From Boardroom to Courtroom: Gender Diversity and Legal Strategies *

Preliminary Draft

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Abstract

We examine how female board representation affects firms' litigation strategy as defendants. Exploiting the SEC's 2010 Proxy Disclosure Enhancements Rule, which induced larger increases in female directors at initially all-male boards, we show that greater female representation increases the likelihood that disputes are resolved before court filing. Evidence from predicted case strength from a Lasso logit model and liability avoided suggests sharper pre-filing screening: gender-diverse boards terminate weaker disputes earlier, leaving a stronger set of cases to proceed. A model of endogenous information acquisition rationalizes these findings, linking female representation to greater information precision and more efficient legal decision-making under uncertainty.

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Keywords: Board composition; litigation processes; settlement; information acquisition

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1 Introduction

Boards of directors shape some of the firm's most relevant decisions. A large body of literature shows that directors appoint and monitor top management, approve major strategic actions, and constrain managerial discretion (Fama and Jensen 1983; Weisbach 1988; Hermalin and Weisbach 1998; Hillman and Dalziel 2003). A growing branch of that literature studies whether board composition affects how these tasks are carried out, with particular attention to gender diversity (Adams and Ferreira 2009; Triana et al. 2014; Post and Byron 2015; Carter et al. 2017; Hsu et al. 2025). Yet we know much less about whether board gender composition changes how firms respond to high-stakes legal disputes. This paper studies that question in the context of corporate litigation.

Litigation is a natural setting for examining board decision-making under uncertainty. Legal disputes are costly, outcomes are noisy, and the relevant choices are strategic: the firm can settle quickly, contest the claim, or continue to litigate as information arrives. These choices are especially important for defendant firms, which must decide how aggressively to contest liability and when to resolve disputes before incurring further costs. The setting, therefore, allows us to ask a broader governance question: Does greater female board representation change how firms acquire information, assess risk, and screen cases before deciding whether to settle or proceed?[1]

Understanding this margin is important for at least two reasons. First, litigation is economically significant. It absorbs managerial attention, generates legal expenditures, and can materially affect firm value even when cases are resolved before judgment. Second, women remain underrepresented on corporate boards, particularly in the most influential positions. If board gender diversity affects how firms handle uncertain, high-stakes decisions, then its consequences extend beyond representation per se to the quality of corporate decision-making. Litigation provides a particularly useful laboratory because it makes the trade-off between caution, information acquisition, and strategic selection particularly relevant.

Empirically, however, estimating the effect of female board representation on litigation strategy is difficult. Firms facing greater litigation risk may adjust board composition in response, creating reverse causality. More broadly, board structure is endogenous to firm characteristics that are hard to observe and may also influence legal outcomes. A simple comparison between firms with more and fewer female directors is therefore unlikely to recover a causal effect.

To address these concerns, we exploit the U.S. Securities and Exchange Commission's 2010 Proxy Disclosure Enhancements Rule. The reform required firms to disclose whether, and if so how, diversity is considered in director nominations. Because firms entered the reform with very different board compositions, the rule generated stronger pressure to adjust boards at firms that had previously appointed

[1] As an illustration of the stakes involved, consider Boeing's behavior following the 737 MAX crashes in 2018 and 2019. The company faced numerous investigations and lawsuits. Under the leadership of the then board, Boeing initially chose to contest several of these claims. However, following a change in leadership and substantial board restructuring, including the addition of more female directors, the company reversed its approach, opting to settle major cases rather than pursue litigation aggressively.

no female directors. We use this differential exposure to identify plausibly exogenous changes in female board representation. In the data, firms with initially all-male boards experienced substantially larger post-reform increases in the number of female directors, consistent with the idea that the disclosure requirement operated through reputational and governance pressure rather than through direct quotas or financial penalties.

Our empirical analysis focuses on cases in which the firm appears as the defendant. This restriction is deliberate. Plaintiff-side litigation reflects heterogeneous motives that are often difficult to compare across firms, including strategic filing behavior, forum selection, and broader business objectives. Defendant behavior is more comparable: once a claim arises, the firm must decide whether to settle early, continue to contest the case, or allow it to proceed to trial. Focusing on defendant firms, therefore, provides a cleaner setting in which to study how governance affects legal strategy.

We document three main findings. First, greater female board representation increases the likelihood that disputes are resolved before any court filing. The effect is strongest among firms that entered the reform with all-male boards, precisely the firms for which the disclosure rule generated the largest change in board composition. Second, the effect is concentrated at the pre-filing stage. Rather than improving courtroom performance mechanically, gender-diverse boards appear to change which disputes proceed at all. Third, evidence based on predicted case strength and liability avoided points to sharper screening. Firms with more female directors are more likely to terminate weaker matters earlier, leaving a stronger set of cases to continue through the litigation process.

This selection-based interpretation is central to the paper. A natural concern is that more female representation simply makes boards uniformly more cautious, leading them to settle more often regardless of case quality. Our evidence is inconsistent with that purely indiscriminate view. Using a Lasso-logit procedure to estimate defendants' predicted winning probabilities from observable case characteristics, we show that the increase in early resolution is concentrated among weaker disputes, while stronger matters are more likely to continue. In other words, gender-diverse boards do not merely retreat from litigation; they appear to sort more effectively between cases that should be dropped and cases that merit continued defense. This distinction matters for interpreting the role of gender diversity in governance. The results point to improved screening and decision quality, not only to greater conservatism.

To rationalize these findings, we develop a parsimonious model of endogenous information acquisition. Before deciding whether to settle or litigate, the board can invest in learning about case quality. Higher precision improves the decision but is costly. In the model, boards that place greater weight on avoiding downside risk choose more precise information, which in turn leads to sharper selection: weak cases are settled earlier, strong cases are pursued more often, and borderline disputes are more likely to be resolved before substantial litigation costs are incurred. The model matches the main empirical pattern in the data and provides a disciplined way to interpret how gender diversity affects litigation strategy through

the value and use of information.

Several pieces of evidence support this interpretation. First, event-study estimates show no differential pre-trends between more- and less-exposed firms prior to the 2010 reform, consistent with the identifying assumption underlying our difference-in-differences design. Second, the effect is concentrated among firms with initially all-male boards, the firms for which the disclosure reform plausibly generated the strongest adjustment pressure, and does not arise under alternative low-threshold treatment definitions. Third, the results are not replicated when we redefine board diversity along ethnic lines, suggesting that the findings are not driven by a generic increase in diversity or by broad post-reform changes in governance practices. Finally, cases terminated early by more-exposed firms exhibit lower predicted winning probabilities, while litigated cases generate higher liability avoided, consistent with sharper screening rather than indiscriminate caution.

The remainder of the paper is organized as follows. Section 2 discusses the related literature. Section 3 presents the empirical design and results. Section 4 develops the theoretical framework. Section 5 reports additional analyses and robustness checks. Section 6 concludes.

2 Related Literature

This paper contributes to several strands of literature. First, it links to research on board gender diversity and corporate governance. A large empirical literature studies whether female directors affect broad firm-level outcomes such as performance, governance quality, corporate social responsibility, misconduct, and monitoring intensity (Adams and Ferreira 2009; Triana et al. 2014; Post and Byron 2015; Harjoto et al. 2015; Cabeza-García et al. 2018; Carter et al. 2017; Nadeem et al. 2020; Brahma et al. 2021; Cumming and Leung 2021; Beji et al. 2021; Griffin et al. 2021). Relative to this literature, our paper makes two distinct moves. First, we focus on litigation strategy rather than broad ex post firm outcomes. Second, we study an environment in which boards must make sequential choices under uncertainty, which allows us to distinguish between a general tendency toward caution and an improvement in screening. In that sense, we treat litigation not simply as an outcome associated with governance, but as a decision process through which governance operates.

Our paper is most closely related to work that links board composition to corporate legal risk. Zheng and Wang (2024), for example, examines the relationship between board gender diversity and litigation-related outcomes, treating litigation primarily as a firm-level exposure or a governance consequence. We differ in three ways: (i) we focus exclusively on firms as defendants, which allows a cleaner interpretation of the firm's response once a dispute arises; (ii) we examine the full sequence of litigation decisions, with particular attention to pre-filing resolution rather than only filed cases or aggregate litigation incidence; (iii) finally, we show that the main effect of female representation operates through case selection: gender-

diverse boards discontinue weaker disputes earlier and leave a stronger pool of cases to proceed. This process-based perspective is important because it identifies the margin on which governance matters.

Our identification strategy also contributes to the literature on disclosure-based governance reforms. We exploit the 2010 Proxy Disclosure Enhancements Rule, which required firms to disclose whether and how diversity is considered in director nominations. Unlike quota-based reforms, the SEC rule did not mandate numerical targets or impose direct sanctions. Its force came through transparency and the reputational pressure that transparency creates. In our setting, that feature is not merely institutional background; it is part of the contribution. We show that disclosure alone induced meaningful changes in board composition, especially among firms that entered the reform with all-male boards. More generally, the results highlight how soft governance regulation can reshape internal decision-making by changing who participates in board deliberation.

The paper also speaks to a broader literature on gender, risk attitudes, and corporate decision-making. Prior work argues that female executives and directors may be more risk-averse or more cautious in environments involving uncertainty, and that these differences can affect financing choices, bank risk, and other corporate outcomes (Fossen 2012; Palvia et al. 2015; Sah et al. 2022). Our findings are consistent with that literature but refine its interpretation. The data do not suggest simply that female representation makes firms litigate less aggressively across the board. Instead, the evidence points to sharper state-contingent behavior: boards with greater female representation are more likely to terminate weaker cases and to continue with stronger ones. For our paper, therefore, the relevant distinction is between indiscriminate caution and selective engagement. This is also why the theoretical framework emphasizes information acquisition. Differences in effective risk aversion matter not only because they can shift the settlement threshold, but also because they can raise the value of becoming better informed before acting.

This emphasis on information acquisition connects the paper to a second set of literatures in economics and finance. A foundational insight in decision theory is that more informative signals improve decisions across a broad class of environments (Blackwell 1953; DeGroot 1970; Raiffa and Schlaifer 1961). Related literature analyzes how much information agents optimally choose to acquire when precision is costly (Grossman and Stiglitz 1980; Verrecchia 1982; Van Nieuwerburgh and Veldkamp 2010; Veldkamp 2011). Another branch emphasizes information-processing constraints and endogenous attention allocation (Sims 2003; Matějka and McKay 2015). We do not attempt to contribute to these theories in a general sense. Instead, we adapt their core insight to a governance problem: before deciding whether to litigate or settle, boards can invest in information about case quality, and the value of that information depends on preferences, costs, and the consequences of mistakes. Our contribution is to bring this logic into a corporate litigation setting and to use it to interpret how board composition affects observed legal choices.

Finally, the paper relates to the economics of settlement and trial. Classic work emphasizes that settlement outcomes are shaped by asymmetric information, strategic bargaining, and the non-random selection of disputes that reach trial (Shavell 1982; Bebchuk 1984; Priest and Klein 1984; Reinganum and Wilde 1986; Spier 1992). We build on this literature's central selection insight, but our focus is different. Rather than modeling the bargaining game between plaintiff and defendant in full detail, we study an internal governance margin within the defendant firm: how the board decides whether to continue fighting a dispute and how much information to acquire before making that choice. This emphasis is motivated by the empirical design. The same external dispute environment may generate different observed litigation paths because firms differ in their governance and in how boards process uncertain information. By endogenizing information acquisition inside the firm, our framework provides a mechanism linking board composition to both the overall propensity to resolve disputes early and the strength-based sorting of cases that we document in the data.

Taken together, these contributions position the paper at the intersection of corporate governance, litigation, and information economics. Relative to the governance literature, we identify a new strategic margin through which gender diversity matters. Relative to the litigation literature, we highlight the role of internal board-level decision-making on the defendant side. Relative to the information-acquisition literature, we show how organizational composition can alter the incentives to become informed before acting. The common theme is that board diversity affects not only who makes decisions, but also how decisions are made when information is imperfect and the costs of mistakes are large.

3 Empirical Analyses

3.1 Regulation-induced Shifts in Female Presence on Board

Institutional Background

In December 2009, the U.S. Securities and Exchange Commission (SEC) adopted the *Proxy Disclosure Enhancements Rule*, which took effect for most public companies in early 2010. The reform amended Regulation S-K to expand disclosure requirements regarding board composition, director qualifications, and the processes used to nominate board members. A central feature of the reform was the introduction of mandatory disclosure on whether, and how, firms consider diversity in the director nomination process.

Although the SEC did not impose explicit quotas or prescribe a specific definition of "diversity", the reform generated meaningful compliance pressure through increased transparency.[2] Firms were not

[2]According to Hazen and Broome (2011), there was substantial support from investors and organizations for enhanced disclosure of director qualifications and board composition. In the comment letters submitted to the SEC prior to the rule's enactment, a large share of respondents emphasized the importance of board diversity. In particular, approximately 43% of the letters discussed the importance of diversity among board members and why greater diversity would benefit stakeholders. Among these, about 21% referred specifically to gender diversity, while 14% highlighted racial diversity. By contrast, only around 0.01% of the comments referred to diversity in terms of directors' background or skills. These responses suggest that, at the time of the reform, diversity was primarily interpreted as gender or racial diversity, with gender receiving the greatest attention. To address the possibility that broader diversity considerations drive our results,

required to disclose whether and how diversity was considered in their director nomination processes. Consequently, firms that did not take diversity into account had to publicly explain the absence of such considerations and justify the lack of diversity on their boards. In other words, non-consideration itself became observable and required formal justification.

These disclosure requirements were not costless. First, publicly articulating why diversity was not considered exposed firms to potential scrutiny from shareholders, proxy advisors, and the broader market.[3] Providing such explanations risked reputational damage, particularly in an environment in which investor sentiment increasingly favored board diversity. Second, even minimal or vague disclosure could itself signal a lack of genuine engagement with diversity concerns, thereby inviting negative public judgment. Thus, both explicit non-consideration and weak disclosure could generate reputational costs.

By contrast, firms that already had female directors or could credibly demonstrate that diversity was meaningfully incorporated into their nomination processes were better positioned to comply with the new requirements.[4]

For these firms, disclosure was less likely to trigger adverse scrutiny. As a result, the reform created asymmetric reputational pressure, falling more heavily on firms whose boards lacked female representation prior to 2010.

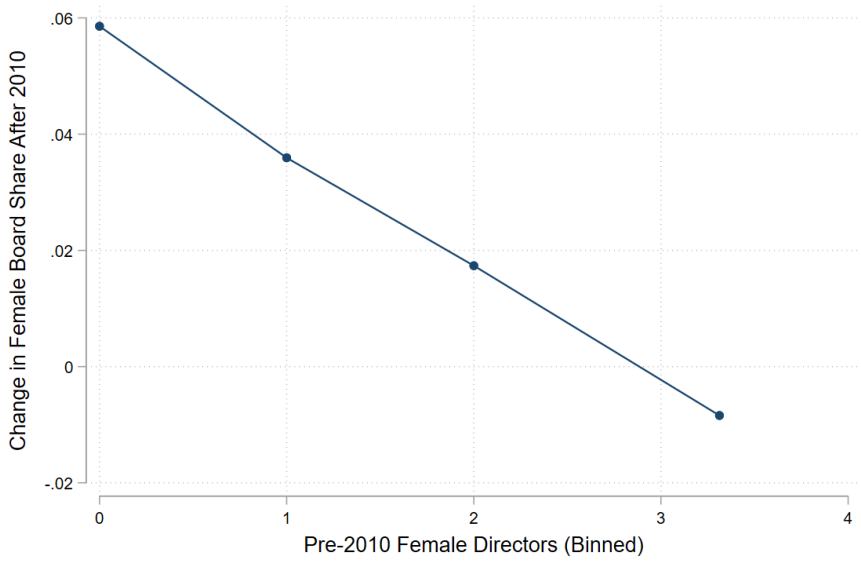


Figure 1: Relationship between change in female share post 2010

Figure 1 illustrates this asymmetry. The vertical axis reports the change in female board share after

we also examine whether ethnic diversity affects our outcome variables and find no significant effect.

[3]According to Hazen (2010) and Hazen and Broome (2011), shareholders have expressed strong preferences for board diversity based on the belief that it enhances business performance.

[4]Firms were required to disclose:

1. Whether diversity is a factor in identifying and evaluating board nominees
2. How diversity is considered, if applicable
3. Whether the firm has a formal diversity policy for the board
4. How the effectiveness of such a policy is assessed

2010, while the horizontal axis shows the average number of female directors in 2009, grouped into quartiles. The figure reveals a clear inverse relationship: firms with fewer female directors prior to 2010 exhibit larger post-reform increases in female board representation.

Notably, the figure also indicates that the largest discrete difference in post-reform adjustment occurs between firms with zero female directors and those with at least one prior to 2010, while additional pre-existing female directors beyond the first are associated with more modest and approximately linear changes. This pattern is consistent with the disclosure-based nature of the SEC reform, as the presence of at least one female director allows firms to credibly demonstrate that diversity is considered in board appointments. By contrast, firms with all-male boards face qualitatively stronger disclosure pressure.

This pattern has two implications. First, it confirms that the enforcement pressure generated by the disclosure reform was stronger for boards with lower initial female representation. Second, it indicates that the reform exerted particularly strong pressure on firms with no female directors prior to 2010. For these firms, the absence of women on the board of directors made it more difficult to credibly communicate how diversity was considered in board appointments, especially given the public and standardized nature of the disclosure. As a result, they had stronger incentives to adjust nomination practices or board composition to align with the spirit of the reform, even in the absence of direct financial penalties.

Accordingly, to assess whether this differential pressure translated into observable governance changes, we compare firms with no female directors before 2010 to those with at least one female director; we find that the former group experienced a significantly larger increase in female board representation after the rule change. Figure 2 illustrates this pattern using an event-study design tracing changes in female board share relative to 2009, the year before the implementation of the SEC disclosure reform. Firms are classified by their exposure to the reform: *More* denotes firms with no female directors before 2010, while *Less* denotes firms with at least one female director prior to 2010.

This binary classification is guided by both the institutional setting and the data. As shown in Figure 1, the largest discrete difference in post-reform adjustment occurs between firms with zero female directors and those with at least one, while additional pre-existing female directors beyond the first are associated with more modest and approximately linear changes. This pattern is consistent with the reform's disclosure-based nature, as the presence of at least one female director allows firms to credibly demonstrate that diversity is considered in board nominations.

Coefficients are normalized to zero in 2009, such that each estimate captures within-firm changes in female board share relative to that baseline. The figure shows that female representation increased steadily among more-exposed firms in the post-reform period, with economically meaningful gains emerging several years after 2010. By contrast, less-exposed firms exhibit considerably more modest changes over the same period, indicating that post-reform adjustments were substantially stronger among firms

that initially had all-male boards.[5] Importantly, the statistical significance observed for the *Less* group after 2015 partly reflects normalization to a relatively low 2009 baseline following a pre-2009 peak in female representation, as shown in Figure A2 in Appendix A. Consequently, the event-study estimates for this group largely capture a recovery toward earlier levels rather than a large or persistent average increase, a pattern consistent with the more muted changes observed in the raw post-period means.

Empirical Setting

This regulatory context creates an empirical environment where changes in board gender composition are influenced by an external disclosure shock rather than by firms' contemporaneous strategic decisions. As such, it provides a useful setting for examining how increased female director representation is associated with subsequent litigation strategies.

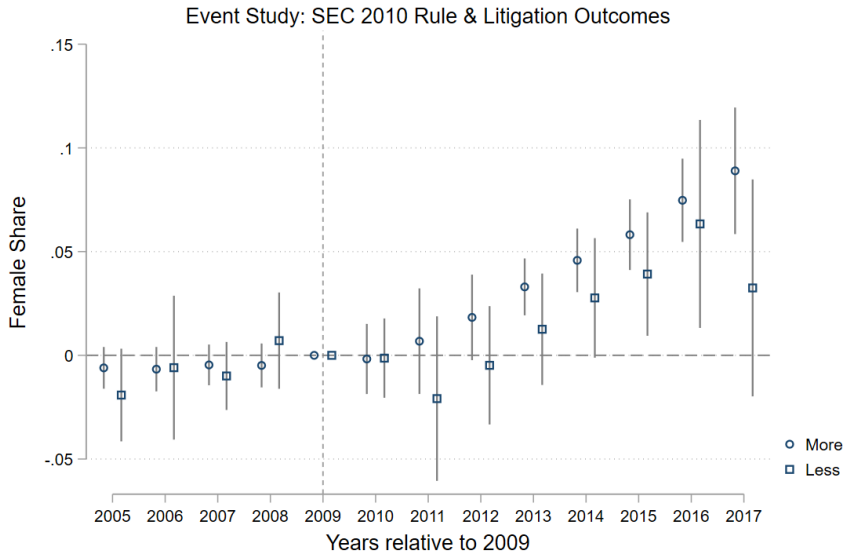


Figure 2: Female Board Share Changed over Time (within that firm) Relative to 2009

Building on this confirmed difference in responsiveness, our empirical strategy adopts a Difference-in-Differences (DiD) approach. Our design exploits heterogeneous exposure to the 2010 SEC reform. Firms with no female directors prior to the reform faced substantially stronger disclosure pressure, whereas firms with at least one female director experienced a weaker shock. Thus, our framework can be framed as a DiD design leveraging differential exposure to a common exogenous shock rather than a binary treatment assignment.[6]

We compare changes in litigation outcomes before and after the reform across these two groups of firms, whose differential exposure generates the variation necessary for identification. This DiD structure

[5] Further analysis of the effects of the enactment is presented in Appendix A.

[6] This approach follows a growing literature adopting variation in shock intensity to identify causal effects in settings where treatment is not randomly assigned, but exposure is plausibly exogenous (Autor et al. 2013; Dharmapala et al. 2011; Bertrand and Mullainathan 2003; Chava and Purnanandam 2010; 2011; Garmaise 2011; Kang et al. 2010; Stan and Puranam 2017)

allows us to examine how an increase in female board representation, induced by varying intensities of the regulatory pressure, relates to shifts in litigation behavior within a shared institutional environment. By comparing firms to themselves over time while leveraging cross-firm variation in exposure intensity, this approach brings us closer to isolating the effect of board gender composition that would be possible using simple cross-sectional comparisons alone.

3.2 Sample Construction and Methodology

3.2.1 Data Source

We obtain litigation data from the Federal Judicial Center (FJC), collecting comprehensive information on civil cases reported by U.S. courts to the Administrative Office of the U.S. Courts. The FJC data provide rich, case-level detail, including filing and termination dates, case disposition, litigation progress, and the nature of the suit.[7] Our analysis focuses on cases involving U.S. firms litigated within the United States and acting as defendants. We do so to avoid accounting for strategic choices that might confound our empirical outcomes. When firms are defendants, they primarily respond to external accusations, allowing us to study how board composition influences litigation strategy under reactive decision-making. In contrast, plaintiff-initiated litigation often reflects a broader set of strategic motivations, including proactive enforcement, bargaining, or competitive considerations, which are more heterogeneous and harder to disentangle empirically. Focusing on defendant-side cases, therefore, facilitates a cleaner interpretation of the relationship between female board representation and litigation behavior.

We link litigation cases to firm-level financial information from Compustat using firm identifiers provided by the WRDS linking tables. Using the same identifier, we merge board-level information, including board gender composition, from BoardEx.

Our final dataset covers 13,671 firms and around 65,470 litigation cases over the period 2005-2017, restricted to cases in which firms are defendants. We exclude multi-district litigation cases because the data do not provide a consistent identifier that allows cases to be tracked when jurisdiction changes across districts.

3.2.2 Variables

Dependent Variable: To examine how firms manage legal disputes, we construct a set of dependent variables corresponding to the major stages of the litigation process. Civil litigation typically progresses through several identifiable steps:

1. **Case filing**, which initiates the dispute and defines the basic claims

[7] For additional details, see Section 3.3.4 (Descriptive Statistics).

2. **Pre-court stage (before issue joined)**, during which parties exchange information, communicate informally, and may resolve the dispute before the defendant files a formal response or the court becomes procedurally involved

3. **Issue joined**, beginning when the defendant files a formal answer, thereby establishing the dispute procedurally and triggering structured court involvement, including motions and pre-trial proceedings.

4. **Trial phase**, encompassing proceedings during and after trial, including judicial rulings and case conclusion

For each stage, we construct binary indicators capturing whether a case terminates at that point. These stage-specific outcomes enable us to observe how cases progress, or fail to progress, through the litigation pipeline. Because each stage reflects a distinct decision point for the firm, the sequence of these indicators provides a structured view of how disputes are managed from initiation to resolution. Moreover, the litigation process is externally documented at each step, making adjustments in how firms evaluate, escalate, or discontinue cases directly observable as transitions across stages. This feature makes litigation a particularly informative setting for studying changes in corporate decision-making.

Independent Variable: Our main analysis exploits variation in firms' responsiveness arising from differences in their initial level of female board representation. That is, heterogeneous exposure to the 2010 SEC reform: we expect the disclosure requirement to exert stronger pressure on firms that had no female directors prior to the reform than on firms that already included at least one woman on the board. This reasoning is substantiated by Figure 2.[8]

Accordingly, we construct a binary indicator equal to one for firms with no female directors before 2010 and zero for firms with at least one female director. We refer to these two groups as the "more-exposed" and "less-exposed" firms, respectively.

Control Variable: We include two categories of control variables: Firm-level characteristics and litigation-specific attributes. To account for differences in firm size, we include capital expenditure as a control.[9] Capital expenditure captures firms' scale and investment capacity, which may influence both board composition and litigation strategy.

We also include several litigation-related controls: case duration, the nature of the suit, and the judicial circuit in which the case is filed. These variables account for heterogeneity in legal complexity, procedural environments, and institutional contexts that may independently affect litigation outcomes.

[8] Further analysis of the effects of the enactment is presented in Appendix A.

[9] We exclude the number of employees due to substantial missing observations across years for firms matched with the litigation data; however, our results remain qualitatively unchanged when employee counts are included as an additional control.

Including these controls helps isolate the relationship between board gender composition and litigation behavior by accounting for observable factors that shape both the progression and resolution of legal disputes.

3.2.3 Descriptive Statistics

Table 1 presents summary statistics for the key litigation variables. Panel A reports case disposition outcomes, illustrating the detailed resolution categories available in the data. Importantly, the dataset also contains information on the progression of each case, allowing us to construct stage-specific dependent variables, as shown in Panel B. When referring to cases with "no court action," we restrict attention to the category *before issue joined, no court action*. This restriction reflects the fact that, prior to the formal establishment of a dispute, case termination is most plausibly due to early resolution or agreement between the parties.

Panel C reports the distribution of cases by nature of suit. The dataset includes approximately 140 distinct nature-of-suit codes, which we aggregate into ten broader thematic categories for tractability. Panel D displays the six most frequently represented industry sectors in our litigation sample.

Table 2 presents summary statistics pooled over the period 2005-2017, separately for firms with no female directors prior to 2010, and those with at least one female director prior to 2010. The table reports firm-level characteristics, such as revenue and capital expenditure, as well as board-level attributes including age, education, independence, nationality, and professional experience. Differences between the two groups reflect systematic heterogeneity in firm size and governance structures over the sample period. Importantly, these differences should not be interpreted as driving our empirical results. Our identification strategy relies on within-firm variation and exploits differential changes following the reform, while firm fixed effects absorb all time-invariant differences between more- and less-exposed firms. As a result, the observed cross-group differences in pooled descriptive statistics are not a concern for inference, as identification does not rely on comparison in levels across groups but on differential adjustments over time.

3.3 Main Estimation and Results

Baseline Model Specification

We run a DiD estimation to determine the impact of the SEC reform on defendant companies' legal strategies. Accordingly, our baseline model is summarized as follows:

$$Y_{i,c,t} = \alpha_0 + \alpha_1(More_i \times Post2010_t) + \alpha_2 X' + \alpha_i + \alpha_t + \alpha_{n\times t} + \epsilon_{i,c,t} \tag{1}$$

The left-hand side of Equation (1) corresponds to binary indicators capturing litigation outcomes at

Table 1: Descriptive Statistics of Litigation

Panel (A)	Freq.	Percent
Disposition		
Dismissed: settled	17046	26.04
Dismissed: voluntarily	11197	17.10
Dismissed: other	10708	16.36
Transferred	4324	6.60
Judgment: motion before trial	4276	6.53
Judgment: other	3366	5.14
Statistical closing	3061	4.68
MDL transfer	2375	3.63
Judgment: default	2137	3.26
Remanded to state court	1924	2.94
Dismissed: want of prosecution	1535	2.34
Dismissed: lack of jurisdiction	1079	1.65
Judgment: consent	1050	1.60
Remanded to U.S. agency	818	1.25
Judgment: appeal affirmed (mag.)	241	0.37
Judgment: appeal denied (mag.)	97	0.15
Judgment: stayed pending bankruptcy	89	0.14
Judgment: jury verdict	67	0.10
Judgment: arbitrator award	48	0.07
Judgment: court trial	28	0.04
Judgment: directed verdict	4	0.01
Total	65,470	100.00

Panel (B)	Freq.	Percent
Progress		
Before issue joined, no court action	14,745	22.52
Before issue joined, order entered	25,977	39.68
After issue joined, no court action	2,193	3.35
After issue joined, judgement on motion	4,369	6.67
After issue joined, pretrial conference held	4,597	7.02
After issue joined, during court trial	3	0.00
After issue joined, during jury trial	16	0.02
After issue joined, after court trial	36	0.05
After issue joined, after jury trial	71	0.11
After issue joined, other	10,500	16.04
Before issue joined, hearing held	360	0.55
After issue joined, order decided	2,600	3.97
After issue joined, request for trial de novo after arbitration	3	0.00
Total	65,470	100.00

Panel (C)	Freq.	Percent
Nature of Suits		
Tort	18,473	28.86
Immigration/Prisoner	14,737	23.02
Civil Rights	8,074	12.61
Contract	6,879	10.75
Statutory/Misc	5,549	8.67
Labor	5,196	8.12
IP	2,676	4.18
Social Security	1,486	2.32
Securities & Antitrust	658	1.03
Tax	278	0.43

Panel (D)	Freq.	Percent
Sector		
Pharmaceuticals and Biotechnology	25151	0.384
Health	19688	0.301
Containers & Packaging	3488	0.053
Leisure & Hotels	2981	0.046
Automobiles & Parts	2811	0.043
General Retailers	2401	0.037

Note: The observation period is between 2005 and 2017. The dataset includes approximately 140 unique nature-of-suit codes; accordingly, Panel (C) has consolidated them into 10 broader thematic categories. Panel (D) displays the 6 most frequently occurring sectors in the dataset.

Table 2: Summary Statistics by Groups

	Full Observation			More			Less		
	Obs	Mean	Std.dev	Obs	Mean	Std.dev	Obs	Mean	Std.dev
Firm Level									
Revenue	13,409	3093.436	11253.63	3,201	690.973	1919.586	10,208	3846.795	12760.4
Capital Exp.	11,662	216.101	772.0427	2,839	57.628	218.304	8,823	267.094	872.840
Employees	13,438	25.823	84.512	3,201	5.381	9.503	10,237	32.215	95.792
Female share	13,671	0.124	0.106	3,262	0.026	0.061	10,409	0.155	0.099
Total Litigation	13,671	62.281	696.295	3,262	7.684	34.177	10,409	79.391	796.985
Board-member Level									
Age	13,671	74.211	3.921	3,262	74.884	4.096	10,409	74.000	3.841
Education	13,671	2.088	0.459	3,262	1.880	0.540	10,409	2.153	0.409
Non-executive	13,671	97.902	44.637	3,262	80.643	32.724	10,409	103.310	46.463
American	13,671	73.965	48.891	3,262	54.786	37.600	10,409	79.975	50.450
Experience	13,671	7.533	3.831	3,262	6.754	4.422	10,409	7.780	3.591

Note: The observation period spans from 2005 to 2017. Age is calculated based on the current years, 2025. Education reflects the number of formal academic or professional qualifications held by a director, typically encompassing bachelor's, master's, doctoral degrees, or equivalent credentials. Previous Experience captures the average tenure a director has served on other quoted company boards. Non-Executive represents the proportion of directors by gender who serve in non-executive roles—positions that do not involve day-to-day operational responsibilities but focus on oversight, strategic guidance, and governance. American denotes the proportion of directors by gender who are of American nationality.

each stage of the litigation process of company i, case c in year t. Accordingly, the model is estimated and interpreted as a Linear Probability Model (LPM). The variable $More_i$ equals one for firms that had no female directors prior to 2010 and zero otherwise. $Post2010_t$ is a time indicator equal to one for years after 2010. The vector $X'_{i,t}$ includes firm-level and litigation-specific control variables, namely capital expenditure and characteristics of the case.

All specifications include year fixed effects, as well as industry-by-year fixed effects, to account for common time trends and differential exposure to legal and economic shocks across industries, particularly around the 2008-2009 financial crisis. Standard errors are clustered at both the firm and litigation district levels to account for correlated shocks within firms and within judicial districts.

Prior to implementing our DiD approach, we conduct an event study to assess whether more and less exposed firms exhibit differential pre-trends in the effect of female board representation on our outcome variable.

$$Y_{i,c,t} = \theta_0 + \sum_{k=-4, k\neq 0}^{8} \sigma_k (More_i \times 1(t - T_s = k)) + \theta_1 X'_{i,t} + \delta_i + \mu_t + \rho_{n\times t} + \eta_{i,c,t} \tag{2}$$

We estimate Equation (2) separately for each litigation outcome at different stages of the litigation process, where $Y_{i,c,t}$ denotes the outcome for firm i, case c, in year t. The coefficients of interest, σ_k, capture the dynamic effects for firms with no female directors prior to 2010 $More_i = 1$ relative to other firms, at event time $k = t - T_s$, where T_s denotes the reference year (2009). The specification includes firm fixed effect δ_i, year fixed effects μ_t, and industry-by-year fixed effects. $\rho_{n\times t}$ as well as a vector of control variables $X'_{i,t}$.

The event study results do not reveal statistically significant effects across most outcomes, except for

settlement before any court action. Figure 3 presents the corresponding estimates.[10]

Figure 3 conveys three key insights. First, there is no evidence of differential pre-trends between more-exposed and less-exposed firms prior to 2010, supporting the validity of the identification strategy. Second, we observe a statistically significant difference between the two groups in a specific post-reform year: 2019. This short-lived effect coincides with the divergence in female board representation relative to 2009 between more- and less- exposed firms, as documented in Figure A1 in Appendix A. Third, consistent with the evolution of board composition shown in Figure A1 in Appendix A, long-run differences are difficult to detect. Over time, firms that were initially less exposed also experienced increases in female board representation, which gradually narrowed the gap between the two groups. As a result, the distinction between more- and less-exposed firms becomes less pronounced, and the estimated differences in litigation outcomes correspondingly attenuate.

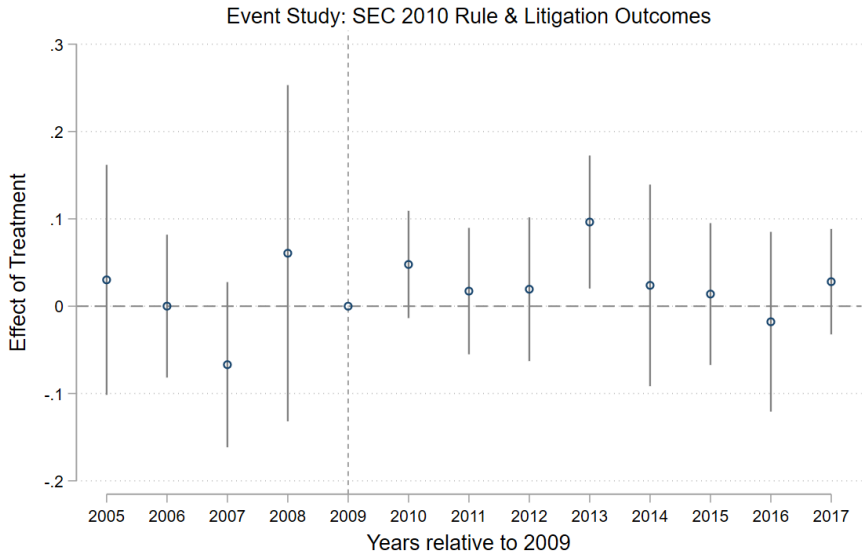


Figure 3: Event Study: Settlement before any Court Action

Main Outcomes

Let us now analyze the association between female board representation and the likelihood that a case is resolved before any court action. As the event-study analysis identifies this outcome as the only stage exhibiting a statistically meaningful post-reform response, we focus our DiD analysis on early settlement behavior. Table 3 presents the corresponding estimates. In line with the event-study evidence, we restrict the observation window to the period from 2005 to 2013, as we do not detect persistent long-run effects beyond this horizon.

The dependent variable is a binary indicator equal to one if a case terminates prior to any court involvement. It is important to note that, as described in the descriptive statistics section, pre-court

[10] Event-study results for the remaining outcome variables are reported in Appendix B.

terminations include cases that end before issue is joined. Accordingly, our definition of termination extends beyond dismissals explicitly coded as settlements to include voluntary dismissals and other dismissal categories.[11] Because our analysis focuses on defendant cases, voluntary dismissals reflect instances in which plaintiffs withdraw their claims. Although the data do not allow us to observe whether such withdrawals result from informal negotiations or from defendants' ability to deter litigation, both mechanisms are closely related to defendants' litigation capacity and are therefore included. In addition, cases labeled as "settlement: Others" likely capture settlement-adjacent dismissals that are not explicitly coded as "dismissed: settled" and instead fall into residual dismissal categories. Consequently, throughout the analysis, we use pre-court termination and settlement interchangeably.

Across specifications, the coefficient on the interaction between more-exposed firms and the post-2010 period is positive. In Column (1), which includes the full set of fixed effects but excludes additional covariates, the estimated coefficient is 0.029 and is not statistically significant. In Column (2), after incorporating firm-level and litigation-related controls, the coefficient increases to 0.034 and becomes statistically significant at the 5 percent level. Interpreted within the linear probability framework, this estimate implies that, following the reform, more exposed firms experienced a 3.4 percentage point increase in the likelihood that a case is resolved before any court action. Relative to the sample mean of 0.17, this corresponds to an increase of approximately 20 percent.

Table 3: No court action

Prob. Settle (before court)	(1)	(2)
$More_i \times Post2010_t$	0.029	0.034**
	(0.030)	(0.015)
Control Variables		
Duration		-0.020**
		(0.009)
Capital Expenditure		0.000*
		(0.000)
Observations	32226	32226
Mean DV	0.17	0.17
sd DV	0.38	0.38
R^2	0.09	0.19
Control	No	Yes
lControl	No	Yes
Firm FE	Yes	Yes
Year FE	Yes	Yes
YearXInd	Yes	Yes

Note: The observation period covers 2005 - 2013. Control variables include firm size measure based on capital expenditure. lControl indicates litigation-related characteristics such as the nature of the suit and circuit where the cases were filed. For brevity, categorical controls are not displaced in the table. Standard errors are clustered at both the firm and court district levels.

Turning to the control variables, their estimated coefficients are economically intuitive. Case duration enters negatively and is statistically significant, indicating that longer cases are substantially less likely to terminate before any court action, a pattern consistent with the mechanics of the litigation process.

[11] Please refer to Table 1, Panel (A).

Capital expenditure enters with a positive coefficient, suggesting that firms with greater investment capacity may possess stronger bargaining positions or legal resources, facilitating early resolution and reducing the need for formal court proceedings.

Taken together with the event-study evidence, these results further confirm that female board representation is associated with litigation outcomes at the early stage of the process. The absence of significant effects during the in-litigation and post-trial stages suggests that the influence of female directors operates primarily ex ante, shaping which cases proceed and how litigation risk is managed before escalation, rather than affecting judicial or procedural outcomes once a case has entered trial. Accordingly, in the following sections, we explore what this "early female effect" entails and investigate the mechanisms through which female board representation may influence firms' early-stage litigation decisions.

3.4 Mechanism Analyses and Results

Winning Rate

We begin by examining the interpretation of the higher settlement rate before any court action. This pattern can be understood in two distinct ways. One possibility is that boards with greater female representation are more likely to discontinue cases at an early stage regardless of their likelihood of success, consistent with prior literature that associates female influence with greater risk aversion (Croson and Gneezy 2009; Byrnes et al. 1999; Von Gaudecker et al. 2011; Eckel and Grossman 2008; Charness and Gneezy 2012; Thöni and Volk 2021; Niederle and Vesterlund 2011; Buser et al. 2014; Filippin and Crosetto 2016). Alternatively, the higher probability of early termination may reflect more selective and effective decision-making. Under this interpretation, boards with more female directors are better at identifying weaker cases and resolving disputes early, while allowing stronger cases to proceed.

To distinguish between these mechanisms, we re-estimate Equation (1) using three alternative dependent variables that capture case outcomes related to the likelihood of winning. This analysis allows us to assess whether early terminations are driven by indiscriminate risk avoidance or by improved case selection. Table 4 reports the corresponding results. Column (1) uses the ratio of the aggregate number of cases won by defendants to the total number of cases, calculated separately before and after 2010, and considers only court decisions in favor of defendants. The estimated coefficient of 0.092 implies that after 2010, more-exposed firms experienced a higher share of defendant-favorable outcomes relative to less-exposed firms. Column (2) broadens the definition to include court decisions in favor of both defendants and plaintiffs. The coefficient remains positive and significant, suggesting that the results is not driven solely by a narrow definition of success. Column (3) uses a case-level binary indicator equal to one if the defendant wins. The estimated coefficient of 0.035 indicates that more-exposed firms are more likely to prevail conditional on cases proceeding to adjudication.

Taken together, these findings suggest that the higher likelihood of early termination documented in the previous section does not reflect indiscrimination risk avoidance. Instead, positive and robust association between female board presence and winning-related outcomes is consistent with more selective litigation behavior: boards with greater female representation appear more effective in filtering cases, discontinuing weaker disputes early while allowing stronger cases to proceed. This pattern supports the interpretation that female directors contribute to improved case selection and more disciplined litigation strategies, rather than simply increasing the propensity to avoid legal risk altogether.

Table 4: Winning Outcome

	(1) Agg.Win (only defendant)	(2) Agg.Win (both)	(3) Prob.win
$More_i \times Post2010_t$	0.144*	0.158**	0.045***
	(0.073)	(0.071)	(0.015)
Control Variables			
Agg.Capital Expenditure	0.000	0.000	
	(0.000)	(0.000)	
Agg.Duration	0.197*	0.201**	
	(0.100)	(0.097)	
Capital Expenditure			0.000**
			(0.000)
Duration			0.016**
			(0.007)
Observations	226	226	33818
Mean DV	0.08	0.08	0.07
sd DV	0.18	0.18	0.25
R^2	0.75	0.75	0.17
Control	Yes	Yes	No
lControl	Yes	Yes	No
Firm FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
YearXInd	Yes	Yes	Yes

Note: The observation period covers 2005 - 2013. Control variables include firm size measure based on capital expenditure. lControl indicates litigation-related characteristics such as the nature of the suit and circuit where the cases were filed. For brevity, categorical controls are not displaced in the table. Standard errors are clustered at both the firm and court district levels. Agg.Win ratio represents the proportion of cases won to the total number of cases, aggregated for the periods before and after 2010. Only defendant refers to cases disposed of by a final judgment in favor of the defendant, while both indicates judgment in favor of both the defendant and the plaintiff. Prob.win represents the estimated probability of winning a case, obtained from a linear probability model.

Lasso-logit Model Analysis

To further support the findings on winning outcomes, we estimate a Lasso-logit model to predict each case's probability of success based on observable case characteristics. This approach allows us to construct an ex ante measure of case strength that is independent of board composition and can be used to assess whether differences in litigation outcomes reflect more selective decision-making rather than indiscrimination risk avoidance. The Lasso-logit specification is defined as follows:

$$\begin{aligned} Y_{i,c,t} &= 1\{defendantwins\} \\ p_{i,c,t} = Pr(Y_{i,c,t} = 1|X_{i,c,t}) &= \sigma(\alpha + X'_{i,c,t}\beta) \end{aligned} \tag{3}$$

where $Y_{i,c,t}$ is a binary indicator equal to one if the court decision favors the defendant (the firm in our sample), and zero otherwise. The predicted probability $p_{i,c,t}$ represents the estimated likelihood of winning based on case-specific features $X_{i,c,t}$. These features include the nature of the suit, judicial circuit, filling year, district, origin of the case, nature of judgment, case duration, the amount requested at filing, and the final payment. By employing a Lasso penalty, the model selects the most informative predictors among this high-dimensional set, yielding a parsimonious and data-driven estimate of case strength.[12]

We then examine how firms incorporate this predicted probability of success into their litigation decisions. Importantly, while our baseline DiD analysis captures extensive margin, that is, whether the inclusion of female directors improves average litigation outcomes, it is not sufficient to uncover how these improvements arise. Testing mechanisms requires variation within firms that were affected by the reform. In this context, such variation comes from differences in the intensity of female representation on the board rather than from a binary exposure indicator.

To capture this intensive margin, we use the continuous share of female directors and estimated the following specification[13]:

$$\begin{aligned} Trial_{i,c,t} = \beta_0 + \beta_1(p_{i,c,t} \times FemaleShare_{i,t} \times Post2010_t) \\ +\beta_2(p_{i,c,t} \times FemaleShare_{i,t}) + \beta_3(FemaleShare_{i,t} \times Post2010_{2010}) \\ +\beta_4 p_{i,c,t} + \beta_5 FemaleShare_{i,t} + \beta_i + \beta_t + \beta_{n\times t} + \eta_{i,c,t} \end{aligned} \tag{4}$$

where $Trial_{i,c,t}$ is a binary indicator equal to one if the firm decides to proceed with the case, meaning that the dispute advances to formal court action. The continuous variable $FemaleShare_{i,t}$ measures the proportion of female directors on the board and replaces the binary exposure indicator used in earlier analyses. Conditioning on case-level strength, this specification allows us to examine behavioral heterogeneity within firms, identifying whether higher female representation systematically alters how boards weigh case quality when deciding whether to proceed to trial. In contrast to the extensive-margin analysis, which captures average effects of exposure to the reform, this intensive-margin approach reveals how differences in the degree of female presence shape strategic judgment in litigation decisions.

Table 5 reports estimates from Equation (4), where the dependent variable, estimated using a linear probability model. The key coefficient of interest is the triple interaction between the predicted probability of winning, female board share, and the post-2010 period, which captures how boards with varying degrees of female representation condition litigation decisions on case strength following the reform.

Across both specifications, the coefficients are positive and statistically significant. In Column (2),

[12] For additional details on the Lasso logit model, see Appendix C.
[13] We further discuss the use of the continuous female-share measure in the following section.

which includes the full set of firm-level and litigation-related controls, the estimated coefficient is 0.361. Interpreted within the linear probability framework, this estimate implies that, after 2010, firms with higher female board representation are more likely to proceed to trial when the predicted probability of winning is higher. Importantly, the main effect of predicted winning probability is small and statistically significant, as is its interaction with female board share prior to 2010, indicating that the heightened responsiveness to case quality emerges specifically in the post-reform period and is amplified by greater female representation.

To interpret the magnitude of this effect, the implied marginal impact on the probability of proceeding to trial can be expressed as follows. For a firm with female board share of 0.3 and a 10 percentage-point increase in the predicted probability of winning, the probability of proceeding to trial increase by 0.01083 ($0.361 \times 0.30 \times 0.10 = 0.01083$), or approximately 1.1 percentage points. Although modest in absolute terms, this effect is economically meaningful given the low baseline probability of going to trial. Taken together, these results suggest that higher female board representation strengthens the alignment between litigation strategy and underlying case strength, consistent with more selective and disciplined decision-making rather than indiscriminate risk avoidance.

Table 5: Mechanism

Prob.Going to Trial	(1)	(2)
$Prob.Winning_{i,c,t}$	-0.005	0.000
	(0.013)	(0.012)
$FemaleShare_{i,t}$	0.069***	0.064***
	(0.024)	(0.019)
$Prob.Winning_{i,c,t} \times FemaleShare_{i,t}$	-0.073	-0.079
	(0.051)	(0.050)
$Prob.Winning_{i,c,t} \times Post2010_t$	-0.045	-0.053
	(0.032)	(0.037)
$FemaleShare_{i,t} \times Post2010_t$	-0.003	-0.055*
	(0.013)	(0.030)
$Prob.Winning_{i,c,t} \times FemaleShare_{i,t} \times Post2010_t$	0.297*	0.361*
	(0.177)	(0.206)
Control Variables		
Capital Expenditure		0.000
		(0.000)
Duration		0.005**
		(0.002)
Observations	32398	32398
Mean DV	0.00	0.00
sd DV	0.05	0.05
R^2	0.07	0.09
Control	No	Yes
lControl	No	Yes
Firm FE	Yes	Yes
Year FE	Yes	Yes
YearXInd	Yes	Yes

Note: The observation period covers 2005 - 2013. Control variables include firm size measure based on capital expenditure. lControl indicates litigation-related characteristics such as the nature of the suit and circuit where the cases were filed. For brevity, categorical controls are not displaced in the table. Standard errors are clustered at both the firm and court district levels.

Taken together, our empirical results indicate that female board representation affects litigation strat-

egy primarily through ex ante decision-making. Firms with greater female presence on their boards are more likely to resolve disputes before court involvement, while the cases that proceed exhibit higher success rates. Mechanism analyses further show that boards with higher female representation condition escalation decisions more strongly on case strength, suggesting more selective and disciplined litigation management. While these findings provide consistent support for a precision-based selection channel, they do not rule out alternative mechanisms through which female directors may influence legal decision-making. To organize these empirical patterns and provide a structured interpretation of the observed behavior, we next develop a theoretical framework that formalizes how board composition affects information acquisition, risk evaluation, and incentives for correctness in litigation decisions. This framework does not claim to exhaust all possible channels but offers a coherent structure for understanding how changes in governance composition can translate into systematic differences in litigation outcomes.

4 Theoretical Framework

This section presents a theoretical framework that proposes mechanisms to account for the empirical outcomes described earlier in this paper. We design a parsimonious model that can be extended to embed multiple mechanisms, with a primary focus on the impact of board members' risk aversion.

Let us consider a firm's board that is facing a legal suit and is therefore the defendant. Cases differ in their "quality"(i.e., the probability that the firm will win or lose such a lawsuit). The case quality is binary:

$$\theta \in \{S, W\}, \qquad Pr(\theta = S) = p, \quad Pr(\theta = W) = 1 - p,$$

where S denotes a *strong* case and W a *weak* case. The board chooses an action $a \in \{litigate, settle\}$. If the board decides to litigate, the case is brought to court, and the lawsuit proceeds. If, instead, the board decides to settle, the case is not brought to court, and the defendant pays a sum in compensation to the plaintiff. Monetary payoffs are denoted as:

$$x(\theta, a) = \begin{cases} X_S > 0, & \text{if } \theta = S,\ a = litigate, \\ -S < 0, & \text{if } a = settle,\ \forall\ \theta, \\ -X_W < 0, & \text{if } \theta = W,\ a = litigate, \end{cases}$$

with $X_W > S > 0$. Thus, litigating a weak case generates greater losses than settling.

The board has CARA preferences:

$$u(c; w) = -\exp\big(-r(w)x\big), \qquad r(w) > 0,$$

where w is the share of women sitting on the board, and $r(w)$ is the Arrow-Pratt coefficient of absolute risk aversion, which we assume to be (weakly) increasing in w, following the literature stating that women tend to be more risk averse than men.

Before undertaking a legal action a, the board chooses an effort level $e \geq 0$ at cost $C(e)$.

Assumption 1 (Effort cost): $C : \mathbb{R}_+ \to \mathbb{R}_+$ *is twice continuously differentiable, strictly increasing, and strictly convex:*

$$C'(e) > 0, \qquad C''(e) > 0.$$

Effort affects the accuracy of a binary signal $s \in \{g, b\}$:

$$Pr(s = g \mid \theta = S, e) = Pr(s = b \mid \theta = W, e) = q(e).$$

Assumption 2 (Accuracy technology): $q : \mathbb{R}_+ \to (1/2, 1)$ *is twice continuously differentiable with*

$$q'(e) > 0, \qquad q''(e) < 0.$$

Thus $q(e)$ is the probability the signal matches the true type. Higher e is higher information quality but with diminishing returns.

Posterior beliefs. Bayes' rule implies that after observing a signal s, the board updates its belief that the case is strong. Define

$$\pi_g(e) := Pr(\theta = S \mid s = g, e), \qquad \pi_b(e) := Pr(\theta = S \mid s = b, e).$$

For any effort level e, the Bayes' rule delivers

$$\pi_g(e) = \frac{p\, q(e)}{p\, q(e) + (1-p)(1-q(e))}, \qquad \pi_b(e) = \frac{p(1-q(e))}{p(1-q(e)) + (1-p)q(e)}.$$

It is immediate to see that $\pi_g(e) > \pi_b(e)$ and $\pi_g(e)$ is increasing in $q(e)$ while $\pi_b(e)$ is decreasing in $q(e)$.

4.1 Optimal Legal Strategy

Given a posterior belief $\pi \in [0, 1]$ that $\theta = S$, if the board litigates, the monetary payoff is X_S with probability π and $-X_W$ with probability $1 - \pi$. If it settles, it receives $-S$ for sure.

Define the expected utility from litigating and settling at posterior π:

$$\mathbb{E}U_L(\pi; w) = \pi u(X_S; w) + (1-\pi)u(-X_W; w), \qquad \mathbb{E}U_S(w) = u(-S; w).$$

Lemma 1 (Posterior cutoff rule): *For each w, there exists a unique cutoff $\bar{\pi}(w) \in (0,1)$ such that litigation is optimal iff $\pi \geq \bar{\pi}(w)$ such that*

$$\bar{\pi}(w)u(X_S; w) + \big(1 - \bar{\pi}(w)\big)u(-X_W; w) = u(-S; w).$$

Moreover, $\bar{\pi}(w)$ is strictly increasing in risk aversion $r(w)$.

The proofs of all lemmas and propositions are in Appendix D

Since $\pi_g(e) > \pi_b(e)$, the optimal action after seeing a signal is:

$$a(s) = \begin{cases} litigate, & \text{if } \pi_s(e) \geq \bar{\pi}(w), \\ settle, & \text{otherwise.} \end{cases}$$

For empirically relevant parameters, litigation is optimal after observing a signal $s = g$ and settlement after obtaining $s = b$. We state this as an assumption (and later show it is satisfied under mild restrictions):

Assumption 3 (Non-degenerate screening region): *For the equilibrium effort choice $e^*(w)$, we have*

$$\pi_g\big(e^*(w)\big) \geq \bar{\pi}(w) > \pi_b\big(e^*(w)\big),$$

so the optimal policy is: litigate if $s = g$ and settle if $s = b$.

4.2 Ex-ante objective

Under Assumption 3, the board's ex-ante expected utility (net of effort cost) is

$$\begin{aligned} EU(e; w) = {} & pq(e)\, u(X_S; w) + p(1 - q(e))\, u(-S; w) \\ & + (1-p)q(e)\, u(-S; w) + (1-p)(1 - q(e))\, u(-X_W; w) - C(e). \end{aligned} \tag{5}$$

Differentiate (5) with respect to e. Only $q(e)$ depends on e:

$$\frac{d}{de}EU(e; w) = q'(e)\Big(p\,[u(X_S; w) - u(-S; w)] + (1-p)\,[u(-S; w) - u(-X_W; w)]\Big) - C'(e). \tag{6}$$

Define

$$\Delta_S(w) := u(X_S; w) - u(-S; w) > 0, \qquad \Delta_W(w) := u(-S; w) - u(-X_W; w) > 0,$$

and

$$B(w) := p\,\Delta_S(w) + (1-p)\,\Delta_W(w) > 0.$$

Then (6) becomes:

$$q'(e^*)\,B(w) = C'(e^*). \tag{7}$$

where $B(w)$ denotes the ex ante benefit from signal informativeness, defined as a weighted average of the benefits of litigating when the case is strong and settling when it is weak.

Lemma 2: *Under Assumptions 1–2, $EU(e; w)$ is strictly concave in e and thus admits a unique maximizer $e^*(w)$ (whenever the interior FOC holds).*

In this scenario, we can analyze the impact of board characteristics on the optimal information acquisition. The following proposition summarizes all the main outcomes of the baseline model.

Proposition 1 (Gender composition, information acquisition, and litigation outcomes): *Let e^* denote the optimal interior information acquisition effort.*

- ***Information acquisition.*** *If the marginal value of correctness is increasing in board gender diversity (i.e., $B'(w) > 0$), and boards populated by more women are more risk averse (i.e., $r'(w) > 0$), then information acquisition effort and thereby signal precision, increase with the share of women on the board:*

$$\frac{\partial e^*(w,p)}{\partial w} > 0 \qquad \textit{and} \qquad \frac{\partial q(e^*(w,p);p)}{\partial w} > 0. \tag{8}$$

  In particular, this holds when weak-case trial losses are sufficiently salient (so that higher risk aversion increases the utility gain from avoiding a weak-case trial).

- ***Prior strength crowds out effort.*** *Holding w fixed, a stronger baseline diagnostic environment reduces costly additional information acquisition, i.e.,*

$$\frac{\partial e^*(w,p)}{\partial p} < 0. \tag{9}$$

- ***Sharper sorting by case strength.*** *The probability of litigating a weak case and the probability of settling a strong case are both* strictly decreasing *in accuracy q. Under screening,*

$$Pr(\textit{litigate} \mid \theta = W) = 1 - q(e^*; p), \qquad Pr(\textit{settle} \mid \theta = S) = 1 - q(e^*; p). \tag{10}$$

  Hence, any increase in w that raises $q(e^*)$ strictly reduces both mistake rates.

- ***Overall settlement can rise with*** *w. The unconditional settlement rate is*

$$Pr(\textit{settle}) = \pi + (1 - 2\pi)q(e^*; p). \tag{11}$$

Therefore, if weak (or borderline) cases are sufficiently prevalent in the population in the sense that $\pi < 1/2$*, then higher* w *that raises* $q(e^*)$ increases *overall settlement:*

$$\pi < \frac{1}{2} \quad \Longrightarrow \quad \frac{\partial}{\partial w} Pr(Set) > 0. \tag{12}$$

If instead $\pi > 1/2$*, improvements in accuracy reduce overall settlement.*

Intuitively, higher board gender diversity can (i) increase costly information acquisition and hence classification accuracy, (ii) sharpen sorting between settlement and trial by reducing both types of mistakes, and yet (iii) increase the unconditional settlement rate when weak or borderline cases are sufficiently prevalent (low π). At the same time, a stronger exogenous prior diagnostic ability p crowds out additional effort: when the environment is already informative, the marginal value of further due diligence falls. Taken together, these theoretical insights provide a structured framework for understanding how increase in female board representation can affect litigation outcomes in the directions documented in our empirical analysis.

4.3 Alternative Mechanisms and Extensions

In this section, we show how mechanisms beyond risk aversion can be embedded in the baseline model. We do so to discuss possible alternative mechanisms that may drive the empirical outcomes described earlier. The key idea is that all channels operate by shifting either (i) the *marginal benefit* of more accurate information acquisition, or (ii) the *marginal cost* of generating accuracy, or (iii) the *mapping* from effort to accuracy.

4.3.1 A unifying reduced-form representation

To incorporate alternative mechanisms in the baseline model, it is useful to write the marginal benefit of information acquisition effort in the following flexible form

$$MB(e;w) = q'(e;w) \cdot \underbrace{B(w)}_{\text{stakes of mistakes}} + \underbrace{\Psi_e(e;w)}_{\text{other benefits of effort}}, \qquad MC(e;w) = C'(e;w), \tag{13}$$

so the FOC becomes

$$q'(e^*;w)\, B(w) + \Psi_e(e^*;w) = C'(e^*;w).$$

All channels below correspond to disciplined restrictions on how w enters $q(\cdot)$, $B(\cdot)$, $C(\cdot)$, and $\Psi(\cdot)$.

4.3.2 Reputational and career concerns (correctness incentives)

Reputational and career concerns make *being correct* valuable in itself, over and above its direct monetary payoff. In litigation settings, this can capture external scrutiny (media, regulators), personal liability

concerns, or career consequences of a perceived mistake.

To include such features in the model, let the board receive an additional benefit $\Gamma(w) \geq 0$ whenever its litigation strategy matches the ex-post optimal action (i.e., litigate if $\theta = S$, settle if $\theta = W$). Under the signal-based rule, the probability of correctness is exactly $q(e)$, so the expected reputational payoff is $\Gamma(w)\, q(e)$.

Under CARA utility, one can incorporate the reputational payoff either as (i) an additive monetary-equivalent component if reputational payoffs are "small" relative to wealth and can be valued in certainty-equivalent units, or (ii) directly inside utility as $u(\cdot + \Gamma)$ in the correct states. The simplest parsimonious representation is the monetary-equivalent version:

$$\mathbb{E}U(e; w) = \mathbb{E}U(e; w) + \Gamma(w)\, q(e) - C(e).$$

Then

$$\mathbb{E}U'(e; w) = q'(e)\big[B(w) + \Gamma(w)\big] - C'(e),$$

and the optimal effort satisfies

$$q'(e^*)\big[B(w) + \Gamma(w)\big] = C'(e^*). \tag{14}$$

If more gender-diverse boards face higher reputational stakes of being correct (i.e, $\Gamma'(w) > 0$), then the marginal benefit of effort increases with women board representation w, implying $e^*(w)$ increases in w under standard regularity conditions (concavity from $q'' < 0$, $C'' > 0$). Thus, reputational concerns reinforce the baseline prediction that gender diversity increases information acquisition.

Empirically, our model predicts that the effect of women's representation on boards of directors has a stronger effect on effort and settlement should be stronger when cases are more visible (media attention, salient plaintiffs, public firms); director careers are more sensitive to governance outcomes (high-profile boards, dense director networks); legal regimes increase personal accountability or scrutiny.

4.3.3 Governance diligence and information-processing advantages

Boards may differ not only in how much information they acquire, but also in how effectively they transform effort into signal accuracy. A large literature interprets gender-diverse boards as more diligent monitors, less prone to overconfidence, and more willing to consult external experts (Adams and Ferreira 2009; Huang and Kisgen 2013; Bernile et al. 2018).

This channel is naturally modeled as a shift in the *accuracy production function*. Let

$$q(e; w) \quad \text{with} \quad q_e(e; w) > 0,\ q_{ee}(e; w) < 0,$$

and assume

$$q_w(e; w) > 0 \quad \text{and/or} \quad q_{ew}(e; w) > 0. \tag{15}$$

The condition $q_w > 0$ means that, holding effort fixed, gender-diverse boards extract more informative signals (better processing). The condition $q_{ew} > 0$ means that the *marginal return* to effort is higher when w is higher, consistent with "effort is used more productively."

With $q(e; w)$, the FOC becomes

$$q_e(e^*; w)\, B(w) = C'(e^*). \tag{16}$$

If $q_{ew}(e; w) > 0$, then for any given e the marginal benefit $q_e(e; w)B(w)$ is larger when w is larger, implying $e^*(w)$ increases with w under concavity. Intuitively, when effort is more productive, the board invests more.

If diligence/processing is central, the effect of w should be empirically stronger when information is complex, and discretion is high (novel claims, uncertain precedent), or when boards can meaningfully improve inference via process (more meetings, external counsel, special committees).

4.3.4 Lower information collection cost

Gender composition may affect coordination, monitoring intensity, or the ease of mobilizing resources for due diligence. This is a pure *cost-side* channel.

To embed this feature in the baseline model, let us allow effort cost to depend on w:

$$C(e; w) \quad \text{with} \quad C_e(e; w) > 0,\ C_{ee}(e; w) > 0,$$

and assume

$$C_{ew}(e; w) < 0, \tag{17}$$

meaning that the marginal cost of effort is lower when the board is more gender-diverse.

The FOC becomes

$$q'(e^*)\, B(w) = C_e(e^*; w).$$

If $C_{ew} < 0$, then the right-hand side of the above inequality decreases with the share of women sitting on the board, thus increasing the optimal effort $e^*(w)$ even if $B(w)$ were constant. Hence, lower information costs are an alternative mechanism that might drive higher screening accuracy with more gender-diverse boards.

In terms of empirical predictions, if cost effects dominate, the gender effect should be strongly correlated with observable *process proxies* such as: board meeting frequency/attendance; use of external

counsel and expert opinions; committee structure and audit/legal oversight intensity.

4.3.5 Differences in beliefs or priors about case strength

Another possible mechanism driving our empirical results is that boards differ in *baseline beliefs* about the likelihood they may win a case upon litigation. This corresponds to differences in p (prior probability of a strong case).

A change in p affects $B(w)$ mechanically through the weights on the two mistake terms. If gender-diverse boards are systematically more pessimistic about case strength (lower p), they may settle more even holding e fixed. This channel is conceptually distinct from information acquisition.

Specifically, belief-based channels imply level differences in settlement that do not necessarily come with more precise sorting (accuracy). In the binary model, this implies: shifts in unconditional settlement without commensurate changes in error rates (e.g., litigating weak cases) or in screening proxies.

5 Robustness Check

Threshold test

As discussed above, our treatment variable is defined as a binary indicator equal to one if a firm had no female directors prior to 2010, and zero otherwise. Although Figure 2 demonstrates that all-male boards experienced the largest increase in female representation following the enhancement rule, one might nonetheless be concerned that this specific threshold definition could introduce bias into our analysis. In particular, it may be argued that alternative cutoffs based on low, but non-zero, female representation could yield similar effects.

To address this concern, we conduct a threshold analysis using alternative definitions of treatments. Specifically, we partition the sample according to pre-2010 female board share using cutoffs of 5%, 10%, and 20%. Table 6 reports the corresponding results. Each row represents a different threshold, redefining treated firms as those below the respective level of female representation prior to 2010.

Across all alternative threshold, we do not observe statistically significant effects on our main dependent variable. This pattern suggests that the treatment effect is not driven by boards with merely low female representation, but rather by boards with no female directors at all. In other words, the strongest and statistically significant effect emerges precisely at the extensive margin, when firms transition from zero to positive female representation following the reform. This finding reinforces our treatment definition and highlights that the critical adjustment occurs at the very margin of initial female inclusion.

Continuous variable test

In the previous section, we examined whether differences in initial level of female board representation

Table 6: Treatment Threshold

Prob.Settle (before court)	(1)	(2)	(3)
$Treshold_i(5\%) \times Post2010_t$	0.006		
	(0.033)		
$Treshold_i(10\%) \times Post2010_t$		-0.003	
		(0.013)	
$Treshold_i(20\%) \times Post2010_t$			0.002
			(0.012)
Control Variables			
Capital Expenditure	0.000*	0.000*	0.000*
	(0.000)	(0.000)	(0.000)
Duration	-0.020**	-0.020**	-0.020**
	(0.009)	(0.009)	(0.008)
Observations	32226	32226	32226
Mean DV	0.17	0.17	0.17
sd DV	0.38	0.38	0.38
R^2	0.19	0.19	0.19
Control	Yes	Yes	Yes
lControl	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
YearXInd	Yes	Yes	Yes

Note: The observation period covers 2005 - 2013. Control variables include firm size measure based on capital expenditure. lControl indicates litigation-related characteristics such as the nature of the suit and circuit where the cases were filed. For brevity, categorical controls are not displaced in the table. Standard errors are clustered at both the firm and court district levels.

drive our main results. We now turn to the post-2010 period and investigate whether the intensity of female representation, measured continuously as the female share on the board, affects our outcome variables. If higher female representation systematically improves litigation outcomes, we would expect to observe consistent effects in this continuous specification.

Using the female share as continuous variable allows us to test the intensive margin, that is, whether increasing female representation from 0 to higher levels after 2010 leads to proportional changes in the outcome. The results are reported in Table 7.

Column (1) presents the baseline continuous specification. Although the coefficient on female share after the 2010 enhancement has the expected sign, it is not statistically significant. This finding suggests that the effect is not linear in female representation and motives further investigation into the source of the significant effect identified in the binary specification.

To explore this heterogeneity, we divide firms into tercile based on female share and re-estimate the regression. The results reveal that the strongest and statistically significant negative coefficient is concentrated in specific segments of the distribution. This pattern indicates that the relationship between female board representation and litigation outcomes is unlikely to be linear and instead may exhibit a concave shape.

To formally examine this possibility, we estimate a quadratic specification. For settlement probability prior to court action, we find evidence consistent with concavity, as illustrated in Figure 4. The implied turning points occur at approximately 26% female representation before enactment and 24% after en-

actment. These estimates suggest that the reduction in pre-trial settlement probability is strongest at intermediate levels of female representation.

However, as reported in Appendix D, similar quadratic patterns do not consistently emerge across our dependent variables. Taken together, these findings indicate that while non-linearity may characterize certain dimensions of litigation outcomes, the curvature is not uniform across all measures.

Table 7: Continuous variable and tertile analysis

Prob.Settle (before court)	(1)	(2)
$FemaleShare_{i,t}$	0.146*	
	(0.083)	
$FemaleShare_{i,t} \times Post2010_t$	-0.034	
	(0.045)	
$2^{nd}tercile$		0.004
		(0.017)
$2^{nd}tercile \times Post2010_t$		-0.002
		(0.009)
$3^{rd}tercile$		0.005
		(0.018)
$3^{rd}tercile \times Post2010_t$		-0.029**
		(0.014)
Control Variables		
Capital Expenditure	0.000*	0.000*
	(0.000)	(0.000)
Duration	-0.020**	-0.020**
	(0.008)	(0.009)
Observations	32226	32226
Mean DV	0.17	0.17
sd DV	0.38	0.38
R^2	0.19	0.19
Control	Yes	Yes
lControl	Yes	Yes
Firm FE	Yes	Yes
Year FE	Yes	Yes
YearXInd	Yes	Yes

Note: The observation period covers 2005 - 2013. Control variables include firm size measure based on capital expenditure. lControl indicates litigation-related characteristics such as the nature of the suit and circuit where the cases were filed. For brevity, categorical controls are not displaced in the table. Standard errors are clustered at both the firm and court district levels.

Winning probability of terminated cases

We now turn to a set of additional robustness check for our main findings. We begin by examining the winning probability of cases that are terminated before any court action. In section 2.4, we show that increases in female board representation lead firms to place greater weight on case strength when deciding whether to proceed to trial, as captured by Equation (4). To further reinforce this interpretation, we focus here on the subset of cases that are discontinued at an early stage and therefore never reach trial.

If our mechanism is correct, cases that are dropped before any court action by more-exposed firms should exhibit lower predicted probabilities of winning, reflecting more selective screening rather than indiscriminate withdrawal. To test this implication, we re-estimate Equation (1), replacing the left-hand-side outcome with the predicted winning probability $p_{i,c,t}$ derived from Equation (4). For these terminated cases, a *win* is defined as an early favorable termination for the defendant, including settle-

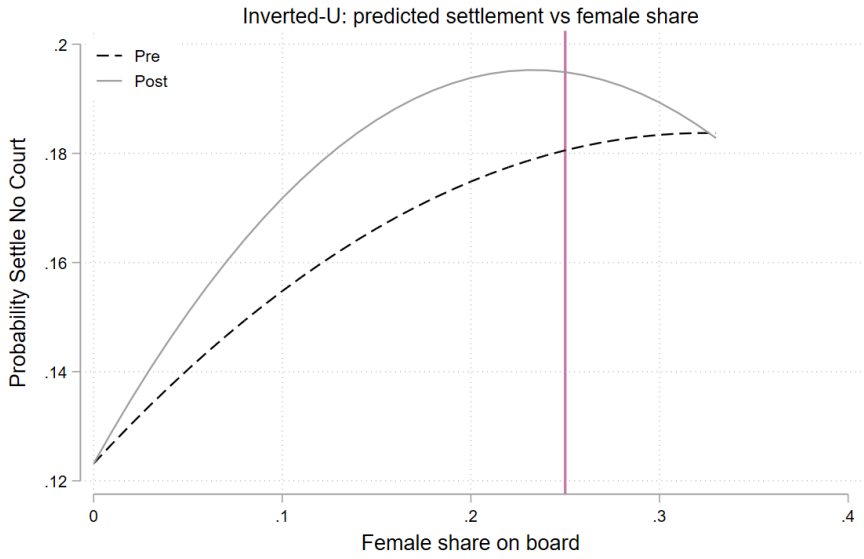


Figure 4: Inverted-U shape of Female Effect

ments or other resolutions that conclude the dispute in favor of the firm without proceeding to trial. For readability, coefficients here are scaled by 1,000 and the dependent variable is expressed as the predicted probability of winning multiplied by 100. Table 8 reports the corresponding results.

The coefficient of interest is the interaction between the more-exposed firms indicator and the post-2010 period, which captures whether reform-induced changes in board composition are associated with differences in the quality of cases that are dropped early.

Across specifications, the interaction term is negative, indicating that cases terminated by more-exposed firms after the reform have lower predicted probabilities of winning. In Column (1), which includes firm and time fixed effects but excludes additional controls, the estimate is negative but not statistically significant. In Column (2), after incorporating firm-level and litigation-related controls, the coefficient becomes statistically significant. Interpreted in light of the scaling, the estimate of -0.122 implies that, following the reform, more-exposed firms terminate cases with predicted winning probabilities that are meaningfully lower than those terminated by less-exposed firms.

This pattern provides additional support for the selective-screening interpretation of our main results. Rather than exiting litigation indiscriminately, firms with increased female board representation appear to drop cases with weaker expected prospects earlier, while allowing cases with higher expected success to proceed further.

Overall, this robustness results reinforce the mechanism evidence presented earlier. The lower predicted probabilities of early favorable outcomes among terminated cases indicate that the higher rate of early termination observed among more-exposed firms reflects more disciplined and selective case screening, rather than generalized risk avoidance or a reduced willingness to litigate.

Table 8: Winning Probability (terminated cases)

Prob.Winning (terminated)	(1)	(2)
$More_i \times Post2010_t$	-0.088	-0.122***
	(0.122)	(0.031)
Control Variables		
Capital Expenditure		-0.000
		(0.000)
Duration		0.856***
		(0.083)
Observations	5659	5659
Mean DV	2.98	2.98
sd DV	0.91	0.91
R^2	0.14	0.97
Control	No	Yes
lControl	No	Yes
Firm FE	Yes	Yes
Year FE	Yes	Yes
YearXInd	Yes	Yes

Note: The observation period covers 2005 - 2013. Control variables include firm size measure based on capital expenditure. lControl indicates litigation-related characteristics such as the nature of the suit and circuit where the cases were filed. For brevity, categorical controls are not displaced in the table. Standard errors are clustered at both the firm and court district levels.

Ethnic Diversity

One important caveat in interpreting the 2010 SEC disclosure reform is that the rule did not explicitly mandate gender diversity. Rather, firms were required to disclose whether and how they consider diversity more broadly in the director nomination process. In principle, firms could therefore comply with the disclosure requirement by emphasizing dimensions of diversity other than gender. Given the contemporaneous institutional environment, prevailing governance norms, and our empirical findings, we believe that increasing gender diversity represented the most salient and feasible response for many firms following the reform. Nevertheless, we cannot rule out the possibility that firms adjusted other dimensions of board diversity in response to the rule.

To address this concern, we conduct an additional robustness check examining ethnic diversity on corporate boards, which is one most observable dimension of diversity. Specifically, we re-estimate Equation (1), redefining more-exposed firms as those whose boards consisted exclusively of Caucasian directors prior to 2010, and less-exposed firms as those with at least one director of a different ethnicity. The results of this analysis are reported in Table 9.

Table 9 reports the results of the robustness analysis examining ethnic diversity as an alternative dimension of board diversity. Across both specifications, the interaction between the exposure indicator and the post-2010 period is small in magnitude and statistically insignificant. In Column (2), after incorporating firm-level and litigation related controls, the coefficient remains statistically insignificant and does not change meaningfully in magnitude or sign. This result indicates that increase in ethnic diversity following the disclosure reform are not associated with changes in early settlement behavior.

Our findings are further reinforced when we compare changes in gender and ethnic diversity between

Table 9: No court action (Diversity analysis)

Prob. Settle (before court)	(1)	(2)
$More_i \times Post2010_t$	0.010	-0.013
	(0.018)	(0.019)
Control Variables		
Duration		-0.020**
		(0.009)
Capital Expenditure		0.000*
		(0.000)
Observations	32226	32226
Mean DV	0.17	0.17
sd DV	0.38	0.38
R^2	0.09	0.19
Control	No	Yes
lControl	No	Yes
Firm FE	Yes	Yes
Year FE	Yes	Yes
YearXInd	Yes	Yes

Note: The observation period covers 2005 - 2013. Control variables include firm size measure based on capital expenditure. lControl indicates litigation-related characteristics such as the nature of the suit and circuit where the cases were filed. For brevity, categorical controls are not displaced in the table. Standard errors are clustered at both the firm and court district levels.

more- and less-exposed firms before and after the 2010 reform. Table 10 examines how board composition evolves following the SEC disclosure reform, separately for firms that were more exposed and less exposed to the rule. Consistent with the disclosure-based nature of the reform, and in line with the patterns shown in Figure 2, female board representation increases in both groups after 2010. This comparison highlights that, although both groups expanded female representation following the reform, the proportional adjustment was substantially larger among firms starting from very low representation.[14]

Columns (3) and (4) report analogous estimates for ethnic diversity. We observe statistically significant post-2010 increases in ethnic diversity for both more- and less- exposed firms. However, these changes are smaller in magnitude and, importantly, do not translate into differences in litigation outcomes. As shown in our earlier robustness analysis, increases in ethnic diversity are not associated with a higher likelihood of settlement before any court action.

This contrast is informative. It suggests that our main results are not driven by a general expansion of board diversity following the reform. Rather, the documented effects appear to be specific to changes in gender composition.

To further examine this point, we re-estimate our logit specification using ethnic diversity share as the key explanatory variable. As reported in Table E1 in Appendix E, higher ethnic diversity is not associated with a greater likelihood of conditioning trial decisions on the probability of winning. In other

[14] Although both groups exhibit increase in female board representation following 2010, the magnitude of the change differs substantially once scaled by typical representation levels. For more-exposed firms, the post-2010 increase is large relative to their average female share (mean $\bar{0}.03$), indicating a substantial compositional shift. In contrast, for less-exposed firms, the increase is modest relative to a much higher average female share (mean $\bar{0}.16$), reflecting incremental adjustment rather than a structural change. This pattern confirms that the SEC disclosure rule affected board composition broadly, while generating particularly strong adjustments among firms initially lacking female directors, precisely the source of variation exploited in our quasi-DiD design.

words, firms with more ethnically diverse boards do not appear to adjust their litigation strategy in the manner observed for gender diversity.

Taken together, these results reinforce the interpretation of our core findings. Although SEC disclosure reform induced adjustments across multiple dimensions of board diversity, only changes in female representation are systematically associated with litigation decision-making. This pattern suggests that the documented effects are not driven by a general shift in diversity-related governance practices. Rather, it indicates that female directors play a distinct and economically meaningful role in shaping early-stage litigation outcomes.

Table 10: Effect of Law

	(1) Female share (More)	(2) Female share (Less)	(3) Diversity share (More)	(4) Diversity share (Less)
$Post2010_t$	0.041***	0.033***	0.013***	0.009**
	(0.011)	(0.008)	(0.003)	(0.004)
Control Variables				
Capital Expenditure	0.000	0.000	0.000**	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Observations	2839	8823	5739	5923
Mean DV	0.03	0.16	0.01	0.10
sd DV	0.06	0.10	0.03	0.10
R^2	0.40	0.65	0.42	0.78
Control	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes

Note: The observation period covers 2005 - 2017. Control variables include firm size measure based on capital expenditure. Standard errors are clustered at both the firm and year levels.

Economic Consequences

In the preceding analyses, we show that greater female board representation is associated with a higher likelihood of resolving cases before any court action, reflecting more accurate assessments of case strength and more selective litigation decisions. If these early-stage decisions indeed improve litigation quality, they should ultimately translate into financial benefits for firms. Accordingly, in this section, we examine whether firms with higher female board representation experience improved financial outcomes following the 2010 reform, compared to the pre-reform period. To end this, we construct a measure of *liability avoided*, defined as follows:

$$Liability \quad Avoided_{i,c,t} = Demanded_{i,c,t} - Payment_{i,c,t} \tag{18}$$

Here, $Demanded_{i,c,t}$ denotes the monetary amount requested by the plaintiff in case c involving firm i at time t, while $Payment_{i,c,t}$ represents the amount ultimately paid by the defendant following the court's decision. We exclude settlement cases at all stages of the litigation process, as information on settlement amounts is not available. We then use $Liability\ Avoided_{i,c,t}$ as the dependent variable in Equation (1). Table 11 reports the corresponding results.

In Column (1), which includes firm and time fixed effects but excludes additional controls, the estimated coefficient on the interaction term is positive but not statistically significant. In Column (2), after incorporating firm-level and litigation related controls, the coefficient increases in magnitude and becomes statistically significant. The estimate of 1.845 implies that, following the reform, more-exposed firms experienced substantially higher liability avoided in litigated cases relative to less-exposed firms.

Interpreted in percentage terms, this coefficient corresponds to an increase of approximately 185 percent in liability avoided.[15] While this magnitude many appear large at first glance, it is economically plausible in the present context. In many cases, defendants incur no monetary penalty when they prevail, resulting in a payment of amount of zero. As a consequence, relatively small changes in litigation outcomes, such as avoiding adverse judgments in weaker cases or securing more favorable resolutions, can translate into large proportional increase in liability avoided. This feature of outcome distribution makes sizable percentage effects both expected and meaningful.

Overall, these results suggest that the early-stage ligation decisions associated with increased female board representation are not only procedurally distinct but also financially consequential. By resolving weaker cases earlier and allowing stronger cases to proceed, firms reduce their exposure to unfavorable judgments, leading to significantly higher amount of liability avoided in the post-reform period. This evidence complements our earlier findings and indicates that improvements in litigation decision quality translate into tangible financial benefits for firms.

Table 11: Liability Avoided

Ln.Liability Avoided	(1)	(2)
$More_i \times Post2010_t$	0.564	1.845**
	(1.040)	(0.753)
Control Variables		
Duration		0.033
		(0.060)
Capital Expenditure		-0.000***
		(0.000)
Observations	3303	3303
Mean DV	6.08	6.08
sd DV	2.50	2.50
R^2	0.22	0.47
Control	No	Yes
lControl	No	Yes
Firm FE	Yes	Yes
Year FE	Yes	Yes
YearXInd	Yes	Yes

Note: The observation period covers 2005 - 2013. Control variables include firm size measure based on capital expenditure. lControl indicates litigation-related characteristics such as the nature of the suit and circuit where the cases were filed. For brevity, categorical controls are not displaced in the table. Standard errors are clustered at both the firm and court district levels.

[15] Because the dependent variable is specified in logarithms, coefficients can be interpreted as approximate percentage changes.

6 Concluding Remarks

This study examines how female board representation shapes firms' litigation strategies, with a focus on the early stages of litigation. Exploiting the 2010 SEC Proxy Disclosure Enhancements Rule as a source of plausibly exogenous variation in board composition, we document that firms facing stronger reform-induced pressure to adjust gender diversity are more likely to resolve cases before any court action. This effect prevails at the earliest stage of litigation. It does not extend to in-court or post-trial outcomes, highlighting that female directors influence litigation behavior primarily ex ante, before cases escalate.

Our empirical findings point to a precise mechanism. Firms with greater female board representation are more selective in their litigation strategy: they are more likely to terminate weak cases early while allowing stronger cases to proceed. Multiple pieces of evidence support this interpretation. First, early terminations among more-exposed firms are associated with lower predicted probability of winning, indicating selective screening rather than indiscriminate risk avoidance. Second, when cases do proceed to the court stage, higher female representation is associated with more substantial alignment between case strength and the decision to go to trial, suggesting improved judgment rather than a general reluctance to litigate. Third, the procedural improvements translate into economically meaningful financial outcomes, as firms with increased female representation experience substantially higher liability avoided following the reform. We rationalize these outcomes using a simple theoretical model in which the board of directors decides whether to pursue litigation or to settle. They base their choice on a signal about their chances of winning a lawsuit. Boards can also choose the precision of such a signal, and we show that more risk-averse boards invest more into signal precision. We assume that risk aversion positively correlates with female representation on the board. As a result, boards are more conservative when deciding whether to go to court, requiring stronger signals to pursue litigation. Furthermore, because of greater signal precision, boards with more female directors are more likely to make the right choice ex post, i.e., to litigate favorable cases and settle weak ones.

An important contribution of the paper is to show that the benefits of female board representation are nonlinear. Using a quadratic specification, we document an inverted-U relationship between female board share and the likelihood of early settlement, with diminishing marginal returns beyond moderate levels of representation. Notably, the 2010 SEC reform shifts firms along this stable relationship without altering its shape. This pattern reinforces the interpretation that the reform operates through changes in board composition, by increasing female representation, rather than by changing how female directors affect decision-making conditional on their presence.

Our study suggests also points to several avenues for future research. First, our analyses focus on cases in which firms act as defendants. While this restrictions enhances interpretability by isolating reactive litigation decision, it leaves open the question of how board gender composition influences plaintiff-initiated litigation, where strategic consideration may differ. Examining such cases would be a

natural extension of the present study. Second, our measures of board diversity are necessarily limited to observable characteristics reported in board data. Future research could explore additional dimensions relevant to legal decision-making, such as directors' informal influence, internal board dynamics, and interactions with external legal counsel, to further illuminate the mechanism through which governance structure shape litigation outcomes.

References

Adams, R. B. and Ferreira, D. (2009). Women in the boardroom and their impact on governance and performance. *Journal of financial economics*, 94(2):291–309.

Ahrens, A., Hansen, C. B., and Schaffer, M. E. (2020). lassopack: Model selection and prediction with regularized regression in stata. *The Stata Journal*, 20(1):176–235.

Autor, D. H., Dorn, D., and Hanson, G. H. (2013). The china syndrome: Local labor market effects of import competition in the united states. *American economic review*, 103(6):2121–2168.

Bebchuk, L. A. (1984). Litigation and settlement under imperfect information. *RAND Journal of Economics*, 15(3):404–415.

Beji, R., Yousfi, O., Loukil, N., and Omri, A. (2021). Board diversity and corporate social responsibility: Empirical evidence from france. *Journal of Business Ethics*, 173(1):133–155.

Belloni, A., Chen, D., Chernozhukov, V., and Hansen, C. (2012). Sparse models and methods for optimal instruments with an application to eminent domain. *Econometrica*, 80(6):2369–2429.

Belloni, A., Chernozhukov, V., and Hansen, C. (2014). High-dimensional methods and inference on structural and treatment effects. *Journal of Economic Perspectives*, 28(2):29–50.

Bernile, G., Bhagwat, V., and Yonker, S. (2018). Board diversity, firm risk, and corporate policies. *Journal of Financial Economics*, 131(2):239–259.

Bertrand, M. and Mullainathan, S. (2003). Enjoying the quiet life? corporate governance and managerial preferences. *Journal of political Economy*, 111(5):1043–1075.

Blackwell, D. (1953). Equivalent comparisons of experiments. *The Annals of Mathematical Statistics*, 24(2):265–272.

Brahma, S., Nwafor, C., and Boateng, A. (2021). Board gender diversity and firm performance: The uk evidence. *International Journal of Finance & Economics*, 26(4):5704–5719.

Buser, T., Niederle, M., and Oosterbeek, H. (2014). Gender, competitiveness, and career choices. *The quarterly journal of economics*, 129(3):1409–1447.

Byrnes, J. P., Miller, D. C., and Schafer, W. D. (1999). Gender differences in risk taking: A meta-analysis. *Psychological bulletin*, 125(3):367.

Cabeza-García, L., Fernández-Gago, R., and Nieto, M. (2018). Do board gender diversity and director typology impact csr reporting? *European Management Review*, 15(4):559–575.

Carter, M. E., Franco, F., and Gine, M. (2017). Executive gender pay gaps: The roles of female risk aversion and board representation. *Contemporary Accounting Research*, 34(2):1232–1264.

Charness, G. and Gneezy, U. (2012). Strong evidence for gender differences in risk taking. *Journal of economic behavior & organization*, 83(1):50–58.

Chava, S. and Purnanandam, A. (2010). Is default risk negatively related to stock returns? *The Review of Financial Studies*, 23(6):2523–2559.

Chava, S. and Purnanandam, A. (2011). The effect of banking crisis on bank-dependent borrowers. *Journal of financial economics*, 99(1):116–135.

Croson, R. and Gneezy, U. (2009). Gender differences in preferences. *Journal of Economic literature*, 47(2):448–474.

Cumming, D. and Leung, T. Y. (2021). Board diversity and corporate innovation: Regional demographics and industry context. *Corporate Governance: An International Review*, 29(3):277–296.

DeGroot, M. H. (1970). *Optimal Statistical Decisions*. McGraw-Hill, New York.

Dharmapala, D., Foley, C. F., and Forbes, K. J. (2011). Watch what i do, not what i say: The unintended consequences of the homeland investment act. *The Journal of Finance*, 66(3):753–787.

Eckel, C. C. and Grossman, P. J. (2008). Men, women and risk aversion: Experimental evidence. *Handbook of experimental economics results*, 1:1061–1073.

Fama, E. F. and Jensen, M. C. (1983). Separation of ownership and control. *The journal of law and Economics*, 26(2):301–325.

Filippin, A. and Crosetto, P. (2016). A reconsideration of gender differences in risk attitudes. *Management Science*, 62(11):3138–3160.

Fossen, F. M. (2012). Gender differences in entrepreneurial choice and risk aversion–a decomposition based on a microeconometric model. *Applied Economics*, 44(14):1795–1812.

Garmaise, M. J. (2011). Ties that truly bind: Noncompetition agreements, executive compensation, and firm investment. *The Journal of Law, Economics, & Organization*, 27(2):376–425.

Griffin, D., Li, K., and Xu, T. (2021). Board gender diversity and corporate innovation: International evidence. *Journal of Financial and Quantitative Analysis*, 56(1):123–154.

Grossman, S. J. and Stiglitz, J. E. (1980). On the impossibility of informationally efficient markets. *American Economic Review*, 70(3):393–408.

Harjoto, M., Laksmana, I., and Lee, R. (2015). Board diversity and corporate social responsibility. *Journal of business ethics*, 132(4):641–660.

Hazen, T. L. (2010). Diversity on corporate boards: Limits of the business case and the connection between supporting rationales and the appropriate response of the law. *NCL Rev.*, 89:887.

Hazen, T. L. and Broome, L. L. (2011). Board diversity and proxy disclosure. *U. Dayton L. Rev.*, 37:39.

Hermalin, B. E. and Weisbach, M. S. (1998). Endogenously chosen boards of directors and their monitoring of the ceo. *American economic review*, pages 96–118.

Hillman, A. J. and Dalziel, T. (2003). Boards of directors and firm performance: Integrating agency and resource dependence perspectives. *Academy of Management review*, 28(3):383–396.

Hsu, P.-H., Li, K., and Pan, Y. (2025). The eco-gender gap in boardrooms. *Management Science*.

Huang, J. and Kisgen, D. J. (2013). Gender and corporate finance: Are male executives overconfident relative to female executives? *Journal of Financial Economics*.

Kang, Q., Liu, Q., and Qi, R. (2010). The sarbanes-oxley act and corporate investment: A structural assessment. *Journal of Financial Economics*, 96(2):291–305.

Matějka, F. and McKay, A. (2015). Rational inattention to discrete choices: A new foundation for the multinomial logit model. *American Economic Review*, 105(1):272–298.

Nadeem, M., Bahadar, S., Gull, A. A., and Iqbal, U. (2020). Are women eco-friendly? board gender diversity and environmental innovation. *Business Strategy and the Environment*, 29(8):3146–3161.

Niederle, M. and Vesterlund, L. (2011). Gender and competition. *Annu. Rev. Econ.*, 3(1):601–630.

Palvia, A., Vähämaa, E., and Vähämaa, S. (2015). Are female ceos and chairwomen more conservative and risk averse? evidence from the banking industry during the financial crisis. *Journal of business ethics*, 131(3):577–594.

Post, C. and Byron, K. (2015). Women on boards and firm financial performance: A meta-analysis. *Academy of management Journal*, 58(5):1546–1571.

Priest, G. L. and Klein, B. (1984). The selection of disputes for litigation. *Journal of Legal Studies*, 13(1):1–55.

Raiffa, H. and Schlaifer, R. (1961). *Applied Statistical Decision Theory*. Division of Research, Graduate School of Business Administration, Harvard University, Boston.

Reinganum, J. F. and Wilde, L. L. (1986). Settlement, litigation, and the allocation of litigation costs. *RAND Journal of Economics*, 17(4):557–566.

Sah, N. B., Adhikari, H. P., Krolikowski, M. W., Malm, J., and Nguyen, T. T. (2022). Ceo gender and risk aversion: Further evidence using the composition of firm's cash. *Journal of Behavioral and Experimental Finance*, 33:100595.

Shavell, S. (1982). Suit, settlement, and trial: A theoretical analysis under alternative methods for the allocation of legal costs. *Journal of Legal Studies*, 11(1):55–81.

Sims, C. A. (2003). Implications of rational inattention. *Journal of Monetary Economics*, 50(3):665–690.

Spier, K. E. (1992). The dynamics of pretrial negotiation. *Review of Economic Studies*, 59(1):93–108.

Stan, M. and Puranam, P. (2017). Organizational adaptation to interdependence shifts: The role of integrator structures. *Strategic Management Journal*, 38(5):1041–1061.

Thöni, C. and Volk, S. (2021). Converging evidence for greater male variability in time, risk, and social preferences. *Proceedings of the National Academy of Sciences*, 118(23):e2026112118.

Triana, M. d. C., Miller, T. L., and Trzebiatowski, T. M. (2014). The double-edged nature of board gender diversity: Diversity, firm performance, and the power of women directors as predictors of strategic change. *Organization Science*, 25(2):609–632.

Van Nieuwerburgh, S. and Veldkamp, L. (2010). Information acquisition and underdiversification. *Review of Economic Studies*, 77(2):779–805.

Veldkamp, L. (2011). *Information Choice in Macroeconomics and Finance*. Princeton University Press, Princeton, NJ.

Verrecchia, R. E. (1982). Information acquisition in a noisy rational expectations economy. *Econometrica*, 50(6):1415–1430.

Von Gaudecker, H.-M., Van Soest, A., and Wengström, E. (2011). Heterogeneity in risky choice behavior in a broad population. *American Economic Review*, 101(2):664–694.

Weisbach, M. S. (1988). Outside directors and ceo turnover. *Journal of financial Economics*, 20:431–460.

Zheng, X. and Wang, X. (2024). Board gender diversity and corporate litigation: evidence from china. *Gender in Management: An International Journal*, 39(3):427–446.

Appendices

Appendix A : Effect of Enactment

Consistent with Figure 2, we document how the SEC's Proxy Disclosure Enhancements Rule, adopted in 2009 and implemented in 2010, was associated with changes in female board representation. Establishing this "first-stage" relationship is central to our DiD framework. Our identification relies on the idea that the reform created stronger incentives for some firms to adjust board composition than for others, generating differential increases in female representation that the reform created stronger incentives for some firms to adjust board composition than for others, generating differential increases in female representation that are plausibly unrelated to firms' endogenous governance choices.

In particular, the reform's pressure depended on firms' initial board composition. Firms with no female directors prior to 2010 faced greater scrutiny in explaining how diversity entered the nomination process, whereas firms that already had at least one female director faced comparatively less pressure. This heterogeneity implies that female representation should rise more sharply among initially all-male boards than among boards that already included women. Demonstrating this differential adjustment is crucial because it provides the variation in exposure that underlies our DiD design. For this reason, we devote this appendix to presenting the first-stage evidence showing that female board representation evolved differently across more- and less-exposed firms following the reform.

We begin by conducting an event-study analysis to examine differences in female board representation between more- and less-exposed firms over time. Specifically, we estimate the following specification:

$$Y_{i,t} = \theta_0 + \sum_{k=-4, k\neq 0}^{8} \sigma_k \cdot 1(t - T_s = k) + \theta_1 X'_{i,t} + \delta_i + \mu_t + \rho_{n\times t} + \eta_{i,t} \tag{19}$$

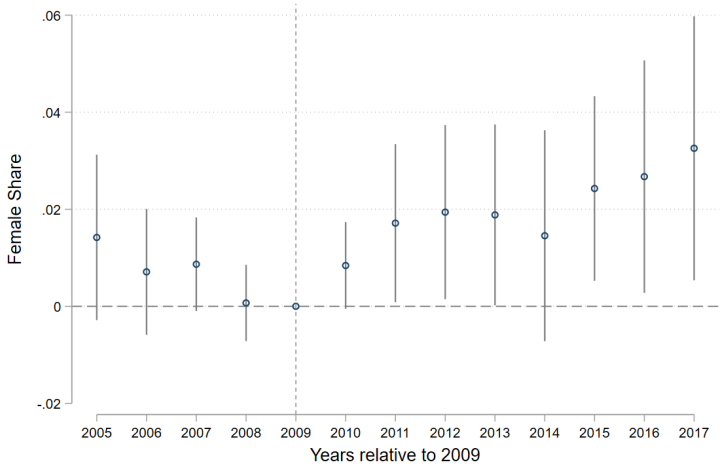
Figure A1 presents the event-study estimates of differences in female board representation between more- and less-exposed firms around the implementation of the 2010 SEC disclosure reform. The coefficients are normalized to zero in 2009, the year immediately preceding the reform, so each point reflects the within-firm change in female board share relative to that baseline.

In the pre-reform period, the estimated coefficients are small and statistically indistinguishable from zero, indicating no differential trends in female board representation between the two groups prior to the reform. This absence of pre-trends supports the validity of our identification strategy. Beginning in 2010, the coefficients turn positive and increase over time, indicating that more-exposed firms experienced a larger rise in female board representation relative to less-exposed firms following the reform. The divergence becomes more pronounced in the years after implementation, consistent with a gradual adjustment in board composition rather than an immediate response.

Overall, the event-study evidence confirms that the SEC disclosure reform generated differential

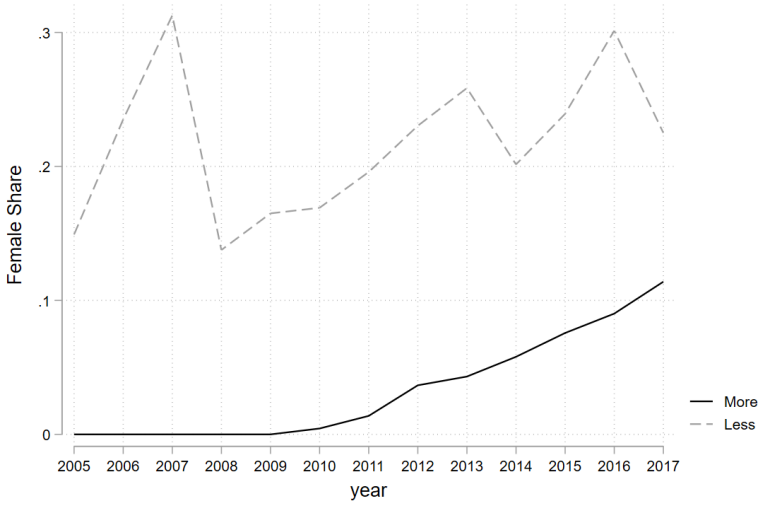
changes in female board representation across firms depending on their initial board composition. This pattern provides the first-stage variation underpinning our DiD design and supports the interpretation that subsequent differences in litigation outcomes are linked to reform-induced changes in female board representation rather than to pre-existing trends.

Figure A1: Event-study: Female share between more- and less-exposed firms



Additionally, we examine the evolution of female board representation over time for more- and less-exposed firms. Figure A2 plots raw average female board share by year for the two groups. Consistent with the regression-based event-study results, female representation among more-exposed firms remains near zero prior to 2010 and rises steadily thereafter. This descriptive pattern illustrates the magnitude and persistence of post-reform adjustments in board composition, complementing the first-stage evidence presented in Figure A1.

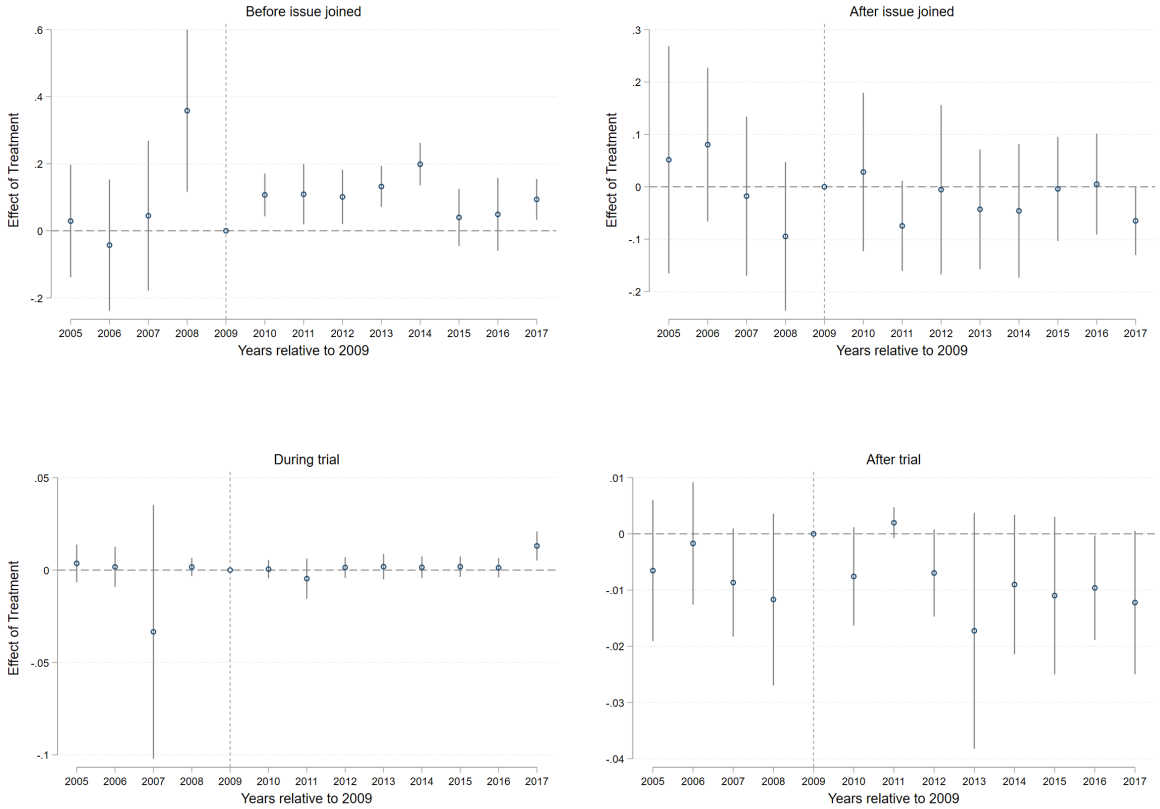
Figure A2: Raw data: Female share between more- and less-exposed firms



Appendix B : Event Study Outcomes

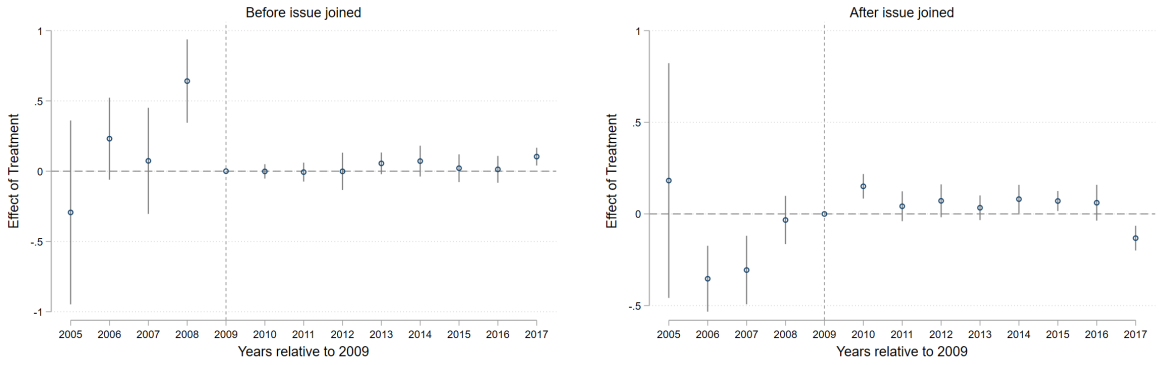
In this Appendix, we re-estimate Equation (2) using alternative litigation outcomes corresponding to different stages of the litigation process.[16]

Panel A: Termination

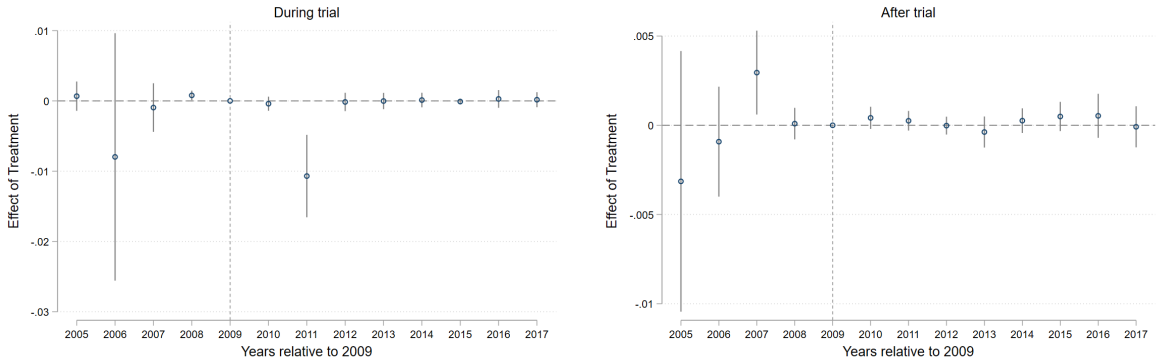


Notes: The dependent variable in this event-study is a set of indicators capturing case termination at each stage of the litigation process, as shown in the corresponding figures.

Panel B: Settlement



[16] Here, "Before issue joined" includes cases coded as "before issue joined: order entered" and "before issue joined: hearing held," which are procedurally distinct from cases classified as "before issue joined: no court action."



Notes: The dependent variable in this event-study is a set of indicators capturing case settled at each stage of the litigation process, as shown in the corresponding figures.

Appendix C : Lasso Logit Model

To evaluate whether firms adjust their litigation strategy based on the expected likelihood of success, we construct a data-driven measure of the predicted probability of winning each case. Specifically, we estimate a logistic regression model with LASSO regularization (lasso logit), which allows us to predict the probability that the defendant firm wins a case using a large set of case characteristics.

LASSO (Least Absolute Shrinkage and Selection Operator) is a penalized regression technique designed for setting with a large number of potential predictors relative to the sample size. The method adds an L_1 penalty to the likelihood function, shrinking small coefficients toward zero and effectively performing variable selection. In the context of a logistic model, the estimator solves:

$$\hat{\beta} = arg \quad min_\beta = \left[-\frac{1}{n} \sum_{t=1}^{n} (y_i log p_i + (1 - y_i) log(1 - p_i)) + \lambda \sum_{j=1}^{p} |\beta_j| \right],$$

where y_i indicates whether the firm wins the case, p_i is the predicted probability of winning, and λ is a penalty parameter that determines the degree of shrinkage applied to the coefficients. When λ is large, more coefficients are shrunk to zero, resulting in a more parsimonious model.

A key challenge in LASSO estimation is selecting the appropriate penalty parameter λ. In this study, we follow the theoretical plug-in penalty approach developed in the high-dimensional econometrics literature (Belloni et al. 2014; 2012). Rather than relying on cross-validation, this method chooses the penalty level using an analytic formula that depends on the sample size and the number of candidate predictors. Intuitively, the plug-in rule sets the penalty proportional to

$$\lambda \propto \sqrt{\frac{log(p)}{n}},$$

where p is the number of potential predictors and n is the sample size. This choice ensures that, with high probability, irrelevant variables are excluded while retaining the predictors that have meaningful

explanatory power. The approach is designed to achieve so-called oracle properties, meaning that the selected model asymptotically performs as if the researcher knew the true set of relevant variables in advance.

The plug-in method is particularly well suited to empirical settings such as ours. Our perdition model includes a high-dimensional set of case-level features, including characteristics of the lawsuit, court jurisdiction, filing year, case duration, monetary claims, and other litigation attributes. In such environments, traditional logistic regression may suffer from overfitting or unstable coefficient estimates. The LASSO procedure addresses this concern by automatically selecting the most informative predictors and shrinking less informative variables toward zero, thereby producing a more stable and interpretable prediction model.

Another advantage of the plug-in penalty approach is that it provides deterministic and theoretically grounded variable selection. Unlike cross-validation, which can introduce randomness through the construction of folds, the plug-in rule produces a stable and reproducible set of selected variables. Prior research shows that this approach yields consistent variable selection and valid post-selection inference under approximate sparsity, that is, when only a subset of the available predictors meaningfully influences the outcome Belloni et al. (2014). Simulation evidence and empirical applications also demonstrate that plug-in penalties perform comparably to cross-validation while often producing more conservative and stable models (Ahrens et al. 2020).

Using the estimated lasso logit model, we compute the predicted probability that each case results in a win for the defendant firm. This predicted probability serves as a measure of case strength, summarizing how observable litigation characteristics translate into the likelihood of success in court. We then use this measure to examine whether firms with higher female board representation adjust their litigation strategies, such as the decision to settle early, based on the expected probability of winning.

Appendix D : Further Analysis of Quadratic Form

In this Appendix, we examine whether female board representation exhibits a quadratic relationship with litigation outcomes beyond early settlement. The purpose of this analysis is to assess whether the concave pattern documented for early settlement decisions also appears in litigation escalation and success outcomes, or whether these effects operate primarily through more discrete governance shifts rather than gradual increases in female representation.

We begin by analyzing the association between female board representation and winning probability. Column (1) presents the continuous specification and shows no statistically significant relationship between female board representation and the probability of winning a case. Column (2) reports the terciles before 2010, firms in the highest females-share tercile experience a 4.5 percent increase in winning prob-

ability after 2010 relative to firms in the lowest tercile. Column (3) presents the quadratic specification, which does not reveal a statistically significant nonlinear pattern.

Combining all together, the results reported in Table D1 suggest that the positive association between female board representation and winning probability does not follow a smooth or quadratic pattern. Instead, the effect appears only when female representation reaches sufficiently high levels, as captured by the highest tercile after 2010.

Table D1: Probability of Winning

Prob.winning	(1)	(2)	(3)
$FemaleShare_{i,t}$	-0.073		-0.316
	(0.099)		(0.292)
$FemaleShare_{i,t} \times Post2010_t$	0.123		-0.383
	(0.099)		(0.346)
$2^{nd}tercile$		-0.005	
		(0.013)	
$2^{nd}tercile \times Post2010_t$		0.005	
		(0.024)	
$3^{rd}tercile$		0.001	
		(0.013)	
$3^{rd}tercile \times Post2010_t$		0.045**	
		(0.021)	
$FemaleShare^2_{i,t}$			0.581
			(0.657)
$FemaleShare^2_{i,t} \times Post2010_t$			1.409
			(0.849)
Control Variables			
Capital Expenditure	0.000**	0.000**	0.000**
	(0.000)	(0.000)	(0.000)
Duration	0.016**	0.016**	0.016**
	(0.006)	(0.006)	(0.007)
Observations	34333	34333	34333
Mean DV	0.07	0.07	0.07
sd DV	0.25	0.25	0.25
R^2	0.16	0.16	0.16
Control	Yes	Yes	Yes
lControl	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
YearXInd	Yes	Yes	Yes

Note: The observation period covers 2005 - 2017. Control variables include firm size measure based on capital expenditure. Standard errors are clustered at both the firm and year levels.

Figure D1: Association between settlement probability and winning probability, and female share on board

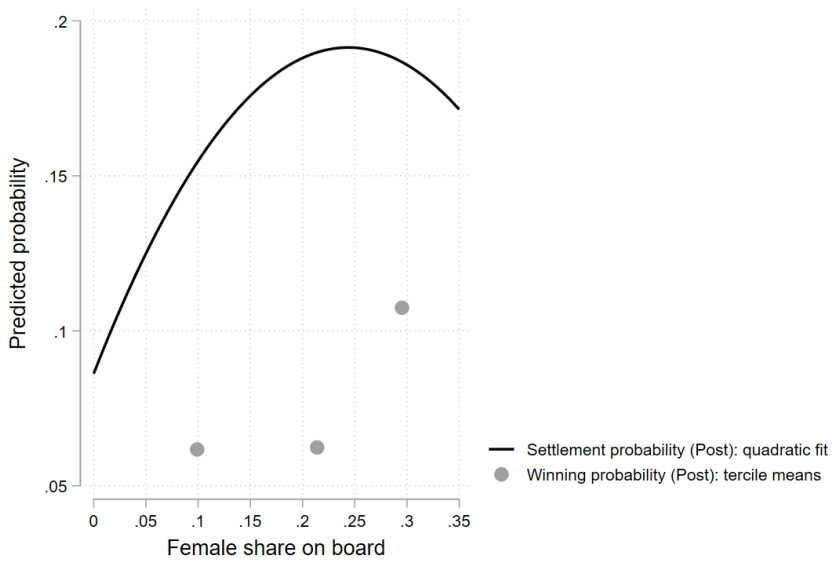


Figure D1 provides a visual summary of how litigation outcomes vary with female board representation. The settlement probability follows a concave pattern, increasing with female share up to roughly one quarter of the board before flattening. In contrast, the probability of winning a case shows little change at lower levels of female representation and rises only in the highest tercile.

Taken together, these patterns suggest a potential governance progression as female representation increases. At low levels of female representation (below roughly 20 percent), female directors may have limited influence on litigation strategy, resulting in little observable change in outcomes. As representation increases to intermediate levels (around 20-25 percent), boards appear more inclined toward early settlement decisions, consistent with the rise in settlement probability. Once female representation reaches higher levels (above roughly 25-30 percent), the effect appears to extend beyond settlement behavior and is associated with improved litigation success.

While these patterns should be interpreted descriptively, they are consistent with the idea that the influence of female directors becomes more pronounced as their representation on the board increases.

Appendix E : Further Analysis of Ethnic Diversity

As mentioned above, the 2010 SEC disclosure rule did not explicitly define what constitutes "diversity." According to Hazen and Broome (2011), there was substantial support from investors and organizations for enhanced disclosure of director qualification and board composition. In the comment letters submitted to the SEC prior to the enactment of the rule, a large share of respondents emphasized the importance of board diversity. In particular, approximately 43% of the letters discussed the relevance of diversity among board members and why greater diversity would be beneficial for stakeholders. Among these, about 21% referred specifically to gender diversity, while 14% highlighted racial diversity. By contrast, only around 0.01% of the comments referred to diversity in terms of directors' background or skills.

The evidence suggests that, at the time of the reform, diversity was primarily understood by market participants as referring to either gender diversity or ethnic diversity. Consequently, in our analysis we focus on ethnic diversity as the main potential confounding dimension when interpreting the effect of female board representation.

Accordingly, in this section we examine whether ethnic diversity is associated with litigation decisions in a manner similar to female board representation. To ensure comparability with our main analysis, we implement the same empirical framework based on the predicted probability of winning obtained from the lasso logit model. The objective of this exercise mirrors that of Section 3.4: we test whether changes in board diversity influence firms' decisions to proceed to trial depending on the predicted probability of success. The predicted probability is obtained from the lasso logit model, which estimates the likelihood that the defendant wins a case based on observable case characteristics.

If our baseline results truly capture a female board representation effect rather than a broader diversity-related governance change, we should not observe a similar pattern when ethnic diversity is used as the explanatory variable. To test this hypothesis, we first estimate the same lasso logit model as in Equation (3) to construct the predicted winning probability. We then re-estimate the litigation decision model using Equation (4), replacing female representation with ethnic diversity.

Table E1 summarizes our findings. In Columns (1) and (2), the triple interaction term, our coefficient of interest, is not statistically significant. Furthermore, the estimate in Column (2) displays the opposite sign compared with our main female board representation analysis. This pattern provides additional reassurance that, although the 2010 enactment may have increased both gender and ethnic diversity on corporate boards (as in Table 10), the increase in ethnic diversity does not produce the same effect on our outcome variable as the increase in female representation.

Table E1: Lasso Logit Model Analysis (diversity)

Prob.Going to Trial	(1)	(2)
$Prob.Winning_{i,c,t}$	-0.011	-0.010
	(0.011)	(0.021)
$DiversityShare_{i,t}$	0.062***	0.045***
	(0.023)	(0.016)
$DiversityShare_{i,t} \times Prob.Winning_{i,c,t}$	-0.072	-0.079
	(0.082)	(0.100)
$Prob.Winning_{i,c,t} \times Post2010_t$	0.025	0.035
	(0.019)	(0.022)
$DiversityShare_{i,t} \times Post2010_t$	-0.019	0.007
	(0.024)	(0.026)
$DiversityShare_{i,t} \times Prob.Winning_{i,c,t} \times Post2010_t$	0.000	-0.019
	(0.088)	(0.110)
Control Variables		
Capital Expenditure		0.000
		(0.000)
Duration		0.004***
		(0.002)
Observations	32398	32398
Mean DV	0.00	0.00
sd DV	0.05	0.05
R^2	0.07	0.09
Control	No	Yes
lControl	No	Yes
Firm FE	Yes	Yes
Year FE	Yes	Yes
YearXInd	Yes	Yes

Note: The observation period covers 2005 - 2013. Control variables include firm size measure based on capital expenditure. lControl indicates litigation-related characteristics such as the nature of the suit and circuit where the cases were filed. For brevity, categorical controls are not displaced in the table. Standard errors are clustered at both the firm and court district levels.

Appendix F : Theoretical Proofs

Proof of Lemma 1

Notice that $\mathbb{E}U_L(\pi; w)$ is affine and strictly increasing in π because $u(X_S; w) > u(-X_W; w)$. Hence there is a unique $\bar{\pi}(w)$ at which $EU_L(\pi; w) = u(-S; w)$.

Then, solving for $\bar{\pi}(w)$ yields

$$\bar{\pi}(w) = \frac{u(-S; w) - u(-X_W; w)}{u(X_S; w) - u(-X_W; w)}.$$

The numerator of $\bar{\pi}$ involves the gap between two losses, $-S$ and $-X_W$, and the denominator involves the gap between a gain X_S and a large loss $-X_W$. As $r(w)$ increases, the utility penalty of the bad outcome $-X_W$ increases relative to both $-S$ and X_S, which raises the posterior evidence required to justify litigation. Formally, differentiating the closed-form expression with respect to $r(w)$ and using $X_W > S > 0$ yields $\bar{\pi}'(w) > 0$.

Proof of Lemma 2

Differentiating (6) with respect to e yields

$$EU''(e; w) = q''(e)\, B(w) - C''(e).$$

Since $q''(e) < 0$, $B(w) > 0$, and $C''(e) > 0$, we have $EU''(e; w) < 0$ for all e.

Proof of Proposition 1

Under screening, the board's ex-ante objective can be written as

$$EU(e; w, p) = q(e; p)\, B(w) - C(e),$$

where $C'(e) > 0$, $C''(e) > 0$, and $q_e(e; p) > 0$, $q_{ee}(e; p) < 0$. The first-order condition for an interior optimum is

$$F(e; w, p) := q_e(e; p)\, B(w) - C'(e) = 0. \tag{20}$$

Strict concavity follows from

$$F_e(e; w, p) = q_{ee}(e; p)B(w) - C''(e) < 0,$$

so $e^*(w, p)$ is unique.

(a) Comparative statics in w. Differentiate $F(e^*(w,p);w,p)=0$ with respect to w:

$$F_e(e^*;w,p)\frac{\partial e^*}{\partial w}+F_w(e^*;w,p)=0.$$

Since $F_w(e;w,p)=q_e(e;p)B_w(w)$ and $q_e>0$, we have $F_w>0$ whenever $B_w(w)>0$. Because $F_e<0$, it follows that

$$\frac{\partial e^*}{\partial w}=-\frac{F_w}{F_e}>0.$$

Since $q_e>0$, $\partial q(e^*;p)/\partial w=q_e(e^*;p)\,\partial e^*/\partial w>0$, which establishes (8).

(b) Comparative statics in p. Differentiate $F(e^*(w,p);w,p)=0$ with respect to p:

$$F_e(e^*;w,p)\frac{\partial e^*}{\partial p}+F_p(e^*;w,p)=0.$$

Here $F_p(e;w,p)=q_{ep}(e;p)B(w)\le 0$ by Assumption **??**. With $F_e<0$, we obtain

$$\frac{\partial e^*}{\partial p}=-\frac{F_p}{F_e}<0,$$

giving (9).

(c) Sorting. Under screening, the only litigation mistake is litigating a weak case, which occurs iff $\theta=W$ and $s=g$, with probability $1-q(e^*;p)$. The only settlement mistake is settling a strong case, which occurs iff $\theta=S$ and $s=b$, also with probability $1-q(e^*;p)$. This yields (10). Since $q(e^*;p)$ increases in w from part (a), both mistake rates strictly fall with w.

(d) Unconditional settlement. Under screening, the board settles if and only if $s=b$. Thus

$$Pr(\text{Set})=Pr(s=b\mid\theta=S)Pr(\theta=S)+Pr(s=b\mid\theta=W)Pr(\theta=W)=(1-q)\pi+q(1-\pi),$$

which simplifies to (11). Differentiating with respect to w:

$$\frac{\partial}{\partial w}Pr(\text{Set})=(1-2\pi)\frac{\partial}{\partial w}q(e^*;p).$$

If $\pi<1/2$, then $1-2\pi>0$ and part (a) implies $\partial q/\partial w>0$, hence (12).