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The consequences of protecting audit partners' personal assets from the threat of liability ☆

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ABSTRACT

This study investigates the audit firm's decision to protect its partners' personal assets by becoming a limited liability partnership (LLP). We find that the likelihood of an audit firm switching from unlimited to limited liability is increasing in its size and exposure to litigation risk. We find no evidence that audit firms supply lower audit quality, lose market share, or charge lower audit fees after they become LLPs. However, the mix of public and private clients in audit firms' portfolios exhibits a significant shift toward riskier publicly traded companies after the switch to limited liability.

1. Introduction

Litigation is a major problem for the auditing profession. It threatens not only the wealth that partners hold inside their audit firms but also their outside wealth. Auditors have lobbied for legal protection of their personal assets, arguing that their inside wealth is sufficient to ensure high quality audits. Accordingly, some countries now permit audit firms to choose organizational forms that confer limited liability. In contrast, other countries impose unlimited liability which exposes partners' personal assets to the risk of litigation. These cross-country differences have arisen in the absence of any systematic evidence on the implications of allowing audit partners to have limited liability. The purpose of this study is to address the following research questions: (1) Is audit quality impaired after audit partners obtain limited liability? (2) Do clients perceive that they suffer adverse consequences when partners are protected by limited liability? (3) Do auditors become more tolerant of client litigation risk after they switch to limited liability? We provide evidence using data from the United Kingdom (UK), which first permitted audit firms to become limited liability partnerships (LLPs) in 2001.

We begin by comparing the audit firms that switch to the LLP organizational form versus those that retain unlimited liability. For two reasons, we predict that larger audit firms are more likely to become LLPs. First, the negligent actions of just one bad partner threaten the entire partnership and this risk is magnified for the larger audit firms that have more partners signing off on audit engagements. Second, the larger audit partnerships are the potential targets of deep pockets lawsuits (Dye, 1993) and so they have stronger incentives to obtain limited liability. Consistent with these arguments, we find that larger partnerships are more likely to obtain limited liability. As expected, we also find a positive relation between client litigation risk and an audit firm's propensity to become an LLP.

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Next, we turn to the primary motivation for the study, namely the consequences of allowing audit partnerships to become LLPs. In an unlimited liability partnership, both the wealth that partners hold inside the audit firm and the wealth that they hold outside the audit firm are exposed to the threat of litigation. In an LLP, the liability exposure is restricted to just the partners' inside wealth and the outside wealth of negligent partners. For example, if an unlimited liability partnership has inside wealth of $50 million and a lawsuit costs $150 million, then the partners in an unlimited liability partnership lose all of their inside wealth ($50 million) and up to $100 million of their outside wealth. On the other hand, if a partnership is organized as an LLP, then a lawsuit of $150 million results in the partners losing all of their inside wealth ($50 million) but only the negligent partner loses his outside wealth. Thus, the total exposure of non-negligent audit partners is greater in an unlimited liability partnership than in an LLP.

Theoretically, the impact of LLP adoption on audit quality is ambiguous. In an LLP, the outside wealth of partners who are not directly involved in the negligent audit is protected. Therefore, partners in an LLP have less incentive to monitor each others' work and less incentive to invest in quality control systems that assure high quality audits (e.g., staff training, hiring, and firing policies). Consequently, audit quality could drop after a firm switches from being an unlimited liability partnership to an LLP (Dye, 1993, 1995; Chan and Pae, 1998). On the other hand, the switch to LLP status could result in higher audit quality because it shifts the relative burden of litigation away from partners who are not negligent to partners who are negligent. Because the personal assets of non-negligent partners are protected when the audit firm is an LLP, partners have stronger incentives to not be negligent on their own audits. This could lead to an improvement in audit quality after an audit firm becomes an LLP. In short, LLP status increases the marginal benefit of exerting effort on one's own audits, but it reduces the marginal benefit of monitoring the audits undertaken by other partners in the firm. The former effect results in higher audit quality, while the latter results in lower audit quality. Therefore, the overall effect of LLP adoption on audit quality is ambiguous. We test the implications for audit quality using three proxies: (1) the issuance of modified audit opinions, (2) the magnitude of abnormal accruals (both signed and absolute), and (3) accrual quality. For all three measures we find that LLP adoption has no significant net impact on audit quality.

Further, we investigate whether LLP adoption has other consequences for audit clients. Clients may perceive that LLP adoption is harmful to them because they no longer have recourse to the personal assets of non-negligent partners in the event that the audit firm files for bankruptcy. In addition, clients may perceive that LLP adoption is harmful because it results in lower audit quality or they may regard it as beneficial if LLP adoption results in higher audit quality. If clients perceive that LLP adoption is harmful to them, we would expect a fall in demand for an audit firm's services after it becomes an LLP. A fall in demand would mean that the audit firm either suffers a drop in its market share or it must offer lower audit fees in order to retain its clients. Therefore, if clients perceive that they are negatively impacted by LLP adoption, we predict that either the market shares of LLP firms or their audit fees would fall relative to the auditors that retain unlimited liability. To the contrary, however, we find that the audit fees and the market shares of LLP firms do not change significantly subsequent to LLP adoption. This suggests that companies do not perceive adverse consequences from LLP adoption and is consistent with our evidence that there is no impact on audit quality.

A third potential effect of LLP adoption is on the audit firm's tolerance of client litigation risk. We predict that audit firms extend their services to riskier types of companies after they obtain the protection of limited liability. Consistent with this prediction, we find that the mix of public and private clients in the audit firm's portfolio switches toward riskier public companies subsequent to LLP adoption. Except for this, however, we find no major changes in audit firms' portfolios after they become LLPs.

In summary, we find no evidence of adverse consequences to clients when auditors become LLPs. There is no drop in audit quality and clients apparently do not prefer to be audited by unlimited liability partnerships. These findings, however, raise an interesting question: given that there is no adverse effect on clients, why do some audit firms retain unlimited liability?

For two reasons, we argue that it is costly for an audit firm to become an LLP. First, LLP firms are required to make their own financial statements available to the general public. This is costly to the extent that auditors are forced to disclose proprietary information that they would otherwise prefer to remain hidden. Second, the financial statements of an LLP firm have to be independently verified by another auditor if the LLP firm meets the size requirements for a mandatory audit. (In our sample, 32 of the 38 audit firms that become LLPs are required to have their financial statements audited.) This means another auditor has access to the LLP firm's proprietary information including its clients. We expect that this is costly because the auditor of the LLP firm can approach a client with a lower fee when it finds out that the LLP firm is making high profits on an engagement. Such access to the LLP firm's private data makes it easier for the auditor of the LLP firm to "poach" the LLP's clients. Consistent with this prediction about client poaching, we find that clients are lost to the LLP firms' auditors at a higher rate subsequent to LLP adoption. That is, the audit firms that switch to the LLP organizational form lose clients to the firms that audit their financial statements.

Overall, our results suggest that audit firms become LLPs when the private benefits of limited liability outweigh the private costs. LLP adoption confers private benefits because it protects the outside wealth of non-negligent partners. On the other hand, LLP adoption is costly because LLP firms are required to file their own financial statements that are subject to independent audit. Beyond the private consequences to audit firms, we find no evidence that LLP adoption has adverse consequences for audit quality or that companies prefer to be audited by firms with unlimited liability. The absence of negative externalities is important because it weakens the economic argument for forcing auditors to have unlimited liability.

This study contributes to our understanding on the role of liability in driving audit quality. There is a widespread belief that unlimited liability is important for incentivizing auditors to provide high quality audits (Dye, 1993, 1995; Chan and

Pae, 1998). The findings in this study, however, suggest that limiting audit partners' personal exposure does not adversely impact audit quality or clients' perceptions of the economic value of audits. This is consistent with other factors such as auditor reputation playing an important role in incentivizing auditors (e.g., Chaney and Philipich, 2002; Weber et al., 2008).

The remainder of this paper is as follows. Section 2 discusses the prior literature and identifies the countries that allow audit partners' personal assets to be protected from the threat of litigation. Section 2 goes on to explain why we focus on the UK for our analysis. Section 3 discusses an audit firm's incentives to become an LLP and the potential consequences of this decision. Section 4 describes the sample and presents descriptive evidence on the types of audit firms that switch to limited liability. Section 5 examines the consequences of LLP adoption for: audit firms' market shares, audit fees, audit quality, and client poaching. Section 6 concludes.

2. Unlimited versus limited liability for audit partners

2.1. Related prior literature

Whereas this paper examines the consequences of protecting partners' *personal* assets, most prior studies focus on the consequences of protecting the wealth held *inside* audit firms. For example, Lee and Mande (2003), Francis and Krishnan (2003), Choi et al. (2004), and Geiger et al. (2006) investigate the consequences of the Private Securities Litigation Reform Act (PSLRA 1995), which reduced the liability threat for audit firms in the US. A limitation of these studies, however, is that they lack a control sample of audit firms that did not experience a reduction in the liability threat following the enactment of the PSLRA. Therefore, these studies cannot distinguish between the consequences of the PSLRA versus other events taking place at the same time. In particular, all the major US audit firms became LLPs around the time that the PSLRA was passed, making it virtually impossible to distinguish between the effects of the PSLRA versus LLP adoption.

There is one prior study on the consequences of allowing audit firms to become LLPs. Muzatko et al. (2004) examine how LLP adoption affects the magnitude of under-pricing in the initial public offerings of US companies. In their study, the treatment variable for LLP adoption is a dummy variable equal to one in 1994 (the adoption year for every audit firm in their sample) and zero in 1993 (the pre-adoption year for every firm). Because every audit firm in their sample becomes an LLP in 1994, they lack a control sample of audit firms that do not become LLPs. Unlike Muzatko et al. (2004), our sample comprises audit firms that become LLPs and audit firms that retain unlimited liability. This allows us to investigate the consequences of LLP adoption using a difference-in-differences research design that controls for audit firm fixed effects and year fixed effects. In addition, it allows us to examine why some audit firms change their organizational form whereas other firms do not. We show that larger audit firms and firms that have riskier clients are more likely to become LLPs. In contrast, the smaller audit firms and firms with less risky clients remain as unlimited liability partnerships. In addition, our study examines whether the LLP structure affects audit quality, audit pricing, and audit firms' client portfolios, whereas Muzatko et al. (2004) examine only IPO under-pricing.

In another related study, Firth et al. (2012) compare audit reporting practices by auditors that are unlimited liability partnerships and auditors that are limited liability corporations. Using a sample of Chinese audits in the period 2000–2004, they find that unlimited liability partnerships are more likely than limited liability corporations to issue modified audit opinions. Firth et al. (forthcoming) conclude that limited liability results in lower auditor reporting conservatism. In their study the comparison is between unlimited liability partnerships and limited liability corporations, whereas in our study the comparison is between unlimited liability partnerships and limited liability partnerships. Whereas incorporation protects the outside wealth of *both* negligent and non-negligent partners, the LLP organizational form affords no protection to negligent partners as their outside wealth remains exposed to the threat of litigation. This may explain why Firth et al. (forthcoming) find reduced auditor conservatism when partnerships become corporations, whereas we find no evidence of reduced conservatism when partnerships switch from unlimited to limited liability. Another possible explanation is that Firth et al. (forthcoming) examine audit firms in China where the institutional environment is relatively weak. The consequences of adopting liability may be relatively benign in countries like the UK and US where other institutional mechanisms ensure high quality audits.

2.2. International evidence

In many countries, audit partners are required to have unlimited liability. In this situation, a partner's personal wealth is at risk even when that partner is not negligent and instead another partner in the same firm acts negligently. Arguing that this is overly burdensome, many auditors have lobbied governments to allow organizational forms that confer limited liability. In the US, this resulted in all of the major audit firms becoming LLPs in 1994 (Muzatko et al., 2004). In the UK, auditors were allowed to have limited liability until an accounting scandal in the late 1920s. The scandal created a perception that auditors needed to have unlimited liability in order to maintain their incentives for high quality auditing (Napier, 1998). Thus, the recent rule change in 2001 permitting UK auditors to have limited liability is a return to a legal regime that was in effect before the late 1920s.

Other countries have followed the recent UK and US examples by allowing audit firms to obtain limited liability. Table 1 shows the different legal requirements for 55 countries. Auditors have unlimited liability in 14 of the 55 countries (Argentina, Brazil, Egypt, Indonesia, Iran, Israel, Jordan, Kenya, Malaysia, Nigeria, Pakistan, Philippines, Uruguay, and

Table 1
Audit partner liability and the litigation threat against audit firms around the world.

Panel A: Cross-country comparisons

Country	Are audit partners permitted to have limited liability?	Index of litigation threat against audit firms (Wingate, 1997)
Argentina	No	3.61
Australia	Yes	10.00
Austria	Yes	3.61
Belgium	Yes	4.82
Brazil	No	4.82
Canada	Yes	8.07
Chile	Yes	2.42
Colombia	Yes	2.42
Costa Rica	Yes	3.61
Denmark	Yes	4.82
Ecuador	Yes	2.42
Egypt	No	n.a.
El Salvador	n.a.	1.00
Finland	Yes	3.61
France	Yes	6.22
Germany	Yes	6.22
Greece	Yes	3.61
Guatemala	n.a.	2.42
Hong Kong	Yes	10.00
India	Yes	2.42
Indonesia	No	3.61
Iran	No	1.00
Ireland	Yes	6.22
Israel	No	n.a.
Italy	Yes	6.22
Jamaica	n.a.	3.61
Japan	Yes	4.82
Jordan	No	n.a.
Kenya	No	n.a.
Malaysia[§]	No	3.61
Mexico	Yes	4.82
Netherlands	Yes	6.22
New Zealand	n.a.	10.00
Nigeria	No	n.a.
Norway	Yes	6.22
Pakistan	No	1.00
Panama	n.a.	3.61
Peru	Yes	2.42
Philippines	No	3.61
Portugal	Yes	3.61
Singapore	Yes	4.82
South Africa	Yes	4.82
South Korea	Yes	3.61
Spain	Yes	4.82
Sri Lanka	Yes	n.a.
Sweden	Yes	4.82
Switzerland	Yes	6.22
Taiwan	Yes	3.61
Thailand	Yes	3.61
Turkey	Yes	2.42
United Kingdom	Yes	10.00
United States	Yes	15.00
Uruguay	No	1.65
Venezuela	n.a.	3.61
Zimbabwe	No	n.a.

Panel B: Audit partner limited liability and the litigation threat against audit firms

$\text{Prob}(Limited_k=1)=f(\alpha_0+\alpha_1\ Wingate_k)$
where:
$Limited_k$=1 if country k permits audit partners to have limited liability,=0 if audit partners are required to have unlimited liability.
$Wingate_k$=Index of litigation threat against audit firms in country k (Wingate, 1997).

Logit model estimation results (with robust standard errors):

Intercept		*Wingate*$_k$	
Coefft.=−1.58	z-stat.=−1.72*	Coefft.=0.80	z-stat.=2.98***

*** Statistically significant at the 10% and 1% levels (two-tailed).
Notes: Because there is no public record of the countries that permit audit partners to protect their personal assets, we obtained this information by contacting regulators, accounting firms, professional accounting associations, and accounting academics around the world. The organizational forms that confer limited liability differ across countries. In some countries, audit firms are allowed to be corporations, which protects partners in the event that the audit company enters bankruptcy. In other countries, audit firms are allowed to become limited liability partnerships. The LLP organizational form provides the same protection to partners' personal assets as incorporation but typically the LLP organizational form is more tax efficient. Other countries have limited liability organizational forms that are unique to themselves. For example, the Gesellschaft mit beschränkter Haftung (GmbH) is a legal entity that is common in Germany, Austria, Switzerland, and other Central European countries, and allows the owners to escape personal liability for the organization's debts.
LLP legislation has been drafted for Malaysia but has not yet been passed.

Zimbabwe). In several countries, the limited liability option became available only recently; e.g., Singapore in 2005, India and Taiwan in 2009, and Ireland in 2010.

The litigation threat to the wealth that partners hold inside their audit firms can be measured using the Wingate index (1997), which was developed by an international insurance underwriter based on an assessment of the litigation risk faced by audit firms in each country.[1] The highest litigation threat is in the US which has a Wingate score of 15.00 and the lowest is in El Salvador, Iran, and Pakistan, which have scores of just 1.00 (Col. (3) of Table 1). We expect that countries would pass legislation allowing partners' personal assets to be protected when the risk of litigation to partners' inside wealth is high. We therefore predict a positive association between the Wingate index and an indicator variable that equals one if audit partners are permitted to have limited liability (zero otherwise). Consistent with this, Panel B of Table 1 reports a significant positive relation between the Wingate index and laws that permit audit firms to protect partners' outside wealth.

2.3. The UK experience

Like the US, the UK experienced a litigation explosion in the 1980s and 1990s. According to a study by the Institute of Chartered Accountants of England and Wales (ICAEW, 1994), the number of claims against Big Six firms (as reported to insurers and remaining open at the year-end) increased from just 3 in 1983 to 627 in 1993. At the same time, there was a large increase in the size of the litigation claims. In 1983, the average of the three largest claims was the equivalent of £38.9 million, but by 1993 this had increased to £487 million. More recently, a study by London Economics (2006) documents that there are six claims against UK auditors in excess of €250 million. Their analysis suggests that a litigation award of €200–400 million could trigger the collapse of one of the Big Four audit firms in the UK, while a penalty of €30–40 million could cause a smaller audit firm to fold. Thus, audit partners in the UK have good reason to be concerned about protecting their personal assets.

Further, the availability of insurance cover has declined because the litigation explosion made the insurance firms' historic data less reliable for predicting future contingencies and so insurers found it difficult to estimate litigation probabilities and future settlement amounts. The absence of reliable estimates combined with the rapidly changing litigation environment meant that insurers became unwilling to insure auditors, particularly the Big Six firms (Moizer and Hansford-Smith, 1998). Auditors responded to this situation by lobbying the government for protection from litigation. The draft Limited Liability Partnership Bill (Select Committee on Trade and Industry (1998): Fourth Report, para. 14) reveals the reasons behind the government's decision to pass the legislation:

> *"There is evidence to suggest that there has been a significant increase in the number and level of claims against professional partnerships, and against large firms of accountants in particular […] These concerns are not limited to the large partnerships. Smaller professional partnerships, particularly in high risk areas may also face claims which go far beyond their insured cover."*[2]

In addition to the high litigation risk facing audit firms in the UK, we argue that this setting has three other advantages. First, every audit firm is required to disclose the date that it becomes an LLP. This information is necessary for our study because we are interested in the consequences of switching to limited liability. Unfortunately, in most countries, it is not possible to identify which audit firms take advantage of the option to switch from unlimited to limited liability or the dates that they switch. Second, because there are costs to becoming an LLP, some audit firms choose to retain unlimited liability. This allows us to identify a treatment group of auditors that change their organizational form *and* a control group of auditors that retain unlimited liability. Thus, we are able to implement a difference-in-differences research design that tests whether audit outcomes are significantly different after audit firms become LLPs compared with a control sample of audit firms that retain unlimited liability. Finally, the UK requires private audit clients to publicly file their audited financial statements.[3] This allows us to measure an audit firm's portfolio weighting towards public companies versus private companies. This is important because we predict that audit firms are more likely to become LLPs when their portfolios contain a relatively high proportion of public companies. Further, we expect that audit firms' portfolios become more heavily weighted toward public companies after they obtain limited liability. These tests are only possible in a country like the UK where data are available on both private and public companies.

[1] Prior studies in the audit literature commonly use the Wingate (1997) index to measure the threat of litigation against audit firms (Francis et al., 2005; Choi et al., 2008; Choi et al., 2009; Hay and Knechel, 2010).

[2] The ICAEW requires every audit firm – regardless of size – to have insurance coverage of at least £1.5 million. Insurance is paid at the national level rather than at the global level, which reflects that foreign affiliates are generally not liable for the actions of a domestic audit firm. While the ICAEW requires every audit firm to be insured, it does not require insurance of partners' personal assets. Unfortunately, due to lack of data, it is unknown whether partners insure their personal assets or the impact of LLP adoption on insurance coverage.

[3] Every company and LLP firm in the UK is required to file its financial statements with a central depository (Companies House). The financial statements are available to the general public and are used by database providers to compile information on private and public companies. This is different from the US where private companies are not required to make their financial statements publicly available.

3. Causes and consequences of switching to limited liability

3.1. An audit firm's incentives to become an LLP

The key difference between an unlimited liability partnership and an LLP is that, in an unlimited liability partnership, a partner's personal wealth is at risk due to the negligent actions of other partners in the firm. In contrast, a non-negligent partner's personal wealth is protected in an LLP. In both an unlimited liability partnership and an LLP, there is no protection afforded to partners' inside wealth or to the personal assets of negligent partners.

We expect that the benefits of being an LLP are greater for audit partnerships whose clients pose high litigation risk. We also expect that the benefits of LLP adoption are greater for the larger auditors. For example, in a two partner firm partner A only has to worry about the degree of care that partner B exercises, whereas in a firm with one hundred partners partner A has to be concerned about the audits of ninety-nine other partners. Therefore, the larger partnerships have stronger incentives to become LLPs. Moreover, large audit firms are potentially exposed to deep pockets lawsuits in which plaintiffs attempt to recoup some of their losses following corporate failure (Dye, 1993). We expect a greater demand from the partners of larger audit firms for protection against such lawsuits.[4]

3.2. An audit firm's incentives to retain unlimited liability

An auditor may retain unlimited liability because it has little to gain from switching to the LLP organization form. For example, LLP status is not beneficial to a single partner audit firm because a negligent partner's personal assets are not protected. In addition, audit firms need to consider the implications of a change in organizational form for their reputations (Mayhew, 2001; Skinner and Srinivasan, in press). LLP adoption could damage these reputations if financial statement users perceive that limited liability would impair audit quality. Therefore, auditors may retain unlimited liability in order to signal their commitment to high audit quality.

Moreover, it is not obvious that the larger audit firms are in fact more likely to become LLPs. Academic research finds that smaller auditors permit more earnings management (Becker et al., 1998; Francis et al., 1999), allow more fraud (Lennox and Pittman, 2010), and are sued more often (Palmrose, 1988). Thus, the smaller auditors may perceive a greater need for protection against lawsuits. In addition, the large audit firms may be less concerned about litigation risk since their risks can be spread across more highly diversified portfolios of clients (Francis and Krishnan, 2003).

3.3. Consequences for audit quality

The consequences of LLP adoption for audit quality are theoretically ambiguous. On one hand, switching to LLP status reduces the exposure of non-negligent partners as it protects their personal assets in the event that a litigation suit triggers the audit firm's bankruptcy. This reduces the marginal benefit of monitoring other partners in the audit firm. Likewise, LLP adoption may result in an audit firm investing less in quality control systems that are designed to ensure a uniformly high level of quality across all partners. For example, the LLP firm may invest less in training and in attracting high quality staff. Therefore, audit quality may drop subsequent to LLP adoption.

On the other hand, audit quality may improve because LLP adoption increases a partner's incentives to exert effort on his own audits. LLP adoption protects the personal assets of non-negligent partners, but it affords no protection to partners who are negligent. An engagement partner has an incentive to work hard in the LLP because the partner knows that by not being negligent, he protects his personal assets. This incentive is diminished in the unlimited liability partnership because even if a partner is not negligent, he can lose his personal assets due to the negligent actions of other partners. Accordingly, the marginal benefit to a partner from exerting more effort is higher when the audit firm is organized as an LLP.

In short, LLP adoption gives stronger incentives for partners to exert effort on their own audit engagements but it gives them weaker incentives to ensure that other partners in the same firm are providing high quality audits. When a firm switches to LLP status, audit quality is expected to fall (increase) if the monitoring effect outweighs (is outweighed by) the effort effect.

3.4. The responses of audit clients to LLP adoption

Clients may prefer to be audited by firms that have unlimited liability if they perceive that LLP auditors have weaker incentives to provide high quality audits. On the other hand, clients may prefer to be audited by LLPs if they perceive that LLPs supply higher quality audits. Therefore, the impact of LLP adoption on the demand for audits is ambiguous. If clients prefer to be audited by firms that have unlimited liability, there will be a drop in demand for an audit firm's services after it becomes an LLP. In this situation, we would expect one or both of the following outcomes. Either clients would switch

[4] To find out why audit firms adopt LLP status, we mailed a short informal questionnaire to the 38 firms in our sample that become LLPs and we received replies from 14 firms. All 14 firms stated that they chose to become LLPs in order to protect their partners' personal assets from the threat of liability.

from the LLP firms to auditors that have unlimited liability or the LLP firms would need to offer lower audit fees in order to prevent their clients switching away. Therefore, we test whether there is a significant drop in audit firms' market shares and/or their audit fees after they switch to the LLP organizational form.

3.5. Disclosure costs and client poaching

An audit firm may retain unlimited liability if it believes that LLP adoption would result in lower audit quality and/or a fall in demand for the firm's services. In addition, there are other reasons why a partnership may decide not to switch to LLP status. First, every LLP firm is required by law to publicly disclose its financial statements. Such disclosures can be costly to the extent that they force firms to reveal proprietary information to competitors that they would prefer to remain hidden (Verrecchia, 1983; Feltham and Xie, 1992; Darrough, 1993; Gigler, 1994). A survey by the UK's Accountancy Magazine (May 2005) finds that some audit firms have chosen to retain unlimited liability because they want their financial statements to be kept private:

> *"In discussions with independent practices we discovered that by far the biggest stumbling block is the need for disclosure. The accounts of an LLP are available for anyone to read and there are elements of disclosure of members' interests. This [disclosure] reveals the company's profits and the income of its members, and it is this information that some firms are extremely reluctant to reveal."*

If an audit firm's financials show that its profits are high, then public disclosure of these financials could drive clients away because they think they are being overcharged. Regulators have also expressed concerns about an alleged lack of competition in the UK audit market (Oxera, 2006; Select Committee on Economic Affairs, 2011) and such concerns could be exacerbated by the disclosure of auditors' profits.

In addition to the disclosure requirement, 32 of the 38 LLP firms in our sample are required to have their financial statements independently audited because they meet the UK's size thresholds for a mandatory audit (more on this in Section 4.1). When an LLP firm has its own financial statements audited, then another audit firm has access to the LLP firm's internal commercial information. We expect that this would make it easier for the auditor of the LLP firm to poach some of the LLP firm's clients. For example, the auditor of the LLP firm can approach a client with a lower bid when it finds out that the LLP firm is making high profits on a certain engagement. Therefore, we predict that LLP firms lose more clients to their auditors during the period they are audited (i.e., after LLP adoption) compared with the period before they are audited. Evidence in support of this client poaching prediction would imply that it is costly to obtain limited liability because the LLP firm has to share proprietary information about its commercial operations with another auditor.[5,6]

The reasons why audit firms become (do not become) LLPs can be inferred from the *ex ante* characteristics of auditors that change (do not change) their organizational form and from the *ex post* consequences of this decision. However, some factors can be assessed only by looking at *ex post* data. For example, client poaching can only be gauged by examining whether LLP firms lose more clients to their auditors after they become LLPs. Thus, we examine the issue of why audit firms become LLPs and the consequences of this decision using both an *ex ante* analysis that explains which firms adopt LLP status (Section 4) and *ex post* analysis that investigates the consequences of LLP adoption (Section 5).

4. The *ex ante* characteristics of adopters and non-adopters

4.1. Sample

While every LLP firm is required to file financial statements, those statements are only required to be audited if the LLP is relatively large. For fiscal years ending before January 30, 2004, an audit is required if the LLP's sales exceed £1 million or its total assets exceed £1.4 million. For later fiscal years, the size thresholds are £5.6 million for sales and £2.8 million for total assets. There are 32 LLP firms that meet one or both of these size thresholds and which therefore have their financial statements audited by another audit firm.

We cannot impose the same size thresholds on other audit firms because the sales and assets of non-LLP firms are not disclosed as they are not required to file their financial statements. Instead, we require that the audit firms undertake at least 100 audit engagements in one or more of the sample years. This sampling restriction yields a total of 97 audit firms. Next, we delete from the entire sample period any company audited by Andersen. We delete such companies because otherwise there would be a mechanical increase in the number of audits by other audit firms, following Andersen's disappearance in 2002. We also exclude KPMG because it was already a limited liability company before the introduction

[5] There used to be a rule in the code of professional ethics that prevented audit firms from making unsolicited approaches to the clients of their competitors. However, this rule was removed in 1983 and it is now commonplace for UK companies to receive unsolicited approaches from prospective auditors (Beattie and Fearnley, 1994, 1998).

[6] To find out why audit firms do not become LLPs, we mailed a short informal questionnaire to the 57 audit firms in our sample that retain unlimited liability and we received replies from 11 firms. Eight firms stated that their desire to keep their financial statements private was an important reason. In addition, five firms stated that they did not want their financial statements to be audited by another audit firm.

Table 2
Summary statistics.

The sample consists of 95 UK audit firms, of which 38 switch to the LLP organizational form and 57 retain unlimited liability. The UK first permitted audit firms to become limited liability partnerships (LLPs) in 2001. We sample these audit firms' engagements for the period 1999–2008 in order to compare audit outcomes in the pre-LLP and post-LLP adoption periods.

Panel A: Number of audit firms and audit engagements

	No. of audit firms	Audit engagements (1999–2008)	Publicly traded clients (%)
Audits by LLP firms	38	201,925	3.55
Audits by non-LLP firms	57	191,062	1.75
Total	95	392,987	2.67

Panel B: Year of LLP adoption

Year	No. of audit firms that become LLPs
2001	1
2002	5
2003	8
2004	8
2005	8
2006	3
2007	4
2008	1
Total	38

of the LLP Act.[7] (Untabulated tests reveal that all of the main results are unchanged if we include Andersen and KPMG in the sample.) This leaves a final sample of 95 audit firms of which 57 auditors retain unlimited liability while 38 adopt LLP status. The adopting group consists of 32 LLP firms that file audited financial statements, plus another 6 LLP firms that file financial statements but are not large enough to qualify for a mandatory audit.

We obtain financial statement data from the online version of the *Financial Analysis Made Easy* (FAME) database in the Summer/Fall of 2009. FAME provides up to ten years of data for both public and private companies because every company in the UK is required to file its financial statements with a central depository (Companies House). Our tests of consequences involve comparing outcomes before the auditor becomes an LLP versus afterwards. We therefore collect data for the period both before and after the LLP legislation took effect in 2001. Specifically, we obtain data for every statutory corporate audit conducted by the 95 audit firms between 1999 and 2008.[8] Any companies that cease to exist or are newly created during the sample period are retained in the years that they file their audited financial statements with Companies House. A limitation of the FAME database is that a company's public/private status is reported at its most recent value only. To correct this problem, we use historic data from the London Share Price Database to identify publicly traded companies in each sample year.

The 95 audit firms conduct a total of 392,987 audits between 1999 and 2008, of which 10,510 (2.67%) are on publicly traded companies and 382,477 (97.33%) are on private companies. The largest auditor is PricewaterhouseCoopers LLP which performed 64,733 audits and earned aggregate audit fees of £5.0 billion. The next largest auditors are Deloitte LLP (£2.6 billion), Ernst & Young LLP (£2.2 billion), Grant Thornton LLP (£426 million), and BDO Stoy Hayward LLP (£421 million). Panel A of Table 2 shows that 201,925 of the 392,987 audits are conducted by LLP firms. Public companies account for 3.55% of the audits by LLP firms compared with 1.75% of the audits by non-LLP firms. Panel B summarizes the year of adoption for the 38 firms that become LLPs. Just one firm (Ernst & Young) becomes an LLP in 2001. Five firms become LLPs in 2002, eight firms adopt LLP status in 2003, 2004, and 2005, three in 2006, four in 2007, and just one firm becomes an LLP in 2008.

4.2. The decision to become an LLP firm

In this section, we compare the *ex ante* characteristics of audit firms that become (do not become) LLPs. We do this by estimating the Cox proportional hazards model shown in Eq. (1):

$$h_i(t) = h_0(t)\exp\left(\alpha_1 BIGN_i + \alpha_2 Ln(\#CLIENTS_{it-1}) + \alpha_3 \%PUBLIC_{it-1} + \alpha_4 \%PUBLIC\_FEE_{it-1} + \alpha_5 AF\_RES_{it-1} + \alpha_6 Ln(ASSETS_{it-1}) + \alpha_7 LEVERAGE_{it-1} + \alpha_8 ROA_{it-1} + u_{it}\right). \quad (1)$$

[7] KPMG became incorporated following the Companies Act of 1989 which allowed audit firms to organize as companies. Except for KPMG, most audit firms remained as partnerships because the tax rules are much less favorable for companies (Cousins et al., 1999). Companies are subject to 'double' taxation (once at the corporate level and again at the shareholder level via either dividends or capital gains), whereas partnerships face taxation only at the partner level. The tax rules for unlimited liability partnerships are the same as for LLPs so tax is not a factor in the partnership's decision to become an LLP whereas it is a major factor in the decision to incorporate.

[8] In the UK, contractual agreements between companies and their auditors to limit auditors' liability became permissible in 2008, which is the final year of our sample period. Our results are robust to dropping 2008 observations from our sample and estimating the models up to 2007.

The dependent variable ($h_i(t)$) is the hazard rate, i.e., the conditional probability that audit firm i becomes an LLP at time t given that it had not become an LLP earlier. The baseline hazard, $h_0(t)$, captures the time variation in LLP adoption and thereby controls for year fixed effects. The t variable is right-censored for auditors that retain unlimited liability because we do not observe whether they will become LLPs after the end of our sample period. The Cox model that we estimate addresses the econometric issues stemming from this right-censoring.

The independent variables capture audit firm characteristics. We use two alternative measures of audit firm size in order to test whether larger audit firms are more likely to obtain limited liability. The $BIGN_i$ indicator variable equals one if audit firm i is a Big N firm, and zero otherwise. The continuous measure of audit firm size is the log of the number of audits performed by firm i in year $t-1$ ($Ln(\#CLIENTS_{it-1})$).[9] (We lag all the time-varying independent variables by one year to prevent their values being affected by the decision to become an LLP.) We expect that larger audit firms are more likely to become LLPs (i.e., $\alpha_1 > 0$ and $\alpha_2 > 0$).

We also expect that audit partners demand more protection when their clients pose higher litigation risk. We measure client litigation risk in two ways. First, the litigation risk stemming from an audit of a public company is greater than that of a private company because more people rely on the audited financial statements of public companies (St. Pierre and Anderson, 1984; Pratt and Stice, 1994; Venkataraman et al., 2008; Badertscher et al., 2011). Thus, we expect that audit firms are more likely to become LLPs if their client portfolios are heavily weighted toward public companies. We measure the portfolio weighting using two variables. The $\%PUBLIC_{it-1}$ variable equals the proportion of audits conducted on public rather than private companies in year $t-1$. The $\%PUBLIC\_FEE_{it-1}$ variable equals the proportion of auditor i's fees earned from public rather than private companies in year $t-1$.

Secondly, we measure litigation risk using data on the fees that are charged to clients. When a client poses high litigation risk, the auditor can perform additional procedures to mitigate the risk or it can charge a risk premium (Beatty 1993; Morgan and Stocken, 1998; Willenborg, 1999; Bell et al., 2001; Seetharaman et al., 2002; Choi et al., 2008, 2009; Venkataraman et al., 2008). In either case, the implication would be that auditors charge higher fees to clients that are more risky. Therefore, we expect that such audit firms are more likely to become LLPs. The AF_RES_{it-1} variable is the mean audit fee residual for audit firm i's clients in year $t-1$. (We measure abnormal audit fees for each client using the residuals from an audit fee model. Descriptive statistics for the variables in the audit fee model and the regression results are reported in the Appendix.) We predict that audit firms are more likely to become LLPs when their portfolios have larger values for $\%PUBLIC_{it-1}$, $\%PUBLIC\_FEE_{it-1}$ and AF_RES_{it-1} (i.e., $\alpha_3 > 0$, $\alpha_4 > 0$, and $\alpha_5 > 0$).

We control for additional characteristics of an audit firm's client portfolio that could affect its decision to become an LLP. Specifically, $Ln(ASSETS_{it-1})$ equals the mean of the natural log of total assets for audit firm i's clients; $LEVERAGE_{it-1}$ is the mean ratio of liabilities to assets for audit firm i's clients; and ROA_{it-1} is the mean return on assets. The profitability and leverage variables measure clients' financial risk which is different from the risk of a lawsuit (DeFond, 2004), so we do not draw inferences about litigation risk from these variables.

Panel A of Table 3 reports descriptive statistics for the 38 LLP firms in their year of adoption. Panel B reports the same information for the years in which audit firms do not adopt LLP status. Panels A and B reveal that the LLP adopters are larger audit firms, have relatively more public clients, and larger audit fee residuals. The differences in the mean values of these variables are statistically significant at the 1% level. Panel C reports a correlation matrix. As expected, the larger audit firms have portfolios that are more heavily weighted to public companies (the correlation between $Ln(\#CLIENTS_{it-1})$ and $\%PUBLIC\_FEE_{it-1}$ is 0.349) and the larger auditors have larger clients (the correlation between $Ln(\#CLIENTS_{it-1})$ and $Ln(ASSETS_{it-1})$ is 0.187). However, these correlations are not sufficiently large to cause multicollinearity problems (the variance-inflation-factors are below two in all our models).

Table 4 presents the regression results. The $BIGN_i$ and $Ln(\#CLIENTS_{it-1})$ coefficients are positive and highly significant, indicating that larger audit firms are more likely to become LLPs. The results also suggest that LLP adoption is more likely for audit firms that have riskier clients. The $\%PUBLIC_{it-1}$ and $\%PUBLIC\_FEE_{it-1}$ coefficients are positive and statistically significant indicating that an audit firm is more likely to become an LLP if more of its clients are publicly traded. We further find that an audit firm is more likely to become an LLP if it was charging high fees (AF_RES_{it-1}). To the extent that high fees reflect an audit firm's assessment of high litigation risk, this finding is consistent with audit firms adopting LLP status when they perceive that the risk of litigation is high. However, we caution that the audit fee residual captures everything that is not controlled for in the audit fee model and litigation risk is just one of those potential factors.

Overall, the evidence suggests that audit firms have stronger incentives to become LLPs when they are larger and when they audit riskier types of companies. The importance of auditor characteristics in explaining the decision to become an LLP firm justifies using a difference-in-differences design in the next section where we control for audit firm fixed effects and year fixed effects when testing the *ex post* consequences of becoming an LLP.

[9] In untabulated robustness tests, we measure audit firm size using the log of clients' assets and the log of clients' audit fees. The variables that are found to be significant (insignificant) in Eq. (1) continue to be significant (insignificant) in this untabulated test. All untabulated results are available from the authors upon request.

Table 3
Audit firm characteristics in the years following the LLP Act (2001–2008).

The UK first permitted audit firms to become limited liability partnerships (LLPs) in 2001. The sample consists of 95 UK audit firms, of which 38 switch to the LLP organizational form and 57 retain unlimited liability during the period 2001–2008.

Panel A: Descriptive statistics for the 38 audit firms that adopt LLP status.
Panel A comprises the 38 years in which audit firms become LLPs ($N=38$).

	Mean	*Min.*	*P10*	*P50*	*P90*	*Max.*
$BIGN_i$	0.132	0.000	0.000	0.000	1.000	1.000
$\#CLIENTS_{it-1}$	915	8	64	168	3,048	7,793
$Ln(\#CLIENTS_{it-1})$	5.615	2.079	4.159	5.123	8.022	8.961
$\%PUBLIC_{it-1}$	0.016	0.000	0.000	0.014	0.034	0.058
$\%PUBLIC\_FEE_{it-1}$	0.058	0.000	0.000	0.045	0.158	0.302
AF_RES_{it-1}	0.040	−0.309	−0.157	0.032	0.206	0.457
$ASSETS_{it-1}$	14,351	760	2,287	7,182	28,118	102,000
$Ln_(ASSETS_{it-1})$	7.385	3.364	6.639	7.504	8.262	9.181
$LEVERAGE_{it-1}$	0.794	0.366	0.525	0.809	1.017	1.401
ROA_{it-1}	−0.294	−1.586	−0.570	−0.253	−0.044	0.048

Panel B: Descriptive statistics for the non-adopters
Panel B comprises the years of the 57 auditors that do not become LLPs plus the pre-adoption years of the 38 audit firms that become LLPs ($N=553$).

	Mean	*Min.*	*P10*	*P50*	*P90*	*Max.*
$BIGN_i$	0.014***	0.000	0.000	0.000	0.000	1.000
$\#CLIENTS_{it-1}$	246***	8	68	125	467	7,793
$Ln(\#CLIENTS_{it-1})$	4.975***	2.079	4.220	4.828	6.146	8.961
$\%PUBLIC_{it-1}$	0.008***	0.000	0.000	0.000	0.025	0.063
$\%PUBLIC\_FEE_{it-1}$	0.025***	0.000	0.000	0.000	0.083	0.276
AF_RES_{it-1}	−0.072***	−0.943	−0.331	−0.034	0,150	0.457
$ASSETS_{it-1}$	7,064***	198	1,516	5,339	12,260	98,248
$Ln(ASSETS_{it-1})$	6.851***	2.755	5.027	7.159	7.763	9.312
$LEVERAGE_{it-1}$	0.792	0.366	0.538	0.785	1.044	1.485
ROA_{it-1}	−0.296	−1.586	−0.575	−0.257	−0.043	0.048

*** The mean values are significantly different between Panels A and B, at the 1% significance level (two-tailed).

Audit firm characteristics in the years following the LLP Act (2001–2008).
Panel C: Correlation matrix
Statistically significant correlations are shown in bold (p-value < 0.05, two-tailed).

	1.	*2.*	*3.*	*4.*	*5.*	*6.*	*7.*
1. $BIGN_i$	1.000						
2. $Ln(\#CLIENTS_{it-1})$	**0.508**	1.000					
3. $\%PUBLIC_{it-1}$	**0.220**	**0.259**	1.000				
4. $\%PUBLIC\_FEE_{it-1}$	**0.392**	**0.349**	**0.734**	1.000			
5. AF_RES_{it-1}	0.049	0.057	**0.153**	**0.115**	1.000		
6. $Ln(ASSETS_{it-1})$	**0.195**	**0.187**	**0.308**	**0.296**	**0.236**	1.000	
7. $LEVERAGE_{it-1}$	0.063	**0.111**	**0.128**	**0.095**	**0.098**	**0.125**	1.000
8. ROA_{it-1}	**0.093**	0.042	**0.102**	**0.134**	0.006	**0.225**	**0.240**

Variable definitions:
$BIGN_i$=one if audit firm i is one of the Big N audit firms, zero otherwise. $\#CLIENTS_{it-1}$=the total number of clients for audit firm i in year $t-1$. $Ln(\#CLIENTS_{it-1})$=the natural log of $\#CLIENTS_{it-1}$. $\%PUBLIC_{it-1}$=the percentage of audit firm i's clients in year $t-1$ that are publicly traded rather than private. $\%PUBLIC\_FEE_{it-1}$=the percentage of audit firm i's audit fees in year $t-1$ that are earned from publicly traded clients rather than private clients. AF_RES_{it-1}=the mean value of the audit fee residual for all of audit firm i's clients in year $t-1$. The residuals are estimated using the audit fee model reported in the Appendix. $ASSETS_{it-1}$=the mean value of total assets for all of audit firm i's clients in year $t-1$ (£000). $Ln(ASSETS_{it-1})$=the mean value of the log of total assets for all of audit firm i's clients in year $t-1$. $LEVERAGE_{it-1}$=the mean value of the ratio of total liabilities to total assets for all of audit firm i's clients in year $t-1$. ROA_{it-1}=the mean value of the return on assets for all of audit firm i's clients in year $t-1$.

5. The *ex post* consequences of LLP adoption

5.1. Auditors' market shares and the riskiness of their client portfolios

In this section, we test whether audit firms' portfolios and market shares change subsequent to LLP adoption. In Eq. (2), we use various auditor characteristics as the dependent variables:

$$Characteristic_{it} = \alpha_0 + \alpha_1 LLP_{it} + u_i + d_t + e_{it}. \quad (2)$$

Table 4
The audit firm's decision to become an LLP (2001–2008).

The regressions are estimated using Cox proportional hazards models with robust standard errors that are adjusted for time-series dependence (*z*-statistics in parentheses). The dependent variable is the probability of becoming an LLP at time t given that the audit firm had not chosen to become an LLP earlier, where t is the number of years since 2001. As in Table 3, the sample comprises the 38 years in which audit firms become LLPs, the pre-adoption years of these 38 auditors, and the years of the 57 auditors that do not become LLPs ($N=591$).

$$h_i(t) = h_0(t)\exp(\alpha_1 BIGN_i + \alpha_2 Ln(\#CLIENTS_{it-1}) + \alpha_3 \%PUBLIC_{it-1} + \alpha_4 \%PUBLIC\_FEE_{it-1} + \alpha_5 AF\_RES_{it-1} + \alpha_6 Ln(ASSETS_{it-1}) + \alpha_7 LEVERAGE_{it-1} + \alpha_8 ROA_{it-1} + u_{it}). \quad (1)$$

$BIGN_i$	1.633		1.411		1.649	
	(3.62)***		(3.05)***		(4.28)***	
$Ln(\#CLIENTS_{it-1})$		0.434		0.385		0.404
		(3.16)***		(2.66)***		(2.81)***
$\%PUBLIC_{it-1}$	26.462	24.316				
	(2.51)**	(2.16)**				
$\%PUBLIC\_FEE_{it-1}$			5.715	4.853	6.184	5.738
			(2.39)**	(1.88)*	(2.77)***	(2.56)**
AF_RES_{it-1}	2.923	3.322	2.855	3.218	2.544	2.708
	(3.30)***	(3.00)***	(3.46)***	(3.15)***	(3.12)***	(2.82)***
$Ln(ASSETS_{it-1})$	0.347	0.330	0.311	0.313		
	(1.28)	(1.14)	(1.28)	(1.20)		
$LEVERAGE_{it-1}$	−1.555	−2.067	−1.363	−1.819		
	(−1.88)*	(−1.77)*	(−1.59)	(−1.56)		
ROA_{it-1}	−0.102	0.307	−0.095	0.288		
	(−0.16)	(0.35)	(−0.16)	(0.35)		
No. of audit firms	95	95	95	95	95	95
No. of audit firm years	591	591	591	591	591	591
Pseudo *R*-squared	9.5%	10.2%	9.1%	9.8%	8.1%	8.5%

*,**,*** Statistically significant at the 10%, 5%, 1% level, respectively (two-tailed).
See Table 3 for variable definitions.

The treatment variable (LLP_{it}) equals one if audit firm i is an LLP firm in year t, and zero otherwise. We include auditor fixed effects (u_i) to control for auditor characteristics that remain constant in the periods before and after LLP adoption. The year fixed effects (d_t) control for any time-varying characteristics that affect both LLP and non-LLP auditors.

The fact that audit firms choose whether to become LLPs raises potential concerns about endogeneity bias with the LLP_{it} variable. For example, an audit firm might become an LLP because it anticipates that it is more profitable to become an LLP and reduce its audit quality than it is to remain an unlimited liability partnership and hold quality constant. In this situation, the decision to become an LLP may not cause a reduction in audit quality but rather the anticipated reduction in future quality causes the audit firm to become an LLP. This would limit our ability to draw causal inferences as to the exogenous impact of LLP adoption on audit quality. Moreover, this caveat applies to all of our specifications in which LLP_{it} is an independent variable.

While this is a valid criticism, we believe that our difference-in-differences design substantially mitigates the concern about endogeneity. All our tests of consequences are panel data tests corrected for audit firm fixed effects. Though it may be true that many unobservable auditor characteristics impact the decision to become an LLP, as long as these auditor-specific characteristics remain stable during the period of study, their inclusion or non-inclusion has no effect on the coefficient estimates for LLP_{it}. In other words, the audit firm fixed effects will completely eliminate the potential bias caused by endogeneity as long as the unobserved source of the endogeneity is constant over time (e.g., Baltagi, 1995). In principle an instrumental variables solution to the endogeneity problem is also available, but in practice it is extremely difficult to find valid instruments (Larcker and Rusticus, 2010).

We test whether there is a shift in the characteristics of audit firms' client portfolios subsequent to LLP adoption. We begin by estimating Eq. (2) using the following dependent variables: $\%PUBLIC_{it}$, $\%PUBLIC\_FEE_{it}$, $Ln(ASSETS_{it})$, ROA_{it}, and $LEVERAGE_{it}$. The $\%PUBLIC_{it}$ and $\%PUBLIC\_FEE_{it}$ variables capture an auditor's portfolio weighting on public rather than private companies in year t. Likewise, we test whether the size, profitability, and leverage of audit firm i's client portfolio changes subsequent to LLP adoption.

We also begin our investigation of whether companies prefer to be audited by firms that have unlimited rather than limited liability. Specifically, we test whether audit firms have fewer clients subsequent to becoming LLPs. The dependent variable in this test equals the log of the number of clients of audit firm i in year t ($Ln(\#CLIENTS_{it})$). If clients prefer to hire auditors that have unlimited liability, we expect that audit firms would have fewer clients after they become LLPs. This would result in a negative coefficient on LLP_{it} in Eq. (2). In addition to this levels measure, we examine the change in audit firm i's market share. The $GROWTH_{it}$ variable equals the log of one plus the number of clients gained minus the log of one plus the number of clients lost by audit firm i in year t. (We take logs to address the skewness in the raw data and we add a one because the log of zero is undefined. When constructing the $GROWTH_{it}$ variable, we exclude any auditor switches that involve the LLP firm and its auditor in order to distinguish between this test of client preferences and the test of client

Table 5
The consequences of LLP adoption for audit firms' client portfolios (1999–2008).

This table tests whether there are significant changes in audit firms' portfolio characteristics after they become LLPs. The sample comprises 912 audit firm years from 1999 to 2008. The standard errors are adjusted for time-series dependence by clustering on each audit firm (t-statistics in parentheses).

$$Characteristic_{it} = \alpha_0 + \alpha_1 LLP_{it} + u_i + d_t + e_{it}. \quad (2)$$

Dep. variables =	(1) $\%PUBLIC_{it}$	(2) $\%PUBLIC\_FEE_{it}$	(3) $Ln(ASSETS_{it})$	(4) ROA_{it}	(5) $LEVERAGE_{it}$	(6) $Ln(\#CLIENTS_{it})$	(7) $GROWTH_{it}$
LLP_{it}	0.006	0.027	0.084	0.003	0.040	0.098	−0.031
	(4.95)***	(6.89)***	(1.44)	(0.19)	(2.56)**	(1.48)	(−0.32)
Audit firm fixed effects?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. of audit firms	95	95	95	95	95	95	95
No. of audit firm years	912	912	912	912	912	912	912
R-squared	10.8%	11.3%	3.4%	0.9%	2.1%	4.7%	12.4%

The regression models include fixed effects for each audit firm (u_i) and year (d_t) but the results for these fixed effects are untabulated.
, * Statistically significant at the 5%, 1% level, respectively (two-tailed).
Variable definitions:
$\%PUBLIC_{it}$ = the percentage of audit firm i's clients in year t that are publicly traded rather than private. $\%PUBLIC\_FEE_{it}$ = the percentage of audit firm i's aggregate audit fees in year t that are earned from publicly traded clients rather than private clients. $Ln(ASSETS_{it})$ = mean value of the log of total assets for all of audit firm i's clients in year t. ROA_{it} = the mean value of the return on assets for all of audit firm i's clients in year t. $LEVERAGE_{it}$ = the mean value of the ratio of total liabilities to total assets for all of audit firm i's clients in year t. $Ln(\#CLIENTS_{it})$ = the log of the total number of clients for audit firm i in year t. $GROWTH_{it}$ = the log of one plus the number of clients gained minus the log of one plus the number of clients lost by audit firm i in year t. When counting the number of clients lost we exclude any auditor switches that involve the LLP firm and its auditor in order to distinguish between this test and the test of client poaching in Table 7. LLP_{it} = one if audit firm i is an limited liability partnership in year t, zero otherwise.

poaching by the LLP's auditor.) If clients prefer to be audited by firms that have unlimited liability, we expect that auditors would grow less quickly after they become LLPs. This would imply a negative coefficient for the LLP_{it} variable.

We estimate these different specifications for Eq. (2) at the level of the audit firm year. The sample period starts in 1999 in order to include the years prior to LLP adoption and it ends in 2008. The results are shown in Table 5. Cols. (1) and (2) reveal significant increases in the public-private portfolio weighting after audit firms become LLPs (t-stats. = 4.95, 6.89). Therefore, auditors are more likely to serve publicly traded companies and they increase their revenues from public clients after they secure limited liability. In conjunction with the results reported in Table 4, we conclude that audit firms are more likely to become LLPs when their portfolios are weighted toward public companies, and there is a further increase in their weighting on public companies after they become LLPs. Cols. (3) and (4) reveal that client size and profitability (ROA_{it}) do not change significantly after the auditor becomes an LLP. However, there is a significant increase in the client leverage of auditors' portfolios as shown in Col. (5).

Interestingly, we do not find that audit firms lose market share after they become LLPs. Col. (6) reveals no significant change in an audit firm's total number of clients subsequent to LLP adoption, while Col. (7) indicates that the growth in the number of clients does not change significantly. Because audit firms do not lose market share after they become LLPs, we find no evidence at this stage that LLP adoption causes a fall in the demand for their audits. However, before reaching this conclusion, it is important to investigate whether clients choose to remain with the LLP firms because they are compensated with lower audit fees. This is explored in the following section.

5.2. Audit fees

If audit quality goes down after audit firms adopt LLP status, then we would expect a fall in the demand for their audits. A fall in demand would mean that clients switch away from the auditors that adopt LLP status or clients demand lower audit fees in order to remain with the LLP adopters. On the other hand, audit quality may increase subsequent to LLP adoption because the marginal benefit of a partner exerting effort on his own audit engagements increases. If partners work harder subsequent to LLP adoption then clients may be willing to pay higher audit fees as compensation for the extra audit effort. The net result could be that audit quality is unchanged and so LLP adoption may have no impact on the demand for an LLP firm's services. Another factor that potentially affects audit fees is the risk associated with conducting audits. We expect that LLP status lowers partners' risk exposure because it protects the personal assets of non-negligent partners. To the extent that this enables companies to negotiate lower audit fees, we would expect to find a reduction in fees subsequent to LLP adoption even if there is no change to audit quality.

We test the effect of LLP adoption on audit fees by estimating the fee model in Eq. (3):

$$LAF_{jt} = \alpha_0 + \alpha_1 LLP_{it} + \beta X_{jt} + u_i + d_t + e_{jt}. \quad (3)$$

Table 6
The consequences of LLP adoption for audit fees and audit quality (1999–2008).

$$LAF_{jt} = \alpha_0 + \alpha_1 LLP_{it} + \beta X_{jt} + u_i + d_t + e_{jit}. \quad (3)$$

$$Audit\ quality_{jt} = \alpha_0 + \alpha_1 LLP_{it} + \beta X_{jt} + u_i + d_t + e_{jit}. \quad (4)$$

LAF_{jt} is the natural log of the audit fee paid by company j to audit firm i in year t. Our proxies for audit quality are modified audit opinions ($MODIFIED\_OP_{jt}$), signed abnormal accruals (AB_ACC_{jt}), and absolute abnormal accruals ($|AB\_ACC_{jt}|$). The sample period starts in 1999 in order to include pre-adoption observations for the audit firms that became LLPs shortly after they were eligible to do so. The standard errors are adjusted for time-series dependence by clustering on both company and audit firm (t-statistics in parentheses).

Dep. variable=	(1) LAF_{jt}	(2) $MODIFIED\_OP_{jt}$	(3) AB_ACC_{jt}	(4) $\|AB\_ACC_{jt}\|$
LLP_{it}	0.012	−0.030	−0.001	0.001
	(0.87)	(−0.45)	(−0.29)	(0.41)
$SIZE_{jt}$	0.336	−0.011	0.007	−0.010
	(51.35)***	(−0.33)	(4.52)***	(−8.37)***
$PUBLIC_{jt}$	0.516	0.132	−0.007	0.024
	(16.89)***	(1.20)	(−0.88)	(3.30)***
ROA_{jt}	−0.115	−0.014	0.087	0.006
	(−25.20)***	(−0.96)	(6.02)***	(0.80)
HI_RISK_{jt}	0.166	0.095	0.023	−0.009
	(16.75)***	(1.72)*	(6.41)***	(−1.77)*
$LEVERAGE_{jt}$	0.065	0.225	0.002	0.082
	(21.50)***	(10.09)***	(0.43)	(16.63)***
$LOSS_{jt}$	−0.135	0.902	0.008	0.012
	(−5.28)***	(17.53)***	(2.13)**	(5.66)***
$LNAF_{jt}$	0.243	−0.041	−0.001	0.003
	(20.63)***	(−2.42)**	(−1.36)	(3.89)***
$CURRENT_{jt}$		−0.003		
		(−2.04)**		
$CATA_{jt}$	0.513			
	(32.54)***			
$MODIFIED\_OP_{jt}$	0.143		−0.010	0.001
	(7.48)***		(−2.07)**	(0.16)
LAF_{jt}		0.187	−0.009	−0.012
		(7.77)***	(−3.76)***	(−5.79)***
Audit firm fixed effects?	Yes	Yes	Yes	Yes
Year fixed effects?	Yes	Yes	Yes	Yes
No. of auditors	95	95	95	95
No. of companies	82,487	82,487	16,982	16,982
No. of audits	392,987	392,987	60,968	60,968
(Pseudo) R-squared	0.611	0.080	0.073	0.069

The consequences of LLP adoption for audit fees and audit quality (1999–2008).
The regression models include dummy variables for each audit firm (u_i) and year (d_t) but the results for these fixed effects are untabulated.
*. **. *** Statistically significant at the 10%, 5%, 1% level, respectively (two-tailed).
Variable definitions:
LAF_{jt}=natural log of the audit fee paid by company j to audit firm i in year t. $MODIFIED\_OP_{jt}$=one if company j receives a modified (or qualified) audit opinion in year t,=zero if the audit opinion is clean. AB_ACC_{jt}=the abnormal accruals of company j in year t. Abnormal accruals are estimated using the residuals from the cross-sectional Jones (1991) model. LLP_{it}=one if company j's audit firm i in year t is a limited liability partnership,=zero otherwise. $SIZE_{jt}$=natural log of the total assets of company j in year t. $PUBLIC_{jt}$=one if company j is publicly traded on the London Stock Exchange or the Alternative Investment Market,=zero otherwise. ROA_{jt}=operating profits divided by total assets for company j in year t. HI_RISK_{jt}=one if company j operates in an industry that has high litigation risk (pharmaceuticals, computers, electronics, manufacturing, retail, and services),=zero otherwise. $LEVERAGE_{jt}$=total liabilities divided by total assets for company j in year t. $LOSS_{jt}$=one if company j reports negative operating profits in year t,=zero otherwise. $LNAF_{jt}$=natural log of the non-audit fees paid by company j to audit firm i in year t. $CURRENT_{jt}$=current assets divided by current liabilities for company j in year t. $CATA_{jt}$=current assets divided by total assets for company j in year t.

LAF_{jt} is the log of audit fees paid by company j in year t and X_{jt} is a vector of client characteristics that affect audit pricing. If audit firms receive lower audit fees after they become LLPs we would expect that $\alpha_1 < 0$ in Eq. (3). The opposite would be expected if the LLP structure results in higher audit fees.

We control for company size ($SIZE_{jt}$) using the log of assets. Publicly traded companies have higher litigation risk and are charged higher fees (Badertscher et al., 2011), so we control for whether the company is publicly traded ($PUBLIC_{jt}$) and whether it operates in an industry that has high litigation risk (HI_RISK_{jt}). Finally, and consistent with past audit fee studies (Hay et al., 2006), we control for client profitability (ROA_{jt} and $LOSS_{jt}$), leverage ($LEVERAGE_{jt}$), non-audit fees ($LNAF_{jt}$), the ratio of current assets to total assets ($CATA_{jt}$), and modified audit opinions ($MODIFIED\_OP_{jt}$). We estimate the audit fee model using all 392,987 audit engagements in the period 1999–2008. The standard errors are adjusted for time-series dependence by clustering on both the company and audit firm (Bertrand et al., 2004).

The results are reported in Col. (1) of Table 6. The LLP_{it} variable is insignificant indicating that LLP adoption does not have a significant impact on audit fees.[10] Together, the evidence from auditors' market shares and audit fees indicates that clients do not reduce their demand for the audits of firms that adopt LLP status. In other words, it does not appear that clients prefer to be audited by firms that have unlimited liability.

5.3. Audit quality

We examine whether the switch to limited liability affects audit quality by estimating Eq. (4):

$$Audit\ quality_{jt} = \alpha_0 + \alpha_1 LLP_{it} + \beta X_{jt} + u_i + d_t + e_{jt}. \quad (4)$$

The dependent variable measures the quality of the audit supplied to company j in year t. Again, the LLP variable captures the impact of becoming an LLP, after controlling for audit firm fixed effects (u_i), year fixed effects (d_t) and other client characteristics (X_{jt}).

Following prior research (e.g., DeFond et al., 2002), we use audit opinions to proxy for the auditors' propensity to detect and report problems related to the client. Thus, our first measure of audit quality is the auditor's issuance of a modified opinion.[11] If audit quality is impaired after auditors become LLPs, we predict that they would issue clean unqualified opinions more often ($\alpha_1 < 0$ in Eq. (4)). The opposite would be expected if the LLP structure improves audit quality. We also examine signed abnormal accruals, which are estimated using the cross-sectional Jones (1991) model. An advantage of using signed rather than absolute abnormal accruals is that auditors and clients tend to disagree about income-increasing rather than income-decreasing earnings management and auditors generally require their clients to adjust earnings downwards rather than upwards (DeFond and Jiambalvo, 1993; Kinney and Martin, 1994; Nelson et al., 2002). However, earnings can be managed either upwards or downwards, so we also use absolute abnormal accruals (Chen et al., 2008).

Cols. (2)–(4) of Table 6 present results using the following dependent variables: (1) modified audit opinions ($MODIFIED\_OP_{jt}$), (2) signed abnormal accruals (AB_ACC_{jt}), and (3) absolute abnormal accruals ($|AB\_ACC_{jt}|$). The standard errors are again adjusted for time-series dependence using the clustering procedure. The audit opinion model is estimated using all 392,987 engagements in the period 1999–2008 and the results are reported in Col. (2).[12] The coefficient on LLP_{it} is statistically indistinguishable from zero, indicating that audit firms do not change their reporting behavior after they obtain limited liability. Results for the control variables are consistent with expectations given that the most common type of modified audit report is the going-concern opinion. Specifically, companies receive modified opinions more often if they incur losses, are in high risk industries, are highly leveraged, publicly traded, or pay high audit fees.

The second audit quality measure is the company's signed abnormal accruals (AB_ACC_{jt}). If LLP adoption leads to lower audit quality, we would expect companies to report aggressively high earnings after audit firms obtain limited liability. This leads to a prediction of a positive coefficient on the LLP_{it} variable in the model that has signed abnormal accruals as the dependent variable (Col. (3) of Table 6).[13] Again, we find that the coefficient on LLP_{it} is statistically insignificant. Likewise we obtain insignificant results in Col. (4), where the dependent variable measures absolute rather than signed abnormal accruals.[14] Overall, the results suggest that LLP adoption is not associated with earnings management.

It is important to caution that the reliability of these inferences depends on the suitability of audit opinions and abnormal accruals as proxies for audit quality. We therefore consider other measures. First, we measure the quality of accruals using the approach in Dechow and Dichev (2002). In untabulated results, we find no significant relation between the LLP_{it} variable and clients' accrual quality. Second, we test whether there is a significant market reaction by investors of audit clients to news of the audit firm becoming an LLP. We use two event dates for this test: the date at which the audit

[10] We acknowledge that there is potential mis-classification of the fees received for audit versus non-audit services. To check whether this measurement error affects our results, we replace the dependent variable in Col. 1 of Table 6 with the log of total fees (i.e., audit and non-audit) and we remove the non-audit fee from the set of independent variables. We continue to find that the *LLP* variable is statistically insignificant.

[11] The FAME database indicates whether the audit report contains an unqualified clean opinion but it does not code the different types of modified opinions. To investigate this, we hand collect a random sample of 50 audit reports that are coded by FAME as being non-clean. We find that: one report contains an "adverse" opinion (i.e., the financials are not fairly presented); three reports contain opinion "disclaimers" (i.e., the auditor is unable to form an opinion due to a limitation on the scope of the audit); 15 reports contain "except for" opinions that are issued due to limitations on the scope of the audit or accounting disagreements over the presentation of the financial statements; 24 reports disclose going-concern problems (23 of the 24 reports are unqualified and one is an except for opinion); and 10 reports disclose fundamental uncertainties about other aspects of the financial statements (8 of the 10 reports are unqualified, one is an opinion disclaimer, and one is an except for opinion). Unlike in the US, audit opinions are not modified for changes in accounting standards or accounting policy.

[12] The control variables are the same as in Col. (1) except that we include the ratio of current assets to current liabilities ($CURRENT_{jt}$) as a control for liquidity. This variable replaces the ratio of current assets to total assets ($CATA_{jt}$), which is a measure of audit complexity in the fee model.

[13] The control variables are the same as in the audit opinion model except that we exclude the current ratio ($CURRENT_{jt}$) because it is mechanically correlated with accruals. The sample size is smaller in the models of abnormal accruals for two reasons. First, we require that data are available to calculate total accruals (i.e., we require data on the change in current assets, change in current liabilities, change in cash, change in debt in current liabilities, and depreciation and amortization.) This reduces our sample to 77,612 observations. Second, we require data for the other variables in the Jones (1991) model in order to estimate abnormal accruals (i.e., we require data on the change in sales, lagged total assets, gross PPE, and industry SIC codes.) This second requirement reduces our sample to 60,968 observations.

[14] We obtain similar results if we follow Hribar and Nichols (2007) by controlling for the standard deviation of cash flows from operations (σCFO_{jt}). However, adding the σCFO_{jt} variable is costly in terms of attrition because the sample declines from 60,968 observations to just 15,439.

firm becomes an LLP and the date that the LLP legislation was passed. We include the latter because investors may anticipate which audit firms would be most likely to change their organizational form. We conduct the event study on just the publicly traded companies given that stock returns are unavailable for private companies. For both event dates, we fail to detect any significant market reaction. Again, this is inconsistent with LLP adoption having adverse consequences for audit clients.

5.4. Client poaching by the auditor of the LLP firm

Of the 38 LLP firms in our sample, 32 are required to have their financial statements independently audited by another firm. We posit that this is costly because the LLP's auditor is uniquely positioned to poach clients from the LLP firm. We test this by comparing how many clients the LLP firm loses to its auditor in the periods before versus after LLP adoption.

$$Ln(\#CLIENTS\_LOST\_AUD_{it}) = \alpha_0 + \alpha_1 LLP_{it} + \alpha_2 Ln(\#CLIENTS\_LLP_{it}) + \alpha_3 Ln(\#CLIENTS\_AUDITOR_{it}) + u_i + d_t + e_{it}. \quad (5)$$

In Eq. (5) the LLP_{it} variable equals one during the years in which the LLP firm is audited, and zero during the same firm's pre-LLP years. For example, Deloitte LLP is audited by Grant Thornton from 2004 to 2008, so LLP_{it} equals one for Deloitte LLP between 2004 and 2008, and zero between 1999 and 2003. The dependent variable ($Ln(\#CLIENTS\_LOST\_AUD_{it})$) equals the log of one plus the number of clients lost by LLP firm i to its auditor in year t. For example, in the case of Deloitte LLP and its auditor Grant Thornton, we count the number of clients that switch from Deloitte to Grant Thornton in each year from 1999 to 2008. (We take logs to reduce the impact of skewness and outliers in the raw variable.) Under the client poaching hypothesis, we expect that LLP firms lose more clients to their auditors after LLP adoption than they do before LLP adoption. This would imply a positive coefficient on LLP_{it} in Eq. (5).

Eq. (5) controls for the size of the LLP firm ($Ln(\#CLIENTS\_LLP_{it})$) and the size of its auditor ($Ln(\#CLIENTS\_AUDITOR_{it})$). We also include audit firm fixed effects (u_i) and year fixed effects (d_t). There are 182 yearly observations that pertain to the pre-LLP period when the firms are not audited ($LLP_{it}=0$) and 99 observations in the LLP period when they are audited ($LLP_{it}=1$). Thus, the sample comprises 281 audit firm years.

The results for Eq. (5) are presented in Table 7. The coefficient on LLP_{it} is positive and statistically significant (t-stat.$=2.85$) implying that an LLP firm loses more clients to its auditor after the change in organizational form. In terms

Table 7
Clients lost by the LLP firms to their own auditors and to other auditors (1999–2008).

Table 7 tests whether LLP firms lose more clients during the years in which they are audited compared with the years before they are audited. The sample comprises the 32 LLP firms that are audited by other audit firms. In Eq. (7) the dependent variable measures the number of clients lost to the LLP's own auditor. In Eq. (8) the dependent variable measures the number of clients lost to auditors other than the LLP's own auditor.

$$Ln(\#CLIENTS\_LOST\_AUD_{it}) = \alpha_0 + \alpha_1 LLP_{it} + \alpha_2 Ln(\#CLIENTS\_LLP_{it}) + \alpha_3 Ln(\#CLIENTS\_AUDITOR_{it}) + u_i + d_t + e_{it}. \quad (5)$$

$$Ln(\#CLIENTS\_LOST\_NOTAUD_{it}) = \alpha_0 + \alpha_1 LLP_{it} + \alpha_2 Ln(\#CLIENTS\_LLP_{it}) + \alpha_3 Ln(\#CLIENTS\_AUDITOR_{it}) + u_i + d_t + e_{it}. \quad (6)$$

	Dep. variable $=Ln(\#CLIENTS\_LOST\_AUD_{it})$		$Ln(\#CLIENTS\_LOST\_NOTAUD_{it})$	
	Coeffts.	t-stats.	Coeffts.	t-stats.
LLP_{it}	0.324	2.85***	0.085	0.43
$Ln(\#CLIENTS\_LLP_{it})$	0.185	2.40**	0.090	0.67
$Ln(\#CLIENTS\_AUDITOR_{it})$	−0.015	−0.38	0.083	1.22
Audit firm fixed effects?		Yes		Yes
Year fixed effects?		Yes		Yes
No. of LLP firms		32		32
No. of LLP firm years		281		281
R-squared		0.429		0.447

The regression model includes dummy variables for each audit firm (u_i) and year (d_t) but the results for these fixed effects are untabulated. The standard errors are adjusted for time-series dependence by clustering on each audit firm.

** Statistically significant at the 5% level (two-tailed).

Variable definitions:

LLP_{it}=One in the post-LLP adoption years during which the LLP firm is audited, zero during the pre-LLP adoption years. For example, Deloitte LLP is audited by Grant Thornton from 2004 to 2008, so LLP_{it} takes the value one for Deloitte LLP between 2004 and 2008 and zero between 1999 and 2003. $Ln(\#CLIENTS\_LOST\_AUD_{it})$=the natural log of one plus the total number of clients that LLP firm i loses to its auditor in year t. For example, in the case of Deloitte LLP and its auditor Grant Thornton, we count the number of clients that switch from Deloitte LLP to Grant Thornton. $Ln(\#CLIENTS\_LOST\_NOTAUD_{it})$=the natural log of one plus the total number of clients that LLP firm i loses to firms other than its own auditor. For example, in the case of Deloitte LLP and its auditor Grant Thornton, we count the number of clients that switch from Deloitte LLP to firms other than Grant Thornton. $Ln(\#CLIENTS\_LLP_{it})$=the natural log of the total number of clients for LLP firm i in year t. $Ln(\#CLIENTS\_AUDITOR_{it})$=the natural log of the total number of clients for the auditor of LLP firm i in year t.

of economic significance, the coefficient on LLP_{it} translates into the LLP firm losing an extra 0.55 clients to its auditor in each year. A poached client represents a lost engagement not only in the first year but also in subsequent years. Given that the average LLP firm loses 0.55 engagements per year due to client poaching, this would mean that after ten years the LLP firm would have lost approximately 30 annual audit engagements ($30.25 = 0.55 \times (1+2+\cdots+9+10)$), or an average of three engagements per year. To be sure, the economic magnitude of this cost is small for the very large audit firms. For example, the loss of three clients is equivalent to just 0.01% of the annual revenue of the largest LLP firm (PricewaterhouseCoopers).[15] However, the client poaching cost is more significant for the smaller firms. For example, it is equivalent to 10.12% of annual revenue for the smallest LLP firm that loses clients to its auditor (Price Bailey LLP).[16] Moreover, the poached clients are not solely private companies. In an untabulated test, we find that client poaching is statistically significant for both publicly traded and private companies.[17]

To verify that these poaching results are really attributable to the relationship between the LLP firm and its auditor, we test whether LLP firms lose significant numbers of clients to firms that are not their auditors. Specifically, we construct a new dependent variable ($Ln(\#CLIENTS\_LOST\_NOTAUD_{it})$) that measures the number of clients that the LLP firm loses to firms other than its own auditor. For example, in the case of Deloitte LLP and its auditor Grant Thornton, the $Ln(\#CLIENTS\_LOST\_NOTAUD_{it})$ variable captures the number of clients that switch from Deloitte LLP to auditors other than Grant Thornton. Eq. (6) is the same as Eq. (5) except for this change to the dependent variable:

$$Ln(\#CLIENTS\_LOST\_NOTAUD_{it}) = \alpha_0 + \alpha_1 LLP_{it} + + \alpha_2 Ln(\#CLIENTS\_LLP_{it}) + \alpha_3 Ln(\#CLIENTS\_AUDITOR_{it}) + u_i + d_t + e_{it}. \quad (6)$$

The results for Eq. (6) are presented in Table 7. We find that the coefficient on the LLP_{it} variable is close to zero and statistically insignificant. Therefore, LLP firms do not lose more clients during the post-LLP period compared with the pre-LLP period. This is consistent with the evidence in Table 5 that audit firms do not lose market share after they become LLPs. In an untabulated test, we also find no evidence that LLP firms poach more clients from their auditors subsequent to LLP adoption. This finding helps to rule out the alternative explanation that there is a two-way client referral relationship between the LLP firm and its auditor that causes a higher frequency of clients switching between these two auditors. Overall, we conclude that it is costly for an audit firm to become an LLP because the firm is then exposed to client poaching by its own auditor. Except for this, we find no evidence that LLP adoption results in auditors losing clients.

5.5. The large audit firms

LLP adoption may have little effect on the smaller audit firms for two reasons. First, LLP status provides no protection for a one-partner audit firm because it is impossible for such a firm to have any non-negligent partners in the event of an audit failure. Second, the costs of monitoring other partners' behavior may be low in firms that have few partners. We therefore re-run all our tests on the audit firms that earn at least £10 million in fees during the sample period. The results for these 39 audit firms are very similar to those tabulated for the full sample. We continue to find that audit firms are more likely to become LLPs if they are large and are exposed to higher litigation risk. We also find that the client portfolios of LLP firms are more heavily weighted toward public companies subsequent to the change in organizational form. We continue to find no evidence that audit firms lose clients or grow more slowly after they become LLPs. Finally, we continue to find that LLP adoption has no significant effect on audit fees or audit quality.[18]

5.6. Asset shifting from audit firms to partners' personal accounts

When an audit firm converts to LLP status, the personal assets of non-negligent partners cease to be exposed to the threat of litigation. Accordingly, an audit firm has an incentive to pull assets out of the firm and distribute them to partners after it becomes an LLP. This in turn means that partners will have less wealth invested inside the audit firm and less incentive to provide high quality audits. Based on this intuition, Dye's (1995) theoretical model predicts that audit quality will fall after audit firms obtain limited liability because assets are shifted from within the audit firm partnership to

[15] The mean audit fee that PricewaterhouseCoopers LLP loses as a result of poaching is £14,703 whereas its annual revenue averages £550 million during our sample period. Therefore, the loss of three clients would cost the firm approximately 0.01% of its revenue ($0.0001 = 3 \times 14{,}703/550{,}000{,}000$).

[16] The mean audit fee that Price Bailey LLP loses as a result of poaching is £29,000 whereas its annual revenue averages £860,000 during our sample period. Therefore, the loss of three clients would cost the firm approximately 10.12% of its revenue ($0.1012 = 3 \times 29{,}000/860{,}000$).

[17] A natural question is whether LLP firms include non-compete clauses in their audit engagement contracts in order to prevent their clients from being poached. Although English Common Law originally held non-compete clauses to be unenforceable, contemporary case law permits non-compete clauses in two specific circumstances: (1) a non-compete clause is allowed in the case of a business sale in order to prevent a former owner from opening up a new competing business, (2) a non-compete clause is allowed in an employment contract in order to prevent an employee poaching customers from the former employer. Neither of these circumstances covers the situation where an audit firm audits an LLP audit firm. Moreover, our findings suggest that non-compete clauses are not generally used in this situation. If they were being used, we would find that fewer clients are lost by the LLP firm to its auditor after the firm becomes an LLP, whereas our results indicate the opposite.

[18] There are eight audit firm mergers and four newly established audit firms within our sample. All of our conclusions are unchanged when we drop the merging and newly established firms from the sample.

partners' personal accounts. On the other hand, this prediction may not hold if LLP firms maintain incentives for high quality audits by retaining partners' wealth inside their audit firms.

We search for evidence of wealth transfers by examining the equity held by partners within their audit firms in the periods before versus after LLP adoption. Of the 38 LLP firms in our sample, 21 firms provide information on both partnership equity and the number of partners during the pre-LLP year. For these firms, we measure partnership equity per partner during the pre-LLP year and in each subsequent year up to the end of our sample period. This gives a sample of 21 pre-LLP and 77 post-LLP observations. We then estimate the following model:

$$Ln(Equity\ per\ partner_{it}) = \alpha_0 + \alpha_1 LLP_{it} + u_i + d_t + e_{it}. \quad (7)$$

The dependent variable is the log of the average equity stake held by audit partners in their firms (i.e., partners' inside wealth). The LLP_{it} variable equals zero in the year prior to LLP adoption, and one in all subsequent years. If equity is withdrawn subsequent to LLP adoption, we expect significant negative coefficients on LLP_{it}.

A limitation of Eq. (7) is that it does not directly address the conduit through which wealth is withdrawn from audit firms and re-distributed to audit partners' personal accounts. We therefore construct a more direct measure of this conduit by comparing how much audit firms distribute to their partners in the periods before versus after LLP adoption:

$$Ln(Distribution\ per\ partner_{it}) = \alpha_0 + \alpha_1 LLP_{it} + \alpha_2 Ln(Profits\ per\ partner_{it}) + \alpha_3 Ln(Total\ assets_{it}) + u_i + d_t + e_{it}. \quad (8)$$

The dependent variable in Eq. (8) is the log of the average distribution to each partner by audit firm i in year t. If LLP firms distribute more of their wealth to partners subsequent to LLP adoption we would expect significant positive coefficients on LLP_{it} ($\alpha_1 > 0$). There are 14 LLP firms that report partner distributions in the year prior to LLP adoption. The estimation sample consists of 70 audit firm years (14 observations are pre-LLP while 56 are post-LLP).

Eq. (8) controls for the log of an audit firm's profits per partner ($Ln(Profits\ per\ partner_{it})$) because partner distributions are driven by audit firms' profit sharing rules.[19] We expect that partners receive bigger payouts when their firms are more profitable and so we predict a significant positive coefficient on $Ln(Profits\ per\ partner_{it})$ ($\alpha_2 > 0$). We also control for audit firm size ($Ln(Total\ assets_{it})$) because prior research on executive compensation suggests that size is important.

Table 8 reports descriptive statistics and regression results for the 21 LLP firms that have equity per partner data. Panel A finds that the average equity stake of partners is approximately £100,000 to £400,000 depending on the size of the audit firm. Partners' inside wealth is larger at the larger audit firms. For example, the average partner at Deloitte has an equity stake of £424,459 in the year prior to LLP adoption, while the average partner at Nexia Smith and Williamson has an equity stake of £111,760. Naturally, data on partners' outside wealth, such as their personal savings, are not publicly available. Nevertheless, we can gauge their likely outside wealth by examining how much partners are paid annually. Table 8 shows that the average annual distribution per partner is typically about £150,000–£500,000, with partners at the larger audit firms earning more. The combination of high distributions and low equity suggest that a considerable proportion of partners' wealth is held in personal accounts outside of audit firms. In turn, this means that there are substantial reductions in partners' risk exposure subsequent to LLP adoption.

Panel A of Table 8 reveals no systematic reduction in audit partners' inside wealth subsequent to LLP adoption. Partner equity increases (decreases) in 13 (8) audit firms from the year immediately prior to LLP adoption to the year immediately afterwards. Consistent with this, the regression results in Panel B find an insignificant negative coefficient on the LLP_{it} variable in Eq. (7). Thus, equity is not withdrawn and re-distributed to partners' personal accounts subsequent to LLP adoption. Likewise, the results for Eq. (8) indicate that LLP adoption does not result in larger distributions to partners. As expected, Eq. (8) finds a strong positive relation between partners' distributions and the audit firm's profitability (t-stat.=6.20).[20] Audit firm size is negatively associated with partners' distributions, after controlling for audit firm fixed effects and performance (t-stat.=−8.80).

Overall, we find no evidence that wealth is shifted from inside audit firms to partners' personal accounts subsequent to LLP adoption. However, it is important to caution that we do not have data on equity per partner and distribution per partner for many of the audit firms in our sample and it is conceivable that there is a positive correlation between non-disclosure and asset shifting. Moreover, it is conceivable that some of the LLP audit firms shifted wealth to partners' personal accounts in year t-2, two years prior to adopting LLP status in year t.

6. Conclusions

The evidence in this study indicates that larger audit firms and firms that are exposed to greater litigation risk are more likely to become LLPs. This is consistent with these firms having stronger incentives to protect their partners' personal assets. Switching is costly, however, as an LLP firm is required to publicly disclose its financial statements and the financial statements of large LLP firms are subject to independent audit. Our findings suggest that the audit requirement is costly because it increases the rate at which the LLP firm loses clients to the firm that audits its financial statements. Beyond the

[19] All of the LLP firms in our sample report positive profits, so using the log transformation does not cause any of the problems that are normally associated with non-positive values. In an untabulated test, we estimate Eqs. (7) and (8) using the raw variables rather than the log transformations and our inferences are unchanged.

[20] In a supplementary test, we find no significant change in audit firm profitability subsequent to LLP adoption.

Table 8
Partners' equity holdings and their annual distributions before versus after LLP adoption.

Panel A: Partners' equity and annual distributions to partners

	Average partnership equity per partner (£000)		Average annual distribution per partner (£000)	
	Year before LLP adoption	Year after LLP adoption	Year before LLP adoption	Year after LLP adoption
Deloitte LLP	424.459	413.954	n.a.	568.106
Ernst & Young LLP	521.732	425.922	421.248	447.924
PricewaterhouseCoopers LLP	340.842	448.733	404.505	575.392
Grant Thornton LLP	326.063	381.045	n.a.	296.916
UHY Hacker Young LLP	358.493	386.616	208.511	278.667
PKF LLP	315.198	373.280	191.349	227.160
Buzzacott LLP	311.446	315.148	n.a.	271.835
Chantrey Vellacott LLP	264.406	226.205	104.619	111.143
Kingston Smith LLP	261.183	298.273	n.a.	247.168
Berg Kaprow Lewis LLP	270.555	251.334	123.103	130.094
BDO Stoy Hayward LLP	211.932	219.366	189.011	204.574
Mazars LLP	219.533	215.450	110.880	159.413
Moore Stephens LLP	184.836	166.400	156.394	158.211
RSM Robson Rhodes LLP	166.705	198.494	164.039	144.910
Horwath Clark Whitehill LLP	171.293	175.750	140.017	156.417
Barnes Roffe LLP	148.127	176.979	n.a.	173.425
Macintyre Hudson LLP	129.951	130.099	n.a.	122.667
Nexia Smith & Williamson LLP	111.760	114.292	142.920	116.292
Reeves & Neylan LLP	84.718	97.250	n.a.	n.a.
Price Bailey LLP	63.808	63.370	59.731	51.000
MRI Moores Rowland LLP	54.133	52.086	174.903	216.767

Panel B: Regression results

$Ln(Equity\ per\ partner_{it}) = \alpha_0 + \alpha_1\ LLP_{it} + u_i + d_t + e_{it}$.
$Ln(Distribution\ per\ partner_{it}) = \alpha_0 + \alpha_1\ LLP_{it} + \alpha_2\ Ln(Profits\ per\ partner_{it}) + \alpha_3\ Ln(Total\ assets_{it}) + u_i + d_t + e_{it}$.
The regression models include fixed effects for each audit firm (u_i) and year (d_t).

	$Ln(Equity\ per\ partner_{it})$		$Ln(Distribution\ per\ partner_{it})$	
	Coefft.	*t*-statistic	Coefft.	*t*-statistic
LLP_{it}	−0.004	−0.30	−0.007	−0.58
$Ln(Profits\ per\ partner_{it})$			0.085	6.20***
$Ln(Total\ assets_{it})$			−0.131	−8.80***
Audit firm fixed effects?	Yes		Yes	
Year fixed effects?	Yes		Yes	
Audit firm-year observations	98		70	
Number of audit firms	21		14	

*** Statistically significant at the 1% level (two-tailed).

private costs to audit firms, we find no evidence that LLP adoption has adverse consequences for audit clients. Specifically, the evidence does not indicate that clients prefer to be audited by non-LLP firms and we do not find any impairment of audit quality subsequent to LLP adoption. However, auditors are more willing to service publicly traded companies – which carry higher litigation risk than private company engagements – after they adopt limited liability.

A puzzle that we have been unable to resolve is why audit fees do not drop after audit firms become LLPs. LLP adoption protects the personal assets of non-negligent partners and therefore substantially reduces partners' risk exposure. In the absence of any change to audit quality, it is expected that companies would be able to negotiate lower audit fees following a reduction in partners' risk exposure. The fact we do not find this could be due to a lack of competition within the UK audit market such that LLP auditors avoid offering lower fees to their clients.

We caution that our paper has two other limitations. First, our analysis is restricted to audit firms in the UK. This caveat is important because the UK imposes costs to LLP adoption, namely the disclosure and audit requirements, that do not exist in most other countries. Therefore, it is important to emphasize that our findings may not generalize to other countries. Second, we do not observe the relevant counterfactual outcome for the organizational form that is not chosen by the audit firm. That is, we do not observe what the LLP firm's audit fees or its market share would have been if it had retained unlimited liability. Likewise, we do not observe what the non-adopting firm's fees or market share would have been if it had adopted LLP status. The decision to become an LLP firm is likely to be made optimally, taking into account the expected future consequences to the firm's partners. For example, the non-LLP auditors may have chosen to retain

Table A1
Descriptive statistics and results for the audit fee model (2001–2008).

$$LAF_{jt} = \alpha_0 + \alpha_1 SIZE_{jt} + \alpha_2 BIGN_{jt} + \alpha_3 PUBLIC_{jt} + \alpha_4 HI\_RISK_{jt} + \alpha_5 ROA_{jt} + \alpha_6 MODIFIED\_OP_{jt} + \alpha_7 LOSS_{jt} + \alpha_8 LNAF_{jt} + \alpha_9 CATA_{jt} + \alpha_{10} LEVERAGE_{jt} + \text{Year fixed effects} + u$$

Panel A: Descriptive statistics for the variables used to estimate the audit fee model

Variable	Obs.	Mean	Median	1st Percentile	99th Percentile
LAF_{jt}	326,623	2.219	2.197	0.000	5.617
$SIZE_{jt}$	326,623	8.378	8.423	2.398	14.026
$BIGN_{jt}$	326,623	0.588	1.000	0.000	1.000
$PUBLIC_{jt}$	326,623	0.028	0.000	0.000	1.000
HI_RISK_{jt}	326,623	0.178	0.000	0.000	1.000
ROA_{jt}	326,623	−0.177	0.016	−5.065	0.875
$MODIFIED\_OP_{jt}$	326,623	0.054	0.000	0.000	1.000
$LOSS_{jt}$	326,623	0.431	0.000	0.000	1.000
$LNAF_{jt}$	326,623	0.913	0.000	0.000	5.489
$CATA_{jt}$	326,623	0.688	0.820	0.005	1.000
$LEVERAGE_{jt}$	326,623	0.861	0.685	0.006	9.931

Panel B: Multivariate results for the audit fee model (R^2=59.4%)

	$SIZE_{jt}$	$BIGN_{jt}$	$PUBLIC_{jt}$	HI_RISK_{jt}	ROA_{jt}
Coefft.	0.335	0.100	0.545	0.178	−0.120
t-stat.	187.13***	17.63***	34.96***	27.15***	−41.21***
	$CATA_{jt}$	$MODIFIED\_OP_{jt}$	$LOSS_{jt}$	$LNAF_{jt}$	$LEVERAGE_{jt}$
Coefft.	0.531	0.147	−0.141	0.246	0.064
t-stat.	55.08***	14.82***	−25.59***	116.12***	31.24***

The continuous variables are winsorized at the top 1% and bottom 99% percentiles. The standard errors in the audit fee model are adjusted for non-independence by clustering on each company (*t*-statistics in parentheses).
*** Statistically significant at the 1% level (two-tailed).
Variable definitions:
LAF_{jt}=the natural log of the audit fee paid by company *j* in year *t*. $SIZE_{jt}$=the natural log of the total assets of company *j* in year *t*. $BIGN_{jt}$=one if company *j* hires a Big N audit firm in year *t*, zero otherwise. $PUBLIC_{jt}$=one if company *j* is publicly traded on the London Stock Exchange or the Alternative Investment Market,=zero otherwise. HI_RISK_{jt}=one if company *j* operates in an industry that has high litigation risk (pharmaceuticals, computers, electronics, manufacturing, retail, and services),=zero otherwise. ROA_{jt}=operating profits divided by total assets for company *j* in year *t*. $MODIFIED\_OP_{jt}$=one if company *j* receives a modified (or qualified) audit opinion in year *t*,=zero if the audit opinion is clean. $LOSS_{jt}$=one if company *j* reports negative operating profits in year *t*,=zero otherwise. $LNAF_{jt}$=the natural log of the non-audit fees paid by company *j* in year *t*. $CATA_{jt}$=current assets divided by total assets for company *j* in year *t*. $LEVERAGE_{jt}$=total liabilities divided by total assets for company *j* in year *t*.

unlimited liability because they foresaw that LLP adoption would have undesirable consequences for them. Likewise, the LLP auditors may have chosen to obtain limited liability because they foresaw that this would be optimal. Since the LLP adoption variable in our analysis is endogenous rather than exogenous, it is important to be cautious when interpreting the results of Eqs. (2)–(8) where LLP is used as an independent variable. In particular, it would be inappropriate to infer from our results that we are isolating the effects of exogenous LLP adoption. Rather, we are investigating the effects of a regulatory change that allows audit firms to choose for themselves whether LLP adoption is privately optimal for them.

Appendix A

See Table A1.

References

Accountancy Magazine, 2005. Get your teeth into LLPs. May, pp. 73–74.
Badertscher, B., Jorgensen, B., Katz, S., Kinney, W.R., 2011. The effect of ownership structure on audit fees. Working paper.
Baltagi, B.H., 1995. Econometric Analysis of Panel Data. Wiley, Chichester.
Beattie, V., Fearnley, S., 1994. The changing structure of the market for audit services in the UK—a descriptive study. The British Accounting Review 26, 301–322.
Beattie, V., Fearnley, S., 1998. Audit market competition: auditor changes and the impact of tendering. The British Accounting Review 30, 261–289.
Beatty, R., 1993. The economic determinants of auditor compensation in the initial public offerings market. Journal of Accounting Research 31, 294–302.
Becker, C.L., DeFond, M.L., Jiambalvo, J., Subramanyam, K.R., 1998. The effect of audit quality on earnings management. Contemporary Accounting Research 15, 1–24.
Bell, T.B., Landsman, W.R., Shackelford, D., 2001. Auditors' perceived business risk and audit fees: analysis and evidence. Journal of Accounting Research 39, 35–43.
Bertrand, M., Duflo, E., Mullainathan, S., 2004. How much should we trust differences-in-differences estimates? The Quarterly Journal of Economics 119, 249–275.
Chan, D., Pae, S., 1998. An analysis of the economic consequences of the proportionate liability rule. Contemporary Accounting Research 15, 457–480.
Chaney, P., Philipich, K., 2002. Shredded reputation: the cost of audit failure. Journal of Accounting Research 40, 1221–1245.
Chen, C.Y., Lin, C.J., Lin, Y.C., 2008. Audit partner tenure, audit firm tenure, and discretionary accruals: Does long auditor tenure impair earnings quality. Contemporary Accounting Research 25, 415–445.

Choi, J.H., Doogar, R.K., Ganguly, A.R., 2004. The riskiness of large audit firm client portfolios and changes in audit liability regimes: evidence from the US audit market. Contemporary Accounting Research 21, 747–785.
Choi, J.H., Kim, J-B., Liu, X., Simunic, D.A., 2008. Audit pricing, legal liability regimes, and Big 4 premiums: theory and cross-country evidence. Contemporary Accounting Research 25, 55–100.
Choi, J.H., Kim, J-B., Liu, X., Simunic, D.A., 2009. Cross-listing audit fee premiums: theory and evidence. The Accounting Review 84, 1429–1463.
Cousins, J., Mitchell, A., Sikka, P., 1999. Auditor liability: the other side of the debate. Critical Perspectives on Accounting 10, 283–312.
Darrough, M., 1993. Disclosure policy and competition: Cournot vs. Bertrand. The Accounting Review 68, 534–562.
Dechow, P., Dichev, I., 2002. The quality of accruals and earnings: the role of accrual estimation errors. The Accounting Review 77, 35–59.
DeFond, M.L., 2004. Discussion of "The riskiness of large audit firm client portfolios and changes in audit liability regimes: evidence from the US audit market". Contemporary Accounting Research 21, 787–794.
DeFond, M.L., Jiambalvo, J., 1993. Factors related to auditor–client disagreements over income-increasing accounting methods. Contemporary Accounting Research 9, 415–431.
DeFond, M., Raghunandan, K., Subramanyarn, K.R., 2002. Do non-audit service fees impair auditor independence? Evidence from going-concern audit opinions. Journal of Accounting Research 40, 1247–1274.
Dye, R., 1993. Auditing standards, legal liability, and auditor wealth. Journal of Political Economy 101, 887–914.
Dye, R., 1995. Incorporation and the audit market. Journal of Accounting and Economics 19, 75–114.
Feltham, G., Xie, J., 1992. Voluntary financial disclosure in an entry game with continua of type. Contemporary Accounting Research 9, 46–80.
Firth, M., Mo, P., Wong, R., 2012. Auditors' organizational form, legal liability, and reporting conservatism: evidence from China. Contemporary Accounting Research 29 (1), 57–93.
Francis, J.R., Maydew, E.L., Sparks, H.C., 1999. The role of Big 6 auditors in the credible reporting of accruals. Auditing-a Journal of Practice & Theory 18, 17–34.
Francis, J.R., Krishnan, J., 2003. Evidence on auditor risk-management strategies before and after the Private Securities Litigation Reform Act of 1995. Asia-Pacific Journal of Accounting and Economics 9, 135–157.
Francis, J.R., Reichelt, K., Wang, D., 2005. The pricing of national and city-specific reputations for industry expertise in the US audit market. The Accounting Review 80, 113–136.
Geiger, M.A., Raghunandan, K., Rama, D.V., 2006. Auditor decision-making in different litigation environments: the Private Securities Litigation Reform Act, audit reports and audit firm size. Journal of Accounting and Public Policy 25, 332–353.
Gigler, F., 1994. Self-enforcing voluntary disclosures. Journal of Accounting Research 32, 224–241.
Hay, D.C., Knechel, W.R., Wong, N., 2006. Audit fees: a meta-analysis of the effect of supply and demand attributes. Contemporary Accounting Research 23, 141–191.
Hay, D.C., Knechel, W.R., 2010. The effects of advertising and solicitation on audit fees. Journal of Accounting and Public Policy 29, 60–81.
Hribar, P., Nichols, D.C., 2007. The use of unsigned earnings quality measures in tests of earnings management. Journal of Accounting Research 45, 1017–1053.
ICAEW, 1994. Auditor liability. Technical Release for the Institute of Chartered Accountants of England and Wales, London.
Jones, J., 1991. Earnings management during import relief investigations. Journal of Accounting Research 29, 193–228.
Kinney Jr., W.R., Martin, R.D., 1994. Does auditing reduce bias in financial reporting? A review of audit-related adjustment studies. Auditing: A Journal of Practice and Theory 13, 151–156.
Larcker, D., Rusticus, T., 2010. On the use of instrumental variables in accounting research. Journal of Accounting and Economics 49, 186–205.
Lee, H.Y., Mande, V., 2003. The effect of the Private Securities Reform Act of 1995 on accounting discretion of client managers of Big-6 and non-Big 6 auditors. Auditing: A Journal of Practice and Theory 22, 93–108.
Lennox, C., Pittman, J., 2010. Big Five audits and accounting fraud. Contemporary Accounting Research 27, 209–247.
London Economics, 2006. Study on the economic impact of auditors' liability regimes. Final Report to EC-DG Internal Market and Services, Brussels.
Mayhew, B.W., 2001. Auditor reputation building. Journal of Accounting Research 39 (3), 599–617.
Moizer, P., Hansford-Smith, L., 1998. UK auditor liability: an insurable risk? International Journal of Auditing 2, 197–213.
Morgan, J., Stocken, P., 1998. The effects of business risk on audit pricing. Review of Accounting Studies 3, 365–385.
Muzatko, S.R., Johnstone, K.M., Mayhew, B.W., Rittenberg, L.E., 2004. An empirical investigation of IPO underpricing and the change to the LLP organization of audit firms. Auditing: A Journal of Practice and Theory 23 (1), 53–67.
Napier, C., 1998. Intersections of law and accountancy: unlimited auditor liability in the United Kingdom. Accounting, Organizations and Society 23, 105–128.
Nelson, M., Elliott, J., Tarpley, R., 2002. Evidence from auditors about managers' and auditors' earnings management decisions. The Accounting Review 77, 175–202.
Oxera, 2006. Competition and choice in the UK audit market. Report prepared for Department of Trade and Industry and the Financial Reporting Council, Oxera Consulting, April 2006.
Palmrose, Z-V., 1988. An analysis of auditor litigation and audit service quality. The Accounting Review 63, 55–73.
Pratt, J., Stice, J.D., 1994. The effects of client characteristics on auditor litigation risk judgments, required audit evidence, and recommended fees. The Accounting Review 69, 639–656.
Seetharaman, A., Gul, F.A., Lynn, S.G., 2002. Litigation risk and audit fees: Evidence from UK firms cross-listed on US markets. Journal of Accounting and Economics 33, 91–115.
Select Committee on Trade and Industry, 1998. Draft Limited Liability Partnership Bill (Fourth Report). House of Commons, 1 December 1998.
Select Committee on Economic Affairs, 2011. Auditors: Market Concentration and Their Role. House of Lords, 30 March 2011.
Skinner, Douglas J., Srinivasan, Suraj., 2012. Audit quality and auditor reputation: evidence from Japan. Accounting Review, in press. http://dx.doi.org.ezlibproxy1.ntu.edu.sg/10.2308/accr-50198.
St. Pierre, K., Anderson, J.A., 1984. An analysis of the factors associated with lawsuits against accountants. The Accounting Review 59, 242–263.
Venkataraman, R., Weber, J.P., Willenborg, M., 2008. Litigation risk, audit quality, and audit fees: evidence from initial public offerings. The Accounting Review 83, 1315–1345.
Verrecchia, R.E., 1983. Discretionary disclosure. Journal of Accounting and Economics 5, 179–194.
Weber, J., Willenborg, M., Zhang, J., 2008. Does auditor reputation matter? The case of KPMG Germany and ComROAD AG. Journal of Accounting Research 46, 941–972.
Willenborg, M., 1999. Empirical analysis of the economic demand for auditing in the initial public offerings market. Journal of Accounting Research 37, 225–238.
Wingate, M., 1997. An examination of cultural influence on audit environments. Research in Accounting Regulation, 129–148.