

The Impact of the Securities Litigation on the Directors' Labor Market

Eric Helland*

Abstract:

The US has relied on a dual system of enforcement of securities laws with private parties bringing class actions on behalf of injured shareholders while the SEC brings civil penalties or even criminal sanctions against corporate officers for fraudulent misreporting. The merits of the shareholder litigation have been extensively examined but the impact of this litigation on the directors' labor market has been less studied. If directors are unwilling to serve due to the threat of shareholder litigation, it is possible that increased litigation will harm corporate governance regardless of whether the typical case is meritorious. In this study, I examine the hypothesis that liability risk reduces potential directors' willingness to serve (as measured by exit or entry); increases the compensation required to procure service; and reduces director income (as directors avoid liability). I find that litigation risk has an impact on the labor market for outside directors. When I control for the endogenous nature of litigation risk, I find that directors receive lower income from the directors' labor market both in terms of retainers and fees and lower option-based compensation. The total effect is approximately a 6% reduction in income for a one case rise in litigation risk. On the demand side, a rise in litigation risk appears to have no exogenous effect on the likelihood of entry or exit from corporate boards, which suggests that although individual directors may be unwilling to serve, replacements are in ready supply. The replacements, however, do require additional compensation. A rise in litigation risks of one case per year increases retainer and meeting fees by .675%. Total overall director compensation for each board is increased by about \$1,073.

* Eric Helland, Department of Economics, Claremont-McKenna College and RAND. The author wishes to thank Maria Lohner and Paul Van DeVeneter

1. Introduction

In 2002 Congress enacted the Sarbanes-Oxley Act in response to the corporate governance failures at Enron and WorldCom as well as numerous others. SOX and the accompanying changes in regulation from the Securities and Exchange Commission (SEC) and the NYSE and NASDAQ were motivated by a belief that there were widespread and pervasive failures in corporate governance in the US. These perceived failures have refocused attention on an older debate about the methods used by the SEC to enforce securities regulation. The US has relied on a dual system of enforcement with private “attorneys general” bringing class actions on behalf of injured shareholders while the SEC brings civil penalties or even criminal sanctions against corporate officers for fraudulent misreporting (Hensler et al. 2000). In fact, as Grundfest (1994) notes, theoretically dual enforcement regimes can enhance deterrence through a beneficial division of labor with private attorneys going after firms that have the resources to provide compensation while conserving the resources of the SEC to go after corporate fraud when insufficient assets exist to allow for private litigation

These benefits materialize only if the cases brought by private attorneys are meritorious. If private attorneys are bringing cases without foundation to induce a settlement, so-called frivolous litigation, the system is detrimental to overall welfare by increasing costs without an offsetting benefit. The merits of the shareholder litigation has been extensively examined elsewhere with mixed results (see for example Alexander, 1991, Helland, 2006, Fich and Shivdasani, 2007 and cites therein) but what has been less studied is the impact of this litigation on the directors’ labor market.

The literature, with one important exception, has focused on the transfer between shareholders resulting from a settlement while largely ignoring the other potential costs of

shareholder litigation. In particular one of the chief concerns about shareholder litigation is the fear of litigation will reduce the supply of potential directors.¹ Anecdotes suggest that CEOs are increasingly unwilling to serve on other corporate boards (CITE) for fear of litigation. If directors are unwilling to serve due to the threat of shareholder litigation, it is possible that increased litigation will harm corporate governance regardless of whether the typical case is meritorious. If directors who are only tangentially related to the fraud are negatively impacted by the litigation, we may find fewer qualified directors serving on boards as litigation risk rises.

One important piece of information comes from Black et al. (2004) who examine the liability exposure of outside directors. They find that suits against outside directors are rare, but more importantly, payments by outside directors are virtually nonexistent. They find three instances in which outside directors are forced to pay a settlement from their own assets. The results cast doubt on the anecdotes. If liability is essentially zero, why would potential directors avoid boards with liability risk?

It is possible that there are other costs resulting from litigation. Black et al. measure only settlement cost to a director from civil litigation. In particular the reputational cost of a fraud accusation, even without out-of-pocket damage payments, may deter potential directors from service. Yet for outside directors who served on boards accused of fraud, Helland (2006) finds that their number of outside directorships actually increases. Although this may be due to the targeting of firms who also have active directors, it is possible that being sued actually enhances a director's career prospects.² The finding does suggest that the typical director does not suffer reputational harm from shareholder litigation.³

¹ For example James Cox, *Boards Find it Harder to Fill Hot Seats: Scandals, Legal Threats Make Many Decline Slot*, USA Today, July 21, 2002 and *What Directors Think*, *Corporate Board Magazine*, 2002 in which 42% of directors said they have declined a board position because of litigation risk. Both are cited in Black et al (2004).

² As one outside director noted to the author "No one is anyone who hasn't been sued by Milberg Weiss."

³ See also Fich and Shivdasani (2007) who find that shareholder litigation is associated with a reputational penalty.

In this study I examine two aspects of the directors' labor market: the supply side (potential directors themselves) and the demand side (corporations). Specifically I examine the hypothesis that liability risk reduces potential directors' willingness to serve (as measured by exit or entry), increases the compensation required to procure service, and reduces director income (as directors avoid liability). If shareholder suits are directed against imperfectly indemnified directors, we should observe a decrease in willingness to serve, an increase in exit, an increase in pay, and a decrease in overall income. If directors are perfectly indemnified we should see essentially no impact. Derived from Compact Disclosure and IRRC, the data covers the years 1992 to 2004 and contains 2,149 firms and 12,975 directors.

One potential problem is that shareholder litigation is potentially endogenous. For example, if directors are accused of fraud, they may receive higher pay to compensate for the cost of being sued or because the firm's lax internal controls allowed both the fraud and higher director pay observed in the data. For this reason I utilize a quasi-experiment created by the Private Securities Litigation Reform Act of 1995 (PSLRA). The PSLRA raised the standard of what constitutes securities fraud, provided mechanisms for lead plaintiffs to “rein in their lawyers,” and provided sanctions for frivolous litigation (Choi and Thompson, 2006). One aspect of the PSLRA that is particularly important for this study is that different Circuits have very different interpretations of the Act, which results in different likelihoods of litigation across Circuits (Pritchard and Sale, 2005). Due to this variation, the location of the corporations' headquarters and the differential importance of that location once the PSLRA is implemented determines litigation risk, which allows identification of litigation risk independent of the other factors determining exit, entry, and pay.

I find that litigation risk has an impact on the labor market for outside directors. Specifically, I find that as litigation risk rises, directors are less likely to join a new board but also are less likely to exit a board they currently serve on. Moreover when I control for the endogenous nature of litigation risk, I find that directors receive lower income from the directors' labor market both in terms of retainer and fees and options. The total effect is approximately a 6% reduction in income for a one case rise in litigation risk. On the demand side, a rise in litigation risk appears to have no exogenous effect on the likelihood of entry or exit from corporate boards, which suggests that although individual directors may be unwilling to serve, replacements are in ready supply. The replacements, however, do require additional compensation. A rise in litigation risks of one case per year increases retainer and meeting fees by .6%, approximately \$214. In total overall director compensation is decreased by about 1%, approximately \$1,073.

In the next section I discuss the quasi-experiment generated by the PSLRA in greater detail. Section 3 describes the data sources, Section 4 describes the results, and Section 5 concludes.

2. Overview of the PSLRA

Securities cases whether public or private typically arise from alleged intentional violations of disclosure regulations that prohibit directors and officers from making statements with the “intent to deceive, manipulate, or defraud” shareholders about the “financial condition, solvency and profitability” of a firm.⁴ Federal securities laws have two major fraud enforcement methods. The first is for the federal government, under the auspices of SEC, to file civil charges or recommend that the Department of Justice file criminal charges in a case. Alternatively or simultaneously, private attorneys can file civil actions, usually on behalf of the class of defrauded

⁴ The Securities and Exchange Commission (SEC) administers these requirements under the Securities Act of 1933 and the Securities Exchange Act of 1934, which specifies what information corporations are required to disclose to investors. This study does not include derivative suits brought on behalf of all shareholders because they are relatively rare and there are too few in the sample period to estimate the impact on reputation. For evidence on derivative suits, see Ferris et al (2002).

shareholders, against the company in question and/or its officers and directors. Usually a private attorney brings these actions on behalf of a group of shareholders and forms the injured shareholders into a class action.

Exactly what counts, or should count, as fraud and the requirements necessary to prove fraud has been the subject of considerable debate.⁵ In the early 1990s, Congress, as part of the Contract with America, put forward a series of proposals to curb perceived abuse by plaintiffs' attorneys. These proposals ultimately became the Private Securities Litigation Reform Act of 1995 (PSLRA). The Act, which was passed over President Clinton's veto, contained three major mechanisms aimed at curbing frivolous litigation. The Act enacted a series of procedural changes designed to serve as a barrier to bring a securities class action. The Act also provided several avenues that gave more control to lead plaintiffs and required judges to sanction lawyers for frivolous litigation (See Choi and Thompson, 2006).

2.1 Literature on PSLRA's Impact

The impact of the PSLRA on securities litigation has been the subject of a growing body of empirical work. The general conclusion is that the PSLRA made it more difficult to bring certain types of litigation but its impact on overall litigation levels is unclear. Specifically the Act has not reduced the number of filings and, in fact, the total volume of litigation may have increased in the 10 years following the PSLRA (see Miller et al. (2006) and Perino (2003)). Some of the increase is explained by the passage of the Securities Litigation Uniform Standards Act (SLUSA) in 1998. SLUSA effectively forms a federal preemption of state securities litigation and seems to have moved cases from state to federal court.

⁵ See Alexander (1991) who finds that settlement amounts are not correlated with measures of the lawsuit's merits. See also Simon and Dato (1996), which criticizes Alexander's methodology.

Although the volume of cases does not appear to have declined, there do appear to be fewer small-value claims leading to higher settlement values (see Choi, 2007). Choi attributes this to the higher standard necessary to bring a claim. Small-value cases may not be profitable for attorneys after the PLSRA. There is also evidence that the likelihood of a dismissal has increased (see Johnson et al. (2007) and Choi (2007)).

For the purposes of this study, one particularly interesting change resulting from the PSLRA is due to geography. The passage of the Act in 1995 was simply the first step. The PSLRA's impact on the litigation risk of outside directors is ultimately determined by judicial interpretation of the Act. As Pritchard and Sale (2005) point out, this is particularly important in the case of the PSLRA since Congress was unable to agree on specific language dealing with the higher barrier to bringing litigation. Congress left the key provisions of the Act deliberately vague. Pritchard and Sale examine whether this vagueness lead to different outcomes in different jurisdictions. Their study examines motions to dismiss, which are determinate to the outcome of securities class actions. Discovery is effectively bared until the motion is ruled on, which makes the cost of the suit to defendants negligible until the ruling. Prichard and Sale find that if defendants fail to get a case dismissed, the case invariably settles.

In effect, the decision on a motion to dismiss is the outcome of the case. In light of this, Pritchard and Sale examine the difference in the success of motions to dismiss across Federal Circuits. Their findings are consistent with the conventional wisdom from practitioners: the 9th Circuit's interpretation of PSLRA has made it a relatively tougher venue while the 2nd Circuit's interpretation has made it a relatively easier venue. Specifically they find that cases are more likely to be dismissed in the 9th Circuit and less likely in the 2nd Circuit.

Table 1 shows the number of cases by Circuit by year for the number of security class actions in the data. It is clear that the 9th and 2nd Circuits stand out as having the largest number of cases. While there is no obvious change in the trend of the total number of filings around the passage of the PSLRA, it is possible that the number of filings mask other trends in the data.

2.1 Litigation Risk and Corporate Location

For the purposes of this study, the more important aspect is the litigation risk faced by outside directors and the PSLRA's impact on that risk. Table 2 presents the proportion of outside directors in the data that have been named in lawsuit at some point during the sample period. The unit of observation in the table is the director-firm so that a director on the ABC Company who served on the board from 1994 to 2000 and faced three lawsuits dealing with conduct in the years 1998 and 1999 would be listed as having been sued. The Circuit is determined by the Circuit in which the corporation is headquartered. Given that securities class actions effectively can be filed in any number of jurisdictions, and until 1998 in state courts, it is an open question as to whether the location of the corporate headquarters is in any way informative about litigation risk. Table 2 suggests that litigation risk does vary by corporate location. A fact that motivates the quasi-experiment on litigation risk used to estimate the model.

2.2 PSLRA as a quasi-experiment

Estimating the impact of liability risk on the directors' labor market is complicated by the fact that many of the same factors that determine exit from a board, a willingness to take new positions and pay also determine the likelihood of litigation. For example, if governance is weak at a firm, directors may be paid more than comparable firms and litigation risk maybe higher. The typical solution to such endogeneity problems is an instrument that is correlated with the

endogenous variable but uncorrelated with the dependent variable. In this case the instrument is the Circuit in which the corporate headquarters is located interacted with a post-PSLRA indicator. Thus the model is identified by the relative changes in liability risk in different Circuits pre- and post-PSLRA. The basic assumption of the identification strategy is that the corporate headquarters are not chosen because of litigation risks.

3. Data Description

3.1 Directors data

The data on outside directors comes from two principle sources. The first is the Investor Responsibility Research Center (IRRC) database of officers and directors. The IRRC data contains information on committee membership, a detailed classification of directorships and biographical information on directors of S&P 1500 firms for the fiscal years 1996-2004. Because the PSLRA went into effect in 1995 the estimation requires data on these firms and directors prior to 1995. To that end, I extend the IRRC data back to 1992 using the Disclosure database and SEC filings. The number of directorships and number of firms are presented in Table 3. I use only firms in the IRRC data when extending back the sample. Thus there are fewer firms in 1992 because a number of the S&P1500 firms did not exist. Firms which were not in the S&P1500 in 1996-2004 are not included.

3.2 Director Pay and Option Value Construction

The data on director compensation is derived from Execucomp. Execucomp contains data on the annual cash retainer and fees paid to directors for meeting attendance. It also provides the number of options granted to directors. Using Core and Guay (2002), I construct the value of these option grants. There are several components of director compensation missed in the IRRC data. Neither the IRRC data nor Execucomp contains information on meeting fees for committee attendance. Neither do the data sources contain information on director pension plans or other

insurance. Finally, other compensation, such as use of corporate aircraft, is also not recorded. As such the estimates on director compensation in this study should be taken as a lower bound.

3.3 Litigation Data

The primary source for private fraud allegations is Securities Class Action Alert (SCAA) and its Internet iteration the Securities Class Action Services (SCAS). The SCAA was a litigation reporter that contains a list of private securities litigation data between 1985 and the 2002. The SCAA data contained a fairly comprehensive listing of private securities cases regardless of their disposition. It did not consistently contain pending cases. The SCAS is an electronic database that contains regularly updated information on securities cases both pending and resolved. The sample contains over 4,000 cases from the combined sources.

The SCAS data contains information on the parties named in the case. While this information is available for the vast majority of the cases, it is missing in a non-trivial number of cases and for cases in the SCAA. The information on named parties was supplemented with information from the Securities Class Action Clearinghouse at Stanford University, which contains an extensive list of pending securities class action cases. While these three sources are not an exhaustive list of all fraud allegations made against specific directors between 1992 and 2004, the list appears to be fairly comprehensive.

I utilize two measures of litigation risk. Both have limitations. The first is simply the total number of cases filed against the director resulting from a given year of service. Thus a director who serves on a board for a year covered by the class period of the lawsuit is listed as having been sued. The second measure is the eventual size of the settlement fund resulting from the case weighted by the market equity of the company. The first measure is problematic because it does not differentiate the outcome of the case. The second is problematic because the lag in litigation

resolution means that many cases near the end of the sample are still pending and hence have no settlement fund when the sample is constructed. With no obvious reason to prefer one measure to the other, I estimate the model using only the number of suits resulting from a given year of service and re-estimate the model including both the number of cases and the total size of the eventual settlement fund.

3.4 Other Data Sources

The other control variables in the study, such as the firm characteristics, returns and the location of the corporate headquarters, are derived from Compustat and CRSP. The summary statistics for the sample measure both at the level of the individual director and company are presented in Table 4.

4. Results

4.1 Specification

The dataset is analyzed in two ways: by director and by company. The director dataset is constructed by assuming that the first year after 1992 that a director serves as an outside director in the dataset is the year the director enters the labor market and the last year of service prior to 2004 marks the director's exit. During the intervening years, a director is included in the data regardless of whether they are currently serving on any boards. Using this "director labor force" panel I can measure a director's overall litigation risk, measured by the number of cases filed against a director for any board he or she serves on during that year and whether a director exits a board, exits the labor market, joins a new board and the income derived from overall board service.

I utilize four measures of director's board-generated income. First is salary plus meeting fees and cash bonuses. The second is the Black-Scholes value of the director's options from board

service. I assume that exit from the board terminates all non-exercised options as option contracts for officers and directors typically end six months after exit. I also use the total salary of directors including both options and fees. Finally I examine the ratio of fees to total compensation to examine the power of the incentives facing a director.

The model is estimated using two specifications. The first assumes that litigation risk is exogenous and is estimated using a fixed effects model,

$$y_{it} = \delta_i + \gamma_t + \alpha_1 \textit{litigation risk} + \beta_1 X_{it} + \varepsilon_{it}$$

where y_{it} is either the probability of exit by director i in year t , the probability director i joins a new board in year t , the probability of director i being in the directors' labor market in year t , or the income measures for director i in year t , δ_i are director fixed effects, γ_t are year fixed effects and X_{it} are the determinates of the labor market outcomes. In general the controls are designed to capture the director's experience and attractiveness as a director both for continued service on current boards and to other boards considering him or her for future service. X_{it} contains the number of other outside boards director i serves on, director i 's average term of service for all boards he or she serves on, the number of boards director i serves on in which he or she is an independent director, the number of boards in which the director is related to the CEO, and the director's age.

Because the fixed-effects terms remove all director characteristics that are constant throughout the sample such as race and gender, I confine myself to director controls that change during the director's time in the labor market. In particular I include the number of boards the director has served on in which they have also had a prior disjoint appointment (i.e. one separated by more than one year), the number of times the director has served as a non-employee chairman of the board, individual measures for the number of committee chairmanships the director holds on

the audit, compensation or governance committees, and if the director was on any of these committees as a member.

I also include indicator variables for whether the director has served as the president, chief executive officer, chief operating officer, chief financial officer, treasurer, vice president, or an executive vice president in his or her career.

Several characteristics of a director's relationship with a firm are also included. I include an indicator variable if the director owns less than 1% of the stock on any of the boards he or she serves on, a similar indicator variable if the director has sold professional services to a company for which he/she is a board member (such as legal services or accounting advice), and whether the director's positions involve interlocking directorships with another board (for example the CEOs of two companies serving on each others boards). Finally, I include indicator variables for directors who are employed by a charity.

I also include an interaction between the director's profession and a post SOX indicator variable. The professions include academics, lawyers, professional directors, other CEOs, consultants, relatives of the CEO and accountants, who following the passage of SOX are anecdotally in much higher demand.

Finally, I include several characteristics of the companies on which the director serves. I include the average tenure of the CEOs in the director's portfolio of board positions, the average net sales of these companies, the average return on assets, the average level of research and development spending relative to sales, the proportion of companies in the director's portfolio that restated their earnings and the average size of those restatements, the average market-to-book ratio of these firms, and finally the average return on equity of the companies on which the director serves.

The results from these regressions are provided in Table 5, which contains the results for the number of exits, new boards joined, and whether the director is in the labor market. The two measures of liability are included in the Table 5. To conserve space all other results are omitted. I cannot reject the null that litigation risk has an impact on director labor market outcomes.

Table 6 presents the results on director income from the board service. The amount of income derived from retainers and meeting fees is negatively correlated with litigation risk. Since the log of income is used, the results indicate that an increase in liability risk of one case reduces the director's income by .075% or approximately \$270 dollars. The impact on total compensation from options is negatively correlated with the size of the settlement relative to the value of market equity. A one dollar increase in weighted settlement fund results in a .032% decrease in total salary coming from options. This result carries over to total salary regressions with a one dollar increase in litigation risk as measured by the weighted settlement fund resulting in a .023% reduction, about \$350 dollars. Finally increased litigation risk appears to move compensation toward more high-powered incentives with the ratio of fee-based salary to total salary declining in liability risk measured by the number of cases but increasing in weighted settlement fund.

The impact of liability risk on the supply side of the directors' market appears relatively small. The obvious problem of interpreting these results in light of potential endogeneity, however, is clear. Are these directors tainted by having been sued or are they staying out of the directors' market due to risk? In the next section I turn to the results from the quasi-experiment.

4.3 Supply Side IV Results: Directors

The second model treats liability risk as endogenous using the Circuit in which the company is headquartered and the interaction between Circuit and an indicator variable as capturing the PSLRA period as an instrument for liability risk. The model is given by

$$y_{it} = \delta_{1i} + \gamma_{1t} + \alpha_1 \overline{\text{litigation risk}_{it}} + \beta_1 X_{it} + \varepsilon_{it}$$

$$\text{litigation risk}_{it} = \delta_{2i} + \gamma_{2t} + \lambda_{2k} \text{Circuit}_{itk} + \lambda_{2k} \text{Circuit}_{itk} * \text{PSLRA}_t + \beta_2 X_{it} + v_{it}$$

where the variables retain their meaning from above but $\overline{\text{litigation risk}_{it}}$ is the predicted value of liability exposure from the first stage regression and Circuit_{itk} is the proportion of director i 's board seats headquartered in Circuit k in year t where k is a variable for each of the 11 Circuits plus DC. The $\text{Circuit}_{itk} * \text{PSLRA}$ is the Circuit proportions multiplied by a PSLRA indicator variable.

The results from the first stage regression estimating litigation risk are presented in Table 7. The differences in litigation risk across Circuits are readily apparent from the different magnitudes of the coefficients on the Circuit percentages. The post PSLRA effect is captured in the interactions between the proportions of a director's boards with headquarters in each Circuit with the PSLRA indicator. Consistent with previous research I find that the PSLRA is associated with a rise in litigation risk but that rise is not equally distributed across corporate HQs. An F-test of the joint significance of the Circuit percentages and the PSLRA interactions is able to reject the null of no effect at any reasonable significance level. The instruments are less effective at capturing the weighted settlement amount. The F-test, although still significant at any conventional level, is smaller than for the number of cases regression and only the 8th and 12th Circuit have a statistically significant impact on the size of the settlement fund. Moreover only the 8th Circuit proportion interacted with the PSLRA indicator is statistically significant. In general the quasi-experiment is better suited to explaining the number of cases faced by a director in a given year rather than the size of the settlement fund.

4.31 Entry, Exit and Participation

Table 8 panel A presents the results for the exit model estimated controlling for the endogeneity of litigation risk. A rise in litigation risk reduces the number of boards a director

accepts in a year. The impact is quite large. The average director in my sample joins .06 boards per year. A one case rise in litigation risk reduces that number by .08 boards, over a 100% decrease. The result is robust to the inclusion of the size of the settlement fund weighted by market equity.

Table 8 panel B presents the results on board exits. For all directors in the sample, an increase in litigation risk actually reduces the likelihood of exit. In this case, increased litigation risk causes a statistically significant decrease in the likelihood a director exits the board. I estimate three different version of the model. The first examines exits for all potential directors in the sample but includes those who are not currently serving on a board. The second specification estimates the model only for those directors currently serving on at least one board and finally in column 3, I estimate the model including the size of the settlement as an additional variable.

In all three specifications the impact of increases in litigation risk is negative and significant suggesting that directors are less willing to exit a particular board when litigation risk rises. The probability of exit by an outside director is about 3% a year suggesting that a one case increase in litigation risk reduces the likelihood of exit by half. One explanation for the result is that once directors have found the compensation for their board service sufficient to compensate them for the additional litigation risk, firms are more willing to retain them in light of others' unwillingness to serve. Panel C presents the probability that a director participates in the labor market by serving on any boards is also reduced by litigation risk. Only about 8% of the sample exits the directors' labor market entirely during the sample. In both specifications, including only the number of cases resulting from a year of service or including the eventual size of the settlement, the impact on increased litigation risk is negative and significant. A one case increase in litigation risk reduces the likelihood a director is in the directors' labor market at all by .5. This is almost a 50% decrease in

the likelihood an individual serves on any board. The results suggest three effects for individuals considering service on a board. Increased liability risk from serving on the board makes it less likely they will join that board and less likely they will serve in the directors' labor market at all.

4.32 IV Results for Directors' Income

The results from the regression of director's income are provided in Table 9. The first measure of director's income includes only income resulting from meeting fees and retainers. The second measure includes only income derived from options and the final measure is the total income from both sources. The top panel of Table 9 presents the result for all directors regardless of whether they are in the labor market or not. Those directors not in the labor market are assumed to have no income from the directors' labor market. The impact of liability risk on all three measures of income is negative and significant. A one case increase in liability risk per year results in a 6.21% decrease in director's income from fees and retainers. Since the average director earns \$36,000 a year from fees and retainers in the directors' labor market this amounts to a \$2,160 decrease in income for each director per year. The impact on income from options is similar. A one case increase in litigation risk reduces option income by 3.5% or approximately \$4,140 dollars. For total compensation both from options and fees, a one case increase in liability risk reduces income by 6.25% or about \$7,930 dollars. The results are consistent with the earlier findings on the labor force and board participation. Directors appear to be avoiding boards with higher litigation risks and are accepting lowering incomes as a consequence. Interestingly the impact of liability risk on the ratio of the fees to total pay is not statistically significant. Although directors are accepting lower income in response to litigation risk, they do not appear to be adjusting the risk profile of that compensation in response to liability risk.

Panel B presents the income results only for directors in the labor market. In this fee-based income appears to slightly higher, about .14% or 67 dollars a year relative to the \$48,000 in fees directors who participate in the market earn from fees. The impact of litigation risk for directors who participate in the market is not significant for the other measures of income. The results suggest that the reduction in director's income is largely caused by entirely avoiding service as a director when litigation risk rises and those directors who remain in the market receive higher income although the result is negligible in magnitude.

Panel C presents the results for the income measures for all directors including both measures of litigation risk. The results on the number of cases are largely unchanged but an increase in the size of the settlement fund weighted by market equity increases director income for each of the measures. A one standard deviation in weighted settlement value increases fee-based compensation by 2.23% or about \$800 dollars. For options-based compensation, a one standard deviation increase increases income by 1.13% about \$1367 dollars. For total compensation, a one standard deviation increase in liability risk as measured by the weighted size of the settlement fund increases total director income by 1.71% or about \$2,616. There are several possible interpretations for the divergent signs on the two measures of litigation risk. One possibility is that they measure different dimensions of litigation risk. The weighted settlement differs from zero only if the number of lawsuits is greater than one. This would suggest that cases that ultimately result in no payment deter directors from taking positions in the first place but that as the magnitude of potential cases increases, directors require additional compensation. In essence, each potential suit reduces a directors' willingness to serve, but as the value of the potential case grows, the director demands additional income.

The results from the supply side of the directors' labor market suggest that directors are less willing to join new boards as litigation risk increases, are less willing to participate on any boards as litigation risks increase, and are willing to forgo income as the number of cases for a given year of board service increases. In addition directors are less likely to exit a board as litigation risk increases and demand higher overall income when the value of each potential suit rises. I now turn to the demand side of the directors' labor market, namely the firms hiring directors.

4.4 The Demand Side: Corporate Responses to Litigation Risk

To determine the impact on the demand side I estimate the model treating the firm year as the unit of observation. The specification is

$$y_{jt} = \delta_j + \gamma_t + \alpha_1 \text{litigation risk}_{jt} + \beta_1 X_{jt} + \varepsilon_{jt}$$

where *litigation risk_{jt}* is the number of cases per year that named at least one outside director on the board of company *j* in year *t*. The other independent variables retain their meaning from above but are now measured for corporation *j* in year *t*. *X_{ij}* includes the average term of service for the current board, the average age of the board, the size of the board, whether the board is SOX compliant, the proportion of inside directors on the board, an indicator variable that equals one if the board has a majority of insiders, the tenure of the CEO, and the company's net sales, return on assets, return on equity, research and development spending weighted by sales, whether the firm restated earnings and the size of the restatement, and the market-to-book ratio.

Table 10 presents the results without controlling for the potential endogeneity of litigation risk. I am unable to reject the null of no relationship between the number of exits or entry from the board and litigation risk. For litigation risk measured by the weighted settlement fund, both the number of exits and entries are negatively related to the size of litigation risk. Table 10 panel B presents the results on director pay again without controlling for endogeneity. The impact of

litigation risk is only statistically significant for option and total pay, which are reduced by litigation risk.

4.41 LIML Results.

The instrumental variables estimation for the company level data is estimated by

$$y_{jt} = \delta_{1j} + \gamma_{1t} + \alpha_1 \overline{\text{litigation risk}}_{jt} + \beta_1 X_{jt} + \varepsilon_{jt}$$

$$\text{litigation risk}_{jt} = \delta_{2j} + \gamma_{2t} + \lambda_{1k} \text{Circuit}_{jtk} * \text{PSLRA}_t + \beta_2 X_{jt} + v_{jt}$$

where X_{jt} contains the same variables as above. Since the model includes company fixed effects and too few companies change the location of their headquarters during the sample period to estimate Circuit fixed effects, I include only the indicators for the Circuit in which company is headquartered interacted with the PSLRA indicator.

The first stage results are presented in Table 11. While none of the individual Circuits is individually significant, the F tests are able to reject the null of all instruments equaling zero at conventional levels. One problem is that conventional levels may be insufficient. Stock, Wright and Yogo (2002) suggest the F statistic should exceed 10 before two stage least squares is used. In the case of two endogenous regressors the F test should be higher. For this reason I utilize the limited information maximum likelihood (LIML) estimator that performs better when instruments are potentially weak (see Stock, Wright and Yogo, 2002).

The results for the number of new entrants and exits from the board are presented in Table 12. In none of the specifications am I able to reject the null of no relationship between litigation risk and entry or exit. The results for the director-pay regressions are presented in Table 12 panel B. The results indicate a statistically significant and positive relationship between retainers and meeting fees and litigation risk by both measures. A one case increase in litigation risk increases fee-based compensation by .675% or about \$214 per year. The impact on total pay is somewhat

larger. A one case increase in litigation risk produces a .521% increase in overall compensation or about \$1,073 dollars per director.

Column 5 presents the results including both measures of litigation risk. An increase in the number of cases still increases compensation, but the weighted size of the settlement fund also has a statistically significant and positive impact on fee-based pay. A one standard deviation in the size of the weighted settlement amount increases pay by 2.5% or about \$775 dollars are year. The impact on option-based compensation and overall compensation is not statistically significant but both measures of litigation risk have a positive and significant impact on the ratio of fee-based compensation to overall compensation indicating that as litigation risk rises compensation of directors shifts away from options. The results are consistent with the hypothesis that firms that face a higher risk of litigation against outside directors must pay those directors more to induce them to serve on the board.

5. Conclusions

Litigation risk is typically ranked one of the most important concerns of corporate directors. It is so important that surveys of directors typically identify litigation risk as one of the reasons for refusing board service. An exodus of directors is potentially a concern for corporate governance. If qualified directors leave the directors' labor market due to litigation risk, it is possible that securities litigation, while designed to improve corporate governance, might actually harm it. Yet the general concern among directors about litigation risk is not matched with actual risk. Black et al. (2004) find only a handful of cases in which directors paid judgments out of their own assets. In general, companies completely indemnify their directors against financial loss.

One possible explanation is that directors lose more than just assets in a securities class action — they lose reputation. Yet Helland (2006) finds that directors do not suffer a labor market

penalty from serving on a board accused of fraud unless the case results in a settlement in the top quartile of payments. This again suggests that the harm to a director's reputation from a typical securities case is nonexistent.

In this study I examine the labor market impact of litigation risk using a quasi-experiment created by the PSLRA. Because different Circuits interpreted the PSLRA differently, the PLSRA changed litigation risk differentially depending the location of the corporate headquarters. Using sample of over 2,000 companies and 12,000 directors, I estimate the impact of litigation risk. For the supply side, I find that a rise in litigation risk reduces the number of boards a director accepts in a year by over a 100%. By contrast, an increase in litigation risk actually reduces the likelihood of exit. A one case increase in litigation risk reduces the likelihood of exit by .07, which is almost double the mean likelihood of exit. The probability that a director participates in the labor market by serving on any boards is also reduced. A one case increase in litigation risk reduces the likelihood a director is in the directors' labor market at all by .5. This is almost a 50% decrease in the likelihood an individual serves on any board.

The impact of this decreased willingness to participate in the directors' labor market and decreased willingness to join a board is not offset by decreased exits for boards on which a director is currently serving. Overall director income resulting from board service falls. For fee-based income, such as meeting fees and retainers, a one case increase in litigation risk reduces a director's income by \$2,160 per year. The impact on income from options is similar. A one case increase in litigation risk reduces option income by 3.5% or approximately \$4,140 dollars. For total compensation from both options and fees, a one case increase in liability risk reduces income by 6.25% or about \$7,930 dollars.

On the demand side I find no comparable impact on willingness to serve on a board or on exits, but I do find that as litigation risk increases compensation rises. A one case increase in litigation risk increases fee-based compensation by .675% or about \$214 per year. The impact on total pay is somewhat larger. A one case increase in litigation risk produces a .521% increase in overall compensation or about \$1,073 dollars per director.

The supply and demand side results suggest that potential directors are less willing to serve on boards and willing to forgo income to avoid litigation risk. The impact on corporations, however, appears to be somewhat smaller. One interpretation of this effect is that potential directors, even those who may not actually join the directors' labor market, keep directors' salaries from rising to meet the risk premium demand by those I observe exiting the market. The second possibility is that board size is potentially endogenous. Faced with difficulty of filling board seats, companies can simply reduce the size of the board rather than replacing an exiting director.

The policy implications of these findings require some context. If the typical case is not meritorious, then one might view these results as further evidence in support of limiting shareholder class actions. If, however, even some cases are meritorious, the magnitude of the increase in director pay estimated in this study would not appear to raise a concern about a mass exodus from corporate boards in response to litigation risk.

References

- Alexander, Janet (1991) "Do the Merits Matter? A Study of Settlement in Securities Class Actions," 43 *Stanford Law Review*, 497.
- Black, Bernard, Brian R. Cheffins and Michael Klausner (2004) "Outside Director Liability" Stanford Law and Economics Olin Working Paper No. 250
- Bohn, John and Stephen Choi (1996) "Fraud in the New Issue Market: Empirical Evidence on Securities Class Actions," *University of Pennsylvania Law Review*, 14:903-982
- Booth, James R. and Daniel N. Deli (1996) "Factors affecting the number of outside directorships held by CEOs," *Journal of Financial Economics*. 40:81-104.
- Choi, Stephen (2007) "Do the Merits Matter Less After the Private Securities Litigation Reform Act?" *Journal of Law, Economics and Organization*, forthcoming.
- Choi, Stephen and Robert Thomas (2006) "Securities Litigation and its Lawyers: Changes During the First Decade After the PSLRA," *Columbia Law Review*. 106:1489-1533.
- Core, John and Wayne Guay (2002) "Estimating the Value of Employee Stock Option Portfolios and Their Sensitivities to Price and Volatility," *Journal of Accounting Research*, 40(3):613-630.
- Ferris, Stephen, Robert Lawless and Anil K. Makhija, (2008) "Derivative lawsuits as a corporate governance mechanism: Empirical evidence on board changes surrounding filings," *Journal of Financial and Quantitative Analysis*, forthcoming.
- Fich, Eliezer and Anil Shivdasani (2007) "Financial Fraud, director reputation and shareholder wealth," *Journal of Financial Economics*. 86:306-336.
- Hensler, Deborah, Nicholas Pace, Bonita Dombey-Moore, Beth Biddens, Jennifer Gross and Erik Moller. (2000) *Class Action Dilemmas: Pursuing Public Goals for Private Gain*. RAND Institute for Civil Justice.
- Grundfest, Joseph A. (1994) "Disimplying Private Rights of Action Under the Federal Securities Laws: The Commission's Authority." *Harvard Law Review*, 107:961-1024.
- Helland, Eric (2006) "Reputational Penalties and the Merits of Class Action Securities Litigation," *Journal of Law and Economics*. 49(2):365-395.
- Johnson, Marilyn, Karen Nelson and Adam Pritchard (2007) "Do the Merits Matter More? The Impact of the Private Securities Litigation Reform Act," *Journal of Law, Economics and Organization*, forthcoming.
- Miller, Ronald (2006) *NERA Economic Consulting, Recent Trends in Shareholder Class Action Litigation: Beyond the Mega-Settlements, Is Stabilization Ahead?*

Niehaus, Greg and Greg Roth (1998) “Insider Trading, Equity Issues and CEO Turnover in Firms Subject to Securities Class Actions,” Memo.

Perino, Michael (2003) “Did the Private Securities Litigation Reform Act Work?” *University of Illinois Law Review*. 913-

Prichard, A.C. and Hillary Sale (2005) “What Counts as Fraud? An Empirical Study of Motions to Dismiss Under the Private Securities Litigation Reform Act,” *Journal of Empirical Legal Studies*, 2(1):125-149.

Simon, Leonard and William Dato (1996) “Legislating on a False Foundation: The Erroneous Academic Underpinnings of the Private Securities Litigation Reform Act of 1995,” *San Diego Law Review*. 33:959-

Stock, J., H. Wright and M. Yogo (2002) “A survey of weak instruments and weak identification in generalized method of moments.” *Journal of Business and Economic Statistics*. 20:518-529.

Table 1: Number of Cases by Circuit

This table displays the number of cases filed by the Circuit and year in which the case was filed. The number of cases is derived from the SCAA/SCAS databases.

year	1st Circuit	2nd Circuit	3rd Circuit	4th Circuit	5th Circuit	6 th Circuit	7th Circuit	8th Circuit	9th Circuit	10th Circuit	11th Circuit	DC Circuit	Total
1992	0	8	4	0	2	1	2	1	9	0	1	0	28
1993	4	15	7	2	5	3	4	1	20	2	8	0	71
1994	12	54	36	6	14	14	8	15	75	7	7	2	250
1995	9	30	39	2	17	9	4	5	78	6	14	1	214
1996	11	39	23	5	9	3	4	3	58	6	24	1	186
1997	13	40	25	3	12	10	14	9	70	6	19	2	223
1998	18	60	37	11	29	11	3	11	75	13	36	2	306
1999	14	39	45	15	23	16	13	8	60	10	27	3	273
2000	19	356	62	19	15	16	12	10	69	8	32	0	618
2001	17	75	22	9	15	11	11	9	78	6	15	0	268
2002	20	75	28	11	23	20	13	20	55	10	22	1	298
2003	9	43	23	16	15	12	8	4	36	7	17	0	190
2004	5	51	25	11	18	7	12	8	73	5	20	2	237
Total	151	885	376	110	197	133	108	104	756	86	242	14	3,162

Table 2: The Proportion of Directors Sued by Circuit

The table lists the proportion of directors' positions that are named in a securities lawsuit during the sample period 1992-2004. The Circuit is based on the location of the corporate headquarters.

Location of Corporate Headquarters	Director not named in a lawsuit	Director named in a lawsuit
1st Circuit	88.8%	11.2%
2nd Circuit	83.7%	15.3%
3rd Circuit	89.9%	10.1%
4th Circuit	92.8%	7.2%
5th Circuit	88.4%	11.6%
6th Circuit	88.5%	11.5%
7th Circuit	91.8%	8.2%
8th Circuit	90.9%	9.1%
9th Circuit	89.0%	11.0%
10th Circuit	86.0%	14.0%
11th Circuit	90.7%	9.3%
DC Circuit	81.1%	18.9%
Total	86.3%	13.7%

Table 3: The Total Number of Directors and Firms

The table lists the annual number of firms and directors for the combined Disclosure and IRRC sample. The IRRC sample covers the S&P1500 for the years 1996-2004. The Disclosure sample is used to extend the IRRC data back to 1992.

Year	Number of Directors	Number of Companies
1992	2783	682
1993	7035	1600
1994	7936	1740
1995	9287	1880
1996	10455	2021
1997	11334	2073
1998	12975	2149
1999	12749	2059
2000	12071	1924
2001	11901	1914
2002	9827	1531
2003	9919	1515
2004	9748	1476

Table 4: Descriptive statistics

Panel A: Director sample		
Variable	Mean/SE	Source
Number of exits from boards	.0385 (.1925)	IRRC/Disclosure
Number of new boards joined	.0681 (.252)	IRRC/Disclosure
Does the director serve on any boards? (In the labor market)	.9176 (.275)	IRRC/Disclosure
Income from meeting fees and retainer	36.1306 (35.7323)	Execucomp
Income from options	121.7777 (532.4912)	Execucomp
Total income	153.3906 (536.0346)	Execucomp
Ratio of income from fees to total compensation	.5779 (.4223)	Execucomp
Settlement fund weighted by sales	.0147 (1.4611)	SCAA/SCAS
Number of lawsuits during the year in which the director is a named defendant.	.2249 (.921)	SCAA/SCAS
Observations	89941	
Panel B: Company sample		
Number of exits from the board	.1704 (.5064)	IRRC/Disclosure
Number of new entrants to the board	.3211 (.7123)	IRRC/Disclosure
Meeting fees and annual retainer	32.1005 (18.8215)	Execucomp
Black Scholes value of options granted to directors	151.8683 (613.3419)	Execucomp
Total director pay	175.7169 (563.823)	Execucomp
Ratio of fees to total pay	.6052 (.3882)	Execucomp
Settlement fund weighted by sales	.0388 (2.8489)	SCAA/SCAS
Number of lawsuits during the year in which the director is a named defendant.	.6589 (1.1638)	SCAA/SCAS
Observations	8549	
Standard deviations in parentheses		

Table 5: Results for director level OLS regressions

	Probability of Exit-sued	Probability of Exit-sued	Probability of Entry-sued	Probability of Entry-sued	Probability in market-sued	Probability in market-sued
Number of cases	-0.002 (0.002)	-0.002 (0.002)	-0.002 (0.002)	-0.002 (0.002)	-.00417 (0027)	-.00048 (.0027)
Settlement fund/market equity		-0.000 (0.000)		0.000 (0.001)		00029 (.0005)
Observations	89941	89941	89941	89941	89941	89941
Number of Directors	14348	14348	14348	14348	14348	14348
R-squared	0.07	0.07	0.10	0.10	0.35	0.34
Standard errors in parentheses						
* significant at 10%;						
** significant at 5%;						
*** significant at 1%						

Table 6 Director level OLS regression results

	Ln(Fee based salary)	Ln(Fee based salary)	Ln(Option Salary)	Ln(Option Salary)	Ln(Total Salary)	Ln(Total Salary)	Ln(Ratio of Fees to Total Salary)	Ln(Ratio of Fees to Total Salary)
Number of cases	-0.075** (0.032)	-.0747*** (.032)	0.046 (0.044)	0.046 (0.044)	-0.050 (0.043)	-0.050 (0.043)	-0.009** (0.004)	-0.009** (0.004)
Settlement fund/market equity		-.017*** (.0066)		-0.032*** (0.009)		-0.023*** (0.009)		0.006*** (0.001)
Observations	89941	89941	89941	89941	89941	89941	67434	67434
Number of Directors	14348	14348	14348	14348	14348	14348	13130	13130
R-squared	0.22	0.22	0.19	0.19	0.19	0.19	0.04	0.04
Standard errors in parentheses								
* significant at 10%;								
** significant at 5%;								
*** significant at 1%								

Table 7: First stage director level instrumental variables results

	First Stage Number Suits	First Stage Settlements
Proportion of Corporate HQs in Circuit 1	-0.118*** (0.033)	0.030 (0.160)
Proportion of Corporate HQs in Circuit 2	-0.097*** (0.022)	-0.038 (0.105)
Proportion of Corporate HQs in Circuit 3	-0.035 (0.028)	0.009 (0.136)
Proportion of Corporate HQs in Circuit 4	-0.177*** (0.032)	0.015 (0.155)
Proportion of Corporate HQs in Circuit 5	-0.052** (0.022)	-0.057 (0.108)
Proportion of Corporate HQs in Circuit 6	-0.152*** (0.027)	-0.226* (0.133)
Proportion of Corporate HQs in Circuit 7	-0.187*** (0.028)	-0.064 (0.137)
Proportion of Corporate HQs in Circuit 8	-0.144*** (0.029)	0.752*** (0.143)
Proportion of Corporate HQs in Circuit 9	-0.335*** (0.025)	0.059 (0.120)
Proportion of Corporate HQs in Circuit 10	0.039 (0.041)	0.082 (0.200)
Proportion of Corporate HQs in Circuit 11	-0.220*** (0.033)	-0.165 (0.158)
Proportion of Corporate HQs in DC Circuit	-0.277*** (0.059)	0.714** (0.288)
Circuit 1*PSLRA	0.039* (0.022)	0.002 (0.106)
Circuit 2*PSLRA	0.066*** (0.014)	0.031 (0.066)
Circuit 3*PSLRA	0.035** (0.018)	0.009 (0.086)
Circuit 4*PSLRA	0.038** (0.019)	0.010 (0.091)
Circuit 6*PSLRA	0.034** (0.017)	-0.013 (0.084)
Circuit 7*PSLRA	-0.007 (0.018)	-0.007 (0.086)
Circuit 8*PSLRA	0.036* (0.018)	0.156* (0.089)
Circuit 9*PSLRA	0.052*** (0.016)	0.003 (0.075)
Circuit 10*PSLRA	0.039 (0.025)	0.011 (0.120)
Circuit 11*PSLRA	0.024 (0.020)	0.013 (0.099)
DC Circuit*PSLRA	0.208*** (0.038)	0.073 (0.183)
Observations	89941	89941
R-squared	0.10	0.00
F test: All Instruments=0	21.65	5.05
Prob > F	0.00	0.00
Standard errors in parentheses		
* significant at 10%; ** significant at 5%;		
*** significant at 1%		

Table 8 Director level data instrumental variable results
Panel A

	Probability of Entry	Probability of Entry
Number of cases	-0.087*** (0.031)	-0.087*** (0.031)
Settlement fund/market equity		-0.007 (0.013)

Panel C: Number of director exits

	All Directors	Only in labor Market	Including Settlement amount
	Probability of Exit	Probability of Exit	Probability of Exit
Number of cases	-0.117*** (0.025)	-0.050* (0.026)	-0.117*** (0.025)
Settlement fund/market equity			0.003 (0.011)

Panel C: Director labor force participation

	Probability in labor market-sued	Probability in labor market
Number of cases	-.4976*** (.0414)	-.502*** (.0464)
Settlement fund/market equity		.0939*** (.0194)

Observations: 89,941
Number of Directors: 14,348
Standard errors in parentheses
* significant at 10%;
** significant at 5%;
*** significant at 1%
Observations: 89,941

Table 9: Instrumental variables results for director income

	Log(Income from Cash)	Log(Income from Options)	Log(Total Income)	Ratio of Salary to Total Pay
Panel A: All Directors				
Number of cases	-6.213*** (0.483)	-3.497*** (0.563)	-6.245*** (0.596)	0.044 (0.042)
Settlement fund/market equity				
Observations	89941	89941	89941	67434
Number of Directors	14348	14348	14348	13130
Panel B Only Directors in the labor Market				
Number of cases	0.140** (0.055)	-0.012 (0.138)	-0.019 (0.094)	0.033 (0.033)
Settlement fund/market equity				
Observations	45306	45306	45306	45306
Number of Directors	10342	10342	10342	10342
Panel C: Including Settlement Size				
Number of cases	-6.248*** (0.589)	-3.515*** (0.590)	-6.272*** (0.651)	0.044 (0.042)
Settlement fund/market equity	1.530*** (0.251)	0.775*** (0.251)	1.175*** (0.277)	0.044 (0.034)
Observations	89941	89941	89941	67434
Number of Directors	14348	14348	14348	13130
Standard errors in parentheses				
* significant at 10%;				
** significant at 5%;				
*** significant at 1%				

Table 10: Company level data OLS results

Panel A

	Number of Exits	Number of Exits	New Entrants	New Entrants
Number of cases	0.013 (0.012)	0.013 (0.012)	-0.011 (0.017)	-0.011 (0.017)
Settlement fund/market equity		-0.062*** (0.013)		-0.062*** (0.023)

Panel B

	Log(Cash Pay)	Log(Cash Pay)	Log(Option Pay)	Log(Option Pay)	Log(Total Pay)	Log(Total Pay)	Ratio of Pay to Total Pay	Ratio of Pay to Total Pay
Number of cases	0.010 (0.009)	0.010 (0.009)	-0.009 (0.031)	-0.009 (0.031)	0.001 (0.020)	0.002 (0.020)	0.003 (0.006)	0.003 (0.006)
Settlement fund/market equity				-0.252*** (0.026)		-0.237*** (0.016)		0.014* (0.008)

Observations: 8594

Number of companies: 1604

Standard errors in parentheses

* significant at 10%;

** significant at 5%;

*** significant at 1%

Table 11: Instrumental variable company level data first stage results

	First Stage Number Suits	First Stage Settlements
Proportion of Corporate HQs in Circuit 1 *PSLRA	0.162 (0.314)	-0.008 (0.102)
Proportion of Corporate HQs in Circuit 2*PSLRA	-0.100 (0.307)	0.008 (0.099)
Proportion of Corporate HQs in Circuit 3 *PSLRA	0.020 (0.311)	-0.012 (0.101)
Proportion of Corporate HQs in Circuit 4 *PSLRA	0.365 (0.319)	0.017 (0.103)
Proportion of Corporate HQs in Circuit 5*PSLRA	0.185 (0.311)	-0.010 (0.101)
Proportion of Corporate HQs in Circuit 6 *PSLRA	0.020 (0.311)	-0.007 (0.101)
Proportion of Corporate HQs in Circuit 7 *PSLRA	0.111 (0.313)	-0.006 (0.101)
Proportion of Corporate HQs in Circuit 8 *PSLRA	0.065 (0.312)	-0.005 (0.101)
Proportion of Corporate HQs in Circuit 9 *PSLRA	-0.010 (0.308)	-0.004 (0.100)
Proportion of Corporate HQs in Circuit 10*PSLRA	0.229 (0.321)	-0.004 (0.104)
Proportion of Corporate HQs in Circuit 11 *PSLRA	-0.154 (0.318)	0.164 (0.103)
Proportion of Corporate HQs in Circuit 12*PSLRA	0.317 (0.354)	-0.005 (0.115)
Observations	8594	8594
F test: All Instruments=0	3.95	2.64
Prob > F	0.00	0.00
Standard errors in parentheses		
* significant at 10%; ** significant at 5%; *** significant at 1%		

Table 12 Instrumental variables results company level data
 Panel A: Results of the number of new entrants and exits from the board

	Probability of Entry-sued	Probability of Entry-Industry FE
Number of cases	0.121 (0.159)	0.078 (0.175)
Settlement fund/market equity		-0.382 (0.684)
	Probability of Exit-sued	Probability of Exit-Industry FE
Number of cases	0.107 (0.202)	0.232 (0.231)
Settlement fund/market equity		1.210 (0.899)
Observations: 8594		
Number of companies: 1604		
Standard errors in parentheses		
* significant at 10%; ** significant at 5%; *** significant at 1%		

Panel B: Results on director salary

	Log(Cash Pay)	Log(Option Pay)	Log(Total Pay)	Ratio	Log(Cash Pay)	Log(Option Pay)	Log(Total Pay)	Ratio
Number of cases	0.675*** (0.203)	0.220 (0.285)	0.521** (0.257)	0.042 (0.051)	0.695*** (0.251)	-0.336 (0.474)	-1.444 (2.704)	0.141* (0.084)
Settlement fund/market equity					2.573** (1.044)	-3.316 (2.156)	-9.850 (13.813)	0.743** (0.370)
Observations: 8594								
Number of Directors: 1597								
Standard errors in parentheses								
* significant at 10%; ** significant at 5%; *** significant at 1%								