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AUDITOR LIABILITY AND CLIENT ACCEPTANCE DECISIONS

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Abstract:
The accounting profession has raised concerns that excessive liability exposure renders audit firms unwilling to provide audit services to risky clients, limiting the prospective clients' ability to raise external capital. We address this concern in a model in which the auditor evaluates the riskiness of the client before accepting the client engagement. We consider a setting in which a shift to stricter legal liability regimes not only increases the expected damage payments from the auditor to investors in case of audit failure, but also increases litigation frictions such as attorneys' fees. The main finding is that the relationship between the strictness of the legal regime and the probability of client rejection is U-shaped. Our model suggests that in environments with moderate legal liability regimes, the client rejection rate is lower than in environments with relatively strong or relatively weak legal regimes.

Keywords: *auditor liability; client acceptance decisions; client risk.*

Abstraksi:
Profesi akuntansi telah menimbulkan kekhawatiran bahwa paparan berlebihan membuat kewajiban audit perusahaan bersedia untuk memberikan jasa audit kepada klien berisiko, membatasi kemampuan calon klien 'untuk meningkatkan modal eksternal. Kami alamat ini perhatian dalam suatu model dimana auditor mengevaluasi keberisikoan klien sebelum menerima keterlibatan klien. Kami mempertimbangkan pengaturan di mana pergeseran tanggung jawab hukum ketat rezim tidak hanya meningkatkan pembayaran kerusakan diharapkan dari auditor untuk investor dalam kasus kegagalan audit, tetapi juga meningkatkan friksi litigasi seperti biaya pengacara. Temuan utama adalah bahwa hubungan antara ketatnya rezim hukum dan probabilitas penolakan klien adalah U-berbentuk. Model kami menunjukkan bahwa di lingkungan dengan rezim moderat tanggung jawab hukum, tingkat penolakan klien lebih rendah dari pada lingkungan dengan rezim hukum yang relatif kuat atau relatif lemah.

I. INTROODUCTION

The audit profession has long argued that excessively burdensome legal liability imposed on auditors hinders capital formation by increasing the likelihood that audit firms will reject potential clients, particularly high-risk such firms with limited access capital market. For example, the International Federation of Accountants (1995, 7) states: "The climate in some countries is causing an increasing number of large firms to avoid high-risk audit clients and even entire industries…Without audited financial statements...start up busisesses may not be able to generate confidence. As a result, economic growth can be stymied."In a similar spirit, the Public Oversight Board (19993, 9-10) notes" firms are reportedly refusing to undertake the access of such companies to the credit and equity markets. This could significantly hamper the ability of smaal companies to grow, create jobs, and develop imaginative products and services.

The intuition behind these arguments is cleare: all else equal, a greater legal liability makes audit firms unwilling to accept risky client, reducing the prospective clients' ability to fund new projects. However, in equilibrium, a change in the legal environment will also have an impact on the audit fee. Auditors' legal liability for an audit failure represents a form of implicit insurance to outside investors. The insurance provided by the auditor enables the entrepreneur to raise capital from investors at ;ower cost. The entrepreneur, in turn, can use these savings to compensate the auditor for the liability risk, reducing the likelihood of client rejection. Thus, the equilibrium implications of increased auditor liability on client rejection rates are not as obvious as implied by audit profession's arguments.

Our objective is to shed some light on the omplications of the legal liability environment for the auditor's decision to accept or reject risky clients, the level of audit quality (given acceptance), and the level of the audit fee, in a setting in which the auditor spends costly resources to evaluate the prospective client prior to making the acceptance decision.

In particular, we consider a setting in which an entrepreneur requires capital to undertake a new project and seeks that capital through outside investors. The entrepreneur can ask an auditor to provide information about the new investment opportunity.' Because the potential client is new to the auditor, the auditor knows little about the client initially and undertakes an evaluation prior to accepting the engagement. There are two potential types of clients: good-types and bad-types. The client's type, together with the characteristics of the project, determines whether the project (if financed) will succeed. When the auditor devo-tes greater effort to the evaluation process, she is more likely to discover the client's type. Given our focus on potentially risky clients, such as small start-up firms, we assume that the auditor will not want to accept the client if she fails to discover the client's type (which, of course, also implies rejection if negative infor-mation about the client-type is learned).2 This assumption allows us to study situations in which the auditor sometimes rejects clients with promising new investment opportunities (i.e., good-type clients), consistent with the concerns raised by the audit profession. Clearly, this concern is alleviated if the auditor spends more time and effort evaluating the client because higher effort lowers the likelihood that good-type clients are rejected and unable to obtain financing.

Our focus is therefore on the moral

hazard problem of inducing the auditor to devote effort to the evaluation task. The auditor's incentive to evaluate the client depends not only on the legal liability environment, but also on the audit fee offered by the entrepreneur: the higher the fee, the greater is the value of becoming informed about client-type (compared to staying uninformed and rejecting the client) and the higher is the auditor's effort de-voted to the evaluation process. Consequently, the fee offered to the auditor plays an im-portant incentive role in our setting.

If the auditor accepts the client, then she proceeds with an audit that provides infor-mation about the new investment opportunity. The investors' decision of whether to finance the project is based on the information provided by the auditor. Although the auditor effectively screens out bad-type clients, the auditor still faces litigation (audit) risk because the new pro-ject may fail after the auditor issues an unqua-lified opinion.'

In order to investigate the effects of the litigation environment on the probability that good-type clients get rejected, we consider three components of that environment: (1) the stric-tness of the legal liability regime, which is inter-preted as the probability that the auditor will be sued and found liable after an audit failure, consistent with Shleifer and Wolfenzon (2002); (2) damage payments from the auditor to inves-tors in case of a successful lawsuit against the auditor; and (3) other litigation costs incurred by the auditor such as criminal penalties, attorney fees, or reputation loss. These latter costs are not recovered by investors and are, for clarity, labeled "litigation frictions." In our setting, stricter legal liability regimes lead to both larger expected damage payments to investors and larger expected litigation frictions.

We show that under reasonable assump-tions about the level of expected damage pay-ments, an increase in any of these litigation components results in an increase in both audit quality and the equilibrium audit fee. This rela-tionship is consistent with empirical evidence by Choi et al. (2006), and Seetharaman et al. (2002). However, when considering the probability of client rejection, it is important to carefully disti-nguish between the three components of the liability environment.

We first show that an increase in the potential damage payments to investors leads to a reduction (not an increase) in the client rejec-tion rate. A higher expected damage payment implies that the entrepreneur has to offer the au-ditor a larger audit fee. Otherwise, the audit engagement would become less attractive to the auditor, which would lead to a lower evaluation effort and hence a higher rejection rate. Howe-ver, the increase in the audit fee does not invol-ve a real cost to the entrepreneur. If investors expect a larger damage award from the auditor in case of an audit failure, then investors are willing to give the entrepreneur better financing conditions. The entrepreneur, in turn, can use these savings to compensate the auditor for the increased liability exposure. We call this the triangle effect. Hence, a change in the damage pay-ment has no direct effects on the evaluation effort and the rejection rate. However, there is also an indirect effect, since a larger potential damage award induces the auditor to adopt an audit of higher quality (after accepting the client), which delivers more accurate informa-tion about the investment project and hence leads to improved investment decisions. The anticipation of a better investment decision increases the value of the entrepreneur's invest-ment opportunity in the initial stage. Since this investment opportunity is lost if the auditor rejects the engagement, the entrepreneur is more eager to attract the auditor. To do this, the entrepreneur increases the audit fee by an amount that is larger than the increase in the auditor's expected damage payment, which results in a higher evaluation effort and a lower rejection rate.

If, on the other hand, litigation frictions increase, then the above result is reversed; that is, the client rejection rate increases. Wher litigation frictions are higher, the auditor evil find the engagement with the client less attrac tive and hence will have a weaker incentive carefully evaluate the client, which increases th rejection rate. Of course, the client can counteract this negative effect by offering a larger audit fee, but in this case a real cost is involved besause the triangle effect dosen not hold. As a relult, the equilibrium rejection rate increases with higher litigation frictions.

Because a shift in the strength of the legal regime affects both the expected damage payments to investors as well as expected litigation frictions, a change in the legal regime involves twi opposing effects. Depending on which effect is strongers, a change in the legal regime either increases or decreases the probability of client rejection. In particular, we show that the relationship between the strength of the tegal liability regime and the client rejection rate is U-shaped. Our model therefore predicts that clients are less likely to be rejected in enviribments with moderate legal regimes, as compared to environments witj relatively string or relatively weak legal regimes.

The literarture concerned with auditors' decisions to accept or reject potential clients is mainly survey and empirical research. Most formal models of auditor-client interactions focus on the effects of changes in the legal liability environment on the auditors's incentive to provide high quality audits. Similar to our study, condiser the effects of auditors' legal liability on the efficiency of investment decisions. In the auditor trades off the cost of Type I dan Type II errors when decideing whetrer to provide a qualified or unqualified opinion. An increase in the auditors; legal liablity causes the auditor interpret audit information more conservatively, thus incur-rectly rejecting client reports but an increases likelihood that favorable investment projects will not be funded. In contrast, in our setting, the source of potential under invesmet is the auditors' moral hazard problwm with respect to the clientvaluation task.

Both the legal regime and the audit fee chosen by entrepreneur affect the auditor's the client's type prior to the re-ection decision. Because the audit fee will be optimally adjusted to changes in the legal regime, a stricter legal regime does not necessarily lead to more client rejections (i.e., fewer investments).

In Section II, we develop the model. Section III analyzes a benchmark situation where the auditor's choices of evaluation effort and audit quality are observable and contract-ible. In Section IV, we consider our main setting with unobservable effort choices and derive the optimal audit effort, client evaluation effort, and audit fee. In Section V, the effects of changes in the auditor's legal environment are described. Section VI considers the effects of variations in the riskiness of the project. Section VII concludes.

II. MODEL

Metode Consider a setting with three

risk-neutral parties: an entrepreneur, outside inve-stors, and an auditor. The entrepreneur needs capital I > 0 to undertake a new project. In order to obtain the required capital, the entre-preneur sells (3 € [0,11 proportion of the pro-ject's pay-off to outside investors ((3 is derived endogenously). If the project is financed, then it generates cash flows of x = X > I if it succeeds and x = 0 if it fails. If the entre-preneur is unable to obtain the required capital I from investors, then the project is not under-taken and the entrepreneur receives zero pay-off.

To focus on two types of activities engaged in by auditors, client evaluation versus auditing, we assume that the probability of project success is dependent on both the type of the client and the underlying characteristics of the project. There are two types of en trepreneur, a bad-type, T = B, and a good-type, T = G. The a priori probability of a goodtype is denoted by p € (0,1). The type of the project is also either bad or good and is denoted by t {b,g}. The a priori probability of a good-type project is 8 E (0,1). We refer to (1 - 6) as project risk. The types of the client and the project determine the . probability of project success. For simplicity, we assume that the project succeeds if and only if T = G and t = g. Both T and t are not known ex ante to any players, including the entrepreneur.' We assume that without further information, investors are not willing to finance the project, i.e., pOX - I < 0.

The entrepreneur offers the auditor a noncontingent audit fee, denoted W, for audit services. The auditor is free to accept or reject the audit engagement. Before making this decision, the auditor devotes effort e € [0,1] to evaluate the client's type T. We assume that effort e represents the probability that the audi-tor observes a perfect signal about the client's type. With probability (1 - e), the auditor obtains no additional information. That is, after evaluating the client, the auditor either knows the client's type with certainty or has no better information than before the evaluation. The auditor's private cost of effort e is c(e), with c(0) = 0, c'(e) > 0, c"(e) > 0, and c'(0) = 0.

In order to emphasize the importance of the client-evaluation task we assume that the auditor prefers to reject the client if she fails to discover the client's type (which also means that the auditor rejects if she learns the client's type is bad). Intuitively, this assumption is satisfied if the likelihood of a bad-type client is relatively high and the legal liability environ-ment and the auditor's reputational concerns are sufficiently strong.' Due to this assumption, and consistent with concerns raised by the audit profession, the auditor will sometimes reject clients with promising new investment opportunities (i.e., good-type clients). This problem is alleviated if the auditor spends more effort on evaluating the client because greater effort reduces the probability that the auditor remains uninformed about client-type, and hence reduces the chance that good-type clients get rejected. Our focus is therefore on the moral hazard problem of inducing the auditor to carefully evaluate the client.

As a consequence of our assurnptio that the auditor accepts only good-type clients we naturally consider clients that are viewed a problematic for auditors, i.e., firms that ar high risk, about whom little is known, and fo whom the failure potential is great. For thes firms, the auditor's evaluation effort and con clusion are particularly important because th auditor is more likely to reject the managemen if evaluation results are not unambiguous) positive.

If the auditor accepts the new clien then the auditor proceeds to conduct an audit. In order to distinguish the audit activity from the evaluation activity, we assume that the audit only provides information about the project-type t (but not about the client-type T).9 The auditor chooses audit effort a, which deter-mines the quality of the audit. We assume that effort a represents the probability that the auditor reports the project-type as b, given that the true project-type is b. When the project-type is g, the auditor reports g with certainty.'" Hence, for an imperfect level of auditing (a < 1), the auditor will sometimes report the project-type to beg even though the true type is b." Audit cost is denoted by k(a), with k'(0) = 0, k(a) > 0, and k"(a) > 0.

We assume that investors behave com-petitively, in the sense that they make zero pro-fits. Given the assumption that p6X - 1 < 0, investors are unwilling to finance the project in the absence of an audit. Moreover, if the auditor accepts the audit engagement and reports b, then investors will again not provide capital I, as it is clear that the project will fail. In these cases, the project is abandoned, and the game ends. If the auditor accepts the engagement and issues a report g, then investors are willing to finance the project in exchange for a fraction B < 1 of the project's final cash flows.

If the project is implemented and succeeds, the game ends. An audit failure occurs if the auditor issues a favorable report and the project fails. In this case, the entrepreneur is bankrupt and unable to pay any damages to investors. The investors' only recourse to vestment is to sue the auditor for port (i.e., an audit failure). The ted litigation cost in case of an given en by L = s(D + F), where D) is the damage payment to investors and F < D is the litigation friction, such as the cost of The parameter s E [0,1] reflects that the auditor is sued and case of an audit failure and is he strictness of the legal liability regime.

We assume that the expected damage tors in case of an audit failure is vestors' loss. Since the investors' al investment I, this assumption) < I. Our focus on sD < ble for two reasons. First, if ;es excc.cd investment losses, sD are willing to invest in a project at Id negative net pay-offs if it I < 0) and positive net pay-offs if > 0). Thus, ex post, investors if projects fail, which would

$$U^A(e,a) = ep[W - (1-a)(1-\theta)L - k(a)] - c(e), \quad (1)$$
$$U^E(e,a) = ep[\theta(1-\beta)X - W], \quad (2)$$
$$U^I(e,a) = ep[\theta(\beta X - I) + (1-\theta)(1-a)(sD - I)]. \quad (3)$$

The reservation utility of the three players is normalizes to sero. Investors are willing ti finance the project if and only if the auditor accepts the audit engagement and issues a favorable report about project-type. If the project type is g (which occours with probability 0), theb the project is implemented and succeds. In this case the investors’ pay-off is BX-I and the entrepreneur receives (1-B)X. if the project-type is b and the auditor fails to report b (which occurs with probability (1-8)(1-a)), then the project is implemented and fails. In this case, the entrepreneurs is bankrupt and the investors expect ti ibtain the damage award sD from the auditor.

The timeline of the model is as follows: generate perverse incentives to sabotage succes-sful projects. Second, the empirical evidence regarding litigation outcomes in the U.S. follo-wing audit failures indicates that damage pay-ments received from auditors are substantially smaller than investor losses.16 This evidence is consistent with casual observation that, genera-lly, investors do not applaud audit failures. In most litigation environments, the auditor's maximum legal exposure to investors would be no greater than the loss the investors incur, i.e., D < I (also see the discussion in Schwartz (1997).

As will become clear later, litigation frictions ultimately reduce the value of the entrepreneur's investment opportunity. To ensure that the expected value of the investment opportunity is positive for a good-type client even if the audit quality is low (a = 0), we assume that 6X - I - (1 - 0)sF > 0. Since the auditor accepts the client only after learning that the client is a good-type, the ex ante probability of client acceptance is given by cp." The expected pay-offs for the auditor, UA, the entrepreneur, UE, and the investor, LP, can be stated as:

Stage 1 : The entrepreneur requests an audit and offers the fee W to the auditor.

Stage 2 : The auditor devotes effort e to evaluate the client and makes an acceptance/ rejection decision based on the acquired information.

Stage 3 : If the auditor declines the prospecti-ve client, the game ends. If she accepts the client, she conducts an audit and issues a report. In case of a favorable report, g, investors finance the new project. In case of an unfavorable report, b, the investors do not finance, and the game ends.

Stage 4 : If the project is undertaken in stage 3, final cash flows x are realized. If the project succeeds, profits X are shared between the investors and the client based on the sharing rule p. If the project fails, investors sue the auditor in an attempt to recover damages.

III. BENCHAMRK: THE FORST-BEST SOLUTION

As a benchmark, it is helpful to consider the first-best solution, in which the auditor's effort levels e and a are observable and contractible. If effort levels are contractible, then the entrepreneur can implement any level through a forcing contract, in which the auditor is compensated for her effort cost only if she exerts the contracted level of effort. The entrepreneur's goal is to maximize his utility. subject to the constraints that the auditor and the investors receive their reservation utilities. i.e., UA = 0 and U' = 0. Substituting the participation constraints for the auditor and the investors into (2) yields the entrepreneur's maximization problem:

$$\max_{e,a} ep[\theta(X - I) - (1 - \theta)(1 - a)(I + sF) - k(a)] - c(e).$$

The optimal levels of audit effort and evaluation effort, denoted a' and e', satisfy:

$$(1 - \theta)(1 + sF) - k'(a) = 0 \qquad (4)$$

and:

$$p[\theta(X - I) - (1 - \theta)(1 - a)(I + sF) - k(a)] - c'(e) = 0. \qquad (5)$$

In order to ensure the auditor's partici-pation, the entrepreneur needs to compensate the auditor for the expected litigation friction in case of an audit failure, sF. In contrast, the ex-pected damage payment sD does not show up in the above problem, because sD is not a real cost to any player. Of course, the entrepreneur needs to compensate the auditor for the expected damage payment, sD. However, since investors are the beneficiaries of potential damages, the entrepreneur is able to recoup this outlay in the form of better financing conditions (i.e., a lower p). This situation is equivalent to a three-person game in which the players stand in a circle, each handing $10 bills to the player to the left. Clearly, changing the amount of money trans-ferred does not make anyone better or worse off. We call this the triangle effect.

A higher quality audit helps to improve the investment decision in stage 3, in the sense that the project is implemented less often if the project-type is b. An improved investment deci-sion is not only beneficial because it reduces the probability of wasting capital I for a bad-type project, but also because it reduces the proba-bility of audit failure and hence the expected litigation friction. The larger the capital outlay, I, and the larger the expected litigation friction in case of audit failure, sF, the larger is the optimal audit effort I.

To understand Condition (5), note that the entrepreneur possesses a real option to invest in the new project in stage I. The value of this real option for the good-type entrepreneur is captured by the term in square brackets in Condition (5). If the auditor rejects the client. then the entrepreneur loses the option to invest. since there will be no financing. The higher the value of the real option, the more important is the evaluation effort undertaken by the auditor because higher effort reduces the probability of rejection. Note that the stage 1 value of the real option to invest in the project depends on the anticipated audit quality in stage 3. For a < a. an increase in audit quality improves the value of the investment opportunity and hence the optimal level of evaluation effort, el .

IV. EQUILIBRIUM

Audit Quality

We begin the analysis by determining the auditor's optimal choice of audit quality, given that she has accepted a good-type client. To find the optimal effort a, the auditor solves:

max IF- (1 - a)(1 - 0)(1 - k(a).

The optimal choice of a, denoted a*, satisfies: (/ 0)L — k'(a) = 0.

Clearly, the audit fee IF has no impact on the quality of the audit, because W does not depend on the outcome of the audit However, if the expected litigation cost L increases, then the auditor will have a stronger incentive to carefully audit the client. Note that for 1 = sD, the auditor implements the first-best audit quality, a* = af. Due to our assumption that sD < I, the auditor under-invests in audit quality from a first-best perspective; that is, a* < I. Proposition 1: If the expected litigation cost, L, increases, then the auditor chooses a higher audit quality, a.

Thus, if any component of the auditor's litigation environment increases, then we expect an increase in audit quality for the clients accepted by the auditor. This prediction is generally consistent with evidence in Venka-taraman et al. (2008).

Outside Investors

Outside investors are willing to finance the project only if the auditor accepts the engagement and issues a favorable report about the project. In this case, investors provide the required capital I in return for a fraction (3 of the project's cash flows. In order to determine (3, we set the investors' ex ante utility (3) equal to their reservation utility (zero), which after rearranging yields:

B = 0/ + (1 -6)(1 - a*)(I - sD) /OX

The entrepreneur becomes better off if he has to give up a smaller fraction R in order to obtain the required capital. Keeping the audit effort fixed, the level of (3 declines when the damage award to investors D increases. Intuitively, since investors can expect a larger payment from the auditor in case of project failure, investors are willing to finance the project in exchange for a smaller fraction (3 of the project's cash flows.

A change in the damage award, D, also has an impact on the audit quality, a. There are two relevant effects associated with an increase in audit quality. First, a higher audit quality improves the investment decision in the sense that the project is implemented less often when the project-type is b. Second, a more diligent audit reduces the likelihood that investors obtain damage awards from the auditor after investing in the project. While the first effect reduces 13, the second effect increases R. However, for sD < I, the former effect dominates the latter, implying that investors demand a lower fraction (3 of final cash flows if audit effort increases.

Proposition 2: The entrepreneur has to give up a smaller fraction (3 of final cash flows if the damage payment to investors, D, increases.

Client Evaluation

In stage 2, the auditor decides how much effort to devote to the client evaluation process. Assume that the audit fee offered by the entrepreneur is high enough to induce the auditor to accept a good-type client; that is, W-(1 - a*)(1 - 0)L - k(a*) > 0. If this condition is not satisfied, then the auditor would remain uninformed and always reject the engagement. We show in the next subsection that this condition is satisfied in equilibrium.

The auditor's maximization problem is given by:

max ep(W -'.(1- - a*)(1 - 0)L - k(a*)) - c(e), where a* satisfies (6). The first-order condition for an optimal choice of e is: pV - (1 - a*)(1 - 0).L - k(a*)) - c'(e) = 0. (8)

Holding the audit fee constant, consider how a change in the auditor's expected litigation cost, L, affects the optimal choice of effort e. There are two effects, an indirect effect and a direct effect. The indirect effect occurs because a higher legal liability induces the auditor to choose a higher audit quality. Because the level of a is chosen optimally in equilibrium, by the envelope theorem, this indirect effect is only second order and, hence, is negligible. The direct effect of an increase in L on the auditor's choice of e is negative. To see this, note that accepting the client is associated with litigation risk for the auditor even if the client is a good-type. Hence, when the litigation exposure, L, increases, the strategy to acquire information and accept good-type clients becomes less attractive compared to the strategy to stay uninformed and reject the client. As a result, the auditor will exert less evaluation effort if the legal liability environment becomes tougher.

Keeping the liability environment fixed, a higher audit fee, W, induces the auditor to devote more effort to the evaluation process. When the audit fee increases, the strategy to remain uninformed and reject the client becomes less attractive, which increases the value of obtaining information. The audit fee, W therefore plays an important incentive role in our setting.

Proposition 3: The auditor chooses a higher evaluation effort, e, if the expec-ted litigation cost, L, declines (holding audit fee constant) and/or the audit fee, IF, increa-ses.

Since the auditor rejects the client if uninformed about the client's type, it follows that the probability of rejection is larger auditor chooses a lower evaluation effort. I_C7 = p(1 - e) denote the probability that a good-_ client is rejected and R = (1 - p) + p(1 - e ac probability that the client is rejected inde-.)=.- dent of type. The next corollary directly foL from Proposition 3.

Corollary 1: The probability that the good-, client is rejected, R, and overall rejection rate, R, increase the expected litigation cost, increases (holding audit fee cc tant) and/or the audit fee. decreases.

The finding that clients are more to be rejected if the litigation environmer.: tougher is consistent with arguments advan by the audit profession. However, as we show m the next subsection, this argument is inco=- plete because a shift in the legal liability re: - has an effect on the equilibrium audit fee offered by the entrepreneur.

Audit Fee

In stage 1, the entrepreneur chooses the audit fee, IF, offered to the auditor. The entrepreneur solves the following optimization problem:

max pe(OX(1 P)

subject to (6), (7), and (8). As shown below, the participation constraint for the auditor, UA > 0, is always satisfied in equilibrium and hence can be ignored.

Lemma 1: The optimal level of W satisfies:

-e+[0(X- .1)-W+(1 --a)(1 0)(51)-1)i= = 0, c" (e)

where e and a satisfy (8) and (6), respectively. Proof: See the Appendix.

As shown in the previous subsection, an increase in the audit fee, IV, enhances the auditor's incentive to diligently evaluate the client before making the acceptance/rejection decision. A higher evaluation effort increases the likelihood that the auditor learns the client's type, reducing the probability that good-type clients are rejected. The (good-type) entre-preneur is therefore better off if the auditor devotes more effort to the evaluation process.

The term in square brackets in (11) represents the value of the investment opportu-nity for a good-type client. Since the value of this investment opportunity is positive, the

When choosing the optimal level of IF, the entrepreneur takes into consideration that a larger audit fee increases the auditor's incentive to exert evaluation effort. The positive effect of a higher e on the entrepreneur's utility is captured by the term in square brackets in (10). This effect is traded off with the marginal cost of an increase in W. Substituting (10) into (8) yields the equilibrium evaluation effort, denoted e*, which satisfies:

The expected cost of the audit engage-ment, denoted AC, is composed of the expec-ted litigation cost arid the direct cost of audi-ting and is determined by AC = (1 - a*) (1 - 0)L + k(a*). Equation (12) shows that the equilibrium audit fee, W*, is strictly higher than the expected cost of the audit engagement, AC, which justifies our previous assumption that W > AC. Thus, if the auditor learns that the client-type is good, she will accept the engage-ment. The result that the auditor obtains a wage that exceeds the expected audit cost de-serves some attention because it differs from :he standard assumption in the literature that e auditor, when accepting the engagement, zero expected profits in equilibzium.

The fee offered to the auditor is higher than AC because in our setting the entrepreneur has to overcome an additional moral hazard problem: the auditor must be induced to expend evaluation effort prior to the accep-tance/rejection decision. If the fee just com-pensates the auditor for the expected cost of the engagement, i.e., if W = AC, then the auditor has no incentive to expend costly evaluation effort. By choosing W > AC, the entrepreneur makes it attractive for the auditor to acquire information about the client instead of staying uninformed and rejecting the engagement.

Note that from the result that IF* >

AC, it follows that U4(e*,a**) > 0, that is, the auditor is able to obtain an economic rent in equilibrium. To see this, recall that the auditor chooses the effort level that solves max U(e,a*) = WW'* -AC) -c() For IV* > AC;

and given .cr(0) = 0, the marginal benefit of effort at e = 0 is larger than the marginal cost, implying that e* > 0 and U(e*,a4c) > 0. To determine the auditor's rent, substitute the equilibrium wage, W*, as specified in (12) into the auditor's equilibrium utility, U/1(e*,a*), as specified in (1), which yields U71(eta*) = e*c'(e*) - c(e*). Since c(e) is concave in e, it follows that (e*,a*) > 0 for e* > 0. The larger the induced equilibrium effort, e*, the larger is the auditor's rent.

The auditor's ability to earn rents results from the moral hazard problem with respect to evaluation effort, combined with the constraint that all payments to the auditor must be non-negative; that is, the auditor cannot be punished if she rejects the client. Fol: the sake of argument, suppose that negative payments to the auditor are feasible. Then, the evaluation effort incentive problem could be alleviated by punishing the auditor whenever she rejects the client. In this situation, the entrepreneur could induce evaluation effort without granting the auditor any rents in expectation. Of course, we do not believe that such a scenario is reaso-nable because penalties for rejecting clients cannot be enforced. Thus, our setting has similarities to a standard moral hazard setting where a principal contracts with an agent who is protected by limited liability. To induce effort, the principal offers a bonus for high outcomes but cannot punish the agent for low outcomes, implying that the agent enjoys a rent in expectation (e.g., Innes 1990; Laffont and Martimort 2002).

V. THE ROLE OF THE LEGAL ENVIRONMENT

This section analyzes how a change in the components of the legal liability environ-ment affects the equilibrium outcome of the game. In particular, we analyze how an increase in the strictness of the legal regime, s, damage payments, D, and litigation frictions, 1-7, affect the equilibrium levels of audit fee, W, evalua-tion effort, e, rejection rate, R, and the utilities of the entrepreneur, UE, and the auditor,

In order to simplify the exposition.. helpful to consider specific cost functions the auditor. We therefore assume for remainder of the analysis that k(a) c(e) = 0.5ce2, where k and c are sufficiently to ensure interior solutions.

Change in Damage Payment D

We start by analyzing the eq effects of a change in the damage payment investors. A larger potential damage pa_ induces the auditor to choose a higher quality, a. However, as a first step, it is h to consider a benchmark setting, in which quality remains fixed (i.e., does not change D). Assuming a is fixed, an increase in d D has two immediate effects: first, it red the fraction (3 the entrepreneur needs to investors in order to obtain capital I second, it renders the engagement with client less attractive to the auditor, implythe lower level of evaluation effort and a rejection rate (as discussed in the previous Lion). The optimal response of the entrepr is to counteract the decline in evaluation by increasing the audit fee by (1 - a)(1 - where AD is the change in the damage pa, (see (10)). By doing so, the entrepreneur z res the auditor's incentive to evaluate the to its original level. In other words, in ec rium, a change in the damage award ha direct effect on the auditor's evaluation and the rejection rate. This result can als: verified by observing that the equilibrium level e*, determined by (11), does not di:- depend on D (recall that we are assuming that a* is not affected by a change in D _ course, this result is similar to the effect outlined in the benchmark case.

However, a change in D does have effects if one takes into consideration tills: increase in D induces the auditor to condui= more careful audit. Note that the total sue: - generated in case of a good-type client is a function of audit quality and is determined by 0(X — 1) - (1 -0)(1 - a)(I + sF) — 0.5ka2. Three effects are associated with an increase in audit quality. First, a more careful audit is associated with a higher audit cost. Second, an increase in audit quality reduces the probability of an audit failure and hence reduces the expec-ted litigation friction. Finally, the provision of more accurate information results in an impro-ved investment decision in the sense that the project is implemented less often when the project-type is b. Given the assumption that sD < 1, the benefits associated with an increase in audit effort outweigh the additional costs, such that the audit effort moves closer to the first-best level I. An increase in audit quality there-fore increases the total surplus generated from a good-type client. Since this surplus is lost if the auditor rejects the engagement, the entre-preneur is more eager to attract the auditor. To achieve this, the entrepreneur chooses an audit fee that over-compensates the auditor for the increase in the expected damage payment. This increase in the fee provides the auditor with stronger incentives to evaluate the client and results in a lower rejection rate. Proposition 4: An increase in the damage pay-ment, D, has the following equilibrium effects:

(i) the audit fee, W increases

(ii)the evaluation effort, e, increases,

(iii) the probability that the good-type client gets rejected, RG, and the overall rejection rate, R, decrease, and (iv) the entrepreneur's and the auditor's expec-ted pay-offs, U' and U4, increase. Proof: See the Appendix.

The result that an increase in the poten-tial damage payment to investors is associated with a decline (and not an increase) in the client rejection rate is counterintuitive. The important point here is that the auditors' willingness to provide audit services not only depends on the litigation environment. but also depends on the audit fees that result from those engagements; and the legal environment and the equilibrium audit fees are not independent."

Change in Litigation Friction F

We now consider the effects of a change in the litigation friction, F. Clearly, a larger F induces the auditor to adopt an audit of higher quality. However, there is also a negative effect associated with a larger litigation friction that outweighs this positive effect. The expectation of a higher litigation friction ren-ders the engagement with the client less at-tractive to the auditor and hence lowers her incentive to expend effort to evaluate the client. This reduction in evaluation effort, in turn, results in a higher likelihood of client rejection. The entrepreneur can counteract this effect by increasing the audit fee, but this is costly. The important difference between a change in F and a change in D is that the triangle effect does not hold for the former. That is, the cost F is not recovered by investors and hence not passed on to the entrepreneur. Put simply, a larger level of F increases the cost of hiring the auditor and hence the cost of implementing the project. This leads to the next proposition. Proposition 5: An increase in the litigation friction, F, has the following equilibrium effects:

(i) the audit fee, Wincreases,

(ii) the evaluation effort, e, decreases,

(iii) the probability that the good-type client gets rejected, R<;, and the overall rejection rate, R, increase, and

(iv) the entrepreneur's and the auditor's expected pay-offs, LIE and U4, decrease. Proof: See the Appendix.

One interpretation of litigation frictions is the auditor's cost of losing reputation in case of an audit failure. This expected cost can vary from client to client depending on media cove-rage or more generally the visibility of the client-firm or the industry.20 The higher the visibility and media coverage of the potential client, the higher is the auditor's concern for potential reputation loss. Hence, our model predicts that clients with higher media coverage and visibility pay their auditors a higher audit fee and are more likely to be rejected, but if accepted, these clients obtain a higher quality audit.

Change in Legal. Regime s

It is now straightforward to see how a shift in the strictness of the legal regime, s, affects the equilibrium outcome. On one hand, a higher s has beneficial effects because it increases the expected damage award, sD, the auditor has to pay investors in case of an audit failure. On the other hand, a larger s is detri-mental because it increases the expected litiga-tion friction, sF. These two effects work in opposite directions. For relatively low levels of s, the first effect dominates the second, and for relatively high levels of s, the reverse is true. This leads to the next proposition. day' Proposition 6: Let s, denote the level of s that satisfies (I - sD) ds- (1 - = 0. An increase in the strictness of the legal regime (increase in s) has the following equilibrium effects:

(i) the audit fee, W, increases,

(ii) the evaluation effort, e, increases for s < s, and decreases for s > s,,

(iii) (iii) the probability that the good-type client gets rejected, RC;, and the overall rejection rate, R, decrease for s < s, and increase for s > s,, and

(iv) (iv) the entrepreneur's and the auditor's expected pay-offs, UE and VA, increase for s < s, and decrease for s > s, Proof: See the Appendix.

A shift to stronger legal regimes has an unequivocally positive effect on audit quality and audit fees given that a client is accepted, consistent with evidence reported by Seetharaman et al. (2002), Choi et al. (2008), and Venkataraman et al. (2008). H: ever, the effects of the legal regime on cL acceptance rates are not as straightforw- Proposition 6 implies a U-shaped relations between the strictness of the legal regime the probability of client rejection. Our m suggests relatively fewer client rejections environments in which the legal regime moderate, as compared to environments which the legal regime is relatively s (i.e., s > s,) or relatively weak (i.e., s < s). intuition behind this result is as follows the legal regime is relatively weak, then induced audit quality is also relatively 1: which results in suboptimal investment d sions. The anticipation of low audit q therefore reduces the value of the entre neur's investment opportunity in the stage. As a consequence, the entrepreneir unwilling to offer a high audit fee, w. induces a low evaluation effort and hence high rejection rate.21 In environments -which the legal regime is strong, the a quality will be relatively high, which leads improved investment decisions. However. litigation friction will also be relatively which makes it more expensive for the en preneur to attract the auditor. Due to cost, the equilibrium rejection rate is larger strong legal regimes than in moderate r rues.

Our model generates predictions respect to changes in the legal liability environment caused by regulation such as Sarbanes-Oxley Act of 2002 (SOX).22 regulatory change results in an increase in strength of the U.S. legal liability regime__ then our model indicates that there are b., fits and costs associated with such a ch-- The benefits are improved investment sions due to higher levels of audit glfi The costs are the increase in litigation dons that make hiring the auditor and h implementing projects more expensive. pending on whether the benefits exceed costs (i.e., depending on whether s < s, or s > s1) , such a regulatory change either increases or decreases the probability of client rejection.

A special case of our setting arises if plaintiffs' attorneys operate on a contingent fee basis, which is common practice in the U.S. In this case, the auditor's expected legal liability cost can be characterized by s(Zy + Z(1 - y)) , where Z is the auditor's damage payment, y is the fraction of Z that is recovered by investors, and (1 -5) is the fraction that is retained by the plaintiffs' attorneys. Since a change in damage payment Z is parallel to a change in s, an increase in Z has the same directional effects as an increase in s.

Expected Damage Payments Exceed Investor Losses

Throughout the analysis we focus on the case for which the expected damage payment to investors in case of an audit failure is lower than the investors' loss, sD < I. As discussed in Section II, we view this assumption as most reasonable. However, it is instructive to briefly discuss the case where sD > L

For sD > I, the liability system induces the auditor to overinvest in audit quality relative to first-best (i.e., a* > a).

An increase in dama-ges, D, will induce the auditor to choose an even higher audit effort, which reduces the total surplus generated in the case of a good type client. A decrease in the total surplus reduces the value of the audit engagement, implying that the entrepreneur will choose an audit fee that indu-ces less evaluation effort and a higher rejection rate. Hence, for sD > I, an increase in D reduces the pay-offs for both the auditor and the entrepreneur. An increase in litigation frictions, F, continues to be detrimental to both players and leads to a lower evaluation effort and a higher client rejection rate. Since changes in D and F operate in the same direction, it is clear that an increase in the strength of the legal regime, s, leads to less evaluation effort, a higher rejection rate, and lower pay-offs for the auditor and the entrepreneur. Hence, if expected legal penalties are extreme in the sense that they exceed investment losses), then increasing the strictness of the legal regime is unequivocally undesirable.

VI. THE ROLE OF PROJECT RISK

In this section we analyze the equilib-rium effects of a change in project risk (i.e., change in 0) on the levels of the audit fee, evaluation effort, client rejection rate, and the players' pay-offs. Note that the auditor's expec-ted litigation cost for a good-type client from an ex ante perspective is (1 - 0)(1 - a)s(D + F). Given this formulation, it is easy to see that an increase in project risk (i.e., an increase in (1 - 0)) has effects similar to an increase in the strictness of the legal regime, s. That is, analogous to an increase in s, an increase in project risk has positive effects (since it induces higher audit quality) and negative effects (since it increases the litigation friction). In the following, we refer to these effects as "litigation risk" effects.

However, there is one important diffe-rence between a change in s and a change in project risk. An increase in project risk reduces the value of the entrepreneur's investment opportunity because the project will more likely fail. This loss in project value has important implications for the equilibrium outcome. To see this, recall that in our setting the audit fee serves as an incentive tool: the higher the fee offered by the entrepreneur, the higher is the auditor's incentive to evaluate the client (instead of rejecting the engagement uninformed) and the higher is the probability of client acceptance. If the expected value of the project declines due to a higher likelihood of failure, then the entrepreneur finds it less beneficial to provide the auditor with strong evaluation incentives and hence reduces the audit fee. Holding the litigation risk effect constant, the decline in project value therefore leads to a reduction in the equilibrium audit fee, the auditor's evalua-tion effort, and the pay-offs for both the auditor and the entrepreneur. We refer to this effect as the "project value" effect. Note that the "project value" effect is stronger if the outcome in case of project success, X, is larger. Since a change in project risk is asso-ciated with both the litigation risk and the project value effects, it is difficult to provide clear-cut empirical predictions. However, for industries that produce high profits in the event of project success, the project value effect dominates the litigation risk effect. Suppose, for example, that X > 21 + sF. In this case, given the client is a good-type, the project has a positive expected value (for all a (E (0,1)), even when chances for success are only 0 = 0.5. This assumption seems to be consistent with risky industries for which only a small fraction of new start-ups succeed, but the start-ups that do succeed are highly profitable. In this situation, the following results hold.

Proposition 7: Suppose that X > 21 + sF. An increase in project risk, i.e., an increase in (1 -0), has the following equilibrium effects:

(i) the audit quality, a, increases,
(ii) the audit fee, W, decreases,
(iii) the evaluation effort, e, decreases,
(iv) the probability that the good-type client gets rejected, RG, and the overall rejection rate, R, increase,
(v) the entrepreneur's and the auditor's expec-ted pay-offs, UE and U", decrease.

Proof: See the Appendix.

Our model predicts that firms that implement risky projects are more likely to be rejected by the auditor than firms that imple-ment less risky projects. This result is consis-tent with survey and empirical evidence by Asare et al. (1994) and Johnstone and Bedard (2003). In addition, given that a client is accep-ted, our results suggest a positive link between project risk and audit quality, consistent with evidence in Bell et al. (2001). Finally, our model suggests that firms with higher project risk pay their auditors lower, not higher, audit fees. This result seems to be at odds with the evidence on the link between litigation risk and audit fees (e.g., Beatty 1993; Simunic a 1996). However, it is important to pc.= that this result is driven by our rn feature that the audit fee serves as an i tool to motivate evaluation effort. Fcc reason, the fee offered to the auditor no: depends on the expected litigation and cost (as usually argued), but also on the of the entrepreneur's investment oppo._ The lower the expected value of the rove opportunity, the less eager is the entrt to induce a high evaluation effort by o. large audit fee.

VII. CONCLUSION

There is substantial concern accounting and audit profession that excessive liability exposure adversely affects auditors' willingness to provide audit services to clients that are perceived to be high-risk. If true, auditors' propensity to reject clients is a lem because it reduces prospective clients' ability to access external capital markets to fun innovative new projects. Our goal is to sheed light on these concerns.

We find that audit quality and audit fees both increase with the auditor's expected litigation losses from audit failures. However, when considering the auditor's acceptance decision, we show that it is important to careftilly identify the component of the litigation environment that is being investigated. We decompose the liability environment into three components: (1) the strictness of the legal defined as the probability that the sued and found liable in case of an audit failure (2) potential damage payments from the to investors and (3) other litigation costs red by the auditor, labeled litigation frica such as attorneys' fees or loss of reputation. We show that, in equilibrium, an increase in the potential damage payment actually leads to a reduction in the client rejection rate. This effect arises because the resulting higher audit quality increases the value of the entrepreneur's investment opportunity, which makes it optimal dor the entrepreneur to increase the audit fee by an amount that is larger than the increase in the auditor's expected damage payment However, for this result to hold, it is curcial that damage payments be fully recovered by the invest investprs. We show that an increase in litigation frictions leads to the legal regime affects both the expected damage payments to investors as sell as litigation frictions, the relationship between the ;egal regime and rejection rates in nonmonotonic. Specifically, we show that the relationship is U-shaped, which implies that fot both weak and strong legal liability regimes, rejection more moderate legal liability regimes.

The environment we condiser is limited to settings in which the porposed investment project is relatively risky, such that without futher information, the project will not be funded. For his reason, the auditors's propensity is to reject the client if uncertain vaout the client-type. Our information structure is a simplification of more realistic settings in which the auditor cam ecquire imperfect information about the prospective client. Despite these saveats, our mdel captures certain elements of auditor-client relationships that have attracted considerable attention in the professional and empirical literatures.

End Note:

1. Equivalently, the auditor can be viewed as certifying the client's assertion about project quality.
2. Arthur Andersen et al. (1992, 22) note: "Accountants are also practicing risk reduction. The six largest firms are attempting to reduce the threat of litigation by avoiding what are considered high-risk audit clients and even entire industries." !
3. Smith et al. (2000) also model a two-stage audit process, where the auditor first evaluates internal control strength and then performs substantive tests for fraud. Similar to our model, the first-stage evaluation in Smith et al. (2000) only provides information about the manager's type and not whether fraud was actually committed. However, Smith et al. (2000) do not consider an endogenous audit fee or the auditor's decision to accept or reject on, the client.
4. Radhakrishnan (1999) also separates audit litigation penalties into payments to investors and payments to lawyers (he calls the latter "recovery frictions"). However, he does not consider the effects of these penalties on the auditor's client acceptance decision.
5. See, eg., Asare et al. (1994), Huss and Jacobs (1991), Johnstone and Bedard (2003, 2004), and Johnstone (2000).
6. See, e.g., Dye (1993, 1995), Chan and Pae (1998), Chan and Wong (2002), Hillegeist tot (1999), Narayanan (1994), and Schwartz (1997).
7. The assumption that the entrepreneut has no private information is common in thens, auditing literature; see, for example, Dye (1993, 1995), Schwartz (1997), Chan and Pae We (1998), and Chan and Won- (2002).
8. The conditions for which this assumption is satisfied and related proofs are available upon request.
9. Alternatively, the auditor may be viewed as obtaining information about the veracity of the client's assertions about the project-type. In such a setting, the client would always claim that the project-type is g and the auditor would provide either a qualified or unqualified opinion.
10. A similar audit technology is assumed in Dye (1993, 1995), Schwartz (1997), Chan and Pae (1998), Hillegeist (1999), Radhakrishnan (1999), Chan and Wong (2002), and others.
11. Consistent with prior audit models (see footnote 10), we assume that the auditor reports in a manner consistent with audit evidence; that is, we ignore any possible moral hazard issue related to the audit report. This assumption can be justified by an appeal to a setting in which the auditor must support, through verifiable evidence, his report. In contrast, if the auditor could choose any report with impunity, then in the single period model we study the auditor would always accept the client (and the fee), choose to exert no audit effort, and report b, thus avoiding shareholder litigation. Of course, the market for audits could not be sustained in such an environment.
12. The assumption that the entrepreneur provides no insurance to investors is consistent with assumptions in Dye (1993, 1995), Chan and Pae (1998), Schwartz (1997), Den- et al. (2008) and others.
13. The assumption that $F < D$ is relevant only for Proposition 6 in Section V where investigate the effects of changes in s. We place this upper bound on F because for large levels of F the legal environment becomes dysfunctional in the sense that both theentrepreneur and the auditor are best off if the litigation risk is zero, ie., $s = 0$.
14. Alternatively, one could assume that the auditor is liable for damages only if the cox concludes that he is "neglioent." This negligence scenario can be modeled by assuming that the expected litigation cost in case of an audit failure is $s(h(n)D + F)$, where s reflects the

probability that investors sue the auditor and h(a) is the probability that the auditor is the found negligent, with h'(a) < 0. Our qualitative results are robust to such a modeling change (proof is available upon request).

15. This can be seen by setting the investors' expected utility (stated in (3)) equal to thes reservation utility of zero.
16. Palmrose (2005) reports that for a sample of 57 class actions filed against auditors during the period 1996-2001 (and resolved by mid-2002), actual auditor paymeny were substantially less than potential investor losses, represented by the decrease in a equity over the class period.
17. Mote precisely, the auditor will only accept a good-type client if the audit fee is sufficiently high. However, as shown later, this is always the case in equilibrium.
18. Recall that we assumed in Section II that 0X - I- (1 - 6)sF > 0, which implies that the term in square brackets in (11) is positive for alla < af.
19. We have also considered a setting in which the outcome, X, and the damages for an audit failure. D, ate increasing functions of the level of investment, I. In this case, an increx in I has the same effects as an increase in D, as presented in Proposition 4; that is, audit fee and evaluation effort increase, and rejection 'rates decrease (details regarding this scenatio are available upon request)
20. For example, Johnstone and Bedard (2003) find that audit firms view publicly traded firms as relatively riskier than private firms, in part because of the scrutiny they receive.
21. It is important to recall that our model only applies to potential clients whe will be rejected if the auditor does not learn their type. If the legal regime is very weak, this set of potential clients may be small.
22. The effects of SOX on auditors' litigation environment ate unclear. See Asare at al. (2007) for a discussion of the legal implications of SOX for auditors.
23. The Appendix also provides the equilibrium effects of a change in (1 - 0) for the case where X does not satisfy the condition X > 21 + sF.