What's in a Name?

Reputation and Monitoring in the Audit Market*

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Abstract

Since February 2017, the name of the engagement partner has to be disclosed for all audit reports issued in the USA. We show that this quest for transparency has its pitfalls. Though this rule increases the level of information for investors, it can have negative consequences if we ignore how the rule changes the incentives of the relevant players (auditors). There is a tension between monitoring and reputation incentives when moving from collective reputation environments to individual reputation environments. We analyze the new rule and study the resulting change in auditor incentives to show that while the consequent higher reputation incentives can improve audit quality, partners have a lower incentive to monitor other partners when names are disclosed. This may lead to a fall in audit quality when the rule is implemented. We present several solutions to this problem. (JEL - L14, L51, M42)

Keywords - Audit, Disclosure, Collective Reputation, Engagement partner, Reputation, Monitoring

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1 Introduction

Before February 2017, audit reports issued in the USA did not reveal the name of the lead partner at the audit firm who conducted the audit. In December 2015, the Public Company Accounting Oversight Board (PCAOB) approved a new rule which mandates that the lead partner's name be disclosed to capital market participants[1]. This rule was approved by the Securities and Exchange Commission (SEC) in May 2016 and has come into effect in February 2017[2]. One would expect that since the rule increases the level of information available to market participants, we will get better outcomes (or at least no worse than before) in terms of audit quality. However, this line of reasoning ignores how this transparency increasing rule will change the incentives of the players (auditors and investors) in the game. The incentive effects could critically affect outcomes.

In this article, we analyze audit partner incentives under the two regimes (with and without disclosure of partner names) and explore the possible impact of the new rule on audit quality. We highlight an important friction between monitoring and reputation incentives in a partnership under two different information structures - a collective reputation environment (when names were not disclosed, all partners at the audit firm shared a collective reputation) and an individual reputation environment. We go on to show that ignoring these incentive effects in the quest for transparency can lead to socially undesirable outcomes (lower audit quality). Thus, this paper contains a more general message but we set it in the audit market environment for two reasons[3] - a) To analyze the impact of the new rule, and b) To develop a rich framework which incorporates many details particular to the audit industry in the hope that this framework can be used to analyze several questions related to the audit market.

We show that the regime change from non-disclosure (of name of lead audit partner) to disclosure affects auditor incentives in two ways. One, the disclosure of partner name makes a partner's reputation (and therefore future payoffs) more sensitive to his actions. This generates incentives for the partner to improve the quality of audit reports to build reputation. Thus, this *reputation effect* pushes audit quality up. This is one of the primary reasons for introducing the new rule. The second effect of the new rule however, affects audit quality negatively. We show that an unintended consequence[4] of this regime change is that the incentives to

[1] Instead of requiring that the partner's name be revealed in the audit report itself, the rule mandates that the partner should be identified through form AP on the PCAOB website. This is for legal purposes. From an information disclosure perspective, it serves the same purpose as disclosing the name in the audit report. The information will be available in a searchable database on the Board's web site.

[2] Securities and Exchange Commission (Release No. 34-77787; File No. PCAOB-2016-01) May 9, 2016 Public Company Accounting Oversight Board; Order Granting Approval of Proposed Rules to Require Disclosure of Certain Audit Participants on a New PCAOB Form and Related Amendments to Auditing Standards

[3] Another market to which the ideas of this paper can be directly applied is the credit rating market.

[4] We call it an unintended consequence because we have seen no discussion of this effect in any paper or report.

monitor a fellow partner are lower under the disclosure regime, which in turn can lead to lower audit quality. The incentives to monitor a fellow partner reduce with identification because bad actions taken by one partner no longer affect the reputation of other partners (since reputation is not collectively shared with others under partner identification). Thus, this *monitoring effect* pushes audit quality down by reducing the threat of monitoring[5]. The net audit quality depends upon whether the reputation effect dominates the monitoring effect or vice versa. We discuss conditions under which this transparency inducing rule change can actually lead to lower quality audits. Subsequently, we argue that the effect of lower monitoring incentives can be mitigated through a realignment of incentives inside the audit firm or external monitoring from regulators or through increased audit fees.

Before we describe our analysis and results, a bit of context is in order (more details and context is available in the internet appendix[6]). An external auditor scrutinizes the financial statements of a legal entity or organization in accordance with specific laws or rules. This auditor is independent of the entity being audited. For example, Deloitte could be the audit firm auditing the financial statements of Coca-Cola. Users of the entity's financial information, such as investors, government agencies and the general public, rely on the external auditor to present an unbiased and independent audit report. Audit firms usually operate as partnerships and audit partners are responsible for managing the audit department and engaging in client audits. Unlike other jurisdictions such as several European Union (EU) countries and Australia, in the USA, the name of the lead audit partner was not disclosed to investors and other users of financial statements of publicly traded companies. This was problematic for the following reasons. The Public Company Accounting Oversight Board's oversight activities reveal that audit quality varies across engagements within the big accounting firms (PCAOB (2013))[7]. Researchers also argue that differences across individual partners may influence audit quality (DeFond and Francis (2005)). Consequently, compared to the identity of the audit partner, the identity of the accounting firm may constitute a less informative signal of audit quality for individual engagements[8]. Furthermore, revealing partner names increases transparency. If an audit partner's name is revealed in the audit report, it could generate stronger incentives for the partner to build or protect his reputation via

[5]John et al (2017) study data from the UK (where the disclosure rule was implemented in 2009) and find supportive evidence for such a monitoring effect.

[6]Available on http://surajshekhar.com/

[7]Knechel, Vanstraelen and Zerni (2015) provide evidence that reporting 'style' varies systematically across individual auditors and persists over time. They argue that such differences could be due to systematic differences in risk tolerance or other idiosyncratic attributes of the partner which can affect decisions made during the course of the audit.

[8]To investigate if capital market participants (like investors) indeed value the information contained in the identity of individual audit partners beyond the information provided by the identity of the audit firm, Aobdia et al. (2015) use data from Taiwan and document positive association between the partner's quality and the client firm's earnings response coefficient. They also report positive market reaction when a firm replaces a lower quality partner with a higher quality one and they find evidence that firms audited by higher quality partners experience smaller Initial Public Offering (IPO) underpricing which allows them to obtain better debt contract terms. Overall, their results suggest that capital market participants place (and should place) positive value on information which reveals the identity of the audit partner to them. Liu (2017) looks at UK data and finds that requiring the engagement partner's name to be disclosed led to a reduction in the analysts' forecast errors.

high quality audit reports[9]. Next, we describe the key relationships affecting incentives.

Our model includes three bilateral relationships present in the audit market which affect the incentives of auditors. The first is the relationship between the partner and the issuer manager[10] which arises because of the manager's ability to pressure the auditor by imposing a cost (external exclusion) on the auditor in the event of a disagreement about the issuer's financial statements[11]. The second relationship arises to guard against the risks to audit quality posed by the first relationship. This is the partner-partner relationship. Here the 'monitor' partner (who can be an engagement quality reviewer or a successor partner) may observe the behavior of the engagement partner (whether he succumbed to the pressure of the issuer-manager or not) and disclose it to the accounting firm's leadership. The third relationship is that between the audit firm and audit partners. This captures the audit firm's ability to impose sanctions on a partner or fire (internal exclusion) and replace a partner if the partner is found to be guilty of succumbing to the issuer's pressure.

We have a two period model where the issuer's cash flow in any period could be either good or bad[12]. The partner auditing the issuer obtains a noisy signal about the issuer's cash flows, which is to be announced to the investor. In any period, the investor only wishes to invest if the cash flow is good in that period, and therefore always prefers the true signal to be revealed. The issuer-manager's payoff depends upon the amount invested and therefore he prefers a favorable signal[13] and can commit to putting pressure (make it costly for the partner to announce his realized signal) on the engagement partner to issue a favorable audit report. Audit partners have private types - rigid or flexible. While the former always reveals their observed signal to the investors, the latter is strategic. By acquiescing, a partner avoids the cost (pressure) the issuer would have imposed on him. However, acquiescing to the issuer leads to lower quality of audit and adversely affects the reputation[14] of the engagement partner and maybe even the reputation of the firm (depending on whether partner names are disclosed or not). Revenue from auditing an issuer is increasing in the reputation of the audit partner since reputation is directly linked to the perceived audit quality on that particular engagement.

Whether a partner acquiesced to the client may be detected by a successor partner or an engagement

[9]The argument of transparency also works if there are legal consequences for the auditor for bad quality audit reports. However, the new rule tries to keep the legal liability unchanged from the audit partner's perspective. Form AP is the form used to disclose partner names and from the SEC release number 34-777082 we have the following statements - "*Most accounting firms that commented on the issue agreed that Form AP would address some or all of their liability concerns*" and "*The Board believes that disclosure on Form AP appropriately addresses concerns raised by commenters about liability.*" Thus, the legal consequences of transparency should be minimal and should not affect our qualitative results.

[10]Manager at the client firm (the firm being audited).

[11]While investors value accurate information, managers of issuer firms may prefer favorable reports from auditors. This conflict of interests affects the auditor because the manager of the issuer firm has considerable influence on decisions regarding hiring and compensating of the auditor (Beck and Mauldin (2014)). Therefore, managers can pressure auditors into issuing favorable opinions and succumbing to this pressure impairs auditor independence, thereby reducing audit quality (DeFond and Zhang (2014), Carcello and Neal (2000)).

[12]The true state of the cash flow is chosen by nature every period as an IID draw.

[13]Which makes the good state of cash flow more likely.

[14]The investor's perception of the probability of the partner being rigid type.

quality reviewer[15]. In the model, there is a positive probability[16] that the partner assigned to an issuer in the first period is replaced by a different partner in the second period. The new successor partner acts as a monitor and can report against the engagement partner, particularly if the audit evidence does not support the audit opinion i.e. if the audit signal announced by the previous partner is not the same as the signal received by the previous partner. If an engagement partner is reported by the monitor partner and is found to have acquiesced, he faces sanctions from the leadership of the audit firm. There is a fixed cost[17] of reporting which the monitor partner has to incur in case he reports the other partner of acquiescing. Hence, the incentives to raise a flag against the engagement partner depend on how reporting affects the expected payoff of the monitor partner, which in turn depends on the sharing rule, how reputation affects audit fees, and the cost of reporting.

Note that a partner's payoff depends on the collective[18] reputation of the audit firm when partner names are not disclosed. On the other hand, when partner names are disclosed, the payoff of the partner is directly linked to his own reputation. Thus, for a given level of monitoring, the engagement partner has lower incentives to acquiesce under the disclosure regime because the action of a partner directly affects his own future payoff by changing beliefs about his reputation. However, incentives to monitor may be higher in the non-disclosure regime as partners share reputation. The intuition for this is as follows. In the disclosure regime, a partner's payoffs are more heavily dependent on his own reputation since partner names are observed. Bad behavior of the other partner does not affect the reputation of the monitor partner and therefore has minimal effect on his payoffs. In comparison, in the non-disclosure regime, investors don't observe the identity of the engagement partner. Thus, bad behavior by one partner reduces the reputation of all partners. This generates incentives for the successor partner to report the other partner and clear his name (thereby increasing own reputation) whenever he observes bad behavior. So, if there is no cost of reporting, or if an outside third party can compensate or punish partners and ensure reporting, then disclosing the name of the partner can lead to higher quality audit reports[19]. On the other hand, if the cost of reporting is positive (but not so high as to discourage monitoring), then not disclosing the name of engagement partners may provide incentives to the monitor to report on the erring partner. Note that monitoring by the successor partner is important because of two reasons. First, it improves the quality of an audit in the future, since the partner who has been reporting

[15]Under the mandatory audit partner rotation rule, a partner must be replaced by a new successor partner every five years. Monitoring could also take place via an engagement quality reviewer who monitors an ongoing audit and can prevent an incorrect audit report by reporting against the engagement partner before the audit report is issued. We consider this problem in section 5.1 (and in detail in the internet appendix).

[16]This reflects the uncertainty in the mind of the investor about who the current engagement partner may be. Even if partner rotation is done periodically, an investor may not be privy to the exact time of the rotation.

[17]This cost can be interpreted as a personal cost of accusing a fellow partner and going through the entire process of investigation and internal inquiry subsequently. Alternatively, we could also interpret the cost as Reuben and Stephenson (2013), who show that individuals who report against fellow group members are often shunned later.

[18]An audit firm is a collective body of partners and these partners are heterogeneous in individual characteristics. Since the partner names were not disclosed in the United States, the audit firm's reputation depends on the behavior of each of its partners.

[19]We prove this in the appendix.

incorrectly in the first period faces internal exclusion and is replaced by another partner. Second, the threat of being detected provides additional incentives for the engagement partner to not acquiesce to the client in the first period.

We propose several solutions to the monitoring problem including one where increased audit fee boosts reputation incentives to compensate for the lower monitoring incentives. This could be one of the explanations of the empirical findings of Carcello and Li (2013) where the authors report the joint occurrence of higher quality of audits and higher audit fees after audit partners were mandated to sign audit reports issued in the UK.

Our paper contributes to the literature by providing a theoretical model on how partner identification interacts with profit sharing rules and sanctions inside accounting firms and thus affects the incentives of partners. To the best of our knowledge this paper is the first to model the three relational aspects unique to the audit market (the leadership of the accounting firm to audit partner relationship, the partner-partner relationship via monitoring, and the partner's interaction with the client) to explore the consequences of disclosing partner names. Although our model is streamlined to fit the audit context, our analysis speaks to the broader issue of incentives under collective reputation versus those under individual reputation models of partnerships.

The remainder of the paper is organized as follows. The next section describes some of the related literature. Section 3 presents the formal model with partner rotation. Section 4 presents the analysis of equilibria in our benchmark model where the cost of reporting of reporting is positive. We relax this assumption and contrast our results to the zero cost of reporting case in the appendix. Section 5 describes two alternate formulations of our model - the engagement quality reviewer model and the multitasking model. We discuss how our results may still go through under these alternate specifications (details are in the internet appendix available on the web page http://surajshekhar.com/.). Section 6 discusses potential solutions to the monitoring problem. Section 7 presents the summary and possible extensions of the model.

2 Literature

In this section we describe the related literature. While this paper analyzes the change in incentives of partners and the impact on audit quality of the partner identification rule, at its heart this paper explores the more general issue of monitoring in collective reputation environments versus individual reputation environments. Thus, this paper is related to at least two strands of literature: first, the work on analyzing the impact of such laws in other countries (like Carcello and Li (2013)) and second, the literature on collective reputation and

monitoring. Additionally, our paper shares some common themes with other papers who look at incentives in the audit market like Lee and Levine (2016). We describe some of these papers next and highlight the important distinctions from our paper.

Empirical evidence on whether partner identification can lead to higher audit quality is mixed. Blay et al. (2014) find no evidence of improved audit quality following the implementation of the parter identification rule in Netherlands. Carcello and Li (2013), on the other hand, document an increase in audit fees as well as an improvement in audit quality in United Kingdom after this law was approved. The implications of our theory are consistent with the findings of Carcello and Li (2013). Our theory predicts that audit quality may go down when the regime changes from non-disclosure to disclosure. This is due to the reduced incentives to monitor. However, we show that a sufficient increase in audit fee can raise reputation building incentives enough to compensate for the lack of monitoring incentives, thereby leading to an increase in audit quality.

Obviously our paper is also related to the long literature on reputation in repeated games starting from Kreps, Wilson and Milgrom and Roberts [1982]. Though earlier papers were concerned largely with individual reputation, since Tirole's 1996 paper on collective reputation, we have seen a substantial growth in papers dealing with collective reputation. Most theoretical research on collective reputation since however, has focused on the overlapping generations model of collective reputation (Bar-Isaac (2007), Chen, Morrison and Wilhelm (2013)). Bar-Isaac (2007) argues that agents expend effort for individual reputation when young (since their prior reputation is low) and work for collective reputation (the reputation of the firm) when they are old. A similar analysis is conducted by Jeon (1995) who finds that inter-generational grouping may be more efficient than intra-generational grouping in the presence of moral hazard in joint production. These papers sidestep adverse selection issues and concentrate on moral hazard while in our model, we set aside issues of moral hazard and focus on reputation and monitoring in the presence of adverse selection. More recent papers like Neeman et al (2016) also speak about the potential benefits of collective reputation. They study a model of collective reputation and use it to analyze the benefit of collective brands[20]. They show that collective brands may induce stronger incentives to invest in quality than individual brands. However, unlike our paper, they do not look at the incentives to monitor and how it differs in a collective reputation environment and an individual reputation environment. In an environment similar to Neeman et al (2016), Fishman et al (2014) look at the benefits of collective branding. They find that the incentive to invest in quality rises with collective branding for small firms in a large market who would otherwise find it difficult to establish a reputation owing to few observable outcomes. They find that this effect can hold even with the

[20]Like German cars have high reputation. So all German car makers share a collective reputation (at least amongst those people who are not motor heads!)

free-riding problem[21]. The idea here is that if the firm's outcome contributes sufficiently to the reputation of the brand then the returns to investing in quality can be high enough. Our paper is different because we study the role of reputation and monitoring *within* a firm, and the incentives of partners to maintain their personal reputations via monitoring others.

Within the literature on group monitoring, we must mention the literature on micro finance which has received a lot of attention over the last two decades (see Ghatak and Guinnane (1999)). Mutual monitoring in groups is an important aspect of the joint liability group lending model adopted by many micro-finance institutions across the globe. Under joint liability lending, every member of the group is liable for the loan. Members suffer punishment from the bank if any member of the group fails to repay the loan. This generates incentives for the group members to monitor fellow members. The difference from our work is the following - In micro-finance models, the incentives to monitor and report against a fellow group member exist because the borrowers want to avoid the punishment imposed on the entire group by the bank. However, these papers do not formally discuss how the incentives to protect the collective reputation of the group may induce reporting or monitoring, which is the focus of our paper. Additionally, they do not pay attention to the *simultaneous* change in reputation building and monitoring incentives when micro-finance institutions started shifting from group liability models to individual liability models.

Chen, Morrison and Wilhelm (2013) discuss a case where individuals may do worse on their own as compared to when they are part of a firm. Thus, it is possible to think of this as an analysis which highlights some differences between a collective reputation regime and an individual reputation regime. The authors show that if individual incentives to signal ability by taking actions which may not be optimal for the clients[22] are very strong, then individuals may prefer to work at a firm where there their reputation building incentives will be known to be controlled by internal monitoring. The firm engages in monitoring so that clients are reassured that individual partners will not take actions which are orthogonal to client preferences. This builds the reputation of the firm. In our paper, we consider the situation where partners are already working at a firm and we show how monitoring and reputation building incentives change when a partner identification rule changes the environment from a collective reputation regime to an individual reputation regime. Thus, the way profits within the firm are shared makes a big difference to our analysis (payoffs could be correlated across engagements). Moreover, we show that monitoring need not always come from the leadership of the firm - for example, in Chen, Morrison and Wilhelm (2013), the monitoring capability of the owner of the firm is exogenously given. We show that partners will endogenously choose to monitor each other in a collective

[21]This arises because the firms cannot punish others for using the brand without investing in quality.

[22]Think of investment bankers signalling their ability by coming up with complex derivatives which may not necessarily serve best the interests of their client. Also see Ely, Jeffrey C., and Juuso Valimaki. "Bad Reputation" The Quarterly Journal of Economics (2003): 785-814.

reputation regime.

In terms of research theme, the paper closest to our paper is Lee and Levine (2016). The authors look at individual partner incentives and the partnership's choice of internal quality control. They show that identifying the individual partner increases the individual partner's incentives by increasing accountability. However, they point out that partner identification decreases the partnership's incentive for choosing high cost-high value internal monitoring to motivate partners to exert high effort. As a result, the partnership's choice of internal quality control could be lower in the partner identification setting. This could lead to lower quality audits. The partnership may be forced to pick a higher level of monitoring if there is sufficient external monitoring. Our paper differs from Lee and Levine (2016) in three significant ways. One, Lee and Levine (2016) have a costly monitoring technology which needs to be selected at the beginning of the game. Thus, there is no problem of *implementing* monitoring in their paper or, in other words, they assume that it is possible to commit to monitoring in the beginning of the game. In contrast, in our paper, partners may choose to monitor or not in equilibrium. Thus, we analyze questions like - will the partners actually monitor in equilibrium given that monitoring is not observed? We feel that this is important since monitoring is rarely done by mechanical devices which are impervious to deviations. Two, in Lee and Levine, the quality of the audit depends upon the effort choice of the partner when the partner knows the cost of effort. In our paper, the partner's problem is whether or not to reveal his true signals in the face of an external cost which is endogenously determined in the model[23]. Finally, Lee and Levine highlight the importance of external monitoring by regulators in the context of partner identification. Our paper, on the other hand, focuses on internal realignment of incentives and audit fees as tools to achieve higher quality of audits under partner identification.

3 Model

In this section we present the model in a simple two period set up with all agents being risk neutral.

3.1 Players

There is an audit firm with three partners: one managing partner (who acts as the leadership of the audit firm) and two engagement partners who can work on projects/auditing jobs. There is an issuer (client) who wishes to be audited and every period there is an investor for whom the issuer's firm is an investment prospect. In our model, the managing partner of the audit firm and the investor are passive (behavioral) players[24].

[23] Cost imposed by the issuer manager.

[24] We will describe the actions taken by these players further in this section.

This simplification allows us to focus on the reputation and monitoring incentives faced by the engagement partners in the face of pressure from the issuer to issue favorable reports. The partners maximize discounted sum of payoffs where the discount factor is denoted by δ. The issuer is myopic and he maximises only current period payoff[25].

3.2 Projects and State of the World

In each period the issuer's cash flow for that period is picked by nature and it takes one of two values: G and B with probability p and $1-p$ respectively. These probabilities are common knowledge. The investor wants to invest in the issuer only if the state is G. At the end of each period, the true cash flow of that period is revealed to all players. One engagement partner audits the issuer and the partner who does not work with the issuer is engaged in another project that we name Project 2. We assume that Project 2 is one in which a partner of any type (partner types will become clear shortly) plays the same action and therefore the reputation of the partner is unaffected by its outcome[26]. As is clear, we are primarily interested in the issuer's project and we call it the good state of the world if the cash flow drawn by nature in that period is G, else it is the bad state of the world.

3.3 Partner Assignment and Rotation

The issuer has to hire the audit firm in every period[27]. After the issuer hires the audit firm in Period 1, an unbiased coin is tossed to decide which engagement partner works with the issuer in that period and which partner works on Project 2. The issuer, engagement partners and the managing partner observe the realization of this coin toss. *Under the non-disclosure regime, the investor does not know the identity of the partner chosen to issue the audit report for the issuer. Under the disclosure regime, the identity of the partner is observed by the investor as well.* Partner rotation and monitoring occurs as follows. In Period 2, the partner continues to be with the issuer with probability γ. With probability $1-\gamma$, the other partner is assigned to the issuer. The investor does not observe the switch in partners in the non-disclosure regime (but does so in the disclosure regime). However, the parameter γ is common knowledge to all players.

[25]This assumption is for simplicity and does not change our results qualitatively.
[26]This assumption simplifies our analysis and allows to us focus on the issuer's project.
[27]This may be required by law as observed in the USA.

3.4 Partner Signals/Auditing

Each period, the partner assigned to the issuer gets a signal $s \in \{g,b\}$ about the true cash flow in that period. The conditional distribution of signals is as follows. The audit partner observes the signal g whenever the true cash flow is G. However, if the true cash flow is B the audit partner observes g with probability ε and b with probability $1-\varepsilon$. The partner informs the issuer of his signal truthfully. We assume that he cannot misinform the issuer. This is to be interpreted as a file documenting the partner's 'assessment' of the issuer which the partner has to show to the issuer. The audit partner has to announce a signal to all players, in particular to the investor. The investor wants to invest in the issuer only if the state is G. He updates his beliefs about the true state being G after observing the signal announced by the partner.

3.5 Conflict and Issuer Actions

A conflict between the issuer and the auditor occurs whenever the audit partner gets the signal b since, if announced, this would indicate to the investor that the true state is bad, resulting in zero investment by the investor that period. This hurts the payoff of the issuer (payoffs will be described formally later). If there is a conflict, the issuer can commit to a one period cost[28] (cost$\in [0,\infty)$) which he would impose on the partner if the partner chooses to announce b instead of g. Putting pressure on the partner is costly for the issuer as well. We assume that the cost of putting pressure level B is B[29] i.e. the utility from putting pressure B is $-B$.

3.6 Partner Actions

If the partner gets the signal b, he may be pressured into announcing g by the issuer who fears losing that period's investment by the investor. If there is a conflict at time t, then the partner has two action choices. He can either bow to the pressure and acquiesce (A) (by choosing to announce signal g instead of b to avoid the cost B) to the issuer or not acquiesce (NA) (announce true signal b). We focus our attention on the conflict case only and therefore for the 'good' signal, we assume that the partner reports the signal g whenever he gets g[30]. Thus, if there is no conflict at t, then the partner's action set is simply $\{NA\}$ and if there is a conflict at time t, the partner's action set is $\{A,NA\}$.

[28] Alternatively, a transfer. This cost can be interpreted as anything from making life hard for the partner to getting him fired or not offering him a job in the future.

[29] This could be interpreted as an expected loss in the future if this action was discovered.

[30] One may wonder if this is reasonable. In particular, could the partner announce b when his true signal is g? We do not allow for this possibility for the following reasons. One, the issuer may be able to sue the auditor for misreporting if the auditor's signal is g and he chooses to disclose b. Remember, the auditor has no supportive evidence for the opinion as the signal he received does not match the signal he discloses. Two, on a similar note, the client can report the partner to the managing partner and this can initiate an investigation on the partner who misreports. A similar assumption has been made by others including McLennan and Park (2003).

3.7 Partner Types

The partners can be one of two types: Rigid (R) or Flexible (F) (we define types following Dye, Balachandran, and Magee (1990)). At time zero, nature picks the type of the two partners independently from a distribution Γ where the probability of being rigid is p_h. An R type partner is behavioral and never acquiesces. An F type partner is strategic and decides optimally whether to acquiesce or not. A partner's type is his private information. For simplicity, we assume that the issuer knows that partner's type but the investor does not[31]. Naturally, we will describe all strategies for the flexible type partner only since the other type is behavioral.

3.8 Monitoring

The partner assigned to the issuer in period 2 learns if the previous partner had acquiesced or not. We interpret this as the new partner being able to figure out if the audit evidence supports the audit opinion issued by reading the papers filed by the old partner. He then decides whether to report his predecessor to the managing partner with a message correct or incorrect $\{C, NC\}$ (the former indicates that the audit evidence supports the audit opinion and the latter says it does not). While reporting C is costless, there is a fixed cost c for reporting a partner's action to be NC. This is to be interpreted as a personal cost of confrontation or conflict with a fellow partner. Reuben and Stephenson (2013) show that individuals who report against fellow group members are often shunned later. Alternatively, this cost can be interpreted as the cost of having to go through the entire investigation procedure after making the accusation. In our model, we assume $c > 0$. We relax this in the appendix and show how having a zero cost of reporting changes the results.

It is assumed that if a partner reports that the other partner played A in the previous period, then his accusation will be investigated and the investigation will always reveal the truth. It is also assumed that if the partner reports C, then there will be no further investigation from the leadership of the firm (we could alternatively assume a lower probability of investigation). Both type of partners are strategic when it comes to making the decision of incurring c and reporting on the other partner[32].

3.9 Managing Partner Actions, Investor Actions and Reputation of Partner

The consequences of monitoring are as follows. Following a report NC, there is an investigation which reveals the true signal obtained by the previous partner to the managing partner. The managing partner is behavioral and fires (action f) a partner if and only if he finds out that the partner had not reported his true signal. The

[31] In practice, the issuer's manager has a lot more information about the auditor than the investor. This is because the audit process requires frequent interactions between the management and the auditor.

[32] We could alternatively assume that the rigid type is behavioral about reporting too and always reports all discrepancies. This would not change our qualitative results.

fired partner is replaced by another partner from the distribution Γ immediately (at no cost). If a partner reports against the other partner, but investigations reveal this to be untrue, then the reporting partner is fired. The investor observes if a partner has been fired[33]. However, the investor does not observe the identity of the fired partner. If the reporting partner reports C, the managing partner always takes the action of not firing (action nf).

The reputation of the audit firm at time t indicates the beliefs held by the investor about the probability that the partner assigned to the issuer in period t is of type R. The reputation at time t is given by R_t. In period one, this is the reputation in the beginning of the period, that is, p_h. In period 2, this is the reputation of the audit firm after the managing partner has made his firing decision. Let R_2' indicate the probability that the partner engaged in project 2 is of R type.

The investor updates his beliefs about the true state being G and then makes his investment decision. We assume that the investor invests the amount $I \times Pr(G|s,R_t)$[34] in the issuer's firm where $Pr(G|s,R_t)$ is the posterior probability of the true state being G given that engagement partner i announced the signal s and the reputation of the audit firm is R_t. I is a fixed positive constant indicating size of investment. The investment by the investor in period t is denoted by $i(t)$.

3.10 Errors/Refinements

We introduce errors as a way to refine the set of equilibria and to deal with belief revision following zero probability events[35] in a consistent manner. All partners make an error in announcing the signal with probability ν. Essentially, this means that if the partner wanted to announce a signal, he announces it with probability $1-\nu$ and announces the other signal with probability ν. We will present all results assuming $\nu \to 0$. Thus, our equilibrium concept will be extensive form trembling hand perfect equilibrium. The following assumption also deals with possible off equilibrium events. We assume that there is a small probability that the partner in period one gets fired regardless of his signal or state realization. This is to deal with beliefs following a history where the signal was g, the state realized was G, but the partner was fired.

[33]This assumption is for simplicity. We can obtain the same qualitative results without this assumption, albeit in a longer (but finite) time horizon.

[34]Any investment function, increasing in the investor's expectation about the probability of the G state, will qualitatively produce similar results.

[35]For example - what are the beliefs if the signal announced is b but the state is revealed to be G at the end of period 1? Unless partners can make mistakes, this cannot happen as the engagement partner has to receive the signal g in state G and in this case the partner's action set is singleton $\{NA\}$.

3.11 Timeline

The sequence of events is as follows. At the beginning of the first period, nature draws the type of the two engagement partners from the distribution Γ and randomly assigns one of the two partners to the issuer. Then, nature picks the true state of the world (true cash flow for issuer) for period 1 and the engagement partner receives a signal ($s \in \{g,b\}$). The engagement partner communicates the signal to the issuer truthfully. If there is a conflict, the issuer commits to how much pressure he would put on the partner in case the partner plays *NA* and communicates this to the partner. The engagement partner chooses to acquiesce or not and publicly announces a signal. If there is no conflict, the engagement partner announces his true signal (g)[36]. After observing the signal, the investor makes the investment decision. All players receive their first period payoffs. At the end of the first period, the true cash flow for the first period is observed by all players.

At the beginning of the second period, nature picks the partner to be assigned to the issuer in period 2 (probability of picking the same partner is γ). The partner assigned to the issuer learns about the signals and actions of the previous partner. The new partner decides whether to report against the previous partner or not. The managing partner makes the firing decision. If a partner is fired, he is replaced by a partner drawn from the distribution Γ immediately. The investor observes whether a partner has been fired or not but may not observe the identity of the fired partner[37]. Next, nature draws the true cash flow for period 2 for the issuer and sends a signal to the assigned partner ($s \in \{g,b\}$). The engagement partner communicates the signal to the issuer truthfully. If there is a conflict, the issuer commits to how much pressure he would put on the partner in case the partner plays *NA* and communicates this to the partner. The engagement partner chooses to acquiesce or not and publicly announces a signal. If there is no conflict, the engagement partner announces the true signal (g). After observing the signal, the investor makes the investment decision. All players get their second period payoffs. The true cash flow for the second period is observed by all players. The game ends.

3.12 Payoffs, Strategies and Equilibrium

In each period, the payoffs of players depend on the reputation of the two partners, the sharing rule, the action taken by the engagement partner and the cost imposed by the issuer in case the partner does not acquiesce in a conflict. Let I_a^i be an indicator function which takes the value 1 when partner i is assigned to the issuer. Let I_c be an indicator function which equals 1 when there is conflict. If a partner is fired in the first period, his payoff in the second period is given by the outside option $v_f(\leq 0)$. Essentially, the audit firm's fees in any

[36] If there is no conflict the signal has to be g.

[37] The investor observes the identity in the disclosure regime and does not observe in the non-disclosure regime.

period is a linear combination of the reputations of its two partners. The engagement partners get a share of this and the managing partner of the audit firm is the residual claimant. The issuer gets whatever the investor invests. Since we assume the investor to be behavioral, we do not model his payoffs.

Suppose the issuer commits to impose a cost B on the partner if he plays NA in case of a conflict at period t. Then the period payoffs for the players in the game at time t is given by the following functions of the action taken by the engagement partner:

$$\begin{aligned}
Managing\ Partner(A,NA) &= (1-\alpha_1-\beta_1)(WR_t)+(1-\alpha_2-\beta_2)(XR'_t) \\
Partner^i(NA) &= I^i_a[I_c(\alpha_1(WR_t)+\alpha_2(XR'_t)-B)+(1-I_c)(\alpha_1(WR_t)+\alpha_2(XR'_t))]+ \\
&\quad (1-I^i_a)[\beta_1(WR_t)+\beta_2(XR'_t)] \\
Partner^i(A) &= I^i_a[\alpha_1(WR_t)+\alpha_2(XR'_t)]+(1-I^i_a)[\beta_1(WR_t)+\beta_2(XR'_t)] \\
Issuer(NA) &= I_c.(I.Pr(G|b,R_t)-B)+(1-I_c)I.Pr(G|g,R_t) \\
Issuer(A) &= I.Pr(G|g,R_t)
\end{aligned}$$

$\alpha_1,\alpha_2,\beta_1,\beta_2 \in (0,1)$ are the shares of the engagement partners. α_1 and α_2 are the shares of the engagement partner assigned to the issuer, where α_1 is his share of the audit fee received from the issuer and α_2 is his share of the revenue from Project 2. Similarly, β_1 and β_2 are the other partner's share of the audit fee and Project 2-revenue respectively. Audit fees for the issuer and Project 2 are WR_t and XR'_t respectively. X and W are positive scalars and R_t and R'_t are the probabilities that the partner assigned to the issuer and Project 2 is of the rigid type respectively.

A strategy for an engagement partner is a set of history contingent actions, where the action set in period 1 is $\{A,NA\}$ in case of conflict and $\{NA\}$ if there is no conflict. The action set in period 2 is $\{A,NA\}*\{C,NC\}$ in case of conflict in period 2 and $\{NA\}*\{C,NC\}$ in case of no conflict[38].

The issuer's strategy is a pair of history contingent actions (B_1,B_2), which specifies the amount of pressure he puts on an assigned partner in case of a conflict in period 1 and 2 respectively.

Let E be the set of all equilibrium strategy profiles. $E=\{E_1,E_2\}$ where E_1 represents strategies in period 1. The belief function $\pi_t : [0,1]\times E_t \times \{g,b\} \to [0,1]$ gives the investor beliefs about the probability that the project will generate G at time t, given reputation of the current partner R_t, the equilibrium strategies and the signal report.

[38]Notice that action in period 1 is a function of reputation R_1, the pressure from the manager B_1, and the partner's belief about the second period reporting action $r \in \{C,NC\}$ of the other partner.

The equilibrium concept is extensive form trembling hand perfect equilibrium[39]. Equilibrium consists of action strategies by engagement partners, pressure exerted by the issuer (B_1, B_2), and beliefs held by the investor such that:

1. The strategy of the engagement partner maximizes the expected lifetime utility for the partner.
2. $\{B_1, B_2\}$ maximize the expected lifetime utility for the issuer.
3. R_t, R_t' are calculated using Bayes' rule.

4 Analysis

In this section, we show that when the cost of monitoring is positive, under some conditions we have monitoring equilibria under the non-disclosure regime but not under the disclosure regime. No monitoring may lead to lower audit quality under the disclosure regime. By lower audit quality, we mean that there is a higher probability that the flexible partner succumbs to issuer's pressure and plays A in period 1. In the appendix, we consider the case of zero cost of reporting. We show that in this case, the disclosure regime always outperforms the non-disclosure regime[40]. This is because when the cost of reporting is zero, monitoring always occurs in equilibrium in both regimes. Thus, the cost of reporting and changing monitoring incentives[41] are key to understanding the impact of the new rule on audit quality.

We start by making clear that the second period engagement partner will always play A (if type is flexible) and therefore the only actions of interest is the first period strategy of the flexible engagement partner and the reporting behavior of the successor partner.

Claim 1. *At $t = 2$, in case of a conflict, $B_2 = 0$ and if the F type partner is assigned to the issuer then he plays A irrespective of the disclosure requirement.*

Proof. As the game ends at $t = 2$, an F type partner has no reputation concern in this period, and is indifferent between playing A and NA in period 2 if the pressure imposed is zero. If $B_2 > 0$, the partner strictly prefers the action A. Therefore, the issuer can induce the partner to play A at no cost. Thus, in any equilibrium we must have that the partner plays A when he is indifferent (any other play would not be part of equilibrium

[39]Extensive form trembling hand perfect equilibrium is actually a refinement of sequential equilibrium. Sequential equilibria requires that an assessment (profile of strategies and beliefs) should be a limit point of a sequence of totally mixed strategy profiles and associated sensible beliefs. Extensive form trembling hand perfect equilibrium is a refinement of this as we check the requirement of sequential equilibria for one type of totally mixed strategy (the one introduced by trembles).

[40]In terms of Audit quality.

[41]As we go from a non-disclosure regime to disclosure regime.

strategy as the issuer can always impose a small positive cost). This implies that, in equilibrium, the issuer will choose $B_2 = 0$ and the partner will play A. □

Claim 1 shows that in the second period, which is also the last period of the game, the partner acquiesces to the issuer in any equilibrium. Thus, the only actions of interest are the first period action choice by the flexible partner and the reporting choice of the successor partner in period two.

Next, we look for conditions under which the disclosure regime produces lower quality audit reports as compared to the non-disclosure regime. We will show our desired result in three steps. First, we find conditions under which the only equilibrium in the disclosure regime is one in which the successor partner never reports the predecessor partner. Second, we find conditions under which there exists a reporting equilibrium in the non-disclosure regime. Finally, using the first two results, we find conditions under which the audit quality in the reporting equilibrium in the non-disclosure regime is higher than the audit quality in the disclosure regime.

4.1 Disclosure Regime

This subsection shows that if the cost of reporting is high enough, there is a unique equilibrium in the disclosure regime. Furthermore, there is no monitoring in this equilibrium i.e. the successor partner never reports the predecessor partner and so the latter is never fired. We start with a lemma demonstrating no reporting in the disclosure regime.

Lemma 1. *If $c > \underline{c} = \frac{\alpha_2 X p_h (1-\varepsilon)(1-p_h)}{p_h \varepsilon + (1-p_h)}$, then there is no equilibrium where the successor partner reports with positive probability in the disclosure regime.*

Proof. We prove this by contradiction. Suppose there is an equilibrium where the successor partner reports with positive probability μ. Consider an equilibrium in which the flexible partner's strategy in period 1 is such that, in case of conflict, he plays A with probability x. The successor partner reports a discrepancy with probability μ, where μ is assumed to be strictly greater than zero.

Consider the reporting decision in period 2:

$$Payoff\ from\ reporting\ =\ \alpha_1 W p_h + \alpha_2 X p_h - c$$

$$Payoff\ from\ not\ reporting\ = \alpha_1 W p_h + \alpha_2 X p'$$

where p' is reputation of the other partner in the history (g, B, nf). Bayesian updating leads to:

$$p' = \frac{p_h \varepsilon}{p_h \varepsilon + (1-p_h)(\varepsilon + (1-\varepsilon)x(1-\mu))}$$

Case 1 - $\mu = 1$ (successor partner reports with probability 1). In this case, the above condition implies that $p' = p_h$. However in this case, payoff from not reporting $(\alpha_1 W p_h + \alpha_2 X p_h)$ exceeds the payoff from reporting $(\alpha_1 W p_h + \alpha_2 X p_h - c)$, which implies that the successor partner should never report in equilibrium i.e. μ should be zero. Contradiction.

Case 2 - $\mu \in (0,1)$ (successor partner mixes between reporting and not reporting). The required indifference condition for mixing implies:

$$c = \alpha_2 X p_h \left(1 - \frac{\varepsilon}{p_h \varepsilon + (1-p_h)(\varepsilon + (1-\varepsilon)x(1-\mu))}\right)$$

However, the lemma assumes that $c > \underline{c}$ and it is clear that $\underline{c} > \alpha_2 X p_h (1 - \frac{\varepsilon}{p_h \varepsilon + (1-p_h)(\varepsilon + (1-\varepsilon)x(1-\mu))})$. Therefore the indifference condition cannot hold.

Case 1 and case 2 imply that we cannot have an equilibrium where the successor partner reports with positive probability in the disclosure regime. □

The intuition for the above result is as follows. First, since partner names are disclosed, when there is partner rotation and a new audit partner is assigned to the issuer in period 2, the new partner cannot change beliefs about his own reputation. The investor knows that the partner assigned to issuer in period 2 has a reputation p_h. Second, though the engagement partner can improve the reputation of the *other* partner by reporting discrepancies[42], if the cost of reporting is high enough, the payoff gain from the increased reputation of the other partner does not compensate for the cost of reporting. Note that the payoff gain from reporting the other partner is actually reducing in μ. This is because if the investor believes that the successor partner will report the predecessor partner for playing A with high probability, the incentives to deviate and not report the previous partner increases for the successor partner. The idea is that if the investor observes no firing, then he is more likely to believe that this is due to the first partner getting a wrong signal (else the successor partner would have likely reported him and there would be a firing). However, both type partners can get the wrong signal with equal probability so the reputation of the predecessor partner doesn't fall by much if the there is no firing and the investor believes that the successor partner will report with high probability.

Next, we outline the unique equilibrium in the disclosure regime.

[42] Then, the investor would observe a firing and would figure out that the other partner is a new partner drawn from the pool and therefore has reputation p_h.

Proposition 1. *If $c > \underline{c} = \frac{\alpha_2 X p_h(1-\varepsilon)(1-p_h)}{p_h\varepsilon+(1-p_h)}$, $\exists$ an I_D such that the unique equilibrium in the disclosure regime has the following features:*

a) The successor partner never reports the predecessor partner

b) If $I \geq I_D$, then the flexible partner always plays A in period 1 in case of a conflict.

c) If $I < I_D$, there exists a unique $x(I)$ such that, in case of a conflict, the flexible partner plays A with probability $x(I)$ in period 1.

Proof. Lemma 1 already demonstrates the first claim. Consider the following general strategy for the flexible partner in period 1: in case of a conflict, the flexible partner plays A with probability x.

The first thing to note is that x cannot take the value zero in equilibrium. This is because, in this case, both the flexible and the rigid partner are believed to play the same strategy in period 1 and thus there is no updating of belief by the investor for any observed history. In particular, the flexible partner cannot lose reputation by playing A and since there is no reporting, the flexible partner is not fired for playing A. Thus, the flexible partner has incentives to deviate and play A in period 1 in case of a conflict, thereby avoiding the cost imposed by the issuer while facing no loss of reputation.

Whether x takes a value in $(0,1)$ or 1 depends upon the maximum pressure the issuer-manager is willing to impose on the partner. This is the difference in payoff of the issuer when the engagement partner plays A in period 1 as compared to when the engagement partner plays NA in period 1. Thus, we have the following expression for maximum pressure:

$$max_B = \frac{pI}{p+(1-p)(p_h\varepsilon+(1-p_h)(\varepsilon+(1-\varepsilon)x))}$$

For any $x \in (0,1)$, we must have $B = max_B$, else the issuer manager can induce the flexible partner to play A by increasing the pressure by a very small amount. If $x = 1$, we must have $B \leq max_B$.

If $x \in (0,1)$, the flexible partner must be indifferent between playing A and playing NA. Thus, we must have:

$$\begin{aligned}
&Payoff\ from\ A\ =\ Payoff\ from\ NA\\
&\Leftrightarrow \alpha_1 W p_h + \alpha_2 X p_h + \delta[\gamma(\alpha_1 W p' + \alpha_2 X p_h) + (1-\gamma)(\beta_1 W p_h + \beta_2 X p')] = \alpha_1 W p_h + \alpha_2 X p_h - B +\\
&\delta[\gamma(\alpha_1 W \frac{p_h}{p_h+(1-p_h)(1-x)} + \alpha_2 X p_h) + (1-\gamma)(\beta_1 W p_h + \beta_2 X \frac{p_h}{p_h+(1-p_h)(1-x)})]\\
&\Leftrightarrow B = \delta[\gamma\alpha_1 W + (1-\gamma)\beta_2 X][\frac{p_h}{p_h+(1-p_h)(1-x)} - p']\\
&\Leftrightarrow B = \delta[\gamma\alpha_1 W + (1-\gamma)\beta_2 X][\frac{p_h}{p_h+(1-p_h)(1-x)} - \frac{p_h\varepsilon}{p_h\varepsilon+(1-p_h)(\varepsilon+(1-\varepsilon)x)}] \qquad (1)
\end{aligned}$$

Now, for $x \in (0,1)$ to be optimal, it must be the case that the issuer-manager cannot put a little more pressure

to make playing A strictly better than playing NA. Thus, we must have $B = max_B$. This implies

$$\delta[\gamma\alpha_1 W + (1-\gamma)\beta_2 X][\frac{p_h}{p_h + (1-p_h)(1-x)} - \frac{p_h\varepsilon}{p_h\varepsilon + (1-p_h)(\varepsilon + (1-\varepsilon)x)}] = \frac{pI}{p + (1-p)(p_h\varepsilon + (1-p_h)(\varepsilon + (1-\varepsilon)x))}$$

$$I = \frac{[p + (1-p)(p_h\varepsilon + (1-p_h)(\varepsilon + (1-\varepsilon)x))]\delta[\gamma\alpha_1 W + (1-\gamma)\beta_2 X]}{p}[\frac{p_h}{p_h + (1-p_h)(1-x)} - \frac{p_h\varepsilon}{p_h\varepsilon + (1-p_h)(\varepsilon + (1-\varepsilon)x)}] \quad (2)$$

Thus, we get that the equilibrium x is an increasing function of I. Given any $I < I_D$ where $I_D = \frac{p+(1-p)(p_h\varepsilon+1-p_h)}{p}\delta(\gamma\alpha_1 W + (1-\gamma)\beta_2 X)\frac{1-p_h}{p_h\varepsilon+(1-p_h)}$, there exists a unique $x(I) \in (0,1)$ such that $B = max_B$ and payoff from A equals payoff from NA. If $I \geq I_D$, then optimal x is 1. □

Thus, if the investment amount is very large, the issuer manager loses too much if the audit partner reports the unfavorable signal. Thus, the issuer manager has incentives to put a lot of pressure on the partner which guarantees that the flexible partner succumbs to the pressure and plays A. Next, we find conditions under which there is a reporting equilibrium in the non-disclosure regime.

4.2 Non-Disclosure Regime

In the previous subsection, we saw that under some conditions, the unique equilibrium in the disclosure regime is one in which there is no monitoring. We would like to show that though the disclosure regime has more 'transparency', this may not necessarily be good. To this end, in this subsection, we study the non-disclosure regime and we look for equilibria where the successor partner always reports the predecessor partner in case of a discrepancy between the audit signal and the audit announcement. Using this result, in the next subsection we will identify conditions under which the non-disclosure regime produces higher audit quality reports as compared to the disclosure regime. The following proposition identifies an equilibrium with reporting in the non-disclosure regime.

Proposition 2. *If $c < \bar{c} = \frac{\alpha_1 W p_h(1-p_h)(1-\varepsilon)\gamma}{\varepsilon p_h + (1-p_h)(\varepsilon + (1-\varepsilon)\gamma)}$, then $\exists$ an I_{ND}, $\underline{I}$ such that there is an equilibrium in the non-disclosure regime which has the following features:*

a) The successor partner always reports the predecessor partner

b) If $I \geq I_{ND}$, then the flexible partner always plays A in period 1 in case of a conflict.

c) If $\underline{I} < I < I_{ND}$, there exists a unique $x(I)$ such that, in case of a conflict, the flexible partner plays A with probability $x(I)$ in period 1.

Proof. Consider the reporting decision in period 2 now:

$$\begin{aligned} Payoff\ from\ reporting\ &=\ \alpha_1 W p_h + \alpha_2 X p_h - c \\ Payoff\ from\ not\ reporting\ &= \alpha_1 W R(x) + \alpha_2 X R'(x) \end{aligned}$$

where $R(x)$ is the reputation of the partner assigned to the client in period 2 and $R'(x)$ is reputation of other partner following history (g,B,nf) and reporting is an equilibrium strategy. Therefore:

$$\begin{aligned} R(x) &= \frac{p_h \varepsilon}{p_h \varepsilon + (1-p_h)(\varepsilon + (1-\varepsilon)x\gamma)} \\ R'(x) &= p_h \end{aligned}$$

Since we are looking for an equilibrium where reporting is optimal, we must have:

$$Payoff\ from\ not\ reporting\ < Payoff\ from\ reporting \tag{3}$$

$$\Leftrightarrow \alpha_1 W R(x) + \alpha_2 X R'(x) < \alpha_1 W p_h + \alpha_2 X p_h - c$$

$$\Leftrightarrow c \leq \frac{\alpha_1 W p_h (1-p_h)(1-\varepsilon)x\gamma}{\varepsilon p_h + (1-p_h)(\varepsilon + (1-\varepsilon)x\gamma)} \tag{4}$$

The right hand side (RHS) expression is increasing in x. Define $c(x) = \frac{\alpha_1 W p_h (1-p_h)(1-\varepsilon)x\gamma}{\varepsilon p_h + (1-p_h)(\varepsilon + (1-\varepsilon)x\gamma)}$. Then $\overline{c}$ is the highest value of RHS (c(1)). By assumption in the proposition $c < \overline{c}$. Let $\underline{x}$ be such that $c(\underline{x}) = c$. Then, for all $x \in [\underline{x}, 1]$, $c(x) \geq c$.

Consider period 1 equilibrium behavior now. For all equilibria in which the flexible partner plays A with probability x when there is a conflict, if $x \in (0,1)$, we must have:

$$\begin{aligned} &Payoff\ from\ A\ =\ Payoff\ from\ NA \\ &\Leftrightarrow \alpha_1 W p_h + \alpha_2 X p_h + \delta[\gamma(\alpha_1 W R(x) + \alpha_2 X R'(x)) + (1-\gamma)(v_f)] = \alpha_1 W p_h + \alpha_2 X p_h - B + \\ &\delta[\gamma(\alpha_1 W(\gamma \frac{p_h}{p_h + (1-p_h)(1-x)} + (1-\gamma)p_h) + \alpha_2 X((1-\gamma)\frac{p_h}{p_h + (1-p_h)(1-x)} + \gamma p_h) + \\ &(1-\gamma)(\beta_1 W(\gamma \frac{p_h}{p_h + (1-p_h)(1-x)} + (1-\gamma)p_h) + \beta_2 X((1-\gamma)\frac{p_h}{p_h + (1-p_h)(1-x)} + \gamma p_h))] \\ &\Leftrightarrow B = \delta[\gamma\alpha_1 W(R_h(x) - R(x)) + \gamma\alpha_2 X(R'_h(x) - R'(x)) + (1-\gamma)(\beta_1 W R_h(x) + \beta_2 X R'_h(x) - v_f)] \end{aligned}$$

where $R_h(x) = \gamma \frac{p_h}{p_h + (1-p_h)(1-x)} + (1-\gamma)p_h$ and $R'_h(x) = (1-\gamma)\frac{p_h}{p_h + (1-p_h)(1-x)} + \gamma p_h$

For any $x \in (0,1)$, we must have $B = max_B$, else the issuer manager can definitely get A behavior from the flexible partner by increasing the pressure by a very small amount. If $x = 1$ (A equilibrium), we must

have $B \leq max_B$. Thus, if $x \in (0,1)$, we must have:

$$\delta[\gamma\alpha_1 W(R_h(x) - R(x)) + \gamma\alpha_2 X(R'_h(x) - R'(x)) + (1-\gamma)(\beta_1 W R_h(x) + \beta_2 X R'_h(x) - v_f)] = \frac{pI}{p + (1-p)(p_h\varepsilon + (1-p_h)(\varepsilon + (1-\varepsilon)x))}$$
$$\Leftrightarrow I = \frac{[p + (1-p)(p_h\varepsilon + (1-p_h)(\varepsilon + (1-\varepsilon)x))]\delta[\gamma\alpha_1 W(R_h(x) - R(x)) + \gamma\alpha_2 X(R'_h(x) - R'(x)) + (1-\gamma)(\beta_1 W R_h(x) + \beta_2 X R'_h(x) - v_f)]}{p} \quad (5)$$

Thus, we get once again that the equilibrium x is an increasing function of I. Choose $\underline{I}$ to be such that the above equation is solved by $\underline{x}$. Now, given any $\underline{I} < I < I_{ND} = \frac{p+(1-p)(p_h\varepsilon+(1-p_h))}{p}\delta[\gamma\alpha_1 W(R_h(1) - R(1)) + \gamma\alpha_2 X(R'_h(1) - R'(1)) + (1-\gamma)(\beta_1 W R_h(1) + \beta_2 X R'_h(1) - v_f)]$, we have that reporting is optimal and there exists a unique $x(I) \in (0,1)$ such that $B = max_B$ and payoff from A equals payoff from NA. If $I \geq I_{ND}$, then optimal x is 1. □

Next, we find conditions under which the non-disclosure regime produces higher audit quality (probability of flexible partner playing A in period 1 is lower under non-disclosure regime) as compared to the Disclosure regime.

4.3 Non-Disclosure > Disclosure

Theorem 1. *There exist $c_1, c_2, I_1, I_2, \underline{\nu}$ and $\bar{\alpha}$ such that if the following hold:*

1. $c \in (c_1, c_2)$
2. $I \in (I_1, I_2)$
3. $v_f < \underline{\nu}$ *and* $\alpha_2 < \bar{\alpha}$

then, in any equilibrium, there is no monitoring under the disclosure regime but a monitoring equilibrium exists under the non-disclosure regime. Moreover, the probability of the flexible partner playing A under the non-disclosure regime is strictly lower than that under the disclosure regime.

Proof. In Appendix. □

The existence of this equilibrium demonstrates conditions under which the probability that the investor gets the correct signal from the engagement partner may be lower in the disclosure regime as compared to the non-disclosure regime. In other words, the quality of audit may actually be lower under the disclosure regime. The formal proof is in the appendix but let us discuss some of the sufficient conditions for this result so that the reader gets an intuitive idea about the forces at play.

We need the cost of reporting to be neither too high nor too low. It is obvious that if the cost of reporting is too high then the monitor will find it prohibitively costly to report (irrespective of the regime). If the cost of

reporting is too low then there may be reporting equilibria under both regimes and in this case it is difficult to say if the audit quality will be higher in one regime or another. In fact, in the appendix we show in proposition 3 that the disclosure regime performs better than the non-disclosure regime when the cost of reporting is zero, and this is because reporting is always an equilibrium action when the cost of reporting is zero. If monitoring incentives remain the same then the increased reputation building incentives in the disclosure regime ensures higher audit quality in that regime. Thus, the cost of reporting must be bounded below so that we can use lemma 1 to guarantee that there is no reporting equilibria in the disclosure regime[43].

Aside from the reporting concerns of the monitor partner, for engagement partners to be sufficiently concerned about their own actions to respond to reporting and firing incentives, the bulk of their payoffs must come from their own engagement and not the revenue the firm may earn from project 2. Thus, α_2 (share of revenue from project 2 that goes to the partner assigned to the issuer) has to be low.

Finally, if the level of investment is too small, the engagement partner may find it optimal to play A with such a low probability that there may not be a reporting equilibrium in the non-disclosure regime as well[44]. On the other hand, if the level of investment is high, the issuer may always (irrespective of disclosure policy) be able to pressure the engagement partner into playing A[45]. The implication here is that bigger clients hold more sway over audit partners. We find an interval of I in which the engagement partner acquiesces with positive probability under the non-disclosure regime but with full probability under the disclosure regime[46]. This leads to our main result.

5 Alternate Models

In this section, we discuss the results from two alternative formulations of our model - The engagement quality reviewer model and the multitasking model. Both these models capture some real life aspect of the audit market which is not accounted for in our baseline model. However, we show that our central result may

[43]Note that when the cost of reporting is positive, there can not exist a pure strategy reporting equilibrium under the disclosure regime. The basic idea is that if there was a reporting equilibrium then the monitor partner would have incentives to deviate and not report. This is because of the following. The gain from reporting the other partner comes from increases in reputation (for self and the other partner) which leads to higher payoffs. If he reports the previous partner, he pays a cost c and the reputation of the new partner is p_h and his own reputation is also p_h (since he was just rotated in and the investor can observe that). If he does not report the previous partner, he pays no cost and the investor believes that there was no firing because the previous partner had received the wrong signal and played *NA* (else he would have been reported since it is a reporting equilibrium). Since the probability of receiving the wrong signal is the same across partner types, the previous partner's reputation is unchanged at p_h and of course the monitor partner's reputation is also p_h since he was just rotated in and the investor can observe that. Thus, there are no payoff gains from reporting, but there is a positive cost c. So the monitor will deviate and not report the predecessor partner. However, this does not rule out mixed strategies on the part of the monitor where he reports with positive probability. We use the lower bound on c to rule out even positive probabilities of reporting under the disclosure regime.

[44]This is because in this case the flexible and the rigid type partners play almost similar strategies, therefore the gain from reporting is low. Since we impose a lower bound on c, the cost of reporting may outweigh the gains.

[45]Gains from A to issuer is high because of high I, therefore the maximum pressure the issuer can impose is high.

[46]The payoff from getting fired (v_f) has to be low enough to be able to claim that such an interval exists.

still go through in these models. In this way, they act as robustness checks for our model. We only describe the main result here and leave much of the details to the internet appendix for the interested reader.

5.1 Engagement quality reviewer (EQR)

The analysis in our baseline model explores the incentives of an engagement partner and a monitor partner who may be rotated in to an engagement at the end of the first period. In this subsection, we discuss the more specific case of an Engagement Quality Reviewer (EQR). Engagement quality review is a quality control mechanism used by public accounting firms to monitor the quality of audit engagements. The engagement quality reviewer serves as an evaluator of the performance of the engagement partner and the engagement team. According to the PCAOB Auditing Standard No. 7, the "objective of the engagement quality reviewer is to perform an evaluation of the significant judgements made by the engagement team and the related conclusions reached in forming the overall conclusion on the engagement and in preparing the engagement report, if a report is to be issued, in order to determine whether to provide concurring approval of issuance."

Unlike the successor partner, an EQR can detect whether the audit evidence supports the audit opinion *before* the audit report is issued. Even in this sort of environment, we show that the incentives to report an erring partner is higher in the non-disclosure regime. Thus, we continue to obtain a tussle between reputation and monitoring incentives and we can get the equivalent of our main results in this environment as well. For details of the model, proofs and intuition please look at the internet appendix.

5.2 Multitasking and Collective Reputation

One highly debated aspect of Auditing Standard No. 7 has been the nature of engagement quality review. The debate has been over whether the review partner's role should be independent and almost adversarial in nature versus the review being a collegial, non-adversarial process. In earlier sections, we analyzed the incentives of a monitor partner when the nature of the review process is adversarial (since the erring partner may get fired following a report). In this subsection, we discuss how incentives change under the two regimes when the EQR has a non-adversarial role and works as a "second pair of eyes". We capture this in an alternative model of multitasking where both partners have two roles - monitoring the other partner and auditing their own client. The partners have to allocate a finite amount of time between their monitoring role and their role as an auditor of their issuer. We argue that if a particular kind of equilibrium is played in both regimes then the audit quality will be lower in the disclosure regime under some conditions. For details about the model and our argument look at the internet appendix.

6 Potential solutions to the monitoring problem

It is clear from our analysis that disclosure of the engagement partner's identity reduces the monitoring incentives of a successor partner/engagement quality reviewer. It is also evident that an additional external transfer (prize for monitoring) or, analogously, an increased expected external sanction (punishment for not monitoring), can help mitigate this problem. This class of solutions can be implemented only through an increased cost for regulators. In this section, we propose three other solutions. These can be implemented through increased audit fees or through a realignment of incentives within the audit firm.

6.1 Increase in audit fee

Carcello and Li (2013) report improved audit quality and increased audit fees in U.K. firms after the partners were required to sign the audit report. The increased audit fee can reflect an increased audit effort to counter the increased risk for individual partners. In the context of our model, however, there is another explanation for a rise in audit fees following the implementation of the signature rule. In our model, the audit fee for the partner with the issuer is a linear function of WR_t. Therefore, a higher W leads to increased incentives for the engagement partner to not acquiesce to the issuer's demands in the case of a conflict. Thus, the increased audit fee may be because the audit firm's management want to compensate for the reduced incentive to report with an increased incentive to not misbehave. When monitoring comes from the engagement quality reviewer, since the reporting incentives of the EQR are also increasing in audit fees, an increased W can lead to both increased incentives for the engagement partner as well as improved incentives for the EQR.

6.2 Treating the monitor as the "sink"

If the compensation contracts in partnerships can collect penalty from a group of partners and distribute the collected penalty to another group, then the latter is called the "sink." In a natural set up, the risk neutral principal acts as a sink. However, in our model, the managing partner can not act as the sink in equilibrium. This is because only the successor partner or the EQR can observe the action of the engagement partner. Since contracts can only be made on observables, the managing partner cannot impose a penalty on the engagement partner unless the successor partner or the EQR reports against him. To provide incentives for the monitor partner to report, the managing partner must make a transfer to the monitor. From our analysis, it is evident that the minimum transfer the managing partner needs to make in order to ensure monitoring may be higher under the disclosure regime.

6.3 The modified eat-what-you-kill compensation structure

Knechel, Niemi and Zerni (2013) observe that the Big-4 accounting firms vary in their profit sharing arrangements. At one end of the spectrum there are profit sharing rules close to the lock-step arrangement, where partners are paid according to seniority and their compensation is relatively less sensitive to own performance. On the other end of the spectrum there are partnerships that follow sharing rules close to the eat-what-you-kill model. In the context of our model, a partner's compensation is linked to the revenues from the issuer and from project 2 through exogenous parameters $\alpha_1, \alpha_2, \beta_1$ and β_2. Clearly, monitoring incentives can be improved by increasing the monitor's share of the revenue from the issuer. In our model an increase in the monitor partner's share of the revenue earned from the issuer can only be achieved by reducing either the share of the engagement partner or by reducing the share of the managing partner. However, we can use this insight in the context of a more general compensation function. Consider the following compensation function for a partner i in a partnership of N partners.

$$Pay_i = \alpha \times \{\text{Revenue from engagement}\}_i + \beta \times \{\text{Revenue from engagements reviewed}\}_i$$
$$+ \theta \times \{\text{Revenue from other engagements}\} + \eta \times \{\text{Revenue from nonaudit services}\}$$

A sharing rule relatively less sensitive to own performance will be represented by high values of θ and η while α and β will be low. In order to maximize incentives for the monitor partner and the engagement partner, their share of revenue from other engagements and non-audit services should be minimized, while their compensation should be highly sensitive to their performance as an engagement partner and as a reviewer.

7 Summary and possible extensions

We highlight a possible pitfall in the quest for transparency by analyzing a new rule affecting the audit markets in the USA. We argue that incentive effects must be considered when contemplating the impact of information enhancing rules. Prior to February 2017, the name of the audit partner was not disclosed in the USA. Our study is motivated by a new rule which mandates the disclosure of the name of the lead audit partner for audit reports issued in the United States. This article uses a model of reputation to examine the incentives of auditors at the audit-partner level under the two policy regimes: the disclosure regime and the non-disclosure regime.

We examine whether the transparency inducing partner identification rule always lower incentives of a strategic engagement partner to misreport his audit signal (increase audit quality). We also investigate the

impact of such a regime change on the incentives of a 'monitor' partner to raise the flag against an engagement partner who misreports. Our analysis shows that it is possible that the disclosure regime produces lower quality audit reports. This is due to the trade-off between two opposing incentive effects. While the partner has stronger reputation building incentives under the disclosure regime (which can improve audit quality), the incentives for a monitor partner to raise the flag are actually higher under the non-disclosure regime. The idea is that under the non-disclosure regime, a partner's actions affect the collective reputation of the firm which is shared by other partners in the firm. Hence a monitor partner has incentives to report a partner who misreports to improve the collective (and therefore his own) reputation.

Our model puts structure to the organizational design of audit firms and emphasizes the role of different relational forces that affect the incentives of auditors. This model can be used to study multiple interesting extensions. For example, we could look at the incentives of the leadership of the audit firms to create the right incentives for partners. In our model, we assume that the managing partner imposes sanctions against the engagement partner whenever the latter is found to misreport. We also assume that the compensation structure remains the same under the two regimes. A study exploring strategic behavior of the managing partner and endogenous realignment of compensation structure in this context will provide further insights into this matter. We hope to work on these issues in the future.

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A Appendix

A.1 Proof of Non-disclosure > Disclosure

Proof of theorem 1

Proof. We will prove the theorem using a couple of lemmas:

Lemma 2. $\exists\ \bar{\alpha}$ *such that if* $\alpha_2 < \bar{\alpha}$ *then* $\underline{c} < \overline{c}$.

Proof. $\underline{c} < \overline{c}$ iff:

$$\frac{\alpha_2 X p_h(1-\varepsilon)(1-p_h)}{\varepsilon p_h + (1-p_h)} < \frac{\alpha_1 W \gamma p_h(1-\varepsilon)(1-p_h)}{\varepsilon p_h + (1-p_h)(\varepsilon + (1-\varepsilon)\gamma)}$$
$$\Leftrightarrow \alpha_2 < \frac{\alpha_1 W \gamma[\varepsilon p_h + (1-p_h)]}{X[\varepsilon p_h + (1-p_h)(\varepsilon + (1-\varepsilon)\gamma)]}$$

Clearly our lemma statement is true for $\bar{\alpha} = \frac{\alpha_1 W \gamma[\varepsilon p_h + (1-p_h)]}{X[\varepsilon p_h + (1-p_h)(\varepsilon + (1-\varepsilon)\gamma)]}$ □

Lemma 3. $\exists\ \underline{v}$ *such that if* $v_f < \underline{v}$ *then* $I_D < I_{ND}$

Proof. $I_D < I_{ND}$ iff:

$$\frac{[p + (1-p)(p_h\varepsilon + 1 - p_h)][\delta(\gamma\alpha_1 W + (1-\gamma)\beta_2 X)](1-p_h)}{p[p_h\varepsilon + (1-p_h)]} < \frac{[p + (1-p)(p_h\varepsilon + (1-p_h))][\delta[\gamma\alpha_1 W(R_h(1) - R(1)) + \gamma\alpha_2 X(R'_h(1) - R'(1)) + (1-\gamma)(\beta_1 W R_h(1) + \beta_2 X R'_h(1) - v_f)]]}{p}$$

Now, since v_f is a negative number (payoff if fired), clearly there exists a negative number $\underline{v}$ such that RHS dominates LHS if $v_f < \underline{v}$. □

Now, using $\underline{I}$ from proposition 2, pick $I_1 = max\{\underline{I}, I_D\}$ and $I_2 = I_{ND}$. Choose x_1 to be such that the equation 5 is solved by I_1. Now pick $c_1 = max\{\underline{c}, c(x_1)\}$ and $c_2 = \overline{c}$.

Let $c \in (c_1, c_2),\ I \in (I_1, I_2),\ v_f < \underline{v}$ and $\alpha_2 < \bar{\alpha}$. Then, it is clear from proposition 1, proposition 2, lemma 2 and lemma 3 that there is an equilibrium with reporting in the non-disclosure regime while the only equilibrium in the disclosure regime is the one without reporting. Furthermore, since I is in the range (I_1, I_2), in case of a conflict, the flexible partner acquiesces always to issuer-manager in period 1 in the disclosure

regime while in the non-disclosure regime, the flexible partner issues the correct audit report with positive probability. Therefore, the audit quality is higher in the non-disclosure regime. □

A.2 c=0 case

The results hitherto have all relied on the cost of reporting being positive. Now, we ask what happens if the cost of reporting is zero? In particular, we would like to know how the audit quality compares in the two regimes (disclosure and non-disclosure).

We start with a lemma which says that if the cost of reporting is zero then there are no non-reporting equilibria in either regime i.e. whenever the first period engagement partner announces an audit report which is different from its audit signal, this partner will get reported and fired if partner rotation occurs (irrespective of regime).

Lemma 4. *There does not exist an equilibrium without reporting when the cost of reporting is zero.*

Proof. Consider the case of the non-disclosure regime. The intuition for the disclosure regime will follow.

Suppose there is a no-reporting equilibrium. Consider the incentives of the newly rotated-in successor partner. If no one gets fired, the investor will assume that it was because either the first period partner played *A* but there was no reporting or the first period partner played *NA*. Therefore, after a history of (g,B,nf) the reputation of the first period partner will fall below p_h as it allows for the former possibility. However, the successor partner has incentives to deviate and report. This is because of the belief of the investor when he does observe a firing. Our assumption on errors says that there is a small positive probability that the first period partner gets fired irrespective of his signal or state. Therefore, if the investor believes that no-reporting is happening in equilibrium but still observes firing, he must think that this is because the first period partner got fired by mistake and therefore the reputation of the other partner will be p_h (since the fired partner will get replaced from the pool randomly). This is above the reputation that can be achieved by the other partner if there was no reporting. Since the cost of reporting is zero and the successor partner's payoff is positively dependent upon the other partner's reputation in either regime, he will report. Thus, there is profitable deviation.

In the disclosure regime, the same kind of logic works. Therefore, there does not exist any no-reporting equilibrium when the cost of reporting is zero. □

Next, we show that when the cost of reporting is zero, the disclosure regime produces higher quality audit reports as compared to the non-disclosure regime. The intuition for this is as follows. When the cost

of reporting is positive, it may happen that the reduced monitoring effect (as the regime moves from non-disclosure to disclosure) dominates the increased reputation effect, thereby reducing audit quality. However, as lemma 4 shows, if the cost of reporting is zero, the monitoring effect remains constant when moving from the non-disclosure regime to the disclosure regime. Thus, the increased reputation building incentives in the disclosure regime lead to higher audit quality in the disclosure regime.

Proposition 3. *Given $p_h \in (0,1)$ and $c = 0$, for $\alpha_2, \beta_1 \approx 0$, the probability that the engagement partner acquiesces to the issuer is lower in the disclosure regime as compared to the non-disclosure regime.*

Proof. We prove this with the help of two lemmas. First, we show that the unique equilibrium in the non-disclosure and the disclosure regime has certain features.

In the non-disclosure regime:

Lemma 5. *Given $p_h \in (0,1)$ and $c = 0$, there exist $\underline{I} > 0$ and $\overline{I_{nd}} (> \underline{I})$ such that the unique equilibrium in the non-disclosure regime has the following features:*

At $t = 2$, a new successor partner reports NC if and only if the predecessor partner played A. In case of a conflict, $B_2 = 0$ and the assigned partner plays A.

At $t = 1$, in case of a conflict,

a) If $I \leq \underline{I}$, the issuer puts pressure $B_1 = 0$. The engagement partner plays NA.

b) For each $I \in (\underline{I}, \overline{I_{nd}})$, there exists $x^* \in (0,1)$ such that the issuer puts pressure $B_1 = \frac{Ip}{p+(1-p)[p_h\varepsilon+(1-p_h)\{\varepsilon+(1-\varepsilon)x^*\}]}$. The engagement partner plays A with probability x^*.

c) If $I \geq \overline{I_{nd}}$, the issuer puts pressure $B_1 = \gamma\alpha_1 W[R_2h(1) - R_2(1)] + (1-\gamma)[\beta_1 W R_2 h(1) + \beta_2 X R_2 h'(1) - v_f]$, where, $R_2h(1) = \gamma + (1-\gamma)p_h$, $R_2(1) = \hat{\gamma}\frac{p_h\varepsilon}{p_h\varepsilon+(1-p_h)} + (1-\hat{\gamma})p_h$, $\hat{\gamma} = \frac{\gamma}{\gamma+(1-\gamma)\varepsilon}$, and $R_2h'(1) = \gamma p_h + (1-\gamma)$. The engagement partner plays A.

Proof. The proof is similar to that of proposition 2 □

In the disclosure regime:

Lemma 6. *Given $p_h > 0$, and $c = 0$, there exists $\overline{I_d} > 0$ such that the unique equilibrium in the disclosure regime has the following features:*

At t=2, a new successor partner reports NC if and only if the other partner played A in the first period. In case of a conflict, $B_2 = 0$ and the assigned partner plays A if F type.

At $t = 1$, in case of a conflict,

a) If $I \leq \underline{I}$, the issuer puts pressure $B_1 = 0$. The engagement partner plays NA.

b) If $I \in (\underline{I}, \overline{I_d})$, there exists $x^* \in (0,1)$ such that the engagement partner plays A with probability x^*.

c) If $I > \overline{I_d}$ the assigned partner plays A if F type.

Proof. Proof is similar to proof of proposition 1. □

Now that we know exactly how the equilibria look like in the two regimes when the cost of reporting is zero, we can prove our desired result. First, some notations[47].

Let $\Pi(x)$ be the payoff from playing *NA* minus the payoff from playing *A* in period 1 for the flexible partner who plays *A* with probability x in period 1. It does not include the cost imposed by the issuer so it can be interpreted as the gain in reputational payoff from taking the right action. Let R_2 be the reputation of the partner who is assigned to the issuer in period 2. Let R_2' be the reputation of the partner who is assigned to project 2 in period 2. $\phi(x)$ denotes the reputation of the partner who was assigned to the issuer in period 1 when the partner was supposed to play *A* with probability x in a conflict in period 1 and after the history $\{b,B,nf\}$ i.e. when the partner announced the signal b and the state turned out to be B and there was no firing. Finally, $\phi'(x)$ is the reputation of the partner who was assigned to the issuer in period 1 when the partner was supposed to play *A* with probability x in a conflict in period 1 and after the history $\{g,B,nf\}$ i.e. when the partner announced the signal g and the state turned out to be B and there was no firing. Now,

Under the non-disclosure regime, the partner's incentive to play *NA* is given by:

$$\Pi(x) = \delta\gamma[\alpha_1 W\{\gamma\phi(x) + (1-\gamma)p_h - \hat{\gamma}\phi'(x) - (1-\hat{\gamma})p_h\} + \alpha_2 X\{\gamma p_h + (1-\gamma)\phi(x) - \hat{\gamma}p_h - (1-\hat{\gamma})\phi'(x)\}]$$

$$+\delta(1-\gamma)\left[\beta_1 W\{\gamma\phi(x) + (1-\gamma)p_h\} + \beta_2 X\{\hat{\gamma}\phi(x) + (1-\hat{\gamma})p_h\} - v_f\right]$$

where $\hat{\gamma} = Pr(same\ partner|g,B,nf) = \frac{\gamma}{\gamma+(1-\gamma)\varepsilon} > \gamma$

Under the disclosure regime, the partner's incentive to play *NA* is given by:

$$\Pi_d(x) = \delta\left[\gamma\alpha_1 W(\phi(x) - R_2'(x)) + (1-\gamma)\left(\beta_1 W p_h + \beta_2 X R(x) - v_f\right)\right]$$

Since we want to show that the result holds for low values of α_2, β_1, we will simply show that the result holds when $\alpha_2 \approx 0$ and $\beta_1 \approx 0$ and we will have the desired result by continuity in α_2, β_1

[47] Some of this notation has been listed in the text but we reproduce them here to make the reading easier.

Therefore, rewriting the above equations in terms of $\phi(x)$ and $\phi'(x)$ we get,

$$\Pi(x) = \delta\gamma[\alpha_1 W\{\gamma\phi(x) + (1-\gamma)p_h - \hat{\gamma}\phi'(x) - (1-\hat{\gamma})p_h\}] + \delta(1-\gamma)\left[\beta_2 X\{\hat{\gamma}\phi(x) + (1-\hat{\gamma})p_h\} - v_f\right]$$
$$\Pi_d(x) = \delta\left[\gamma\alpha_1 W(\phi(x) - \phi'(x)) + (1-\gamma)\left(\beta_2 X\phi(x) - v_f\right)\right]$$

It is clear from the above equations that, $\Pi(x) < \Pi_d(x)$ for $x \in (0,1]$.

Now, when the partner plays A in equilibrium, it means that the issuer manager managed to put pressure greater than or equal to the partner's gain from playing NA. In the non-disclosure regime, when I is exactly equal to I_{nd} the issuer-manager's $max_B = \Pi(1)$. Similarly for the disclosure regime when $I = I_d$. Thus, we have that $\bar{I_{nd}}, \bar{I_d}$ are linear functions of $\Pi(1), \Pi_d(1)$ respectively with the same coefficient such that:

$$\bar{I_{nd}} = \frac{p + (1-p)(p_h\varepsilon + (1-p_h)(\varepsilon + (1-\varepsilon)1))}{p}\Pi(1)$$
$$\bar{I_d} = \frac{p + (1-p)(p_h\varepsilon + (1-p_h)(\varepsilon + (1-\varepsilon)1))}{p}\Pi_d(1)$$

Now, $\Pi(x) < \Pi_d(x)\ \forall x \Rightarrow \bar{I_{nd}} < \bar{I_d}$. Thus, if I is in the interval $(\bar{I_{nd}}, \bar{I_d})$, then the flexible partner always plays A in the non-disclosure regime whereas the flexible partner plays NA with positive probability in the disclosure regime. Thus, the audit quality is higher in the disclosure regime.

If $I \in (\underline{I}, \bar{I_{nd}})$, there exists unique x^*, x_d^* such that, in equilibrium in the non-disclosure regime, the flexible partner will play A with probability x^* when there is a conflict in period 1 and in equilibrium in the disclosure regime, the flexible partner will play A with probability x_d^* when there is a conflict in period 1. x^*, x_d^* satisfy the following respectively:

$$I * \frac{p}{p + (1-p)(p_h\varepsilon + (1-p_h)(\varepsilon + (1-\varepsilon)x^*))} = \Pi(x^*)$$
$$I * \frac{p}{p + (1-p)(p_h\varepsilon + (1-p_h)(\varepsilon + (1-\varepsilon)x_d^*))} = \Pi_d(x_d^*)$$

Since $\Pi(x)$ and $\Pi_d(x)$ are increasing in x and $\Pi(x) < \Pi_d(x)\forall x$, it is clear that $x^* > x_d^*$.

Thus, if $I \in (\underline{I}, \bar{I_{nd}})$, the audit quality is higher in the disclosure regime. Finally, if $I < \underline{I}$ or if $I > \bar{I_d}$, then the flexible partner plays the same action in either regime[48]. Thus, for all I, we have that audit quality is weakly higher in the disclosure regime. □

The idea is that when partners are paid according to their own performance (as indicated by $\alpha_2, \beta_1 \approx 0$), the disclosure regime provides more incentives to not acquiesce to the issuer-manager. The intuition is as

[48]Playing NA in both regimes if $I < \underline{I}$, and playing A in both regimes when $I > \bar{I_d}$.

follows. Under the disclosure regime, a partner's reputation is more sensitive to his actions as the investor can see the identity of the partner. This provides more incentives to build reputation under the disclosure regime as compared to the non-disclosure regime. However, when reputation is shared (as in the non-disclosure regime), the loss in reputation due to a bad action is also shared (if the partner is not fired). This can reduce the cost of taking the bad action[49]. We need the condition $\alpha_2, \beta_1 \approx 0$ due to the following reason. If a partner's compensation is less sensitive to his own reputation[50], the partner may have less incentive to build reputation even under the disclosure regime as a substantial part of the cost arising from low reputation is borne by other partners in the audit firm. The same argument holds for any level of monitoring (including no monitoring) in equilibria under both regimes.

[49]Unless the loss in payoff when fired is too much.

[50]For example, if α_2 is high then the compensation of the partner assigned to the issuer is dependent largely on the payoff from project 2.