科技部補助專題研究計畫成果報告
期末報告

聯貸市場與產業審計專家：初級與次級市場的證據

計 畫 類 別 ：個別型計畫
計 畫 編 號 ：MOST 102-2410-H-004-025-
執 行 期 間 ：102 年 08 月 01 日至 103 年 10 月 31 日
執 行 單 位 ：國立政治大學會計學系

計 畫 主 持 人 ：金成隆

計畫參與人員：博士班研究生-兼任助理人員：劉佩怡

報 告 附 件 ：移地研究心得報告
出席國際會議研究心得報告及發表論文

處 理 方 式 ：
1.公開資訊：本計畫涉及專利或其他智慧財產權，1 年後可公開查詢
2.「本研究」是否已有嚴重損及公共利益之發現：否
3.「本報告」是否建議提供政府單位施政參考：否

中 華 民 國 103 年 10 月 22 日

中文摘要： The PCAOB has recently issued two concept releases that seek feedback on a proposal which requires audit firms to disclose the name of the engagement partner in the audit report. This paper provides evidence about the efficacy of this proposal by examining whether industry audit experts at partner level are valued by stakeholders — lenders in the syndicate loan market. Our paper is based on the unique data in Taiwan, where the audit report is issued in the name of two signing auditors, as well as the audit firm. Prior research suggests that lead arrangers prefer to hold a lower share of the loan and to have a larger number of other lenders. First, we find no evidence that Big 4 audit firms are related to the lower share of a syndicated loan held by the lead arrangers, after controlling for industry audit expertise; we also find no evidence that firm-level expertise alone is associated with the share held by lead arrangers. However, we do find that partner-level industry audit experts, either alone or in conjunction with a firm-level industry audit expert, are associated with the lower share of syndicated loans held by lead arrangers. Second, we find that the number of lenders in general (or the number of foreign lenders in particular) in a loan is the largest when borrowers retain industry audit experts at both the firm- and partner-levels.

中文關鍵詞： partner-level audit expertise, firm-level audit expertise, syndicated loan, ownership structure

英文摘要：

英文關鍵詞：

Industry Audit Experts and Ownership Structure in the Syndicated Loan Market: At the Firm and Partner levels

Abstract

The PCAOB has recently issued two concept releases that seek feedback on a proposal which requires audit firms to disclose the name of the engagement partner in the audit report. This paper provides evidence about the efficacy of this proposal by examining whether industry audit experts at partner level are valued by stakeholders — lenders in the syndicate loan market. Our paper is based on the unique data in Taiwan, where the audit report is issued in the name of two signing auditors, as well as the audit firm. Prior research suggests that lead arrangers prefer to hold a lower share of the loan and to have a larger number of other lenders. First, we find no evidence that Big 4 audit firms are related to the lower share of a syndicated loan held by the lead arrangers, after controlling for industry audit expertise; we also find no evidence that firm-level expertise *alone* is associated with the share held by lead arrangers. However, we do find that partner-level industry audit experts, either alone or in conjunction with a firm-level industry audit expert, are associated with the lower share of syndicated loans held by lead arrangers. Second, we find that the number of lenders in general (or the number of foreign lenders in particular) in a loan is the largest when borrowers retain industry audit experts at both the firm- and partner-levels.

Keywords: partner-level audit expertise, firm-level audit expertise, syndicated loan, ownership structure

1. Introduction

In 2009 and 2011, the PCAOB issued two successive releases that seek feedback on the proposal that requires audit firms to disclose the name of engagement partner in standard audit report.[1] The rationale behind the PCAOB's proposal is that the signature and disclosure requirements can increase transparency and audit partner accountability and, in turn, result in enhanced audit quality. In the past several years, this emerging issue has drawn considerable attention from accounting researchers. For example, Chin and Chi (2009) explore the effect of industry audit expertise at the partner level on audit quality. Carcello and Li (2013) find that, in the first year of the introduction of a signature requirement, U.K. firms have relatively higher audit quality, proxied by abnormal accruals, the propensity to meet earnings thresholds, the incidence of qualified audit opinions, and earnings informativeness. To understand the economic consequences of this requirement further, this paper explores whether industry audit expertise at the partner level is valued by stakeholders, i.e. lenders in the syndicated loan market, which has become the largest source of worldwide corporate financing (Ivashina, 2009).[2] Specifically, we examine whether the ownership structure in the syndicated loan market is associated with industry audit experts at the individual partner level.

The first question to be addressed is whether industry audit expertise influences the share of a syndicated loan retained by the lead arranger and whether the differential share is driven, at least to some degree, by partner-level expertise. In the

[1] Concept Release No. 20009-005 and Concept Release No. 2011-007.

[2] Global syndicated lending has grown strongly from the beginning of the 1990s to date. For example, signings of new loans totaled $1.6 trillion in 2003, more than three times the 1993 amount (Altunbaş and Gadanecz, 2004). In the U.S., over the past decade, there have been $780 billion in new debt securities and only $2 billion for equities (Graham et al., 2008). According to the American Banker, syndicated lending generates most underwriting revenue for the financial sector (about 51% of total U.S. corporate finance) (Weidner, 2000). In Taiwan, the amount of syndicated loans is about 23% of total loans; in addition, according to a survey by Thomson Reuters, the amount of Taiwan syndicated loans was about 27.95% of total syndicated loans in the Asia-Pacific area in 2010, which is much larger than that in other Asia-Pacific countries or areas.

process of a syndicate loan, which involve two or more parties lending to a single borrower, information asymmetries can exist between the lenders and the borrower, as well as among the lenders themselves (Sufi, 2007). The presence of these information asymmetries between contracting parties shapes the equilibrium ownership structure of the loan syndicate itself, including the proportion of a loan held by the lead arrangers and the number of participating lenders (Sufi, 2007; Ball et al., 2008). The extant literature (Kim and Song, 2011) finds that high-quality auditors (i.e., Big auditors) can play a critical role in mitigating information asymmetries among contracting parties and, in turn, lead to a lower demand for the lead arrangers to hold a higher percentage of a loan.

However, public perceptions of audit quality and actual audit quality are not homogeneous within the audit firm or within the practice office (DeAngelo 1981; Balsam et al., 2003; Krishnan, 2003; Reichelt and Wang, 2010).[3] There are two distinct views of conceptualizing the operation of a Big 4 audit firm (Ferguson et al., 2003; Francis and Krishnan, 1999): *audit firm* level and *office* level. The empirical studies provide evidence consistent with the latter perspective (e.g., Ferguson et al., 2003; Francis and Krishnan, 1999; Francis et al., 2005). More recently, the argument for office-level perspective has been extended to partner-level industry expertise. Zerni (2012) finds that audit fees are the highest for audit engagements where auditors are industry experts at both the firm and partner levels. Chi and Chin (2011) find that differential audit quality due to industry audit experts is primarily driven by a combination of both firm- and partner-level expertise.

In this paper, we examine whether the proportion of loans retained by lead arrangers is associated with industry audit experts and whether the lower proportion

[3] For example, firms retaining specialist auditors tend to experience higher ERC (Balsam et al., 2003), lower discretionary accruals (Myers et al., 2005), higher client satisfaction (Behn et al., 1999), and higher disclosure levels (Dunn and Mayhew, 2004).

of loans retained by lead arrangers is primarily attributable to audit expertise at the firm level, partner level, or a combination of both — separate and distinct from one another.[4] To address these issues, we use a unique sample of listed firms in Taiwan to test our hypotheses. The audit report in Taiwan contains two signing auditors' names as well as the audit firm's name, in contrast to the U.S., where the audit report only contains the audit firm's name.

The second question to be addressed is whether more lenders are attracted to loans involving borrowers who appoint industry audit experts than those involving borrowers who appoint non-experts. To the extent that industry audit expertise mitigates information asymmetries faced by lenders participating in a loan syndicate, more lenders are willing to participate in a loan syndicate. Thus, following the same logic, we further predict that there are more lenders for a syndicated loan when a borrower appoints industry audit experts, and there are the most lenders when a borrower appoints auditors who are both firm- and partner-level industry audit experts.

The main findings support our predictions that industry audit expertise is valued by lead arrangers and other lenders of syndicated loans and therefore, influences the ownership structure of the loan syndicate. For lead arranger analyses, we find that after controlling for industry audit expertise, there is no difference in ownership structure of syndicated loans between borrowers audited by Big 4 audit firms and borrowers audited by non-Big 4 audit firms. This result is inconsistent with Kim and Song (2011) which document that the share held by the lead arrangers is lower for

[4] Following Chi and Chin (2011), we focus on industry expertise, measured at firm-level and partner-level, rather than office-level. The city offices in Taiwan are mainly located in several cities (i.e., Taipei, Hsinchu, Taichung, Kaoshiung, Tainan), which are very close to one another, as the area of Taiwan's territory is small. Besides, the signing auditors are mainly concentrated in the Taipei office. Since there is a lack of publicly available data on city-level auditors, coupled with the aforementioned features of city offices in Taiwan, this paper does not explore the association between industry expertise at the office (city)-specific level and audit quality.

borrowers audited by Big 4 audit firms than borrowers audited by non-Big 4 audit firms. Therefore, our findings suggest that the effect of Big 4 audit firms on the ownership structure of the syndicated loans is driven by industry audit expertise. Second, we find that the share of a syndicated loan retained by the lead arrangers is smaller when the borrower appoints industry audit experts than when the borrower employs non-experts. Further analyses indicate that partner-level industry audit experts, either alone or in conjunction with a firm-level industry audit expert, are associated with lower shares held by lead arrangers. Interestingly, we find no evidence that firm-level experts *alone* are associated with the share of loan held by lead arrangers; however, firm-level expertise adds something over and above the effects of the partner-level expertise alone. In other words, the differential share of loan held by lead arrangers is driven mainly by a combination of firm-level and other-level expertise.

In analyses of the number of lenders, we find similar conclusions, i.e. the incentive for lenders to participate in the loan is higher for firms audited by industry experts than for firms audited by non-experts; in addition, the number of participating lenders is larger when borrowers retain industry audit experts at both firm-level and partner-levels.

Further analyses also indicate that the number of foreign lenders in a loan is larger when a borrower retains industry audit experts, and is the largest when borrowers are audited by industry experts at both firm-level and partner-level. In addition, we find that the loan amount is the largest when the borrowers appoint industry audit experts at both the firm- and partner-levels.

Our findings make several important contributions to the literature. First, this study contributes to the intense debate on the PCAOB proposals which require audit

firm to disclose the name of partners in audit reports. In contrast to prior studies on the effect of partner-level industry expertise on audit fees (Zerni, 2012) and audit quality (Chi and Chin, 2011), we provide further supporting evidence that partner-level industry expertise is valued by stakeholders, i.e. lead arrangers and other lenders, consistent with the PCAOB's argument that the signature and disclosure requirements increase transparency regarding the engagement partner's identity and, in turn, create an opportunity for the general public (e.g., lenders) to evaluate the engagement partner's experience and track record (PCAOB 2011, 6).

Second, this paper contributes to the literature on industry audit experts by documenting the economic consequence of auditor expertise with respect to the ownership structure of syndicated loans. We demonstrate, in the context of the syndicated loan market, that industry expertise plays an important role when lenders structure the ownership of syndicated loans. Next, we find that for syndicated loans, differential ownership structure due to industry experts is driven mainly by a combination of firm-level and partner-level expertise, but not firm-level expertise alone. The results suggest that partner-level experts can strengthen the effects of firm-level experts alone on the ownership structure of syndicated loans, and *vice versa*.

Finally, our work contributes to the literature on syndicated loans as well. Over the past two decades, the syndicate loan market has become the largest source of corporate financing (Ivashina, 2009). The results suggest that industry audit expertise is viewed as a useful mechanism that mitigates information asymmetry problems faced by lenders in a syndicated loan. As a result, the equilibrium ownership structure of syndicated loans is affected by industry audit experts. In other words, we find that certification by auditors extends to the financial reporting quality of borrowers in the

syndicated market through industry audit experts at both the firm and partner levels.

Our paper differs from Kim and Song (2011) in several ways. First, they find that the share of a syndicated loan retained by the lead arranger is smaller for borrowers with Big 4 auditors than for those with non-Big 4 auditors. However, our paper finds that after controlling for industry audit experts, there is no difference between the two groups. Second, while they focus on the effect of Big 4/non-Big 4 firms, we further explore the association between the ownership structure of syndicated loans and industry audit experts. Third, and more importantly, we examine whether the association between the share held by lead arrangers and industry experts is driven by firm-level experts, partner's experts, or a combination of both. Fourth, we also explore the association between the number of other lenders in general (foreign lenders in particular) and industry audit experts. Finally, and also more importantly, this paper addresses the call of the PCAOB's proposal by documenting the merits of the signature and disclosure requirements in terms of lower share held by lead arrangers.

The remainder of this paper is organized as follows. Section 2 describes the institutional background for our study and reviews relevant literature. In Section 3, we describe our research design. Section 4 describes our sample and data sources. Section 5 reveals the empirical results, and Sections 6 and 7 present both further and robustness analyses. Section 8 presents our conclusions.

2. Background, literature review and hypothesis development

2.1 Institutional background

In the United States the audit report of a publicly listed company bears the signature of the audit firm and indicates the city in which the audit firm is located, but does not include the partner's identity. In 2009 and 2011, the PCAOB issued two

proposals which require audit firms to disclose the name of the engagement partner in audit reports. The PCAOB contends that this requirement will lead to enhanced audit quality due to increased engagement partner accountability and improved transparency of the audit process (King et al., 2012).

In contrast, to enhance the credibility of audit quality, the Taiwanese Securities and Futures Bureau (the TSFB, which is similar to the SEC in the U.S.) amended the Certification of Financial Reports of Public Companies by Certified Public Accountants (*CGAAC*) law in 1982 and mandated that after 1983 the financial reports of a listed company must be jointly audited and signed by two practicing auditors as well as by the audit firm.[5] Because auditors, including the two signing partners and the audit firm, co-sign the same audit report, they are jointly held liable for potential civil liability, administrative sanctions arising from fraudulent financial statements, as well as criminal responsibilities related to fraudulent financial statements.

This unique setting provides us with an opportunity to examine whether industry audit experts at the partner level is valued by stakeholders, i.e. the lenders. The results shed light on the importance/value of the partner signature, a very timely topic currently being considered by the PACOB and other audit standard setters.

2.2 Literature

Industry audit experts

Firms with an industry expertise typically have the incentive and the ability to provide high-quality audit services.[6] Recent studies further indicate that the argument

[5]Additionally, Taiwanese *Statement of Auditing Standards No. 33*, "Auditor Report on Financial Statements", also indicates that audit reports be signed in the name of two independent auditors as well as in the name of the audit firm.

[6] Prior studies reveal that industry audit experts at the firm-level are more likely to issue a going-concern audit opinion (Lim and Tan, 2008), and the clients will disclose information of higher quality (Dunn and Mayhew, 2004). In addition, accruals are smaller for clients of industry audit experts at the firm level (Balsam et al., 2003; Krisnan, 2003). These results are in line with the argument that positive synergies arise when audit firms capture industry expertise through knowledge sharing practices (Reichelt and Wang, 2010).

for a firm-level perspective might be extended to a partner-level perspective. First, signing partners plan and implement the engagement, and ultimately determine the type of audit report to be issued to the client (Ferguson et al., 2003). As a result, signing partner-level experts thus might be expected to have the most critical and direct effect on audit quality, and constitute a more appropriate unit of analysis relative to firm-level specialists (Carcello and Nagy, 2004). Next, industry audit expertise is uniquely possessed by individual partners through deep personal knowledge of local clients; therefore, it is difficult for partners to share knowledge with other partners within an audit firm (Vera-Munoz et al., 2006).[7] Third, an individual partner's expertise is also tied to the innate ability of each individual partner (Bonner and Levis, 1990; Libby and Tan, 1994).

Finally, the PCAOB has recently argued that the signature and disclosure requirement will result in enhanced audit quality due to improved transparency of the audit process and increased engagement partner accountability (PCAOB 2009, 2011; King et al., 2012). In addition, the PCAOB also argued that increased transparency regarding the partner's identity will create an opportunity for the general public (such as lenders) to evaluate the engagement partner's experience and track record. For these reasons, individual partner-level experts are expected to have the most direct critical effect on audit quality, and are, thus, a more appropriate unit of analysis relative to firm- level expertise.

Using Swedish data, Zerni (2012) finds that part of an auditor's deep expertise is

[7] There are four reasons why it is difficult for individual partners to share knowledge with other partners within an practice office or audit firm (Vera-Munoz et al., 2006). First, a large proportion of knowledge in audit firms is difficult to document, and identifying a firm's best practices is not easy for partners. Second, even if a firm manages to collect and codify an extensive array of knowledge, partners still need to sort through the available databases and to exercise judgment about which pieces are applicable to the case at hand. Third, evaluation apprehension is greater when knowledge is freely shared via collective database-related technologies due to the number of people with access to the knowledge. Lastly, knowledge sharing using IT-based expert knowledge systems is not automatically embraced by everyone.

not transferable across audit partners within an audit firm, but is instead inseparably tied to the individual audit partner's private human capital. Using Taiwan data, Chi and Chin (2011) suggest that differential audit quality due to industry expertise is primarily attributable to a combination of firm-level and partner-level experts. These archival studies suggest that engagement partner characteristics matter in regard to audit quality.

Ownership structure of syndicated loans

Syndicated loans are loans provided to a borrowing firm by two or more lenders. In the beginning of constructing a loan contract, the lead arranger signs a preliminary loan mandate with the borrower that specifies covenants, fees, collateral, a loan amount and a range for the interest rate. Once the mandate is signed, the lead arranger then turns to other potential lenders to fund part of the loan. At the same time, the lead arranger provides potential lenders with an information memo about the credibility of the borrower-supplied information and the borrower's credit quality. The lead arranger typically sets up a relationship with the borrower, and *ex ante* possesses private information about the borrower unknown to other syndicated lenders. Therefore, this information asymmetry between the lead arranger and other lenders creates an adverse selection problem (Sufi, 2007; Ball et al., 2008). After signing a loan agreement, the lead arrangers typically are responsible for exerting due diligence and monitoring efforts. However, the unobservability of *ex post* monitoring efforts creates potential shirking and leads to a moral hazard problem (Holmstrom, 1979; Sufi, 2007; Ball et al., 2008).

Recent literature on finance explores the effect of information transparency and lead arrangers' reputation on the ownership structure of syndicated loan deals. Dennis and Mullineaux (2000) indicate that the extent to which a loan can be syndicated

increases and lead arrangers hold a smaller portion of a syndicated loan as information about the borrower becomes more transparent and as the syndicate's lead manager becomes more reputable. Lee and Mullineaux (2004) find that syndicates are smaller and more concentrated when there is less information available about the borrower and when credit risk is relatively high; they also find that syndicates are larger and more diffuse when the arranging bank is more reputable.

Sufi (2007) indicates that the lead bank retains a larger share of the syndicated loan and forms a more concentrated syndicate for the borrower with more severe information asymmetry issues. Ball et al. (2008) reveal that when a borrower's accounting information possesses higher debt-contracting value (DCV), information asymmetry between the lead arranger and other syndicate participants is lower, allowing lead arrangers to hold a smaller proportion of new loan deals. Graham et al., (2008) further find that after a restatement, the number of lenders per loan declines. Finally, Kim and Song (2011) find that the percentage of a syndicated loan retained by the lead arrangers is smaller for the loan to borrowers with Big 4 auditors than for the loan to borrowers with non-Big 4 auditors.

Building on the aforementioned studies, this paper investigates whether the share of a syndicated loan retained by the lead arranger and the incentive for other potential lenders to participate in a loan are driven by firm-level experts, partner-level experts, or a combination of both.

3. *Research Hypotheses*

In the context of a syndicated loan, information asymmetries exist between a borrower and lenders, as well as among lenders themselves. Since the arranger is the only bank to negotiate with the borrower, it is typically the best informed bank regarding the borrowing firm's financial status. Thus, to mitigate these information

problems, the lead arrangers tend to be required to retain a relatively larger proportion of loan ownership (Sufi, 2007; Ball, et al., 2008). While auditing plays a critical role in mitigating information asymmetries among contracting parties, Kim and Song (2011) indicate that lead arrangers hold a lower share of the loan to borrowers audited by Big 4 audit firms than to borrowers audited by non-Big 4 audit firms.

However, most U.S. and Taiwanese listed companies are audited by the Big 4 firms.[8] Therefore, another line of research focuses on industry audit expertise, and finds that industry audit experts provide a higher-quality audit than non-experts do (e.g., Balsam et al, 2003; Kirshnan, 2003). In addition, Reichelt and Wang (2010) further find that joint national- and city-specific industry specialists have the highest audit quality. In recent papers, there is some evidence that differential audit fees and audit quality due to the Big 4 auditors' industry expertise is primarily driven by a combination of both partner-level and audit-firm-level experts (Zerni, 2012; Chin and Chi, 2009). The PCAOB also indicates that this requirement will lead to enhanced audit quality due to improved transparency of the audit process and increased engagement partner accountability.

Based on the above arguments, we predict that in the context of syndicated loans the share of syndicate loan retained by lead arrangers is smaller when a borrower retains industry audit experts. In addition, we further hypothesize that the proportion of a syndicated loan retained by the lead arrangers is the smallest when a borrower hires auditors that are industry experts at *both* the partner-level and the firm-level. As a result, we present our first hypotheses:

H1a: *The share of a syndicated loan held by the lead arranger(s) is lower for borrowers retaining industry audit experts than for borrowers retaining non-industry audit experts.*

[8] Our descriptive statistics indicate that about 85% of our sample are audited by the Big 4 auditors.

H1b: *The share of a syndicated loan held by the lead arranger(s) is the lowest for borrowers retaining auditors who are both firm-level and partner-level experts.*

The loan syndicate literature shows that firms with a high probability of financial distress will borrow from fewer lenders (Bolton and Scharfstein, 1996; Lee and Mullineaux, 2004). A possible reason for this result is that a syndicate structure with fewer lenders facilitates renegotiation and collective decision-making, and thus enhances the prospects of successful loan restructuring in the event of financial distress (Graham, et al., 2008). The literature also suggests that loans to borrowers with information problems involve fewer lenders (Sufi, 2007). Dennis and Mullineaux (2000) indicate that lenders could decline to provide loans to borrowers whose information is less transparent and, thus, results in greater information risk; in addition, when there is limited information about a borrower, fewer lenders help to reduce the "free rider" effect in information gathering and monitoring.

As mentioned above, industry audit experts have the incentive and ability to provide high quality audit services; differential audit quality is driven by a combination of both partner-level and audit-firm-level experts. As a result, we argue that there is a positive association between the number of lenders and industry audit experts; in addition, this association is the strongest when borrowers retain industry audit experts at both the firm level and partner level. This leads to the following hypotheses:

H2a: *The number of lenders in a syndicated loan is larger when borrowers retain industry audit experts than when borrowers retain non-industry experts.*

H2b: *The number of lenders in a syndicated loan is the largest when borrowers retain auditors who are both firm-level and partner-level industry experts.*

4. Research design, sample selection

4.1 Sample and data sources

Our initial sample consists of all publicly traded nonfinancial firms in Taiwan that have syndicated loan data in the Loan Pricing Company (LPC) *Dealscan* database for the 19-year period, 1992–2010. The LPC *Dealscan* database is an online database that contains a variety of historical bank loan data and other financial arrangements collected from the SEC filings and information self-reported by banks. The loan data in the *Dealscan* database are compiled for each deal and facility.[9] Each deal, i.e. a loan contract between a borrower and bank(s) at a specific date, may have only one facility or have a package of several facilities. Following prior studies (Bharath et al., 2008; Graham et al., 2008; Costello and Witternberg-Moerman, 2011; Kim et al., 2011), we conduct our analyses at the facility level since many loan characteristics and loan spreads vary across facilities. Financial information data, audit firm data and signing auditors' names data were obtained from the *Taiwan Economic Journal* (TEJ) Database.

We require that all relevant annual accounting data be available in the fiscal year immediately before the initiation of syndicated loan deals. After merging bank loan data and financial statement data, we obtain a final sample of 852 and 1,626 facility-years for lead retention and the number of lenders analyses, respectively. Panel A of Table 1 shows the sample selection process.[10]

4.2 Descriptive statistics

Table 1, Panel B, presents the number and percentage of industry audit experts at

[9] The actual syndicated loan contract is drafted at the deal level, and all lenders and covenants are listed together on this contract. Because loan terms of the facilities can vary within a syndicated loan deal, a deal typically includes facilities with different price, type, or maturities (Houston et al., 2007).

[10] Similar to the current study, Ivashina (2009) indicates that the loan share retained by the lead bank is available in only 30% of cases. According to DealScan, lead retention data are collected from credit agreements filed with SEC; however, this information is not necessarily reported. Therefore, the lead retention sample is limited (Ivashina, 2009). In fact, this problem is common among studies on lead retention (e.g., Ball et al., 2008; Kim and Song, 2011).

the firm- and partner-levels. It can be seen that there is a very similar pattern of distribution across these two samples. Columns (1) and (2) show the distribution of lead retention sample. Out of our sample of 852, 297 (34.86%) firm years are audited by industry experts at the firm level, and 159 (18.66%) firm years are audited by industry experts at the partner firm level. The number (percentage) of industry experts at the firm level *alone* and partner level *alone* is 218 and 80 (25.59% and 9.39%), respectively. Finally, the percentage (number) of industry experts at both the firm and partner levels is 9.27% (79).

Columns (3) and (4) demonstrate the distribution of industry audit experts among the sample of the lender numbers. The findings indicate that the percentage of industry audit experts at the firm and partner levels is 31.73% and 13.78%, respectively; the percentage of industry audit experts at the firm level alone and partner level alone is 24.23% and 6.27%, respectively; the percentage of industry audit experts at both the firm and partner levels is 7.5%.[11]

[Insert Table 1 here]

4.3. Measure of auditor industry experts

Industry audit experts at firm level

Following and extending prior studies (Gramling and Stone, 2001; Balsam et al., 2003; Krishnan, 2003; Chin and Chi, 2009), we use auditor market shares as a proxy for industry audit expertise at both the individual partner and audit firm levels. In line with prior studies (Balsam et al., 2003), we use the number of clients as the base.

[11] In addition, untabulated results also indicate that partner level industry experts are distributed as follows: Pricewaterhouse Coopers (PWC) has 53 of 224, 23.66%, industry experts; Deloitte Touche (DT) has 93 of 224, 41.52%, industry experts; Emst & Young (EY) has 42 of 224, 18.75%, industry experts; and KPMG has 36 of 224, 16.07%, industry experts.

Such a base avoids a bias toward large clients that is implied by using sales or asset as the base. Thus, a situation where an auditor has a number of small clients in an industry and has developed the knowledge base to be a specialist is captured better by a number-of-clients-based measure than by a sales-based or asset-based measure.[12]

We first rank audit firms in each industry by their market shares and define the audit firm as an expert at the firm-level in an industry if the audit firm is the largest supplier in the industry. Next, we set a dummy variable (*EXPERT_FIRM*) which equals one, if the incumbent auditor of a borrower for the fiscal year immediately before the initiation of syndicated loan deals (year t-1) is one of industry audit experts, and zero otherwise.

Industry audit experts at partner level

Similar to the measure of firm-level auditor experts, we measure market share using the total clients audited by a lead auditor within an industry, and then rank lead auditors in each industry by their market share, and define the lead auditor as an expert at the partner level in an industry if the lead auditor is the largest supplier in the industry.[13] We set a dummy variable (*EXPERT_PARTNER*) which equals one if the incumbent lead auditor of a borrower for the fiscal year immediately before the initiation of syndicated loan deal (year t-1) is one of industry audit experts, and zero

[12] Following Gramling and Stone (2001) and Krishnan (2003), we also use portfolio shares as an alternate proxy for auditor expertise to minimize measurement error and to enhance the reliability of our findings. Krishnan (2003) reports that portfolio shares and industry market shares are highly correlated, but industry market shares may be a messier measure of an auditor's industry expertise. For example, industry market shares exhibit more variation compared to the portfolio shares measured in a year-by-year comparison. Furthermore, industries that are identified as an auditor's specialty, based on the portfolio shares measure, also identify an auditor's specialty based on the market shares measure, but not *vice versa*. We substitute the auditor portfolio shares measure for the industry market shares measure as independent variables and rerun the regressions. Untabulated results show that the results are qualitatively the same. The results are, thus, not driven by the different proxies for auditor industry expertise.

[13] It is difficult to distinguish between the lead and concurring partners from the publicly available audit reports in Taiwan. As a result, following prior studies (Chen et al., 2008; Liu and Wang, 2008), we define the lead partner out of the two signing auditors as the one with the longer tenure with the client. Prior studies find that auditors with more experience are better at recognizing irregular errors and detecting material misstatements than are less tenured auditors (e.g., Hammersley, 2006; Trotman et al., 2008; Kaplan et al.,2008).

otherwise.

To test our hypotheses, we classify industry audit experts into three groups and construct three indicator variables: (1) $EXPERT_{ALONE}^{FIRM}$ is coded one if the auditors are firm-level industry experts (*EXPERT_FIRM*=1), but not partner-level industry experts (*EXPERT_PARTNER*=0); (2) $EXPERT_{ALONE}^{PARTNER}$ is coded one if the auditors are individual partner-level industry experts (*EXPERT_PARTNER*=1), but not firm-level industry experts (*EXPERT_FIRM*=0); (3) $EXPERT^{BOTH}$ is coded one if the auditors are industry experts at both the firm level (*EXPERT_FIRM*=1) and the partner level (*EXPERT_PARTNER* =1). The default comparison is the auditors that are non-experts at either the firm- or individual- partner level.

4.4 Model for empirical analysis

4.4.1 The effect of industry audit experts on lead arranger

To evaluate the impact of auditor quality on the share of a syndicated loan held by the lead arrangers, we specify the following regression:

$$\begin{aligned} Lead\_retention_t = {} & \alpha_0 + \alpha_1 EXPERT_{ALONE,t-1}^{FIRM} + \alpha_2 EXPERT_{ALONE,t-1}^{PARTNER} + \alpha_3 EXPERT_{t-1}^{BOTH} + \\ & \alpha_4 Lender\_specific_{t-1} + \alpha_5 Loan\_specific_t + \alpha_6 Borrower\_specific_{t-1} + \varepsilon_t \end{aligned} \quad (1)$$

In the above equation, the dependent variable, *Lead_retention*, is the total percentage of a syndicated loan facility retained by the lead arranger(s). We are primarily concerned with the signs of the three auditor indicator variables. To be consistent with our first hypothesis H1a, we expect α_1, α_2 and α_3 to be negative. In addition, to be consistent with H1b, we expect α_3 to be less than α_1 and α_2.

To isolate the effect of auditor quality on *Lead_retention* from the effect of other factors, we include in Eq. (1) three different types of control variables that are specific

to loans, lenders and borrowers. The syndicate loan literature shows that several loan-specific characteristics are related to the ownership structure of syndicated loans (e.g., Dennis and Mullineaux, 2000; Lee and Mullineaux, 2004; Sufi, 2007; Ball et al., 2008). Built upon the findings of this literature, we include in Eq. (1) a set of loan-specific control variables, i.e. *Log loan_Size, Log_Maturity, Secured, Fin_covenant, Revolver* and *Term* to isolate potential effects of these loan characteristics from the effect of our test variables on our dependent variable, *Lead_retention.*

The *Log loan_size* variable is measured by the log of the dollar amount of each loan facility given to a borrower. The *Log_Maturity* variable is the log of loan maturity in months in each facility. Previous studies show that the proportion of syndicated loans retained by lead arrangers declines with the maturity of the loan (Dennis and Mullineaux, 2000; Lee and Mullineaux, 2004; Ball et al., 2008). *Secured* is an indicator variable that equals one if the loan facility is secured with collateral(s), and zero otherwise. *Fin_covenant* is a financial covenant index constructed by a dummy variable that equals one if at least one financial covenant is included in each loan deal, and zero otherwise.

We also control for loan types in our regressions. Revolver loans typically are used for funding short-term working capital needs, whereas term loans are used to fund long-term investment needs. In the case of revolver loans, a lender tends to offer a certain amount of credit to borrowers on demands; thus, revolver loans generally are more relationship based than term loans. *Revolver* is an indicator variable taking the value of one if the loan's type is a revolver loan, and zero otherwise. *Term* is an indicator variable taking the value of one if the loan's type is a term loan, and zero otherwise.

In order to control for the potential effect of the lead banks' reputation, we follow Kim and Song (2011) and include two control variables: *Top Lead* and *Prior relation*. *Top Lead* is an indicator variable that is equal to one if at least one of lead arrangers for a loan deal is a top-10 Taiwan lead arranger (in terms of loan volume) in the year before the initiation of the loan based on the loan data from LPC Dealscan, and zero otherwise. *Prior relation* is an indicator variable that equals one if the lead arranger for the current deal has been a lead arranger of previous deals for the same borrower, and zero otherwise.

We further control for a set of borrower-specific variables that are known to affect borrowers' credit quality and thus the loan ownership structure, i.e. (1) firm size (*Log TA*), the log of the book value of total assets, (2) debt ratio (*Leverage*), the sum of short-term debt and long-term debt scaled by total assets, and (3) *Big4*, an indicator variable that equals one if the incumbent auditor of a borrower for the fiscal year immediately before the initiation of syndicated loan facility (year t-1) is one of Big 4 auditors, and zero otherwise.

4.3.2 The effect of industry audit experts on participating lender(s):

To test our second hypothesis that industry audit experts has a positive effect on the number of lenders in a syndicated loan, we specify the following regression:

$$\begin{aligned} Number\_lender_t = {} & \beta_0 + \beta_1 EXPERT^{FIRM}_{ALONE,t-1} + \beta_2 EXPERT^{PARTNER}_{ALONE,t-1} + \beta_3 EXPERT^{BOTH}_{t-1} + \\ & \beta_4 Lender\_specific_{t-1} + \beta_5 Loan\_specific_t + \beta_6 Borrower\_specific_{t-1} + \varepsilon_t \end{aligned} \quad (2)$$

The dependent variable, *Number_lender*, is the total number of lenders in a syndicated loan facility. The test variables, $EXPERT^{FIRM}_{ALONE}$, $EXPERT^{PARTNER}_{ALONE}$ and $EXPERT^{BOTH}$ are as previously defined. Similarly, built upon the findings of prior studies on determinants

of the number of lenders in a syndicated loan (e.g., Lee and Mullineaue, 2004; Sufi, 2007; Costello and Wittenberg-Moerman, 2011), we also include three different types of control variables that are specific to loans, lenders and borrowers. All these control variables are also as defined in Equation (1). To be consistent with our second hypothesis H2a, we expect β_1, β_2 and β_3 to be positive. In addition, to be consistent with H2b, we expect β_3 to be greater than β_1 and β_2.

5. Regression results

5.1 The impact of industry audit experts on loan ownership retention

In this section, we examine the relative effectiveness of the firm-level and individual partner-level industry audit experts in reducing the proportion of a loan retained by lead arrangers. Table 2 shows the results from the regression analysis of loan ownership retention on auditor experts at the partner and the audit firm levels, as well as the control variables. In all regressions, we use a two-tailed test for the coefficients.

In Table 2, three models are reported for comparative benchmarking purposes. Model 1 codes the auditor test variable (i.e. *EXPERT_FIRM*) equal to one if the auditor is the firm-level industry specialist, and zero otherwise; it affords a comparison with the firm-level measure of industry experts. Model 2 codes the auditor test variable (i.e. *EXPERT_PARTNER*) equal to one if the individual-level auditor is an industry specialist, and zero otherwise. However, our main interest is in model 3, which reveals the results of estimating Equation (1), based on the specification of three industry expert indicator variables.

Model 1 explores firm-level industry audit experts alone. It reveals that the coefficient of *EXPERT_FIRM* is positive but insignificant, suggesting that relative to

non-experts, the firm-level audit experts are not associated with the lower proportion of a syndicated load by the lead arranger after controlling for other factors related to ownership structure of the loan. Model 2 analyzes industry audit experts at the partner level alone. It can be seen that there is a negative association between the individual-level industry audit experts and the proportion held by the lead arrangers at the 1% significant level. The results suggest that, on average, the lead arrangers' ownership of loans to borrowers with individual partner-level experts is about 3.8% lower than their ownership of loans to borrowers with non-experts. The results, coupled with the findings of Model 1, provide preliminary evidence that the differential proportion of a loan held by lead arrangers due to industry experts is driven primarily by the individual partner-level experts rather than firm-level industry experts.

Model 3 shows the empirical results for Equation (1) and is the main model of interest. As in Model 1, it reveals that the coefficient of $EXPERT_{ALONE}^{FIRM}$ is insignificant, indicating that the firm-level industry experts alone are indistinguishable from non-experts in terms of the share of a loan held by the lead arrangers. It also reveals that the coefficient on $EXPERT_{ALONE}^{PARTNER}$ is marginally significant at 10% level. The results imply that partner-level industry audit experts alone are marginally related to the share held by lead arrangers.

Model 3 further shows that the coefficient of $EXPERT^{BOTH}$, -3.7014, is negative and significant at the 1% level, as predicted, suggesting that the share of a syndicated loan held by the lead arrangers is lower on average when the auditors of borrowers are joint firm-level and partner-level industry experts. The results, in conjunction with the significant coefficient of $EXPERT_{ALONE}^{PARTNER}$, show that partner-level industry audit expert, either alone or in conjunction with a firm-level industry audit expert, is associated

with the lower share held by lead arrangers. F-tests show that there are significant differences in the coefficients for $EXPERT^{BOTH}$ and $EXPERT^{FIRM}_{ALONE}$ (F-value=7.05, p<0.000) and in coefficients for $EXPERT^{BOTH}$ and $EXPERT^{PARTNER}_{ALONE}$ (F-value=7.04, p<0.000). The results indicate that firm-level industry experts add something over and above the effects of partner-level industry experts alone. In other words, the results indicate that although firm-level industry experts are not directly related to the smaller share held by lead arrangers, they can indirectly lower the share held by lead arrangers via their combination with partner-level industry audit experts.

For these three regressions, the coefficients of the *Big4* are insignificant, inconsistent with a prior study (Kim and Song, 2011). The results here indicate that after controlling for industry audit experts, there is no association between Big 4 audit firms and the share of the loan held by lead arrangers. However, untabulated analyses indicate that after exclusion of the three proxies for industry audit experts, the coefficient of the Big 4 is significant and has the predicted sign, consistent with Kim and Song (2011). Therefore, these results indicate that the results by Kim and Song (2011) are likely driven by industry audit experts rather than the type of firm (Big 4).

5.2 The impact of industry experts on the number of lenders

In this section, we examine the relative effectiveness of firm-level and individual partner-level industry experts in enhancing the propensity of other lenders to participate in a syndicate loan. We use Poisson regression to examine this hypothesis. The results are shown in Table 3.

In Table 3, three models are reported for comparative benchmarking purposes. Model 1 analyzes the industry audit experts at the firm-level alone. It reveals that, consistent with our predictions, the coefficient of *EXPERT_FIRM* is positive and

significant at the 5% level, indicating that the number of other lenders is positively associated with the presence of industry experts at the firm-level. Model 2 analyzes industry audit experts at the partner-level alone. It can be seen that the coefficient of *EXPERT_PARTNER* is also positive and significant at the 1% level, suggesting that the number of other lenders is greater for loans to borrowers who retain industry audit experts at the partner level than for loans to those who do not. These results provide supporting evidence on H2a.

Model 3 reveals that the coefficients of $EXPERT_{ALONE}^{FIRM}$ and $EXPERT_{ALONE}^{PARTNER}$ are positive but insignificant, indicating that firm-level industry experts alone and partner-level industry experts alone are not associated with the number of other lenders in a syndicate loan. In addition, it can be seen that the coefficient of $EXPERT^{BOTH}$, 1.015, is positive and significant at the 5% level, as predicted. The results indicate that the number of lenders is greater for loans to borrowers who retain industry experts at both the firm-level and partner-level. F-tests show that there are significant differences in the coefficients for $EXPERT^{BOTH}$ and $EXPERT_{ALONE}^{FIRM}$ (F-value=3.26, p=0.0387) and in the coefficients for $EXPERT^{BOTH}$ and $EXPERT_{ALONE}^{PARTNER}$ (F-value=3.29, p=0.0376). The results, combined with the insignificance of the coefficients of $EXPERT_{ALONE}^{FIRM}$ and $EXPERT_{ALONE}^{PARTNER}$, indicate that the firm-level industry experts *alone* and partner-level industry experts *alone* are not associated with the number of lenders who participate in the syndicated loan market. More importantly, the differential number of lenders in syndicated loans is attributable to a combination of firm-level and partner-level industry audit experts.

For these three regressions, the coefficient of *Big4* is insignificant; suggesting that after controlling for industry audit experts, there is no association between Big 4/non-Big 4 audit firms and the number of lenders in a loan. In sum, our results imply that lenders consider part of auditors' expertise not to be transferable across

individuals within the same audit firm, but to be instead inseparably tied to partners' private human capital at the individual level.

[Insert Table 3 here]

6. Further analysis

6.1 Foreign lenders

Thus far, the empirical results indicate that more lenders are willing to participate in a syndicated loan when borrowers are audited by industry audit experts. One distinct type of other lenders in a syndicated loan, however, is a foreign lender. Prior studies show that, in the context of the equity market, investors are reluctant to make cross-border investments due to a phenomenon referred to as "home bias"; the main factor contributing to home bias is the high cost of information about foreign investments (Kang and Stulz, 1997). In the context of the syndicated market, Carey and Nini (2006) also reveal that foreign lenders tend to be reluctant to participate in loans due to home bias. Houston et al. (2007) argue that foreign lenders are more likely to be involved in larger loan deals to larger firms since information is more transparent, and soft information is less important for these deals. Similarly, Kim et al. (2011) also find that voluntary IFRS adopters attract more foreign lenders in loan syndicates than non-adaptors.

In the same vein, due to the fact that industry audit experts can enhance financial reporting quality and thus reduce information asymmetry among lenders, in this section, we focus exclusively on the effect of industry expertise on the incentive of foreign lenders to participate in a syndicated loan.

According to the report by the Bank for International Settlements (*BIS*), an international syndicated loan is defined as a case in which there is at least one lender present in the syndicate whose nationality differs from that of the borrower. Thus,

following *BIS*, our measure of the number of foreign lenders, *foreign_no*, is calculated as the number of lenders in the syndicate whose nationality differs from that of the borrower.

The untabulated analyses indicate that our results are very similar to those in Table 3. More specifically, firm-level industry experts alone are not related to the number of foreign lenders in a syndicated loan (p=0.26). But more importantly, there is the greatest number of foreign lenders for loans to borrowers who retain either partner-level alone or both firm- and partner-level industry experts (coefficient=0.26, $p < 0.05$ and coefficient=0.34, $p < 0.01$, respectively).

6.2 Loan Size

It is well-documented that verification of financial statements by industry specialists can reduce information asymmetries more than that by non-specialists. Accordingly, the percentage of a syndicated load retained by the lead arranger is lower for clients of experts than that of non-experts. In this section, we further explore whether the choice of industry audit experts affects the design of syndicated loan size.

To the extent that industry audit expertise can enhance audit quality and in turn reduce information asymmetries between lenders and borrowers, we predict that lenders are willing to offer a larger amount of loan to a loan syndicate when borrowers appoint auditors with industry expertise rather than auditors with non-expertise.

The untabulated results suggest that the amount of a debt contract offered by lenders will increase most when the borrower retains industry audit experts at both the firm-level and individual-level (coefficient= 0.23, and $p < 0.05$). In other words, in the context of a syndicated loan, we find that firms audited by industry audit specialists are likely to gain a larger amount of loan than those retaining non-specialists.

Therefore, in addition to the ownership structure, we provide additional evidence that the choice of industry audit experts affects the design of the syndicated loan amounts.

7. Sensitivity Analysis

To ensure the robustness of our findings, we conduct a battery of sensitivity analyses in this section. The analyses presented thus far are based on the facility, as opposed to a deal level. In this section, we repeat the analyses of Hypotheses 1 and 2 at the deal level. The untabulated results indicate that all of the results are very similar quantitatively in the deal-level analyses. Therefore, our conclusions are robust to different analysis unit of loans.

In order to ensure that our results are not driven by individual Big 4 audit firms, the models in Tables 2 and 3 are re-estimated dropping each of the Big 4 audit firms for each industry category one at a time for our tests. We find that the empirical results are qualitatively the same as those in Tables 2 and 3. The auditor indicator variables that are significant in Tables 2 and 3 are still significant in our model, and have the same signs. Next, we drop each of industry audit experts at the partner level one at a time to ensure that the results in Tables 2 and 3 are not driven by individual industry audit partners. Again, the results are broadly comparable to those in Tables 2 and 3.

8. Conclusions

Using a sample of 1,626 loan facilities from 1992 to 2010, this paper examines whether lenders take into consideration industry audit expertise at the partner level when structuring the ownership of syndicated loans. Specifically, we hypothesize that the share of syndicated loans held by lead arrangers is lower for borrowers retaining industry audit experts, and the lower share due to industry audit expertise are, at least to some degree, driven by partner-level industry audit experts.

Our findings can be summarized as follows. First, we find that partner-level industry audit experts, either alone or in conjunction with firm-level industry audit experts, are associated with a lower share held by lead arrangers. Second, we find that the number of lenders in general (or the number of foreign lenders in particular) in a loan is the largest when borrowers retain industry audit experts at both the firm- and partner-levels.

These findings suggest that lenders value industry audit experts at the partner-level when structuring the ownership of the syndicated loans. Therefore, our empirical results provide supporting evidence of the view that lenders infer audit quality, at least to some degree, from the characteristics of signing auditors. Furthermore, our results may also be interpreted to mean that lenders in the syndicated loan market consider part of auditors' expertise, despite residing within the same audit firm, not to be transferable and homogeneous across individual partners.

Our paper has policy implications for the PCAOB and other regulatory bodies tasked with considering the economic consequences of requiring an audit partner signature. The motivation behind the PCAOB's proposal for the signature and disclosure is to increase transparency for interested parties who rely on the financial statements and accountability on the part of the audit partner. In this paper, we focus our analyses on one important interested party, namely lenders, and find that lenders value industry audit experts at the partner level when structuring the ownership of syndicate loans. The findings add to the intense debate on the merits of the PCAOB's proposal and can be helpful for regulators.

Our findings are subject to several limitations. First, we recognize that our results suggest only one potential benefit of the PCAOB's proposal, and standard setters need to consider all the relevant costs and benefits in determining whether audit firms

should be required to disclose the name of engagement's partner. Thus, our findings are intended to serve as additional inputs to the decision process. Future studies should weigh the potential benefits of such a disclosure requirement (i.e. increased transparency) against the potential costs (e.g., over-auditing, decreased audit partner independence, and increased litigation risk, etc.).[14]

Second, the signature and disclosure requirements can enhance public perceptions of audit quality (audit quality in appearance) and actual audit quality (audit quality in fact) (King et al., 2012). When we find that lenders (lead and other lenders) perceive industry audit experts at the partner-level as relevant in making their lending decisions, we cannot address the following issue: Is the lower share held by lead arrangers due to industry audit experts at the partner level driven by audit quality in appearance, audit quality in fact, or a combination of both? Third, we acknowledge that we cannot directly identify the lead or concurring auditors from the audit reports, which likely influences our inferences. Therefore, the results should be interpreted with caution.

[14] See King et al. (2012) for a more detailed discussion about the costs and benefits of the PCAOB's proposal.

References

Ball, R., R. M. Bushman, and F. P. Vasvari. 2008. The Debt-Contracting Value of Accounting Information and Loan Syndicate Structure. *Journal of Accounting Research* 46 (2):247-287.

Balsam, S., J. Krishnan, and J. Yang. 2003. Auditor industry specialization and earnings quality. *Auditing: A Journal of Practice & Theory, September* 22 (2): 71–97.

Bharath, S. T., J. Sunder, and S. V. Sunder. 2008. Accounting quality and debt contracting. *The Accounting review:* 83(1):1-28.

Bolton, P., and D. S. Scharfstein. 1996. Optimal debt structure and the number of creditors. *Journal of Political Economy*: 1-25.

Bonner, S. E., and B. L. Lewis. 1990. Determinants of auditor expertise. *Journal of Accounting Research* 28:1-20.

Carcello, J. V., and A. L. Nagy. 2004. Audit firm tenure and fraudulent financial reporting. *Auditing: A Journal of Practice & Theory* 23 (2):55-70.

Carcello, J. V., and C. Li. 2013. Costs and benefits of requiring an engagement partner signature: recent experience in the United Kingdom. *The Accounting review* 88(5): 1511-46.

Carey, P., and R. Nini. 2006. Audit partner tenure and audit quality. *The Accounting review* 81 (3):653.

Chi, H. Y. and C. L. Chin. 2011. Firm versus Partner Measures of Auditor Industry Expertise. Auditing: *A Journal of Practice and Theory,* Vol.30, No.2, pp.201-229.

Chin, C. L., and H. Y. Chi. 2009. Reducing restatements with increased industry expertise. *Contemporary Accounting Research* 26 (3):729-765.

Costello, A. M., and R. Wittenberg-Moerman. 2011. The impact of financial reporting quality on debt contracting: Evidence from internal control weakness reports. *Journal of Accounting Research* 49 (1):97-136.

DeAngelo, L. E. 1981. Auditor size and audit quality. *Journal of Accounting and Economics* 3 (3):183-199.

Dennis, S. A., and D. J. Mullineaux. 2000. Syndicated loans. *Journal of financial intermediation* 9 (4): 404-426.

Ferguson, A., J. R. Francis, and D.J. Stokes. 2003. The effects of firm-wide and office-level industry expertise on audit pricing. *The Accounting review*: 429-448.

Francis, J.R., and J. Krishnan. 1999. Accounting Accruals and Auditor Reporting Conservatism. *Contemporary Accounting Research* 16 (1):135-165.

Francis, J.R., K. Reichelt, and D. Wang. 2005. The pricing of national and city-specific reputations for industry expertise in the US audit market. *The Accounting Review*:113-136.

Graham, J. R., S. Li, and J. Qiu. 2008. Corporate misreporting and bank loan contracting. *Journal of financial economics* 89 (1):44-61.

Gramling, A. A., and D. N. Stone. 2001. Audit firm industry expertise: A review and synthesis of the archival literature. *Journal of Accounting Literature* 20:1-29.

Houston, J., J. Itzkowitz, and A. Naranjo. 2007. Borrowing beyond borders: The geography and pricing of syndicated bank loans. *Working paper.*

Holmstrom, B. 1979. Moral hazard and observability. *The Bell Journal of Economics*

10(1): 74-91.
Ivashina, V. 2009. Asymmetric information effects on loan spreads. *Journal of Financial Economic* 92: 300-319.
Kang, J. K., and R. Stulz. 1997. Why is there a home bias? An analysis of foreign portfolio equity ownership in Japan. *Journal of Financial Economics* 46 (1):3-28.
Kim, J. B., and B. Y. Song. 2011. Auditor quality and loan syndicate structure. *Auditing: A Journal of Practice & Theory* 30 (4):71-99.
Kim, J. B., J. S.L. Tsui, and C. H. Yi. 2011. The voluntary adoption of International Financial Reporting Standards and loan contracting around the world. *Review of Accounting Studies*: 1-33.
King, R. R., S. M., Davis, and N. Mintchik. 2012. Mandatory disclosure of the engagement partner's identity: Potential benefits and unintended consequences. *Accounting Horizon* 26(3): 533-561.
Krishnan, J. 2003. Audit committee quality and internal control: An empirical analysis. *The Accounting review*: 649-675.
Lee, S. W., and D. J. Mullineaux. 2004. Monitoring, financial distress, and the structure of commercial lending syndicates. *Financial management*: 107-130.
Libby, R., and H. T. Tan. 1994. Modeling the determinants of audit expertise. *Accounting, Organizations and Society* 19 (8):701-716.
Public Company Accounting Oversight Board (PCAOB). 2009. Requiring the Engagement Partner to Sign the Audit Report. Concept Release No. 2009-005. Available at: http://pcaobus.org/Rules/Rulemaking/Docket029/2009-07-28_ Release_No_2009 -005.pdf
Public Company Accounting Oversight Board (PCAOB). 2011. Improving the Transparency of Audits: Proposed Amendments to PCAOB Auditing Standards and Form 2. Concept Release No. 2011-007. Available at: http://pcaobus.org/Rules/Rulemaking/Docket029/PCAOB_Release_2011-007. pdf
Reichelt, K. J., and D. Wang. 2010. National and office-specific measures of auditor industry expertise and effects on audit quality. *Journal of Accounting Research* 48 (3):647-686.
Sufi, A. 2007. Information asymmetry and financing arrangements: Evidence from syndicated loans. *The Journal of Finance* 62 (2):629-668.
Vera-Munoz, S. C., J. L. Ho, and C. W. Chow. 2006. Enhancing knowledge sharing in public accounting firms. *Accounting Horizons* 20 (2):133-155.
Wittenberg-Moerman, R. 2008. The role of information asymmetry and financial reporting quality in debt trading: Evidence from the secondary loan market. *Journal of Accounting and Economics* 46 (2-3):240-260.
Zerni, M. 2012. Audit partner specialization and audit Fees: Some evidence from Sweden. *Contemporary Accounting Research* 29(1), 312-340.

TABLE 1
Sample Selection and Distribution of Audit Industry Experts

Panel A: Sample Selection		
	Analysis of lead retention	**Analysis of number of lenders**
Total number of syndicated loan facilities from 1992 to 2010 in Taiwan	2,736	2,736
Less: Financial firm loan	(488)	(488)
Less: Facilities with missing loan structure's data on:		
lead bank retention	(1,306)	—
number of lenders	—	(532)
Others (maturity, facility size)	(90)	(90)
Number of facilities in the final sample	852	1,626

Panel B: Distributions for lead retention sample and the number of lenders sample				
Audit industry experts	**Analysis of lead retention N=852**		**Analysis of number of lenders N=1,626**	
	(1)	(2)	(3)	(4)
	Firm	%	Firm	%
Audit firms level	297	34.86	516	31.73
Individual partner level	159	18.66	224	13.78
Both firms and individual partner level	79	9.27	122	7.5
Audit firms level only	218	25.59	394	24.23
Individual partner level only	80	9.39	102	6.27

TABLE 2

Relation between **Loan Ownership of Lead Arrangers** and Industry Audit Expertise

	Audit firm expertise Model 1		Individual partner expertise Model 2		Combined firm- and partner-level expertise Model 3	
Parameter	Coefficient	Prob	Coefficient	Prob	Coefficient	Prob
Intercept	58.536**	0.028	62.067**	0.022	64.912**	0.019
Experimental variables:						
EXPERT_FIRM	1.6028	0.659				
EXPERT_PARTNER			-3.838***	0.000		
$EXPERT_{ALONE}^{FIRM}$					-0.1829	0.167
$EXPERT_{ALONE}^{PARTNER}$					-0.1964*	0.098
$EXPERT^{BOTH}$					-3.7014***	0.000
Control variables:						
Log loan size	-3.8186**	0.020	-2.4470	0.488	-3.7014	0.437
Log Maturity	-7.3173**	0.042	-7.3855**	0.040	-7.4042**	0.034
Secured	-1.4278	0.678	-1.5750	0.644	-1.4089*	0.068
Fin_covenant	10.5012**	0.012	10.7218**	0.011	10.652**	0.011
Revolver	-5.2618	0.300	-5.3012	0.295	-5.2775**	0.030
Term	-1.9473	0.652	-1.8300	0.672	-1.8526*	0.067
Top Lead	-0.1767**	0.013	-0.1775**	0.013	-0.1789**	0.012
Prior relation	-5.5403	0.161	-5.5654	0.158	-5.7953	0.147
Log TA	5.6865***	<.000	5.6361***	<.000	5.5838***	<.000
Leverage	-12.9680	0.280	-13.1050	0.275	-13.409	0.266
Big 4	7.0633	0.198	7.7074	0.128	7.3341	0.186
$EXPERT^{BOTH} < EXPERT_{ALONE}^{FIRM}$					F=7.05*** (p=0.0009)	
$EXPERT^{BOTH} < EXPERT_{ALONE}^{PARTNER}$					F=7.04*** (p=0.0009)	
$EXPERT_{ALONE}^{PARTNER} < EXPERT_{ALONE}^{FIRM}$					F=0.00 (p=0.9910)	

(The table is continued on the next page.)

TABLE 2 (Continued)

Parameter	Audit firm expertise Model 1 Coefficient	Prob	Individual partner expertise Model 2 Coefficient	Prob	Combined firm- and partner-level expertise Model 3 Coefficient	Prob
Loan purpose indicators	Included		Included		Included	
Year fixed effects	Yes		Yes		Yes	
Observations (facility-level)	852		852		852	
Adj. *R*-square	26.98%		27.01%		27.05%	

Notes:

Statistical significance based on two-tailed tests at the 1 percent, 5 percent, and 10 percent levels are denoted by ***, **, and *, respectively. *EXPERT_FIRM* is a dummy variable which equals one, if the incumbent auditor of a borrower for the fiscal year immediately before the initiation of syndicated loan deal (year t-1) is one of industry expertise auditors firm, and zero otherwise. *EXPERT_PARTNER* is a dummy variable which equals one, if at least one of the two incumbent auditors of a borrower for the fiscal year immediately before the initiation of syndicated loan deal (year t-1) is one of industry expertise auditors individual, and zero otherwise. $EXPERT_{ALONE}^{FIRM}$ is coded one if the auditors are firm-level industry experts, but not partner-level industry experts. $EXPERT_{ALONE}^{PARTNER}$ is coded one if the auditors are individual partner-level industry experts, but not firm-level industry experts. $EXPERT^{BOTH}$ is coded one if the auditors are industry experts at both the firm level and the partner level. *Log loan size* is the log of dollar amount of loan facility. *Log Maturity* is the log of the maturity of loans in month. *Secured* is an indicator variable that equals one if the loan facility is secured with collateral, and zero otherwise. *Fin_covenant* is an indicator variable that equals one if the loan facility constructed by one or more financial covenants included in a loan contract, and zero otherwise. Both *Revolver* and *Term* are dummy variables represent the loan type of each facility is belonging to. *Revolver* is an indicator variable taking the value of one if the loan's type is revolver loan, zero otherwise. *Term* is an indicator variable taking the value of one if the loan's type is term loan, zero otherwise. *Top Lead* is an indicator variable that is equal to one if at least one of the lead arrangers for a loan deal is a top-10 Taiwan lead arranger (in terms of loan volume) in the year before the initiation of the loan based on the loan data from LPC Dealscan, and zero otherwise. *Prior relation* is an indicator variable that equals one if the lead arrangers for the current deal has been a lead arranger of previous deals for the same borrower, and zero otherwise. *Log TA*, the natural log of the book value of total assets. *Leverage* equal to the sum of short-term debt and long-term debt scaled by total assets. *Big4*, an indicator variable that equals one, if the incumbent auditor of a borrower for the fiscal year immediately before the initiation of syndicated loan facility (year t-1) is one of Big 4 audit firms, and 0 otherwise.

TABLE 3

Relation between the **Number of Lenders** and Industry Audit Expertise

	Number lenders					
	Audit firm expertise Model 1		Individual partner expertise Model 2		Combined firm- and partner-level expertise Model 3	
Parameter	Coefficient	Prob	Coefficient	Prob	Coefficient	Prob
Intercept	-0.3706**	0.013	-0.2894**	0.057	-11.347***	<.000
Experimental variables:						
EXPERT_FIRM	0.0869**	0.016				
EXPERT_PARTNER			0.0945***	<.000		
$EXPERT^{FIRM}_{ALONE}$					0.1908	0.880
$EXPERT^{PARTNER}_{ALONE}$					0.4420	0.146
$EXPERT^{BOTH}$					1.0150**	0.012
Control variables:						
Log loan size	0.0912***	<.000	0.0886***	<.000	0.7418***	<.000
Log Maturity	0.0400**	0.044	0.0392**	0.049	0.2905	0.334
Secured	0.1821***	<.000	0.1815***	<.000	1.4983***	<.000
Fin_covenant	0.0167	0.473	0.0142	0.542	0.1173	0.747
Revolver	0.3204***	<.000	0.3223***	<.000	2.3341***	<.000
Term	0.3258***	<.000	0.3275**	<.000	2.4664***	<.000
Top Lead	0.0088***	<.000	0.0088***	<.000	0.0446***	<.000
Prior relation	0.1450***	<.000	0.1471***	<.000	1.4362***	<.000
Log TA	0.0289***	<.000	0.0269***	0.000	0.2160**	0.043
Leverage	0.2741***	<.000	0.2577***	<.000	1.9058**	0.042
Big4	0.0264	0.349	0.0569	0.307	0.2700	0.491
$EXPERT^{BOTH} > EXPERT^{FIRM}_{ALONE}$					F=3.26** (p=0.0387)	
$EXPERT^{BOTH} > EXPERT^{PARTNER}_{ALONE}$					F=3.29** (p=0.0376)	
$EXPERT^{PARTNER}_{ALONE} > EXPERT^{FIRM}_{ALONE}$					F=1.11 (p=0.3295)	

(The table is continued on the next page.)

TABLE 3 (Continued)

Parameter	Audit firm expertise Model 1 Coefficient	Prob	Individual partner expertise Model 2 Coefficient	Prob	Combined firm- and partner-level expertise Model 3 Coefficient	Prob
Loan purpose indicators	Included		Included		Included	
Year fixed effects	Yes		Yes		Yes	
Observations (facility-level)	1626		1626		1626	
Pseudo R-square	27.48%		27.44%		27.49%	

Notes:

Statistical significance based on two-tailed tests at the 1 percent, 5 percent, and 10 percent levels are denoted by ***, **, and *, respectively. *EXPERT_FIRM* is a dummy variable which equals one, if the incumbent auditor of a borrower for the fiscal year immediately before the initiation of syndicated loan deal (year t-1) is one of industry expertise auditors firm, and zero otherwise. *EXPERT_PARTNER* is a dummy variable which equals one, if at least one of the two incumbent auditors of a borrower for the fiscal year immediately before the initiation of syndicated loan deal (year t-1) is one of industry expertise auditors individual, and zero otherwise. $EXPERT_{ALONE}^{FIRM}$ is coded one if the auditors are firm-level industry experts, but not partner-level industry experts. $EXPERT_{ALONE}^{PARTNER}$ is coded one if the auditors are individual partner-level industry experts, but not firm-level industry experts. $EXPERT^{BOTH}$ is coded one if the auditors are industry experts at both the firm level and the partner level. *Log loan size* is the log of dollar amount of loan facility. *Log Maturity* is the log of the maturity of loans in month. *Secured* is an indicator variable that equals one if the loan facility is secured with collateral, and zero otherwise. *Fin_covenant* is an indicator variable that equals one if the loan facility constructed by one or more financial covenants included in a loan contract, and zero otherwise. Both *Revolver* and *Term* are dummy variables represent the loan type of each facility is belonging to. *Revolver* is an indicator variable taking the value of one if the loan's type is revolver loan, zero otherwise. *Term* is an indicator variable taking the value of one if the loan's type is term loan, zero otherwise. *Top Lead* is an indicator variable that is equal to one if at least one of the lead arrangers for a loan deal is a top-10 Taiwan lead arranger (in terms of loan volume) in the year before the initiation of the loan based on the loan data from LPC Dealscan, and zero otherwise. *Prior relation* is an indicator variable that equals one if the lead arrangers for the current deal has been a lead arranger of previous deals for the same borrower, and zero otherwise. *Log TA*, the natural log of the book value of total assets. *Leverage* equal to the sum of short-term debt and long-term debt scaled by total assets. *Big4*, an indicator variable that equals one, if the incumbent auditor of a borrower for the fiscal year immediately before the initiation of syndicated loan facility (year t-1) is one of Big 4 audit firms, and 0 otherwise.

赴大陸地區研究心得報告

計畫編號	NSC 102-2410-H-004 -025
計畫名稱	聯貸市場與產業審計專家:初級與次級市場的證據
出國人員姓名（服務機關及職稱）	金成隆（國立政治大學會計學系教授）
出國時間地點	2014.05.12~2014.05.15
大陸地區研究機構	中南財經政法大學

一、工作記要：

2014/05/12 搭乘東方航空公司班機抵達武漢天和機場，入住中南財經政法大學並住進市區旅館。

2014/05/12~2014/05/14 本人與中南財經政法大學教師交談。同時，也廣泛接觸其他教授，就本計畫會計研究中的相關議題進行深入座談；特別是有關 IPO 漲跌停幅限制的為提，獲得很多釐清。

2014/05/15 由武漢天和機場搭乘東方航空公司班機抵達台灣桃園機場。

赴國際研討會心得報告

計畫編號	NSC 102-2410-H-004 -025
計畫名稱	聯貸市場與產業審計專家:初級與次級市場的證據
出國人員姓名（服務機關及職稱）	金成隆（國立政治大學會計學系教授）
出國時間地點	2014.07.4~2014.07.8
研討會名稱&地點	2014 International Conference on Business and Information (日本大阪)

工作記要：

2014/07/4 搭乘中華航空公司班機抵達大阪機場，入住研討會舉辦地點之飯店。

2014/07/4~2014/07/5 本人與參與研討會盛會，並於會場上與各國學者交流。

2014/07/6-7 私人參訪行程。

2014/7/8 由大阪關西機場搭乘中華航空公司班機抵達台灣桃園機場。

科技部補助計畫衍生研發成果推廣資料表

日期:2014/08/13

科技部補助計畫	計畫名稱: 聯貸市場與產業審計專家：初級與次級市場的證據
	計畫主持人: 金成隆
	計畫編號: 102-2410-H-004-025- 學門領域: 會計

無研發成果推廣資料

102 年度專題研究計畫研究成果彙整表

計畫主持人：金成隆	計畫編號：102-2410-H-004-025-
計畫名稱：聯貸市場與產業審計專家：初級與次級市場的證據	

成果項目			量化			單位	備註（質化說明：如數個計畫共同成果、成果列為該期刊之封面故事...等）
			實際已達成數（被接受或已發表）	預期總達成數(含實際已達成數)	本計畫實際貢獻百分比		
國內	論文著作	期刊論文	1	0	100%	篇	
		研究報告/技術報告	0	0	100%		
		研討會論文	0	0	100%		
		專書	0	0	100%		
	專利	申請中件數	0	0	100%	件	
		已獲得件數	0	0	100%		
	技術移轉	件數	0	0	100%	件	
		權利金	0	0	100%	千元	
	參與計畫人力（本國籍）	碩士生	0	0	100%	人次	
		博士生	0	0	100%		
		博士後研究員	0	0	100%		
		專任助理	0	0	100%		
國外	論文著作	期刊論文	0	0	100%	篇	
		研究報告/技術報告	0	0	100%		
		研討會論文	0	0	100%		
		專書	0	0	100%	章/本	
	專利	申請中件數	0	0	100%	件	
		已獲得件數	0	0	100%		
	技術移轉	件數	0	0	100%	件	
		權利金	0	0	100%	千元	
	參與計畫人力（外國籍）	碩士生	2	0	100%	人次	
		博士生	2	0	100%		
		博士後研究員	0	0	100%		
		專任助理	0	0	100%		

其他成果 (無法以量化表達之成果如辦理學術活動、獲得獎項、重要國際合作、研究成果國際影響力及其他協助產業技術發展之具體效益事項等，請以文字敘述填列。)	無

	成果項目	量化	名稱或內容性質簡述
科教處計畫加填項目	測驗工具(含質性與量性)	0	
	課程/模組	0	
	電腦及網路系統或工具	0	
	教材	0	
	舉辦之活動/競賽	0	
	研討會/工作坊	0	
	電子報、網站	0	
	計畫成果推廣之參與（閱聽）人數	0	

科技部補助專題研究計畫成果報告自評表

請就研究內容與原計畫相符程度、達成預期目標情況、研究成果之學術或應用價值（簡要敘述成果所代表之意義、價值、影響或進一步發展之可能性）、是否適合在學術期刊發表或申請專利、主要發現或其他有關價值等，作一綜合評估。

1. 請就研究內容與原計畫相符程度、達成預期目標情況作一綜合評估

■達成目標

□未達成目標（請說明，以 100 字為限）

□實驗失敗

□因故實驗中斷

□其他原因

說明：

2. 研究成果在學術期刊發表或申請專利等情形：

論文：■已發表 □未發表之文稿 □撰寫中 □無

專利：□已獲得 □申請中 ■無

技轉：□已技轉 □洽談中 ■無

其他：（以 100 字為限）

3. 請依學術成就、技術創新、社會影響等方面，評估研究成果之學術或應用價值（簡要敘述成果所代表之意義、價值、影響或進一步發展之可能性）（以 500 字為限）