence that seeking a social reputation (or the concern for one's personal image) is an important incentive for prosocial behavior. Lacetera and Macis (2010) show that the symbolic award for a blood donation is an effective incentive only when the award is announced publicly. Carpenter and Myers (2010) measure image as it concerns whether a person has purchased a "vanity plate", a car plate displaying information that a person volunteers time in the community, and find that those people who care more about their social reputation do volunteer more time as fire fighters. Benabou and Tirole (2006) offer a formal theory modelling the interaction between monetary and image incentives for prosocial activities.

Compared with the abundant studies on the effect of social reputation on individual behavior, relatively few studies have ever considered how such factor affects corporate policy. In particular, although the determinants of compensation are intensively examined in the literature, when the firm and managers are negotiating compensation contracts, how social reputation is considered in this process is still an unanswered question.[1] This paper analyzes how executive compensation is designed when working for a certain firm is likely to harm a manager's social reputation. We theorize that when an executive accepts an offer from a company with a negative social norm, she expects her opportunities in the external labor market to be reduced. Such a loss of outside opportunities is especially large in a booming economy, when the value of such opportunities is high. In order to recruit talented people, the firm thereby must offer a premium in pay to compensate for the executive's loss, either in the

[1] Notable works of Tosi and Greckhamer (2004), Dyck, Volchkova, and Zingales (2008), and Kuhnen and Niessen (2012) study the possible impact of social norm on compensation plan. We discuss these studies in greater details later. For a comprehensive review of the compensation literature, please see Core, Guay and Larcker (2003), Bebchuk and Fried (2003; 2005), Devers, Cannella, Reilly and Yoder (2007), and Kaplan and Rauh (2010).

form of a higher fixed payment or in the form of asymmetric pay-for-performance sensitivity tilting toward the direction in managers' favor.[2]

We seek empirical evidence to our theoretical prediction. One challenge for this task is to identify those managers that are likely to suffer from a negative social norm. In this study, we rely on whether or not it is a "sin" company that a manager works for so as to ascertain the social reputation risk. A company is denoted as "sin" if it, or one of its segments, operates in the industries of alcohol, gambling, and tobacco, which are industries arguably having a negative social norm. There are both anecdotal and academic evidence showing that a part of society expresses strong disapproval of these industries.[3] Hong and Kacperczyk (2009) present that pension funds, universities, and other social norm-constrained investors tend to avoid stocks related to sin industries. We conjecture that managers, with their social prominence, would behave like institutional investors and avoid the negative image associated with sin industries, unless they are fairly compensated.

Following the definition of Hong and Kacperczyk (2009), we identify sin companies as those operating in alcohol, gambling, and tobacco industries in U.S. between 1993 and 2014. We first show that the sin-company managers who hold outside board seats receive lower pays for their director service than do their non-sin-company peers. Such evidence is consistent with our premise that managers working for sin companies face a reduced outside opportunity set.

To perform empirical tests on our key hpotheses, we construct a matched sample consisting of 1,032 firm-years by finding one non-sin matching firm for each of the

[2] Firms may pay managers an asymmetric pay-for-performance sensitivity to increase the reward upon good performance (i.e., increase pay for luck) under equilibrium. We provide an illustration of the idea in greater details in the theoretical model section.

[3] In a New York Times article published in 1994 titled "How do tobacco executives live with themselves?", the writer wrote: "Not long ago I visited the Philip Morris headquarters on several occasions and spoke with upper-level executives. … All feel beleaguered by portions of society (one vice president complained of being accosted at a cocktail party in his hometown by someone calling him a 'mass murderer') and by the news media and the 'antis,' whom they alternately call 'Nazis' or 'smoking police.'"

sin-companies in our sample (516 sin-company observations), and identify 5,317 manager-year observations that represent the managers working for these firms in our sample.

We compare the level of compensation grants between sin and non-sin companies. Using a multivariate regression analysis, we find that the total compensation paid to sin-company managers, on average, is about 0.65 million dollars higher than that paid to non-sin managers, which represents 24.2% premium in pay. Moreover, when we compare the pay-for-performance sensitivity (PPS), we find an asymmetry in PPS for sin-company managers whereby the PPS is greater when the firm experiences better performance, whereas no such asymmetric PPS is found for the managers working for the non-sin matching firms. Such asymmetric PPS in favor of sin-company managers is consistent with our theoretical prediction that sin companies have to design a contract favorable to their managers in order to compensate for lost outside opportunities.

We further investigate whether the documented sin-company compensation premium varies with the regional religiosity. Prior studies have presented evidence that religion belief has a significant effect on people's perception of smoking, drinking, and gambling. People with stronger religion adherence are less likely to engage in activities perceived as being a "vice" under the social norm (e.g. Cochran and Akers 1989; Wasserman and Trovato, 1996; Heath et al., 1999; Ours, 2004; Diaz, 2000). Consistent with this notion, we find the compensation premium received by sin-company managers is particularly large when the company is located in a highly religious area. Such a finding further supports the hypothesis that sin managers demand additional pay for their social reputation concern.

We perform additional auxiliary tests to lend credence to our results. Talented managers supposedly face a larger loss of outside opportunities should they work for sin companies. Using the managerial ability score developed by Demerjian, Lev, and McVay (2012), we find evidence supportive to such prediction whereby the sin-company managers receive especially

large pay premiums when they exhibit high abilities. One may also suspect that the pay premium offered by sin companies is the excessive compensation extracted from entrenched managers. We proxy for managerial entrenchment with the portion of the company board filled with inside directors. As executives themselves, inside directors have a strong influence on the compensation policy and have a higher chance to seek self-interests (Ryan and Wiggins, 2004; Chhaochharia and Grinstein, 2009). However, unsupportive of the alternative hypothesis, such an additional variable does not explain away the higher pay given to sin-company managers, indicating our result is not due to managerial entrenchment.

We contribute to the literature in three ways. First, we consider the issue of manager reputation from a unique point of view in the literature. Milbourn (2003) provides empirical evidence to a model in which the manager's personal reputation is taken as a signal of her ability. Malmendier and Tate (2009) and Francis, Huang, Rajgopal, and Zang (2008) use reputation as a proxy for CEO power and document that CEO reputation (or fame) is negatively associated with firm performance and earnings quality. Different from the aforementioned studies, we take the behavioral view and hypothesize that managers' concern for their reputation is rooted in their desire for social approval.

Second, as reputation is unobservable, the proxy variables used in prior studies (e.g. press coverage, winning an award, tenure, experience, firm performance, etc.) are arguably subject to endogenous concern. Our proxy, based on whether a firm operates in a sin industry, is a rather exogenous variable that is significantly related to personal social reputation. Based on a research design with minimized endogeneity concern, we find that personal reputation is an important consideration when managers negotiate their contracts.

Last but not least, our study adds to a relatively small strand of literature in the field of corporate finance that examines how social norm affects corporate policies. Hilary and Hui (2009) show that firms located in religious areas display a high degree of conservatism, as

measured by low stock volatility and low investment rate. Dyreng, Mayew, and Williams (2012) and McGuire, Omer, and Sharp (2012) document that firms in regions with high religion adherence have a low chance of engaging in accounting fraud, because in these regions "honesty" is a highly regarded social value.

As for compensation studies, the seminal work of Tosi and Greckhamer (2004) points out that there is no universally agreeable compensation policy, because the public perception varies with the different cognitive system in each culture. Kumar, Page, and Spalt (2011) show that those firms in regions with more Protestant churches are less likely to grant employee stock options, because Protestants are strongly opposed to gambling. Dyck, Volchkova, and Zingales (2008) and Kuhnen and Niessen (2012) present that negative public opinion on executive compensation (proxied with media coverage) leads to a reduction in manager pay, indicating that firms are under pressure to conform with the social norm that is always dynamically evolving. A concurrent and complementary work of Novak and Bilinski (2016) also documents a pay premium for sin-company managers. However, our research differs from theirs along several dimensions. First, we devise a theoretical model that formally illustrates the origin of such premium. Second, in addition to the pay level, we show that the asymmetric PPS can be another approach for sin companies to compensate their managers. Third, we investigate the interactive relationship between religiosity and the sin-company pay premium, lending further support to our prediction.

The paper is organized as follows. Section 2 illustrates our idea with a theoretical model. Section 3 describes our data and summary statistics. Section 4 examines the sin-company premium in managerial compensation and offers additional tests. Section 5 concludes.

2. Theoretical Model

To illustrate our idea, we devise a simple model depicting how a manager makes the

decision of working for a sin or a non-sin company. Our model is a three-period model under the revised framework of Oyer (2004). Figure 1 illustrates the time line of the decision process.

Insert Figure 1 about here

In the beginning at period 0 (t=0), a manager faces a random future market wage (capturing outside opportunity) $M_{t+1}=M_t+\varepsilon_t$, where the random term ε_t may be ε_H (>0) or ε_L(<0). In other words, the market wage for the manager at period 1 (t=1) and period 2 (t=2) fluctuates depending on certain factors that are out of the manager's control, such as industry or macroeconomic conditions. The value of company V_t is a random variable fluctuating in a similar fashion with two possible outcomes, V_H and V_L ($V_H > V_H$), that are realized at both periods 1 and 2. As such, both the company value and the manager's market wage are affected by the realized state of the economy, so the pairs (V_H, ε_H) and (V_L, ε_L) occur with probabilities p_H and p_L, respectively.

Two representative companies, one sin company (S) and one non-sin company (NS), compete for this manager, by providing a compensation contract that consists of two parts: a fixed wage w and a share (b) of firm value, in which w is positive and b in [0,1]. We assume that there is an adjustment cost if the company changes contract terms, and so both companies S and NS do not change the contract as long as the manager stays with the firm. At period 0, the manager decides which company (S or NS) she shall work for. At period 1, the manager has an opportunity to decide if she wants to leave the firm. If she does, she joins the labor market and faces the market wage when being considered by other firms. However, if the manager works for the sin company, then she suffers from a reputation loss and sees her market wage drop in period 2 by an amount of c, no matter whether it is ε_H or ε_L that is realized. The reputation loss, c, is positive and reflects a bad social impression about working in a sin company.

We first solve for the optimal contract that the non-sin company must offer to attract the manager. To convince the manager working for *NS* at period 0, her compensation contract must satisfy the following constraint:

$$w_0^{NS} + b_0^{NS} V_H \geq M_0 + \varepsilon_H,$$

$$w_0^{NS} + b_0^{NS} V_L \geq M_0 + \varepsilon_L. \quad (1)$$

As such, the compensation that this manager receives from firm *NS* must be equal or higher than the market wage under both economy states that have been realized. The binding of both constraints ensures that the manager accepts the offer from the *NS* firm.[4] The solution of the contract is thus:

$$b_0^{NS} = \frac{\varepsilon_H - \varepsilon_L}{V_H - V_L} \equiv b^*,$$

$$w_0^{NS} = (M_0 + \varepsilon_H) - \left(\frac{\varepsilon_H - \varepsilon_L}{V_H - V_L}\right) V_H \equiv w^*(M_0). \quad (2)$$

Therefore, the *NS* firm must provide a compensation contract that consists of a fixed wage w^* that depends on the current market wage M_0 and a constant share b^* of firm value.

At period 1, the manager has to make a decision: she can choose to stay with the current firm or leave it and join the labor market. If the manager stays, then she will continue to receive b^* and $w^*(M_0)$; but if she joins the labor market, then she is able to re-negotiate her contract. Following the same reasoning as above, the manager's new contract conditional on leaving would be b^* and $w^*(M_1)$, where $w^*(M_1) = w^*(M_0) + \varepsilon_H$ or $w^*(M_1) = w^*(M_0) + \varepsilon_L$, with probabilities p_H and p_L, respectively.

Given the equity component of compensation (b^*) is the same in both periods, the manager decides whether to leave the firm by comparing $w^*(M_0)$ and $w^*(M_1)$ and leaves the firm if $w^*(M_1) = w^*(M_0) + \varepsilon_H > w^*(M_0)$, which happens with probability p_H; and stays if

[4] Oyer (2004) denotes the first equation in (1) as the "bull constraint" (when $\varepsilon_t = \varepsilon_H$) and the second equation as the "bear constraint" (when $\varepsilon_t = \varepsilon_H$). The holding of both constraints is termed as the "dual binding participation constraints" (DPC). Oyer also considers the solution when only the bull constraint holds (termed as SPC). However, since the intuition of our model can be seen in both solutions, we focus on the DPC solution to simplify the discussion.

$w^*(M_1) = w^*(M_0)+\varepsilon_L < w^*(M_0)$ with probability p_L. Assuming no discount rate and denoting the expected firm value as V^e ($=p_H V_H + p_L V_L$), we have the expected aggregate compensation across two periods for the manager at $t=0$ as:

$$E_0(C^{NS}) = [w^*(M_0) + b^* V^e] + \{p_H[w^*(M_1) + b^* V^e] + p_L[w^*(M_0) + b^* V^e]\}$$
$$= 2[w^*(M_0) + b^* V^e] + p_H \varepsilon_H. \quad (3)$$

The last term in excepted compensation, $p_H\varepsilon_H$, thereby represents the value of the manager's option of leaving the firm in a booming economy.

We now consider the case of the sin company. If the manager works for the sin company *S*, then at $t=0$ the optimal contract will be the same as in equation (2). At the end of first period at $t=1$, as in the case of *NS*, if the manager stays with the current firm, then she will continue to receive b^* and $w^*(M_0)$. However, if the manager joins the labor market and re-negotiates her contract, then different from the *NS* case, she would face a market wage reduction c in the labor market at $t=2$, because of the reputation loss. As such, at time $t=1$, the optimal contract that a sin-company manager may secure in the external labor market is b^* and $w^*(M_1)-c$, and the manager compares $w^*(M_1)-c$ and $w^*(M_0)$ to decide whether to leave *S*. Suppose we consider the conservative case when the reputation loss is relatively small, such that $c<\varepsilon_H$.[5] The manager thereby leaves the firm if it is ε_H that is realized at $t=1$, as $w^*(M_1)-c = w^*(M_0)+\varepsilon_H - c > M_0$. Hence, we have the aggregate expected compensation $t=0$ as:

$$E_0(C^S) = [w^*(M_0) + b^* V^e] + \{p_H[w^*(M_1) - c + b^* V^e] + p_L[w^*(M_0) + b^* V^e]\}$$
$$= 2[w^*(M_0) + b^* V^e] + p_H(\varepsilon_H - c). \quad (4)$$

By comparing $E_0(C^{NS})$ and $E_0(C^S)$ in (3) and (4), we understand that the manager would never choose working for the sin company if the sin company only offers a contract based on the fluctuation of market wage. Therefore, the sin company must "sweeten" its offer in order

[5] We may repeat the analysis when assuming $c>\varepsilon_H$, when the loss of reputation is even larger than the increase of market wage. In this case, the manager of the sin company would never leave the firm and lose the entire option of seizing a higher market wage. The premium that a sin company must provide to managers therefore is even larger. Since the analysis is similar, we only discuss the conservative case as the illustration to our idea.

to attract the manager. By investigating our model, we realize that there are two approaches for the sin company to achieve this. First, the sin company may increase the fixed wage and set:

$$w_t^S = w_t^{NS} + \frac{1}{2} p_H c, \tag{5}$$

at t=0 and 1. This makes $E_0(C^S) = 2[w^*(M_0) + b^* V^e] + p_H \varepsilon_H$, and the manager will be indifferent between working for company *S* and *NS*. Moreover, we note that such fixed wage premium would increase the p_H, the probability of booming economy. In other words, when the economy is expected to be in an expansion phase, the manager's re-negotiation option is valuable and the sin company has to offer a large premium in compensation.

Second, the sin company can set an asymmetric pay-for-performance sensitivity (PPS) so as to increase the reward upon good performance, i.e. increase pay for luck. If the sin company sets an asymmetric PPS b in the following way:

$$b_H^S = b^* + \frac{c}{2V_H} \text{ and } b_L^S = b^*, \tag{6}$$

then the expected aggregate compensation would become equal to the one received from working for the non-sin company as shown in equation (7).

$$\begin{aligned} E_0(C^S) &= 2\ \{\mathrm{w}^*(M_0) + p_H(b_H^S V_H) + p_L(b_L^S V_L)\} + p_H(\varepsilon_H - c) \\ &= 2\ \left\{\mathrm{w}^*(M_0) + p_H\left(b^* + \frac{c}{2V_H}\right)V_H + p_L(b^* V_L)\right\} + p_H(\varepsilon_H - c) \\ &= 2[w^*(M_0) + b^* V^e] + p_H \varepsilon_H \\ &= E_0(C^{NS}). \end{aligned} \tag{7}$$

The intuition here is as follows. The manager enjoys an option to renegotiate her contract if the market wage is high, captured by the term $p_H \varepsilon_H$ in $E_0(C^{NS})$. However, the reputation loss makes such an option less valuable. The sin company thereby has to compensate the manager by rewarding the manager a higher pay when the firm value is high; even though such a high firm value results from the realization of a good economic state, and not from the manager's

effort. As such, our simple model yields two testable empirical predictions.

H1: Sin companies provide higher compensation to their managers than do non-sin companies.

H2: The magnitude of asymmetric pay-for-performance sensitivity for sin companies is larger than that for non-sin companies.

3. Sample and Data

We start constructing our sample with the Compustat universe from 1993 to 2014. We follow Hong and Kacperczyk (2009) and define sin companies by three steps. First, using the Fama and French (1997) 48-industry classification, we classify group 4 as alcohol companies and group 5 as tobacco companies. Second, a company is classified as a gaming company if it operates in an industry with one of the following NAICS codes: 7132, 71312, 713210, 71329, 713290, 72112, and 721120. Lastly, we supplement the firm-level data with the Compustat Segment dataset and classify a sin company by whether it has segments operating alcohol, tobacco, and/or gaming businesses. By further requiring a firm must be covered in the Execucomp database to be included in our sample, we have a sin-company sample of 516 firm-year observations belonging to 44 sin companies.

To enhance the statistical power of our analyses, we construct a matched sample that consists of the sin companies and their matching firms drawn from non-sin industries. To be specific, we implement the propensity score matching with the following two steps. In the first step, we gather all available observations in Execucomp from the year 1993 to 2014 (33,243 observations) and estimate a logistic model where the dependent variable takes the value of one if a firm operates in a sin industry, and zero otherwise. In the model we include 5 firm characteristics variables that are shown in literature to significantly affect the managerial compensation policy (e.g. Core and Guay, 1999; Guay, 1999). The logarithm of

sales (*Ln(Sale)*) is a measure of firm size; the market-to-book ratio (*MB*) is a measure of the amount of investment opportunities; the annualized stock volatility (*Volatility*) is a measure of firm riskiness; one-year lagged cash flow (*Lagged Cash Flow*) and financial leverage (*Leverage*) are measures of corporate financial health. Panel A of Table 1 reports the estimates of this logistic model. The predicted value of this logistic model is denoted as the propensity score.

Insert Table 1 around here

In the second step, for any given sin-company observation, we construct a portfolio of matching candidates by requiring all observations must be drawn from the same year as the sin-company observation and these candidate firms must operate in non-sin industries. We then select the candidate observation that has the propensity score closest to the sin company's score as its matching observation. As such, we obtain 516 pairs of matching firm-year observations, one matching non-sin-company observation for each of the sin-company observations. Panel B of Table 1 reports the pairwise comparison of the firm characteristics between the sin companies and their matching firms. We report the mean of each of these variables for both groups, and perform the two-sample t-test to examine whether there are significant inter-group differences in the means of these firm characteristics. The finding of insignificant inter-group differences for all variables indicates that our matched sample is of adequate quality.

To construct the manager-level sample, we search in Execucomp for all the senior managers who work for the firms in our sample, and obatin 5,317 manager-year observations. Panel A of Table 2 reports the summary statistics of this manager-level sample. Variable *TC* is the total compensation, recorded as the variable *TDC1* in Execucomp; *Sin Mgr* is a dummy variable that takes the value one if a manager works for a sin company, and zero if the

manager works for a non-sin company; firm characteristics variables *Sale*, *MB*, *Volatility*, *Lagged Cash Flow* and *Leverage* are defined as described above. Lastly, we obtain manager age (*Mgr Age*) from Execucomp, and search for these managers' biographies on the internet if the value of this variable is missing in Execucomp. Such a process yields 3,503 observations with available manager age information. The average total compensation grant for senior managers in our sample is about 3 million dollars. By construction, about half (50.3%) of the managers work for the sin industry firms. The average manager age is about 53 years old.

Insert Table 2 around here

Since many prior studies in executive compensation focus on CEOs, we also reduce our manager-year sample to including only CEO-year observations. Panel B of Table 2 reports the summary statistics of this CEO-level sample. The average total compensation of CEOs is about 6 million dollars. The observation that the average CEO pay is substantially higher than the average pay taken across all senior managers as reported in Panel A is consistent with the intuition that CEO should be the highest-paid officer in a company. The average CEO age is about 56. One additional CEO characteristics information reported in Execucomp is *CEO Tenure*, which is the number of years in which a CEO has worked as the top officer. The average *CEO Tenure* for the CEOs in our sample is about 5.8 years.[6]

4. Results

4.1 Sin Company Manager Directorship

We start our empirical investigation by seeking evidence to our underlying assumption – namely, that sin company executives suffer from unfavorable treatment in the external labor

[6] We tried to gather this tenure information for non-CEO senior managers as well. That is, we searched on the internet for each VP in the attempt to know how many years since she took her current position. However, there are many VPs for them we could not find this information. Therefore, we decide to include tenure as a control variable only for the CEO sample.

market. If hiring sin-company managers brings a negative image onto the firm, then we expect that compared to their peers working for non-sin companies, the sin-company managers face smaller opportunity sets in the outside director market. A sin-company manager therefore has to accept lower pay for his service, if he wishes to work as an outside director.

To identify those managers who have director seats, we collect all director identities and director compensation data reported in the Execucomp database and match them with the executives in our dataset by year and person name. Of all 172,364 manager-year observations in Execucomp, we are able to identify 6,375 observations that represent managers who hold at least one outside directorships. To examine whether sin-company managers indeed receive lower pay for their service as directors, we estimate the following model:

$$Ln(1+Dir\ Pay_{i,t}) = \beta_0+\beta_1 Sin\ Mgr_{i,t}+\beta_2 Ln(Sale^{DIR}_{i,t})+\beta_3 MB^{DIR}_{i,t}+\beta_4 ROA^{DIR}_{i,t} + \beta_5 Leverage^{DIR}_{i,t}+Industry\ and\ Year\ Effects+\varepsilon_{i,t}, \quad (8)$$

where the subscripts *i* refers to manager and *t* refers to year. The variable *Dir Pay* is the sum of director pays taken across all outside directorships held by a given manager. The sample average of *Dir Pay* is 0.192 million dollars. As control variables, we include the characteristics of the firm in which a manager works as a director: $Sale^{DIR}$ is sales; MB^{DIR} is market-to-book ratio; ROA^{DIR} is return on assets; $Leverage^{DIR}$ is financial leverage, computed as total debt divided by market value of assets. Ryan and Wiggins (2004) and Brick, Palmon, and Wald (2006) show that firm size (measured by $Sale^{DIR}$), growth opportunity (measured by MB^{DIR}, ROA^{DIR}), and financial risk (measured by $Leverage^{DIR}$) are important determinants of director compensation. Please refer to Appendix A for detailed definitions of the variables.

Insert Table 3 around here

Table 3 reports the estimation results. In column (1), we document a significantly negative association between *Sin Mgr* and *Log(1+Dir Pay)*, indicating that the pays received

by sin-company managers for their outside director service are lower than that received by their peers working in non-sin companies. Using the sample mean of *Log(1+Dir Pay)* (0.076) as the benchmark, the negative coefficient of *Sin Mgr* (-0.02) represents a 26% discount in pay when an outside director is an executive in a sin company. As for the control variables, consistent with intuition, we find that a director receives higher pay when she is a director in a larger and more profitable firm.

We further include in the regression the variables $Sale^{MGR}$, MB^{MGR}, ROA^{MGR}, and $Leverage^{MGR}$ to control for the characteristics of a manager's own firm. Furthermore, we include the pay a manager receives in her own firm (*Ln(1+Mgr Pay)*). To the extent that managerial compensation is related to a manager's talent, there should be a positive association between director pay and managerial pay. In column 2 of Table 3 we report the estimates. Consistent with our expectation, there is a strong positive association between *Log(1+Mgr Pay)* and *Log(1+Dir Pay)*, indicating a manager's talent is recognized in the director labor market. Importantly, the negative association between *Sin Mgr* and *Director Pay* stays intact even after we control for these additional variables. Overall, in this table we show that managers working for sin companies receive lower compensation as outside directors, which is consistent with our premise that sin-company managers face fewer outside opportunities in the external labor market.

4.2 Compensation Grant

We hypothesize that sin companies need to offer their managers a compensation package that is more attractive than the one offered by non-sin companies. We first perform a basic univariate comparison of the compensation grants (*TC*) between sin and non-sin companies. We estimate the mean of *TC* at $3.3 million for sin companies, and $2.87 million for non-sin companies; and their difference is statistically significant at 1% level. To enhance the

credibility of our results, we also perform a multivariate analysis by estimating our baseline regression model with our manager-year sample as follows.

$$Ln(TC_{i,t}) = \beta_0 + \beta_1 Sin\ Mgr_{i,t} + \beta_2 Ln(Sale_{i,t}) + \beta_3 MB_{i,t} + \beta_4 Volatility_{i,t} + \beta_5 Lagged\ Cash\ Flow_{i,t} + \beta_6 Leverage_{i,t} + \varepsilon_{i,t}. \quad (9)$$

Our focus is β_1, the coefficient of the sin manager dummy (*Sin Mgr*) — a significant positive β_1 would indicate that sin companies offer a higher pay to their managers relative to other companies, even after strict control on many firm characteristics.

Insert Table 4 around here

In the column 1 of Table 4 we report the estimation results of our baseline model. We find the estimate of β_1 is 0.217 and statistically significant at 1% level. That is, the managers working for sin companies indeed receive higher compensation. Using the average value of *TC* taken across the managers working for non-sin companies ($2.87 million) as the benchmark, we compute the average pay received by sin-company managers is about $0.65 million higher, which represents 24.2% increase in pay.[7] Therefore, we find that the pay premium received by sin-company managers is economically significant.

To gauge the robustness of our results, we add additional control variables into the model. In the column 2 of Table 4 we control industry and year effects, where industry dummy variables are constructed with two-digit SIC code. In the column 3, in addition to industry and year dummy variables, we further include two manager characteristics variables: the manager age (*Mgr Age*) and the CEO dummy (*CEO*), a dummy variable that takes the value one when the manager is a CEO. The expectedly positive coefficient of CEO dummy indicates CEOs do receive higher pays than other senior managers. Importantly, the positive coefficient of *Sin Mgr* stays significant. In column 4, we perform the analysis using our CEO sample in order to

[7] Given the coefficient of *Sin Mgr* is 0.217 and the average compensation for non-sin companies is $2.87 million, we calculate sin-company managers' average pay by solving the variable *x* in the following equation *Ln(x)-Ln(2.87)=0.217*.

examine whether CEOs also receive pay premium from sin companies. In column 5, we also include two CEO characteristics, a CEO's age (*Mgr Age*) and the number of years that this manager has been the CEO (*CEO Tenure*). We find the CEOs working for sin companies indeed also are paid higher than their peers working for non-sin companies. In sum, our results are in support of our first hypothesis – namely, sin companies offer higher compensation to their managers than do non-sin companies.

4.3 Asymmetric Pay-for-performance Sensitivity

The compensation literature emphasizes that the link between pay and performance (e.g. Murphy, 1985; Jensen and Murphy, 1990) is crucial to incentivize managers. A compensation contract with high pay-for-performance sensitivity (PPS) would hold the manager accountable for his own decisions. However, in our model we show that aside from granting a fixed payment, an alternative approach for the sin companies to compensate for reputation loss is to provide a compensation scheme with asymmetric PPS: the reward to managers upon good performance is of larger magnitude than the punishment upon bad performance. Such a pay scheme is favorable to managers and thereby constitutes a premium.

To empirically test our prediction, we estimate PPS with the following model:

$$(TC/LagMVE*100)_{i,t} = \beta_0+\beta_1(\Delta MVE/LagMVE)_{i,t}+\beta_2(\Delta MVE/LagMVE)^2_{i,t} + Control\ Varibles+\varepsilon_{i,t}, \quad (10)$$

where *LagMVE* is the market value of equity at the end of year *t-1*, and *ΔMVE* is the change in market value of equity from year *t-1* to year *t* - *ΔMVE/LagMVE* thereby essentially is the growth rate of the equity value. The coefficient β_1 in model (10) represents the average PPS estimated for our sample, as it captures the pay granted to managers per dollar change in equity value, with both the dependent and independent variables scaled by the lagged value of equity. The squared term $(\Delta MVE/LagMVE)^2$ captures the nonlinearity in PPS. A significantly

positive coefficient of this squared term indicates the association between the grant and the firm value change is stronger when there is a larger increase in firm value, i.e. the reward a manger receives for success is larger than the punishment for failure.

Insert Table 5 around here

In the column 1 of Table 5 we start by regressing the compensation grant on only the firm value change. The significantly positive coefficient of *(ΔMVE/LagMVE)* indicates that firms in our sample indeed maintain a positive PPS in their compensation policies. In the column 2 we include the same set of control variables as in Table 4 and find such positive PPS remains intact.

Given the finding that firms do maintain a positive PPS, we ask whether there is an asymmetric PPS for sin companies. In the column 3 we focus on only sin-company observations and estimate the model in equation (10). The significant and positive coefficient of $(\Delta MVE/LagMVE)^2$ shows that the PPS received by sin-company managers increases in the firm value change. As a contrast, there is no such asymmetry in PPS found when we estimate the same model for non-sin-company observations in the column 4. Lastly, in the column 5 we confirm our finding by including the interaction term between *Sin Mgr* and $(\Delta MVE/LagMVE)^2$ and estimate such model when pooling the sin and non-sin companies. We find the coefficient of $Sin\ Mgr*(\Delta MVE/LagMVE)^2$ is significantly positive, whereas the coefficient of $(\Delta MVE/LagMVE)^2$ is insignificant. This finding confirms that the asymmetric PPS is found only for sin company managers.

Taken together, our finding indicates that compared with their non-sin company peers, sin company managers are granted higher PPS as larger rewards upon satisfactory performance, but lower PPS as smaller punishment upon disappointing performance. In other words, there indeed is a particularly strong asymmetric PPS embedded in the compensation policies devised by sin companies. Therefore, our empirical investigation yields supportive

evidence to our theoretical prediction that one approach for the sin companies to compensate their managers is to design an asymmetric PPS in favor of their managers.

4.4 Alternative Matching Sample

One may question whether our results are sensitive to how we select the matching firms. To address this concern, in this section we perform a robustness check by re-conducting the analyses using multiple matching samples. Specifically, we perform the analysis as follows. First, we construct a candidate portfolio of matching companies with the following steps. For each sin-company observation we construct an initial candidate portfolio of matching firms by drawing all candidate firms in Execucomp from the same year and from non-sin industries. We then compute the distance score between a sin company and a given candidate firm as follows:

$$Distance\ \ Score = \sum_k \left| \frac{x_k^{SIN} - x_k^{MAT}}{x_k^{SIN}} \right|,$$

where subscript k refers to a certain firm characteristics variable. For each sin company, we rank the candidates by this distance score and keep only the bottom quartile as our matching candidate portfolio. As a result, for any given sin-company observation, the non-sin companies in its matching candidate portfolio are fairly similar to it in the sense that they have similar firm characteristics.

Second, for each sin-company observation we draw one matching firm randomly from its matching candidate portfolio. By repeating such random draw for all sin-company observations, we are able to construct one matching sample. Then we pool together the sin companies and their matching firms, and estimate the regression model as in column 3 of Table 4 in order to obtain one set of estimated coefficients. Third, we repeat the above step for 1,000 times and estimate 1,000 sets of estimated coefficients. In Table 6 we report the mean of the estimated coefficients for all independent variables.

Insert Table 6 around here

We use two sets of firm characteristics to compute distance score. For *Distance Score 1*, we include *Sale* and *MB*. For *Distance Score 2*, we include *Sale*, *MB*, *Volatility*, *Lagged Cash Flow* and *Leverage*. We compute the mean of coefficients and the t-statistics (as reported in Table 6) in a way similar to Fama-MacBeth method, where the statistics are computed across 1,000 sets of coefficients estimated with alternative matching samples. We find the results are qualitatively similar to those in Table 4 – we continue to find significantly positive coefficients of *Sin Mgr* in Table 6. Therefore, our finding of the pay premium received by sin-company managers is robust to alternative matching sample selection procedures.

4.4 Religiosity

Numerous studies have documented that religion belief has a significant effect on people's perception of smoking, drinking, and gambling. People with stronger religion adherence are less likely to engage in such activities, because these activities are generally perceived as a "vice" under the social norm. Both anecdotal and academic evidence present that there is a strong, negative correlation between religiosity and the use of tobacco and alcohol (e.g. Cochran and Akers 1989; Wasserman and Trovato, 1996; Heath et al., 1999; Ours, 2004).[8] Diaz (2000) reports that Las Vegas residents who regularly attend religious services gamble less frequently and for smaller dollar amounts. Therefore, if the documented pay premium indeed is resulted from the negative social norm, then we expect that such a premium is especially large for the companies located in the areas with high religiosity.

Following Hilary and Hui (2009), we construct our measure of religiosity with the data

[8] A study, titled "So Help Me God: Substance Abuse, Religion and Spirituality," released by the National Center on Addiction and Substance Abuse at Columbia University in 2001 shows that adults who never attend religious services are three times more likely to smoke and almost seven times likelier to binge drink than those who attend religious services at least weekly. A questionnaire survey conducted by Gallup in 2013 also reveals that smoking is negatively related to church attendance, ranging from a low of 12% among those who report attending church at least once a week, to 30% among those who never attend church. The Gallup report can be found at http://www.gallup.com/poll/163856/strong-link-church-attendance-smoking.aspx.

drawn from the state-level "Churches and Church Membership" files in American Religion Data Archive (ARDA). Specifically, the variable *Religiosity* is computed as the number of religious adherents divided by the total population in a state, measuring the proportion of religious people in the population. We then rank the states by *Religiosity* in each year, and create a dummy variable *High Religiosity*, which takes the value of one if a state is in the top tertile, and zero otherwise. This *High Religiosity* variable is then merged with our sample by in which state a firm's headquarter is located.[9]

To detect whether the sin-company pay premium varies with religiosity, we create four indicator variables: *I{Sin Mgr=i & High Religiosity=j}*, where *i* and *j* take the value either 0 or 1. These four indicator variables take the value of one when *Sin Mgr* equals to *i* and *High Religiosity* equals to *j*, and zero otherwise. We augment the model in the column 3 of Table 4 by including these indicator variables except *I{Sin Mgr=0 & High Religiosity=0}* so as to avoid the dummy variable trap. If the sin-company pay premium is larger for the companies located in more religious areas, then the coefficient of *I{Sin Mgr=1 & High Religiosity=1}* should be larger than the coefficients of the other two indicator variables. Table 7 presents the results.

Insert Table 7 around here

Consistent with our conjecture, the estimated coefficients of *I{Sin Mgr=1 & High Religiosity=1}* are all significantly positive across three models. Specifically, from the results of column 1, we observe that the pay premium offered by sin companies exists in relatively less religious areas as well (the coefficient of *I{Sin Mgr=1 & High Religiosity=0}* is significantly positive). However, the magnitude of pay premium is larger for the companies located in the religious areas (the coefficient of *I{Sin Mgr=1 & High Religiosity=1}* is 0.303,

[9] Since the Churches and Church Membership data are only available for four years (1971, 1980, 1990, 2000), we use the data in 1990 for the observations before 2000 and the data in 2000 for the observations after 2000.

whereas the coefficient of *I{Sin Mgr=1 & High Religiosity=0}* is 0.184). The results in column 3 indicate that such religiosity effect is even stronger for CEO pays. Therefore, the investigation between sin-company compensation premium and religiosity lends further support to our hypothesis — we find evidence that firms located in more religious areas indeed offer higher pay to their managers, because their managers have to bear a larger cost of negative social reputation.

4.5 Manager Ability

Milbourn (2003) explains that a firm must offer a large compensation in order to retain the talents, because a talented manager enjoys high-value outside opportunities in the external labor market. It thus is reasonable to hypothesize that a talented manager would suffer from a particularly large reputation loss when he works for a sin company. If this is the case, then we expect the sin-company pay premiums are positively related to the managers' abilities. To empirically examine this prediction, we measure manager ability (*Mgr Ability*) with the one-year lagged value of the managerial ability score developed by Demerjian, Lev, and McVay (2012), which captures how efficiently a manager generates revenues from given economic resources using the data envelopment analysis (DEA) approach.

Using a similar approach to the previous test, we create four indicator variables: *I{Sin Mgr=i & High Mgr Ability=j}*, where *i* and *j* take the value either 0 or 1. The dummy variable *High Mgr Ability* takes the value of one when a company is in the top tertile as ranked by *Mgr Ability* for each year. We augment the model in the column 3 of Table 4 by including these indicator variables except *I{Sin Mgr=0 & High Mgr Ability=0}*. If the pay premium provided by sin companies increases in manager talents, then we expect the coefficient of *I{Sin Mgr=1 & High Religiosity=1}* is larger than the coefficients of the other two indicator variables.

Insert Table 8 around here

Table 8 reports the results. The sample size is reduced to 4,242 observations, because we require the availability of the *Mgr Ability* data. Across all three models we find that the coefficient of *I{Sin Mgr=1 & High Mgr Ability=1}* is significantly positive and is of larger magnitude than the coefficient of *I{Sin Mgr=1 & High Mgr Ability=0}*, indicating sin companies offer higher pay premiums to talented managers. In particular, although the coefficient of *I{Sin Mgr=0 & High Mgr Ability=1}* is positive, the magnitude of it is relatively smaller than the magnitude of the coefficient of *I{Sin Mgr=1 & High Mgr Ability=1}*. This shows that although talented managers receive higher pays, it is the managers working for sin companies can set the highest price for their talents. In sum, we find evidence consistent with the argument that talented managers suffer most from negative social reputation and thus are entitled to higher compensation.

4.6 Managerial Entrenchment?

A possible alternative explanation for our results is that the higher pay to sin-company managers actually represents the excessive compensation received by entrenched managers. In other words, the fact that sin companies are paying premiums to their managers goes against shareholders' best interest and is a manifestation of corporate governance failure. To examine if this is the case, we investigate whether the pay premium varies with the percentage of board seats filled with inside directors.

A firm's board of directors is the very institution that is responsible for setting executive pays. If inside directors, as the executives who also sit on board, are allowed to wield influence in the compensation setting process, then it is likely that they would seek self-interest. Prior studies have documented that boards filled with more insiders tend to impose weaker monitoring on their managers (Ryan and Wiggins, 2004) and grant higher executive compensation (Chhaochharia and Grinstein, 2009).

We obtain the inside director data from the IRRC director database and merge them with our sample. The sample size reduces to 3,915 observations as a result, when the availability of director data is required. We rank the firms by the proportion of the board seats taken by the firm's own executives; and define the dummy variable *High Inside Dir* as one when the firm is in the top tertile, and zero otherwise. Using a setting similar to that in Table 7 and 8, we augment the model in the column 3 of Table 4 by including the indicator variables reflecting the different combinations of the values of *Sin Mgr* and *High Inside Dir*.

Insert Table 9 around here

Table 9 reports the results. From the results in column 1 we observe that the magnitudes of the coefficients of *I{Sin Mgr=1 & High Inside Dir=1}* and *I{Sin Mgr=1 & High Inside Dir=0}* are not largely different, although the coefficient of the later variable is slightly larger. As such, we do not find that the pay premiums offered by sin companies strongly varies with the proportion of inside directors. The results in column 2 and 3 are qualitatively similar. Therefore, our evidence is not consistent with the argument that the compensation premium of sin companies results from the weak corporate governance.

5. Concluding Remarks

This paper presents both a theoretical model and empirical analysis on whether executive compensation is related to the concern for personal reputation. In the model we show that when a manager considers a job offer, she would demand a premium in compensation if the hiring firm bears an unfavorable social image. Such a compensation premium for social reputation loss may be realized in the form of a higher fixed payment or an asymmetric pay-for-performance sensitivity.

Following Hong and Kacperczyk (2009), we hypothesize that managers of companies in sin industries – alcohol, gambling, and tobacco – are likely to suffer potential reputation loss.

With a sample of sin company managers in the U.S. between 1993 and 2014, we first document that sin company managers, compared with their non-sin company peers, receive lower director pay when sitting on outside boards. Such evidence is consistent with the premise that sin-company managers face relatively limited outside opportunities.

Turning to examine the executive compensation of sin company managers, we find that after controlling other factors that may affect managerial pay, total compensation paid to sin-company managers is about 24% higher than that paid to managers in non-sin industries. Moreover, the asymmetry in pay-for-performance sensitivity for sin-company managers is larger than that for non-sin company managers. Such a finding is consistent with our prediction that sin companies may compensate their managers by providing higher fixed pay or more asymmetric PPS.

We further provide supplementary evidence that the sin-company compensation premium is especially large when the company locates in religious areas and when the manager is talented. We lastly rule out poor corporate governance as a possible alternative explanation to our results. While many studies examined how social reputation alters individual behavior, relatively few studies ever considered the role of social reputation in the labor market. Our study fills the gap and provides evidence that a manager's concern on her personal social image is also an important factor in the executive labor market.

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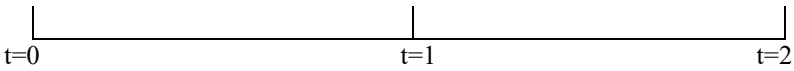
Appendix A. Variable Definition

Variable	Definition
TC	The total compensation grant (in million dollars) reported in the Execucomp database (variable TDC1). Note that the definition of TDC1 changed in 2006. Before 2006, it includes salary, bonus, other compensation, restricted stock grant, long-term incentive plan, all other compensation, and the Black-Scholes value of option awards. After 2006, it includes salary, bonus, non-equity incentive plan, fair value of option awards, fair value of stock awards, total portion of deferred earnings reported as compensation, and all other compensation.
Director Pay	The total compensation received as a director as reported in Execucomp (variable TOTAL_SEC).
Sin Mgr	A dummy variable that takes a value of one if the manager works in a sin company.
Sale	Total sales of a firm (Compustat data item SALE).
MB	Ratio of the market value of assets to the book value of assets, where the market value of assets is defined as the book value of assets (Compustat data item AT) minus the book value of equity (Compustat data item CEQ) plus the market value of equity (Compustat data item PRCC_F*CSHO).
Volatility	Annualized standard deviation of the monthly stock returns during a fiscal year.
Lagged Cash Flow	The one-year lagged value of the ratio of operating cash flow (Compustat data item OANCF) to total assets.
ROA	The return on assets, computed as net income (Compustat data NI) to total assets.
Mgr Age	The age of a manger in a specific year.
CEO	The dummy variable taking value of one if the manager is a CEO.
CEO Tenure	Number of years that the current CEO has worked as a CEO in the firm.
Mgr Ability	The managerial ability measure of Demerjian et al. (2012), which captures how efficiently managers generate revenues from given economic resources based on the data envelopment analysis (DEA) approach.
Religiosity	The number of religious adherents divided by the total population in a state, measuring the proportion of religious people in the population. The data are drawn from the state-level "Churches and Church Membership" files in American Religion Data Archive.
Inside Dir	The number of inside directors divided by board size. The data are drawn from IRRC.

Figure 1. Time Line of Events



The company sets the compensation contract: fixed wage *w* and a share (*b*) of firm value. The manager decides to work for a sin company or a non-sin company.

The market wage and firm value realized. The manager decides to stay with the firm or to join the labor market and renegotiate her contract.

The market wage and firm value realized again. If the manager works for a sin company at *t=1*, her wage drops by amount *c* at *t=2* as the reputation loss.

Table 1. Propensity Score Matching Samples

We construct a matching sample for the 516 sin-company firm-year observations with the following steps. First, we estimate the propensity score by estimating a logistic model in which the value of dependent variable is coded as one if it is a sin company, and zero otherwise. Five variables are selected as the independent variables, including natural logarithm of sales (*Ln(Sale)*), market-to-book ratio (*MB*), annual stock return volatility (*Volatility*), one-year lagged cash flow scaled by assets (*Lagged Cash Flow*), and financial leverage ratio (*Leverage*). We estimate this model with all firm-year observations from 1993 to 2014 available in Compustat and Execucomp databases. Panel A presents the propensity score estimating model. Reported in the parentheses are p-value derived with White's robust standard error clustered at firm level. Second, for each of the 516 sin-company observations, we find a matching company that (i) is drawn from the same year and from a non-sin industry, and (ii) has a propensity score that is closest to the score of the given sin company. As such, our firm-level sample consists of 1,032 firm-year observations. Panel B presents the pair-wise comparison between the sin-company observations and their non-sin company matching observations.

Panel A. Logistic Model

Independent Variable	Dependent Variable = Prob(Sin Company=1)
Intercept	-10.307***
	(0.000)
Ln(Sale)	0.217***
	(0.000)
MB	0.197***
	(0.000)
Volatility	-0.198
	(0.377)
Lagged Cash Flow	1.856***
	(0.000)
Leverage	3.687***
	(0.000)
N	33,243
Hosmer and Lemeshow Goodness-of-Fit Test	30.672***

Panel B. Sample Comparison

		Mean			
	N	Sin Company Sample	Non-sin Company Sample	Difference in Mean	P-value of Difference in Mean
Sale	516	12053.7	11374.2	679.5	0.400
MB	516	2.110	1.974	0.136	0.123
Volatility	516	0.356	0.358	0.002	0.875
Lagged Cash Flow	516	0.090	0.085	0.005	0.350
Leverage	516	0.345	0.350	-0.005	0.685

Table 2. Summary Statistics

Our sample consists of 5,317 manager-year observations, derived from the managers working in 1,032 firm-year from 1993 to 2014. Panel A presents the summary statistics of this manager-year sample. *Sin Mgr* is a dummy variable that equals one if a manager works in a sin company; zero otherwise. *TC* is the total compensation as the *TDC1* variable reported in the Execucomp database. Firm characteristics include sales (*Sale*), market-to-book ratio (*MB*), annualized monthly stock volatility (*Volatility*), one-year lagged cash flow (*Lagged Cash Flow*), and financial leverage (*Leverage*). *Mgr Age* is the age of a manger; this information we only are able to gather for 3,503 observations. Panel B presents the summary statistics when we limit the sample to only the CEO-year observations. *CEO Tenure* is the number of years since a CEO has been in office. Please see Appendix A for detailed definitions of the variables.

Variable	N	Mean	Std Dev	Q1	Median	Q3
Panel A. Whole Sample						
TC ($millions)	5317	3.044	3.686	0.779	1.662	3.613
Sin Mgr	5317	0.503	0.500	0.000	1.000	1.000
Sale ($millions)	5317	11809.9	26189.7	1035.8	2749.1	11070.7
MB	5317	2.026	1.389	1.154	1.514	2.415
Volatility	5317	0.358	0.206	0.209	0.317	0.454
Lagged Cash Flow	5317	0.088	0.078	0.046	0.081	0.124
Leverage	5317	0.239	0.171	0.106	0.205	0.352
Mgr Age	3503	53.032	7.841	48.000	53.000	58.000
Panel B. CEO Sample						
TC ($millions)	1,032	6.002	5.314	1.668	3.951	9.123
Sin Mgr	1,032	0.500	0.500	0.000	0.500	1.000
Sale ($millions)	1,032	12165.0	27957.4	913.8	2634.2	10511.9
MB	1,032	2.070	1.424	1.164	1.562	2.471
Volatility	1,032	0.355	0.207	0.209	0.313	0.448
Lag Cash Flow	1,032	0.089	0.080	0.046	0.083	0.127
Leverage	1,032	0.232	0.172	0.103	0.190	0.342
Mgr Age	1,032	55.930	7.153	51.000	56.000	61.000
CEO Tenure	1,032	5.831	6.387	1.000	4.000	8.000

Table 3. Sin Manager Director Compensation

This table presents evidence that sin company managers receive lower pay for their director services. Variable *Director Pay* is the sum of director compensation taken across all directorships held by a manager; $Sale^{DIR}$ (sales), MB^{DIR} (market-to-book ratio), ROA^{DIR} (return on assets), $Leverage^{DIR}$ (leverage) are firm characteristics of the company in which a manager serves as a director; and $Sale^{MGR}$, MB^{MGR}, ROA^{MGR}, $Leverage^{MGR}$ are firm characteristics of a manager's own company. In the parenthesis is t-statistics computed with White's robust standard error clustered at the firm level. The intercept term is not reported to save space. *, **, *** indicate significance at 10%, 5%, and 1%, respectively. Please see Appendix A for detailed definitions of the variables.

	Dependent Variable = Ln(1+Dir Pay)	
	(1)	(2)
Sin Mgr	-0.020**	-0.020**
	(-2.96)	(-2.90)
$Ln(Sale^{DIR})$	0.019***	0.018***
	(37.75)	(33.48)
MB^{DIR}	0.002	0.002
	(1.38)	(1.24)
ROA^{DIR}	0.029**	0.033**
	(2.73)	(3.27)
$Leverage^{DIR}$	-0.004	-0.001
	(-0.48)	(-0.14)
$Ln(Sale^{MGR})$		-0.000
		(-0.43)
MB^{MGR}		-0.001
		(-1.61)
ROA^{MGR}		-0.022
		(-1.63)
$Leverage^{MGR}$		-0.010**
		(-3.35)
Ln(1+Mgr Pay)		0.005***
		(4.24)
Industry Effect	Yes	Yes
Year Effect	Yes	Yes
N	6375	6375
Adj R^2	0.230	0.232

Table 4. Sin Company Executive Pay Premium

This table presents evidence that sin company managers receive premiums in their compensation. *Sin Mgr* is a dummy variable that equals one if a manager works in a sin company; zero otherwise. *TC* is the total compensation as the *TDC1* variable reported in the Execucomp database. Firm characteristics include sales (*Sale*), market-to-book ratio (*MB*), annualized monthly stock volatility (*Volatility*), one-year lagged cash flow (*Lagged Cash Flow*), and financial leverage (*Leverage*). *Mgr Age* is the age of a manger. *CEO* is a dummy variable that takes value of one if a manager is CEO, and zero otherwise. *CEO Tenure* is the number of years since a CEO has been in office. Reported in the parenthesis are t-statistics computed with White's robust standard error clustered at the firm level. The intercept term is not reported to save space. *, **, and *** indicate significance at 10%, 5%, and 1%, respectively.

	Dependent Variable = Ln(TC)				
	(1)	(2)	(3)	(4)	(5)
Independent Variable				CEO=1	CEO=1
Sin Mgr	0.217***	0.213**	0.201**	0.280***	0.260***
	(3.40)	(2.05)	(2.04)	(2.95)	(2.69)
Ln(Sale)	0.414***	0.446***	0.467***	0.441***	0.444***
	(21.00)	(25.23)	(22.37)	(21.08)	(21.42)
MB	0.097***	0.063***	0.053**	0.019	0.018
	(4.55)	(3.31)	(2.29)	(0.69)	(0.64)
Volatility	0.053	-0.159	-0.298	-1.055*	-1.123*
	(0.32)	(-0.80)	(-1.36)	(-1.74)	(-1.79)
Lagged Cash Flow	-0.365	-0.487	-0.215	-0.079	0.016
	(-1.20)	(-1.64)	(-0.66)	(-0.20)	(0.04)
Leverage	-0.033	-0.376*	-0.154	-0.011	0.060
	(-0.15)	(-1.81)	(-0.66)	(-0.03)	(0.15)
Ln(Mgr Age)			-0.049		-0.639
			(-0.34)		(-1.64)
CEO			0.854***		
			(19.42)		
Ln(CEO Tenure)					0.069*
					(1.93)
Industry Effect		Yes	Yes	Yes	Yes
Year Effect		Yes	Yes	Yes	Yes
N	5317	5317	3503	1032	1032
Adj R^2	0.315	0.385	0.503	0.419	0.411

Table 5. Asymmetric Pay-for-Performance Sensitivity

This table presents the asymmetric pay-for-performance sensitivity (PPS) of sin companies. We estimate PPS by regressing the total managerial pay (*TC*) on the change in shareholder value (as measured with market value of equity, *MVE*), where both dependent and independent variables are scaled by the lagged shareholder value (*LagMVE*). The estimated coefficient thereby captures the amount of compensation a manager is rewarded in response to a per dollar increase in shareholder value. The squared term $(\Delta MVE/LagMVE)^2$ is included in the model to capture the asymmetry in PPS — a nonlinear relationship indicates that the magnitude of PPS varies with the level of the change in firm performance. In the parenthesis is t-statistics computed with White's robust standard error clustered at the firm level. The intercept term is not reported to save space. *, **, and *** indicate significance at 10%, 5%, and 1%, respectively.

	Dependent Variable = TC/LagMVE *100				
	(1)	(2)	(3)	(4)	(5)
Independent Variable			Sin Mgr=1	Sin Mgr=0	
ΔMVE/LagMVE	0.077***	0.105***	0.092***	0.081***	0.088***
	(9.07)	(12.77)	(5.85)	(5.67)	(8.44)
$(\Delta MVE/LagMVE)^2$			0.049**	0.002	0.002
			(2.16)	(0.09)	(0.10)
$(\Delta MVE/LagMVE)^2$*Sin Mgr					0.048**
					(2.32)
Sin Mgr					-0.009
					(-0.87)
Ln(Sale)		-0.038***	-0.034***	-0.041***	-0.038***
		(-21.12)	(-12.53)	(-15.91)	(-21.38)
MB		-0.012***	-0.009***	-0.014***	-0.011***
		(-6.23)	(-3.95)	(-3.87)	(-5.95)
Volatility		0.167***	0.160***	0.168***	0.160***
		(8.91)	(5.43)	(5.91)	(7.89)
Lagged Cash Flow		0.132***	0.114**	0.127**	0.126***
		(3.36)	(1.97)	(2.31)	(3.24)
Leverage		0.193***	0.212***	0.160***	0.190***
		(8.31)	(6.17)	(4.86)	(8.24)
Industry Effect		Yes	Yes	Yes	Yes
Year Effect		Yes	Yes	Yes	Yes
N	5317	5317	2675	2642	5317
Adj R^2	0.031	0.315	0.320	0.333	0.317

Table 6. Alternative Matched Samples

In this table we estimate the baseline model with alternative matched samples. Specifically, we perform the analysis with the following steps. First, we form a matching candidate portfolio for each of the sin company observations as follows. For each sin-company observation, we construct an initial matching candidate portfolio by including all observations from the same year and belong to the firms in non-sin industries. Then we compute the distance score between a sin company and a candidate firm as follows.

$$Distance\ \ Score = \sum\nolimits_k \left| \frac{x_k^{SIN} - x_k^{MAT}}{x_k^{SIN}} \right|,$$

where subscript *k* refers to a certain firm characteristics variable. For each sin company, we rank the candidates in the initial portfolio by this distance score and keep only the bottom quartile as our matching candidate portfolio. As a result, the non-sin companies in the matching candidate portfolio are similar to sin companies in the sense that their firm characteristics are of similar values. Second, for each sin-company observation we draw one matching firm randomly from its matching candidate portfolio. We pool together the sin companies and their matching firms as a matched sample, and estimate the regression model as in Table 4 to obtain one set of estimated coefficients. We repeat the second step (drawing matching firms and obtaining estimates) for 1,000 times and obtain 1,000 sets of estimated coefficients. In the table we report the mean and the t-statistics based on the estimated coefficients. We use two sets of firm characteristics to compute distance score. For *Distance Score 1*, we include *Sale* and *MB*. For *Distance Score 2*, we include *Sale*, *MB*, *Volatility*, *Lagged Cash Flow* and *Leverage*. The intercept term is not reported to save space. *, **, and *** indicate significance at 10%, 5%, and 1%, respectively, based on the standard errors computed with the 1,000 estimates.

	Mean of the Estimated Coefficients of					
Criterion for Forming Matching Candidate Portfolio	Sin Mgr	Ln(Sale)	MB	Volatility	Lagged Cash Flow	Leverage
Distance Score 1	0.322***	0.434***	0.088***	0.181***	-0.393***	-0.359***
Distance Score 2	0.306***	0.434***	0.090***	0.220***	-0.269***	-0.292***

Table 7. Religiosity

This table presents evidence that sin company pay premium varies with religiosity. The dummy variable *High Religiosity* takes the value of one if a company is incorporated in a state that is in the top tertile as ranked by the ratio of religious adherence. To differentiate the effects for alternate combinations of the values of *Sin Mgr* and *High Religiosity*, we construct indicator variables *I(Sin Mgr=i & High Religiosity=j)* that is equal to one if *Sin Mgr* equals *i* and *High Religiosity* equals *j*, where *i* and *j* take values of either 0 or 1. To avoid the dummy variable trap, the variable *I(Sin Mgr=0 & High Religiosity=0)* is omitted. The intercept term is not reported to save space. *, **, and *** indicate significance at 10%, 5%, and 1%, respectively.

	Dependent Variable = Ln(TC)		
	(1)	(2)	(3)
Independent Variable			CEO=1
I(Sin Mgr=1 & High Religiosity =1)	0.303**	0.246**	0.430***
	(2.18)	(2.02)	(2.70)
I(Sin Mgr=1 & High Religiosity =0)	0.184*	0.131	0.188
	(1.91)	(1.33)	(1.45)
I(Sin Mgr=0 & High Religiosity =1)	0.044	-0.059	0.045
	(0.69)	(-0.88)	(0.54)
Ln(Sale)	0.423***	0.468***	0.452***
	(19.87)	(22.05)	(18.66)
MB	0.110***	0.055**	0.018
	(5.15)	(2.40)	(0.63)
Volatility	0.016	-0.366	-1.195***
	(0.07)	(-1.64)	(-4.66)
Lagged Cash Flow	-0.297	-0.329	-0.127
	(-0.87)	(-0.98)	(-0.25)
Leverage	-0.492**	-0.143	0.012
	(-2.33)	(-0.61)	(0.03)
Ln(Mgr Age)		-0.055	-0.626*
		(-0.39)	(-1.81)
CEO		0.849***	
		(19.19)	
Ln(CEO Tenure)			0.069*
			(1.94)
Industry Effect	Yes	Yes	Yes
Year Effect	Yes	Yes	Yes
N	5317	3503	1032
Adj R^2	0.430	0.513	0.486

Table 8. Manager Ability

This table presents evidence that sin companies pay premium varies with managerial ability. We measure manager's ability with the one-year lagged value of the managerial ability score developed by Demerjian, Lev, and McVay (2012). The dummy variable *High Mgr Ability* takes the value of one if a company is in the top tertile as ranked by the managerial ability score. To differentiate the effects for alternate combinations of the values of *Sin Mgr* and *High Mgr Ability*, we construct indicator variables *I(Sin Mgr=i & High Mgr Ability=j)* that is equal to one if *Sin Mgr* equals *i* and *High Religiosity* equals *j*, where *i* and *j* take values of either 0 or 1. To avoid the dummy variable trap, the variable *I(Sin Mgr=0 & High Mgr Ability=0)* is omitted. In the parenthesis are t-statistics obtained with White's robust standard errors, clustered at the firm level. The intercept term is not reported to save space. *, **, and *** indicat significance at 10%, 5%, and 1%, respectively.

	Dependent Variable = Ln(TC)		
	(1)	(2)	(3)
Independent Variable			CEO=1
I{Sin Mgr=1 & High Mgr Ability=1}	0.289**	0.355**	0.455**
	(2.04)	(2.29)	(2.49)
I{Sin Mgr=1 & High Mgr Ability=0}	0.189	0.197	0.226
	(1.52)	(1.42)	(1.46)
I{Sin Mgr=0 & High Mgr Ability=1}	0.082	0.167**	0.057
	(1.58)	(2.42)	(0.53)
Ln(Sale)	0.432***	0.465***	0.443***
	(19.48)	(19.88)	(15.68)
MB	0.080***	0.080***	0.051*
	(4.21)	(3.85)	(1.91)
Volatility	-0.038	-0.111	-0.223
	(-0.24)	(-0.66)	(-0.86)
Lagged Cash Flow	-0.416	-0.142	0.380
	(-1.22)	(-0.34)	(0.64)
Leverage	-0.306	0.070	0.646*
	(-1.41)	(0.26)	(1.65)
Ln(Mgr Age)		0.001	-0.339
		(0.01)	(-0.76)
CEO		0.835***	
		(16.60)	
Ln(CEO Tenure)			0.052
			(1.23)
Industry Effect	Yes	Yes	Yes
Year Effect	Yes	Yes	Yes
N	4242	2627	782
Adj R^2	0.455	0.577	0.508

Table 9. Managerial Entrenchment

This table presents evidence against the notion that sin companies pay premium represents managerial entrenchment. Specifically, we measure the management-friendliness of a board with the proportion of board seats taken by the inside directors (i.e. the members of the management team). The dummy variable *High Inside Dir* takes the value of one if a company is in the top tertile as ranked by the proportion of inside directors. To differentiate the effects for alternate combinations of the values of *Sin Mgr* and *High Inside Dir*, we construct indicator variables *I(Sin Mgr=i & High Inside Dir=j)* that is equal to one if *Sin Mgr* equals *i* and *High Inside Dir* equals *j*, where *i* and *j* take values of either 0 or 1. To avoid the dummy variable trap, the variable *I(Sin Mgr=0 & High Inside Dir=0)* is omitted. The intercept term is not reported to save space. *, **, and *** indicate significance at 10%, 5%, and 1%, respectively.

	Dependent Variable = Ln(TC)		
	(1)	(2)	(3)
Independent Variable			CEO=1
I{Sin Mgr=1 & High Inside Dir=1}	0.168	0.130	0.153
	(1.55)	(1.27)	(0.98)
I{Sin Mgr=1 & High Inside Dir=0}	0.192*	0.184*	0.241*
	(1.89)	(1.78)	(1.73)
I{Sin Mgr=0 & High Inside Dir=1}	-0.017	-0.027	-0.127
	(-0.20)	(-0.27)	(-1.21)
Ln(Sale)	0.470***	0.482***	0.469***
	(30.85)	(22.41)	(19.26)
MB	0.074***	0.075***	0.049
	(3.15)	(3.06)	(1.58)
Volatility	0.162	0.147	-0.050
	(0.92)	(0.97)	(-0.19)
Lagged Cash Flow	-0.306	-0.201	0.032
	(-0.97)	(-0.55)	(0.05)
Leverage	0.014	0.195	0.598*
	(0.09)	(0.93)	(1.69)
Ln(Mgr Age)		0.107	-0.294
		(0.67)	(-0.60)
CEO		0.874***	
		(16.12)	
Ln(CEO Tenure)			0.056
			(1.29)
Industry Effect	Yes	Yes	Yes
Year Effect	Yes	Yes	Yes
N	3915	2679	720
Adj R^2	0.463	0.606	0.505