



A multivariate analysis of the determinants of auditors' opinions on Asian banks

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Abstract

Purpose – Prior studies on the determinants of audit reports focus on non-financial sectors. In contrast, the present study seeks to examine the determinants of auditors' opinion in the banking industry, using a sample of banks drawn from nine Asian countries over the period 1995-2004.

Design/methodology/approach – Logistic regression and a sample of 199 qualified financial statements and 4,403 unqualified ones are used.

Findings – The results indicate that Asian banks that receive qualified opinions are in general smaller ones, less well capitalized, less profitable and cost efficient, and appear to have excess liquidity. More external auditing requirements and less accounting and disclosure requirements in the banking sector, also increase the probability of receiving a qualified audit opinion.

Practical implications – Knowledge of the above mentioned characteristics could be of particular interest to banks' managers, investors, credit analysts and bank supervisors.

Originality/value – Despite the economic importance of the banking industry, accounting researchers have done little to investigate the various relationships that exist between banks and their auditors. Furthermore, most studies focus on the US market and examine the pricing of audit services for financial institutions, the audit opinions on publicly-traded savings and loans institutions that subsequently failed, the effectiveness of bank audit, the loss underreporting and the auditor role of examination of banks, the impact of accounting and auditing systems on risk-shifting of safety nets in banking. The present paper extends the literature by investigating the determinants of external auditors' opinion on Asian banks.

Keywords Auditing, Banks, South East Asia, China, Japan

Paper type Research paper

Introduction

Accurate accounting statements are necessary for numerous stakeholders (e.g. regulators, investors, customers) that want to monitor banks or access their financial condition. Although bank management is responsible for preparing accounting statements in accordance with the appropriate reporting framework and the standard accounting procedures, these statements may contain inaccurate information due to

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errors or management fraud. External auditing is, therefore, required to validate the accuracy of these statements.

As Fernandez and Gonzalez (2005) point out, better accounting and auditing systems that provide the regulators with more information about the real risk of bank assets cannot only increase the effectiveness of minimum capital requirements but also serve to guide disciplinary action imposed by supervisors on bank management in order to reduce instability. In contrast, an audit function that fails to adequately address important regulatory considerations exposes both bank shareholders and the public at large to unnecessary risk (Fields *et al.*, 2004). For example, it has been argued that the poor quality of public disclosure and transparency, and inadequate accounting and auditing standards, have contributed to the occurrence of the Asian financial crisis[1] (Goldstein, 1998; Chino, 1999; Shirai, 2001). For instance, Shirai (2001, p. 56) argues that:

... a lack of adequate accounting, auditing and reporting requirements in Asia, therefore, explains partly why there was a lack of awareness among market participants and regulations that the growing concentration of foreign bank loans to unhedged borrowers could cause serious banking crises once the exchange rate depreciated sharply.

Finally, various other studies that refer the lessons to be drawn from the Asian financial crisis highlight the importance of adequate accounting and auditing procedures (Wade, 1998; Iwasaki, 2000; Das, 2000).

Despite the economic importance of the banking industry[2], accounting researchers have done little to investigate the various relationships that exist between banks and their auditors (Fields *et al.*, 2004). The purpose of the present paper is to extend the literature by investigating the determinants of external auditors' opinions on Asian banks.

Previous studies that examined the determinants of auditor's opinion focused on non-financial firms (Ireland, 2003; Spathis, 2002, 2003; Ruiz-Bardadillo *et al.*, 2004) and excluded banks from the sample due to their specific characteristics and differences in the environment in which banks operate. Hence, while the general theoretical factors (i.e. risk, size) should impact audit opinions on a similar way, irrespective of the type of organization, a number of the empirical proxies typically included in previous models (e.g. current ratio, quick ratio, stock to assets ratio), are not related to banks.

The International Federation of Accountants – IFAC (2000) also points out numerous special considerations which arise in the case of banks auditing because of:

- the particular nature of the risks associated with the transactions undertaken by banks;
- the scale of banking operations and the resultant significant exposures which may arise with short periods of time;
- the extensive dependence on computerized system to process transactions;
- the effect of the regulations in the various jurisdictions in which they operate; and
- the continuing development of new products and banking practices that may not be matched by the concurrent development of accounting principles and auditing practices.

We, therefore, develop a model that incorporates numerous measures that focus on the banking sector, hence providing a framework for the empirical examination of bank

audit decisions. We also examine the auditing and accounting requirements and the official disciplinary power in the banking industry, to see whether there is a relationship between the regulatory and supervisory framework and audit qualifications. We focus on the Asian banking system because such an analysis can be of particular importance at this time since most Asian bank supervisors aim to implement Basel II, which introduces more disclosure requirements under Pillar 3, as a key part of their bank supervisory regime (Fitch, 2005).

The rest of the paper is organized as follows. The next section discusses prior relevant empirical literature. Followed by a section, that outlines research design. The penultimate section discusses the empirical results, while the last section provides the concluding remarks and some directions for future research.

Literature review

Prior literature related to the present paper can be classified in two broad categories. The first consists of studies that examine various issues of auditing in banking. The second consists of studies that examine the determinants of audit opinions in non-financial sectors. In the following sections, we discuss in turn each one of these categories.

Auditing and banking

Studies that fall in this category focus mainly on the US market and examine:

- the pricing of audit services for financial institutions;
- the audit opinions on publicly-traded savings and loans (S and Ls) institutions that subsequently failed;
- the effectiveness of bank audit;
- the loss underreporting and the auditor role of examination of banks; and
- the impact of accounting and auditing systems on risk-shifting of safety nets in banking.

Stein *et al.* (1994) use survey data from 1989 to examine the determinants of fees and labor hours for 108 financial services companies. They show that fees for financial institutions are related to size and operational and reporting complexity, as well as to the auditor's assessment of the client's assistance and internal control systems. In a more recent study, Fields *et al.* (2004) also examine the audit pricing of the US financial institutions. They use a sample of 277 financial institutions and data from 2000, and find that audit fees are higher for banks that have more transactions accounts, higher degrees of credit risk, fewer securities (as a percentage of total assets), and are less efficient ones. They also observe higher fees for institutions that have higher risk-adjusted capital ratios and more intangible assets. Finally, savings institutions are charged a significant premium relative to other banks.

Blacconiere and DeFond (1997) investigate the audit opinions of 24 US publicly-traded S and Ls institutions that subsequently failed during 1982-1989. They find that S and Ls that are perceived as being less financially viable, with greater declines in stock prices prior to the audit opinion date and lower net interest yield, are more likely to be assigned a going-concern opinion. Further, examination of the five S and Ls with non-going concern reports reveals that these institutions are in better

financial condition and have smaller stock price declines than the average of the ones receiving going-concern opinions. Finally, they find that going-concern reports in the year prior to the failure of an S and L do not prevent audit litigation, as well as that the propensity to be sued is relatively positively to the size of the failed S and L.

Siddiqui and Podder (2002) examine the effectiveness of audit of 14 banks operating in Bangladesh. The authors obtain the information for their study through interviews with bank managers, accountants and auditors, while banks' audited financial statements are used as a secondary source of information. They found that while seven banks had actually overstated their profits, none of the audit firms auditing these banks expressed a qualified opinion and only three of them expressed unqualified reports with modified wording, while the remaining issued clean audit reports. Consequently, the authors question the level of independence, objectivity, and competence of the auditors.

Gunther and Moore (2003) use a sample of 25,514 end-of-year call reports from the US commercial banks for the period 1996-1998, that contains both originally-reported and subsequently-revised financial variables, to study accounting restatements. Their results indicate that the worse a bank's financial condition, the more likely it is for originally-reported data to understate financial losses. Furthermore, they report that external auditors also prompt upward revisions to provision expenses. The study of Fernandez and Gonzalez (2005) focuses on the role of accounting and auditing systems on bank risk-taking. Using a sample of 275 publicly traded banks from 29 countries, they find that accounting and auditing systems are effective in counteracting the risk shifting of bank safety nets after controlling for regulatory and official supervisory devices (i.e. restrictions on banking activities, minimum regulatory capital requirements, and official discipline). The effectiveness of these systems in controlling bank-risk, decreases with bank charter value, but increases with the moral hazard originated by the deposit insurance scheme in the country. They also report that accounting and auditing systems are complements to minimum capital requirements, but substitutes for restrictions on bank activities and official discipline.

The determinants of audit opinions

Most of the prior studies could be distinguished as those that examine going-concern and non-going concern modifications. Related to the latter are also studies that examine falsified financial statements (Spathis, 2002; Spathis *et al.*, 2002). However, as Ireland (2003) points out, prior research on non-going concern and related audit modifications is limited. A few studies also examine both going-concern and non-going concern modifications (DeFond *et al.*, 2000; Ireland, 2003).

Spathis (2002) and Spathis *et al.* (2002) examine the case of falsified statements in Greece. Spathis *et al.* (2003) develop a model with two overall objectives:

- (1) to investigate the relationship between client performance measures and auditors' decisions; and
- (2) develop a classification model to distinguish between firms that should receive a qualified opinion from the ones that should receive an unqualified one.

A similar study by Pasiouras *et al.* (2006) develops a classification model to distinguish between qualified and unqualified reports in the UK.

DeFond *et al.* (2000) analyze audit modifications in China which include uncertainties, limitations on scope and GAAP violations (disagreements) but do not distinguish between types of modifications. In contrast, in a UK study, Ireland (2003) treats going-concern and non-going concern modifications separately although she does not distinguish between different types of non-going concern modifications such as adverse opinions or disclaimers of opinions.

Monroe and Teh (1993) provide a summary of earlier audit reporting studies that focus on uncertainty modifications by classifying them in those that deal with prediction of going-concern related modifications (Mutchler, 1984, 1985, 1986; Levitan and Knoblett, 1985; Menon and Schwarz, 1987) and those which examine uncertainty modifications in general (Bell and Tabor, 1991; Dopuch *et al.*, 1987). Most recent studies that focus on uncertainty or going-concern related modifications are the ones of Krishnan (1994) and Louwers (1998) in the US, and Lennox (1999) and Citron and Taffler (2000) in the UK.

Most of these studies use binary logit (Keasey *et al.*, 1988; Bell and Tabor, 1991; Monroe and Teh, 1993; Louwers, 1998; Laitinen and Laitinen, 1998; DeFond *et al.*, 2000; Spathis, 2002, 2003) or probit (Dopuch *et al.*, 1987; Lennox, 1999) models, where the dependent variable is dichotomous. Spathis *et al.* (2002, 2003) and Pasiouras *et al.* (2006) use multicriteria aid techniques that originate from operational research approaches. In contrast to these studies that deal with dichotomous variables, Krishnan (1994) uses an ordered probit model to distinguish between three categories of uncertainty modification: clean; non-going concern related; and going-concern related. Ireland (2003) also uses a multinomial logit model to distinguish between clean reports, non-going concern related modified reports (i.e. disagreement and limitations on scope), and going-concern related modifications.

Research design

Sample

Table I presents the observations in sample by country and year. The bank specific data are taken from Bankscope database of Bureau van Dijk's that is considered the most comprehensive database for research in banking and can be used to compare banks across countries. Bankscope contains numerous information, such as financial statements, credit ratings, history of the banks and auditors' opinions[3].

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Total
China	7	27	33	36	42	44	42	43	33	0	307
Hong Kong	11	56	57	59	61	61	56	57	51	0	469
India	7	19	44	58	58	65	50	70	72	52	495
Japan	40	46	176	183	261	265	282	263	240	178	1,934
Korea	21	43	45	33	29	32	29	25	9	0	266
Malaysia	28	62	69	64	62	47	45	42	38	0	457
Singapore	13	25	29	22	22	22	15	14	12	0	174
Taiwan	6	36	42	45	48	47	48	41	34	8	355
Thailand	1	14	15	4	17	25	27	24	17	1	145
Total	134	327	511	504	600	608	592	577	509	240	4,602

Table I.
Observations in sample
by country and year

Country specific data are collected from the World Bank (WB) database on the regulation and supervision of banks developed by Barth *et al.* (2001) and updated by Barth *et al.* (2006).

The sample used consists of 199 qualified financial statements and 4,403 unqualified ones, from 631 commercial banks[4] operating in nine Asian countries over the period 1995-2004. The sample is unbalanced in the sense that some of these banks received qualified opinions for more than one year, while others were not included in the sample for all years, due to missing information (either in terms of financial data or auditor's opinion or both).

Variables

Fields *et al.* (2004) point out that banks' managers are eventually answerable to their primary regulatory authority, and it is therefore, reasonable to assume that the audit function should be driven by financial variables and ratios that regulators consider important. The International Auditing Practices Committee also states that:

The auditor considers the ratios obtained by one bank in the context of similar ratios achieved by other banks for which the auditor has, or may obtain, sufficient information. These ratios generally fall into the following categories: asset quality, liquidity, earnings and capital adequacy.

On the basis of data availability, we focus on three of the four categories mentioned above[5]. We also include an additional variable to measure banks' size.

Finally, we consider three country-specific variables to control for the bank regulatory and supervision framework. The latter might have an effect on the incentives of bank managers to publish accurate reports, as well as the ones of auditors to detect and report any misstatements. As Lam and Mensah (2006) point out, audit opinions are issued in varying regulatory and legal environments, some with more risk to the auditor than in others. They also argue that, assuming that auditors in developed economics have similar ethical standards and training and apply the same global audit methodologies, their audit opinions even in identical business circumstances may vary due to differences in the regulatory and legal pressures faced. Prescott (2004) also argues that without adequate supervision and appropriate penalties a bank has not many incentives to report the true risks of its assets. Furthermore, it has been argued that flexibility in accounting standards leads to ambiguity in implementation (Bayless *et al.*, 1996). Additionally, the existence of flexibility and subjectivity in accounting procedures and policy choices provides greater room for earnings management and heightens pressure for negotiation between management and the auditor on the application of appropriate GAAP (Johl *et al.*, 2003).

There are obviously, several additional variables that could be considered such as audit and non-audit fees, whether the auditor is a big one or not, audit quality, etc. Unfortunately, data availability has not allowed us to consider such issues at the present study[6], and we hope that future research will improve upon this. Table II presents the variables used in the model. The section that follows provides a discussion of the variables along with a justification for their selection.

Bank specific variables

LOGASS is the logarithm of total assets that serves as a measure of bank's size which might have an impact on auditors' opinion for various reasons. For example,

MAJ 22,3	<i>Bank-specific variables</i>	
	LOGASS	The natural logarithm of bank's total assets expressed in million US dollars
274	EQAS	The equity to assets ratio. It measures the amount of protection afforded to the bank by the equity they invested in it. The higher this figure the more protection there is
	ROAA	The return on average assets ratio. It shows the returns generated from the assets financed by the bank
	COST	The cost to income ratio. It measures the overheads or costs of running the bank, the major element of which is normally salaries, as percentage of income generated before provisions
	LIQ	The liquid assets to customer and short term funding ratio. It shows what percentage of customer and short term funds could be met if they were withdrawn suddenly, the higher this percentage the more liquid the bank is and less vulnerable to a classic run on the bank
	<i>Country-specific variables</i>	
	AUDRQ	This variable takes values between 0 and 8 with higher values indicating more external auditing requirements in the banking sector. The value is determined by adding 1 if the answer is yes and 0 otherwise, for each one of the following eight questions from Barth <i>et al.</i> (2001, 2006) (1) Is an external audit compulsory for banks? (2) Are specific requirements for the extent or nature of the audit spelled out? (3) Are auditors licensed or certified? (4) Do supervisors get a copy of the auditor's report? (5) Does the supervisory have the right to meet with external auditors to discuss report without bank approval? (6) Are auditors required by law to communicate directly to supervisory agency any presumed involvement of bank directors or senior managers in illicit activities, fraud or insider abuse? (7) Can supervisors take legal action against auditors for negligence? (8) Has legal action been taken again an auditor in the last five years?
	DISCRQ	This variable takes values between 0 and 6 with higher values indicating more accounting and disclosure information requirements in the banking sector. The value is determined by adding 1 if the answer is yes and 0 otherwise, for each one of the following six questions from Barth <i>et al.</i> (2001, 2006): (1) Does accrued, though unpaid, interest/principal enter the income statement while the loan is still performing? (2) Are financial institutions required to produce consolidated accounts covering all bank and any non-bank financial subsidiaries? (3) Are off-balance sheet items disclosed to supervisors? (4) Must banks disclose their risk management procedures to the public? (5) Are off-balance sheet items disclosed to public? (6) Are bank directors legally liable if information disclosed is erroneous or misleading?
	OFDISPR	This variable takes values between 0 and 14 with higher values indicating a higher degree of official disciplinary power of the supervisory agency in the banking sector. The value is determined by adding 1 if the answer is yes and 0 otherwise, for each one of the following 14 questions from Barth <i>et al.</i> (2001, 2006):

Table II.
List of independent variables

(continued)

- (1) Are there any mechanisms of cease-desist type orders whose infraction leads to automatic imposition of civil and penal sanctions on banks directors and managers?
- (2) Can the supervisory agency order directors/management to constitute provisions to cover actual/potential losses?
- (3) Can the supervisory agency suspend director's decision to distribute dividends?
- (4) Can the supervisory agency suspend director's decision to distribute bonuses?
- (5) Can the supervisory agency suspend director's decision to distribute management fees?
- (6) Has any such action taken in last five years?
- (7) Can any supervisory agency (i.e. bank supervisor, court, deposit insurance agency, bank restructuring or asset management agency, etc.) supersede bank shareholder rights and declare bank insolvent?
- (8) Does banking law allow any supervisory agency to suspend some or all ownership rights of a problem bank?
- (9) Does the law establish pre-determined levels of solvency deterioration which forces automatic actions such as intervention?
- (10) Regarding bank restructuring and reorganization, can supervisory regime or any other governmental agency supersede shareholder rights?
- (11) Regarding bank restructuring and reorganization, can supervisory regime or any other governmental agency remove and replace management?
- (12) Regarding bank restructuring and reorganization, can supervisory regime or any other governmental agency remove and replace directors?
- (13) Regarding bank restructuring and reorganization, can supervisory regime or any other governmental agency forbear certain prudential regulations?
- (14) Regarding bank restructuring and reorganization, can supervisory regime or any other governmental agency insure liabilities beyond any explicit deposit insurance scheme?

Table II.

large companies are more likely to have good accounting systems and internal controls, thus reducing disagreements and limitations on scope (Ireland, 2003). In contrast, assets' overstating or misappropriation is among the typical financial statement fraud techniques (Ziegenfuss, 1996; Beasley *et al.*, 1999) and reported size may, therefore, reflect overstated assets, increasing the likelihood of disagreements (Ireland, 2003). Size might also be related to switch threats as the literature suggests that audit opinion may influence firm's decision to switch or retain the incumbent auditor (Krishnan, 1994; Krishnan and Stephens, 1995; Lennox, 2000; Gómez-Aguilar and Ruiz-Barbadillo, 2003). Arguably, the decision of the auditor will be affected by the income that the auditor receives from the client, and therefore, the loss of a client that represents a high proportion of auditor's revenue poses a large economic threat. Although we do not have data to directly observe switch threats, the literature suggests a positive relationship between size and audit fees (Chan *et al.*, 1993; Brinn *et al.*, 1994; Che-Ahmad and Houghton, 1996; Fields *et al.*, 2004). Hence, there are economic incentives for the auditor to issue an unqualified opinion in order to retain a large client (Stice, 1991; Lys and Watters, 1994; Ruiz-Barbadillo *et al.*, 2006).

EQAS is the equity to assets ratio that serves as a measure of capital strength[7]. The capital adequacy requirements imposed by the 1988 Accord as well as the new capital framework (Basel II) require banks to hold capital on the basis of their assets' risk. The reason is that capital serves as the last line of defense against the risk of bank failure, as any losses a bank suffers could be finally written off against capital. Thus, an adequate supply would seem to obviate the need for more specific controls over risk (Golin, 2001). However, banks are highly geared enterprises that do not usually maintain much capital relative to their liabilities, unless constrained by regulation. As a result, bank management may manipulate financial statements, given the need to meet certain requirements. Obviously, the latter could increase the likelihood of disagreements and the issuance of a qualified audit opinion. One could also expect to observe a poor capital strength that would increase qualified opinions, as financially distressed banks are more likely to attempt to overstate their financial position.

ROAA is the return on average assets that measures banks' profitability. Numerous studies that examine non-financial sectors indicate that firms which receive qualified opinions are less profitable ones (Loebbecke *et al.*, 1989; Summers and Sweeney, 1998; Beasley *et al.*, 1999; Spathis, 2002, 2003; Spathis *et al.*, 2003). As Spathis (2002, p. 185) points out "... the profitability orientation is tempered by manager's own utility maximization defined (partially) by job security." More detailed earnings management studies demonstrate that managers will, depending on their position, within bonus boundaries, increase earnings in order to:

- increase their compensation through formal and informal compensation plans (Healy, 1985);
- reduce the likelihood of debt covenant violation (Sweeney, 1994; DeFond and Jiambalvo, 1994); and
- reduce the likelihood of job loss (DeAngelo, 1988; Pourciau, 1993).

Earnings are not only affected by the capacity to generate revenue but also from the efficiency in expenses management as well. We therefore, use the cost[8] to income ratio (COST) as a proxy for cost efficiency.

LIQ is the ratio of net loans to customers and short-term funding that serves as a measure of liquidity which reveals the relationship between comparatively illiquid assets (i.e. loans) and comparatively stable funding sources (i.e. deposits and other short-term funding)[9]. The influence of liquidity on auditor's decision is unclear. On one hand, the possibility of a qualified audit report is higher when the financial health of a company deteriorates (i.e. low liquidity) (Spathis, 2003), while on the other hand high liquidity may increase disagreement type modifications as assets may have been overstated to meet the above mentioned requirements (Ireland, 2003).

Country-specific variables

AUDRQ indicates the degree of external auditing requirements in the banking sector. This variable scores 1 if the answer is yes and 0 otherwise, for each one of the following eight questions:

- (1) Is an external audit compulsory for banks?
- (2) Are specific requirements for the extent or nature of the audit spelled out?
- (3) Are auditors licensed or certified?

- (4) Do supervisors get a copy of the auditor's report?
- (5) Does the supervisory have the right to meet with external auditors to discuss report without bank approval?
- (6) Are auditors required by law to communicate directly to supervisory agency any presumed involvement of bank directors or senior managers in illicit activities, fraud or insider abuse?
- (7) Can supervisors take legal action against auditors for negligence?
- (8) Has legal action been taken again an auditor in the last five years?

Theoretically, AUDRQ can take values between 0 and 8, with higher values indicating more external auditing requirements.

DISCRQ indicates the degree of accounting and information disclosure requirements in the banking sector. The variable can take values between 0 and 6 by adding 1 if the answer is yes and 0 otherwise, for each one of the following six questions:

- (1) Does accrued, though unpaid, interest/principal enter the income statement while the loan is still performing?
- (2) Are financial institutions required to produce consolidated accounts covering all bank and any non-bank financial subsidiaries?
- (3) Are off-balance sheet items disclosed to supervisors?
- (4) Must banks disclose their risk management procedures to the public?
- (5) Are off-balance sheet items disclosed to public?
- (6) Are bank directors legally liable if information disclosed is erroneous or misleading?

OFDISPR is a measure of official disciplinary power of the supervisory agency indicating whether the supervisory authorities can take specific actions to prevent and correct problems in the banking industry. This is determined by adding 1 if the answer is yes and 0 otherwise, for each one of the following 14 questions:

- (1) Are there any mechanisms of cease-desist type orders whose infraction leads to automatic imposition of civil and penal sanctions on banks directors and managers?
- (2) Can the supervisory agency order directors/management to constitute provisions to cover actual/potential losses?
- (3) Can the supervisory agency suspend director's decision to distribute dividends?
- (4) Can the supervisory agency suspend director's decision to distribute bonuses?
- (5) Can the supervisory agency suspend director's decision to distribute management fees?
- (6) Has any such action taken in last five years?
- (7) Can any supervisory agency (i.e. bank supervisor, court, deposit insurance agency, bank restructuring or asset management agency, etc.) supersede bank shareholder rights and declare ban insolvent?

- (8) Does banking law allow any supervisory agency to suspend some or all ownership rights of a problem bank?
- (9) Does the law establish pre-determined levels of solvency deterioration which forces automatic actions such as intervention?
- (10) Regarding bank restructuring and reorganization, can a supervisory regime or any other governmental agency supersede shareholder rights?
- (11) Regarding bank restructuring and reorganization, can a supervisory regime or any other governmental agency remove and replace management?
- (12) Regarding bank restructuring and reorganization, can a supervisory regime or any other governmental agency remove and replace directors?
- (13) Regarding bank restructuring and reorganization, can a supervisory regime or any other governmental agency forbear certain prudential regulations?
- (14) Regarding bank restructuring and reorganization, can a supervisory regime or any other governmental agency insure liabilities beyond any explicit deposit insurance scheme?

Consequently, DISPR can range between 0 and 14, with higher values indicating more disciplining power of the authorities.

Methodology

The model estimated in this study is a binary logit model of the following form:

$$E(y) = \frac{\exp(b_0 + b_1x_1 + b_2x_2 + \dots + b_nx_n)}{1 + \exp(b_0 + b_1x_1 + b_2x_2 + \dots + b_nx_n)}$$

where $y = 1$ if the auditor issues a qualified opinion; $y = 0$ if the auditor issues an unqualified opinion; $E(y = p \text{ (qualified opinion)}) = \Pi$; Π denotes the probability that $y = 1$; b_0 = the intercept term; b_1, b_2, \dots, b_n = the regression coefficients of independent variables; x_1, x_2, \dots, x_n = the independent variables.

The estimation of a logit model can be problematic when there are a few observations from one outcome (i.e. qualified statements) relative to the other one (i.e. unqualified statements). The reason is that the "information content" of such a sample for model estimation is quite small, leading to relatively imprecise parameter estimates (Palepu, 1986). One approach to tackle this problem is to use a choice-based sampling approach (i.e. equally matched sample of observations from the two groups) to increase the sampling rate of qualified financial statements. An alternative procedure that is being used in the present study is to weight the data and compensate for differences in the sample [10].

The model is estimated using annual data over the period 1995-2004, as it concerns bank specific characteristics. However, as data from the WB database are available for only two points in time [11] (i.e. 2001, 2003), we use country-specific data (i.e. AUDRQ, DISCRQ, OFDISPR) from the 2001 database for the period 1995-2000 and from the 2003 database for the 2001-2004 period. While this might seem constraining, note that Barth *et al.* (2004) point out that such regulations change very little over time and in their study control of these influences did not alter their findings. Consequently, in line with other studies that use this database (Focarelli and Pozzolo, 2001; Demircu-Kunt

and Detragiache, 2002; Buch and DeLong, 2004a, b; Fernandez and Gonzalez, 2005), we assume that these regulatory characteristics remain constant over limited periods of time.

Empirical results

Table III presents descriptive statistics[12] (mean, standard deviation) for the explanatory variables defined in Table II, along with the results of a Kruskal-Wallis test of means differences. The univariate tests suggest that the mean values of the independent variables for the qualified versus the unqualified financial statements are significantly different in almost all cases. More detailed, banks with qualified financial statements appear to be smaller, more liquid, less well capitalized, and less cost efficient on average than the ones with unqualified financial statements. We also observe significant differences in the case of AUDRQ, DISCRQ, and OFDISPR.

Table IV presents the results of the multivariate analysis. Two specifications of the logistic model are estimated[13]. The first specification (Model 1) includes only the five bank specific variables (i.e. LOGASS, EQAS, ROAA, COST, LIQ), while the second includes both the bank-specific variables and the country-specific variables (Model 2). The results of the two estimations are reported in columns 1 and 2, respectively.

Both models are statistically significant at the 1 percent level with χ^2 values equal to 2,001.07 (Model 1) and 2,691.625, respectively. The Nagelkerke $R^2 = 0.47$ (Model 1) and 0.88 (Model 2), accordingly.

The logarithm of total assets (LOGASS) has a negative and statistically significant coefficient in both cases indicating that the higher the size of the bank the lower the probability of receiving a qualification. A possible explanation is that large companies

	Unqualified ($N = 4,403$)		Qualified ($N = 199$)		Kruskal Wallis χ^2
	Mean	Standard deviation	Mean	Standard deviation	
LOGASS	3.753	1.012	3.328	0.810	67.075*
EQAS	7.965	9.067	5.098	4.008	42.165*
ROAA	0.282	1.301	-0.905	4.538	2.367
COST	59.231	19.396	81.964	48.128	70.466*
LIQ	23.653	21.496	34.833	17.066	93.903*
AUDRQ	4.766	1.648	5.487	0.681	16.646*
DISCRQ	4.812	0.819	4.528	0.737	30.954*
OFDISPR	10.635	3.054	9.211	1.351	77.338*

Notes: *Statistically significant at the 1 percent level; LOGASS – the logarithm of banks assets (express in US dollars); EQAS – the ratio of equity to total assets; ROAA – the return on average assets; COST – the cost to income ratio; LIQ – the ratio of liquid assets to customer and short term funding; AUDRQ – a variable taking values between 0 and 8 on the basis of eight yes/no answers on eight questions from Barth *et al.* (2001, 2006), with higher values indicating more auditing requirements in the banking sector of a country; DISCRQ – a variable taking values between 0 and 6 on the basis of six yes/no answers on six questions from Barth *et al.* (2001, 2006), with higher values indicating more accounting and information disclosure requirements in the banking sector of a country; OFDISPR – a variable taking values between 0 and 14 on the basis of 14 yes/no answers on 14 questions from Barth *et al.* (2001, 2006), with higher values indicating higher disciplining power of the authorities in the banking sector of a country

Table III.
Descriptive statistics and
Kruskal-Wallis test

	Model 1	Model 2
LOGASS	-0.813 **	-0.789 **
EQAS	-0.174 **	-0.140 **
ROAA	-0.098 **	-0.067 **
COST	0.030 **	0.036 **
LIQ	0.059 **	0.054 **
AUDRQ	-	1.099 **
DISCRQ	-	-1.010 **
OFDISPR	-	-0.028
Constant	0.198	-1.128 *
χ^2	2,001.074 **	2,691.625 **
Nagelkerke R^2	0.470	0.590

Notes: The sample consists of 4,403 unqualified statements and 199 qualified ones; *statistically significant at the 5 percent level; **statistically significant at the 1 percent level; LOGASS – the logarithm of banks assets (express in US dollars); EQAS – the ratio of equity to total assets; ROAA – the return on average assets; COST – the cost to income ratio; LIQ – the ratio of liquid assets to customer and short term funding; AUDRQ – a variable taking values between 0 and 8 on the basis of eight yes/no answers on eight questions from Barth *et al.* (2001, 2006), with higher values indicating more auditing requirements in the banking sector of a country; DISCRQ – a variable taking values between 0 and 6 on the basis of six yes/no answers on six questions from Barth *et al.* (2001, 2006), with higher values indicating more accounting and information disclosure requirements in the banking sector of a country; OFDISPR – a variable taking values between 0 and 14 on the basis of 14 yes/no answers on 14 questions from Barth *et al.* (2001, 2006), with higher values indicating higher disciplining power of the authorities in the banking sector of a country; Model 1 includes only bank specific variables; Model 2 includes both bank specific variables and country specific variables

Table IV.
Logistic regression
results

are more likely to have better accounting systems and internal controls, thus reducing disagreements and limitations on scope (Ireland, 2003). Furthermore, auditors are more likely to waive earnings management attempts (resulting in misstatements) in large clients, even after controlling for the materiality of such attempts (Nelson *et al.*, 2000).

Equity to assets (EQAS) is also statistically significant and negatively related to the probability of a qualified opinion, consistent with the univariate results, suggesting that less well capitalized banks are more likely to receive a qualified opinion. Therefore, this finding is consistent with the one of studies on non-financial firms which report that highly-g geared companies, which experience financial distress problems, are more likely to received qualified opinions (Ireland, 2003; Spathis *et al.*, 2002). This is probably due to banks management attempts to manipulate financial statements, given the need to overstate their financial position and meet regulators requirements.

ROAA is statistically significant and carries a negative sign as well. Hence, it supports the studies that examined non-financial sectors and indicate that firms which receive qualified opinions are less profitable ones (Loebbecke *et al.*, 1989; Summers and Sweeney, 1998; Beasley *et al.*, 1999; Spathis, 2002, 2003; Spathis *et al.*, 2003). As expected, COST is statistically significant and positively related to the probability of a qualified opinion, providing further support to the argument that less efficient banks are more likely to receive a qualified opinion.

Finally, consistent with the univariate results, LIQ carries a negative sign and is statistically significant, indicating that the more liquid the banks is the more likely it is to receive a qualified opinion. While this contradicts the financial distress and less efficient banks argument, one potential explanation is that assets might have been overstated, hence leading to disagreement-type modifications.

Turning to the country-specific variables, we observe that two (AUDRQ, DISCRQ) of the three are statistically significant. AUDRQ carries a positive sign, indicating that the higher the degree of external auditing requirements the higher the probability of a qualified audit opinion. This is not surprising since higher degree of external auditing requirements implies among others that there are specific requirements for the extent or nature of the audit, the auditors are licensed and/or certified, it is required by law to communicate directly to supervisory agency any presumed involvement of bank directors or senior managers in illicit activities, fraud or insider abuse, as well as that supervisors take legal action against auditors for negligence. Hence, auditors are under increased pressure to discover and report any misstatements in the financial statements.

In contrast, DISCRQ carries a negative sign indicating that less accounting and information disclosure requirements result in higher probability of a qualified opinion. This finding is in line with the argument that flexibility in accounting standards leads to ambiguity in implementation. Furthermore, as in such environments bank directors may not be legally liable if information disclosed is erroneous or misleading, it also provides support to the argument of Prescott (2004) that without appropriate penalties banks have not much incentives to report the true risks of their assets.

Conclusions

Prior studies on the determinants of audit reports focus on non-financial sectors. In contrast, the present study examines the banking sector and extends the limited but growing strand of the literature that investigated the pricing of audit services for financial institutions, the audit opinions on publicly-traded S and Ls institutions that subsequently failed, the effectiveness of bank audit, the loss underreporting and the auditor role of examination of banks, the impact of accounting and auditing systems on risk-shifting of safety nets in banking.

We use a sample of 199 qualified financial statements and 4,403 unqualified ones from nine Asian countries over the period 1995-2004 and logistic regression to examine the impact of bank specific and country specific characteristics on the probability of receiving a qualified audit opinion.

The results indicate that Asian banks that receive qualified opinions are in general smaller ones, less well capitalized, less profitable and cost efficient, and appear to have excess liquidity. More external auditing requirements and less accounting and disclosure requirements in the banking sector, also increase the probability of receiving a qualified audit opinion. Knowledge of these characteristics can be of particular interest to bank's managers, investors, credit analysts and bank supervisors. The latter rely heavily on external auditors as they access the financial performance of banks.

A possible direction towards future research could be to examine additional types of banks, as the present one has focused on commercial banks only. Another extension of the present study could be the inclusion of additional financial and non-financial

variables such as asset quality, audit fees and auditor's independence, that were not included in the present study due to data availability.

Notes

1. The investigation of the factors that had an impact on the Asian financial crisis in general, and whether auditing in particular has really played a role is out of the scope of this paper. We refer to this argument simply to emphasize the importance of an adequate auditing framework. For studies on the causes of the Asian financial crises one can see among others Corsetti *et al.* (1998); Goldstein (1998); Chino (1999); Berg (1999); Wade (1998); Das (2000); Kwack (2000); Miyakoshi (2000) and Shirai (2001).
2. It is well known that banks play a central role in the economy through their financial intermediation (BIS, 2002), and that their efficiency has an impact on economic growth (Rajan and Zingales, 1998; Levine, 1997, 1998). In contrast, bank insolvencies can result in systemic crises which have adverse consequences for the economy as a whole. Caprio and Klingebiel (2003) provide information on 117 systemic banking crises that have occurred in 93 countries and 51 borderline and smaller banking crises in 45 countries since the late 1970s.
3. The only audit information available in Bankscope is whether the auditor issued a qualified or unqualified opinion. Hence, we have no further information to distinguish whether qualifications are due to disagreements (e.g. accounting treatment or disclosure), limitations on scope (i.e. lack of audit evidence) or going-concern issues. Similarly, we have no information on whether unqualified audit reports contain explanatory paragraphs related to going-concern issues or other fundamental uncertainties.
4. We focus only on commercial banks to avoid differences in the financial statements between various types of banks (e.g. investment, savings, etc.).
5. Asset quality indicators have not been considered in the analysis due to the extremely high number of missing values in all the relevant variables.
6. Only the name of the current auditor is available in Bankscope (i.e. most recent accounts, in our case 2004). Hence, we could not observe whether the auditor was a big one or not for the entire period of our study, or whether the bank has switched auditors or not.
7. Probably the employment of risk-weighted such as the Tier 1 ratio would be more appropriate. However, due to extremely many missing values for Tier 1, we rely on EQAS that is considered one of the basic ratios whose use dates back to the 1900s, and is still being used in many recent studies in banking (Cyree *et al.*, 2000; Wheelock and Wilson, 2000, 2004; Kocagil *et al.*, 2002).
8. Cost refers to overheads, which are the costs of running business, such as staff salaries and benefits, rent expenses, equipment expenses and other administrative expenses.
9. The lower the value of this ratio, the more liquid the bank is.
10. The following formula is used: weighting for Group 0 (unqualified) = $(1/N_0) \times ((N_0 + N_1)/2)$, weighting for Group 1 (qualified) = $(1/N_1) \times ((N_0 + N_1)/2)$. Hence, the weight for unqualified financial statements is $(1/4,403) \times ((4,403 + 199)/2) = 0.522$ and the one for qualified financial statements is $(1/199) \times ((4,403 + 199)/2) = 11.563$.
11. Barth *et al.* (2004) indicate that data in the database that became available in 2001 are primarily from 1999. That is of the 107 responses reviewed, 13 were received in November 1998, 65 were reviewed in 1999, and 29 in 2000 (19 of which in either January or February).
12. It should be mentioned that all the descriptive statistics are after capping the extreme values of all financial variables. The influence of outliers can be severe in logistic regression. To deal with this problem we smooth all financial variables by replacing all observations above the

99th percentile with that value. This reduces the impact of outliers in the estimation of the parameters of the model while it allows retaining all observatories in sample.

13. A third specification was also estimated with all the bank and country specific variables as well as country (dummy) variables. The rationale for the inclusion of the dummy variable was to control for any differences not considered through our three country-specific variables. We do not report the results in the paper, as none of the country variables was statistically significant.

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