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Secrecy Culture and Audit Opinion: Some International Evidence

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Secrecy Culture and Audit Opinion: Some International Evidence

Abstract

We examine whether and how auditors respond to audit risks arising from secrecy culture when making audit opinions decisions. Using a sample of international Big N auditors from 33 countries, we find strong and robust evidence that auditors are more likely to issue modified audit opinions to clients domiciled in countries with a strong secrecy culture. In addition, we find that the association between secrecy culture and auditors' propensity to issue modified audit opinions is less pronounced in countries with strong investor protection than that in countries with weak investor protection.

I. INTRODUCTION

Culture has been defined as a collective programming of the mind that distinguishes one group of people from another (Hofstede and Bond 1988). These values and beliefs are transmitted relatively unchanged from generation to generation (Guiso, Sapienza, and Zingales, 2006). Culture influences human beings' behavior and in turn has economic consequences[1]. Accountants have a strong interest in understanding the role of culture in various financial reporting practices. Gray (1988) was among the first authors to develop a framework for a country-level accounting subculture based on Hofstede (1980). Among various accounting subcultures[2], Gray (1988) identifies secrecy culture as an important factor associated with disclosure risk (e.g., Gray 1988; Gray and Vint 1995; Hope, Kang, Thomas, and Yoo 2008; Wingate 1997). One question naturally arising from previous studies is whether and how auditors respond to the reporting risks inherent in secrecy culture. We attempt to shed some light on this issue by examining audit opinion decision.

One important responsibility of the accounting profession is to issue audit opinion (Choi and Jeter 1992). An auditor is required to express opinions on whether financial reporting is prepared in accordance with generally accepted accounting principles (GAAP), and a modified

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[1] The literature provides ample evidence that culture has economic consequences (see e.g., Adler 1997; Guiso, Sapienza, and Zingales 2006; Hofstede 1980; House, Hanges, Javidan, Dorfman, and Gupta 2004; Ralston, Holt, Terpstra, and Cheng 1997; Salter and Niswander 1995; Stulz and Williamson 2003).

[2] Gray (1988) constructs four dimensions of subcultures in the accountancy profession: professionalism versus statutory control, uniformity versus flexibility, conservatism versus optimism, and secrecy versus transparency.

audit opinion is issued when a client has misstatements arising from GAAP violations. Issuing

opinion is one of the most significant tools for communicating with financial information users.

Indeed, audit opinions, particularly modified audit opinions, are associated with various economic

outcomes for client firms[3]. Despite the importance of audit opinions in capital markets, very few

studies examine the determinants of audit opinions in an international context. In addition,

although numerous behavioral studies show that national culture significantly influences auditors'

judgments and decision-making (see Nolder and Riley 2013), systematic studies based on large

samples of archival data are scant due to data limitations[4]. We are motivated to advance our

understanding of auditor's opinion decision by examining the culture effect in an international

context. We believe that audit opinions are observable outcomes of audits directly under the

auditors' influence and control and thus could overcome the limitations and provide additional

insights beyond prior behavioral studies.

Auditors are expected to express independent opinions. Failure to report a modified audit

opinion when one is warranted indicates an egregious audit failure, which erodes auditor reputation

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[3] A modified audit opinion sends a signal to the market that financial reporting is unreliable and thereby affects
investors' responses to the earnings number. Previous studies show that modified audit opinions are associated with
lower earnings response coefficients (ERCs) (e.g., Choi and Jeter 1992), negative stock returns (Chen, Su, and Zhao
2000), and unfavorable loan terms (Chen, He, Ma, and Stice 2015).

[4] Prior behavioral studies are normally based on a small number of countries. One notable limitation using archival
data is that it is difficult to find observable outcomes of auditors' behavior. This limitation suggests that inferences
from proxies based on archival data are likely to be weak.

capital and results in litigation costs (DeFond and Zhang 2014). To safeguard valuable reputation

capital and avoid litigation risks, auditors act conservatively and lower the threshold for issuing

modified audit opinions to clients with high misstatement risk (Francis and Krisnan 1999, 2002;

Geiger and Raghunannda 2002; Geiger, Raghunannda, and Rama 2005)[5]. A secrecy culture

constitutes one misstatement risk because managers embedded in such a culture tend to avoid

hiring competent auditors (Hope et al. 2008), use opaque disclosure policies (Gray and Vint 1995;

Wingate 1997), and aggressively use discretionary accruals (Braun and Rodriguez 2008).

Responding to the misstatement risks in a secrecy culture, auditors are likely to issue modified

audit opinions to the clients domiciled in such culture to protect their reputation and reduce

litigation risks (Carcello and Palmrose 1994; Reynolds and Francis 2000). In the international

setting, although litigation risks vary in different countries, audit failure in one country is likely to

result in reputation loss in other countries (Cahan, Emanuel, and Sun 2009). Drawing on the

literature, we hypothesize that auditors are more likely to issue modified audit opinions to clients

domiciled in societies that exhibit a strong secrecy culture.

We also recognize that social norms never exist in a vacuum and thus consider the

moderating effect of investor protection on the relationship between secrecy culture and modified

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[5] For example, with increased risk exposure after the Sarbanes-Oxley Act was implemented in 2002, the probability
of issuing going concern opinions increased (e.g., Geiger et al. 2005) in the U.S.

audit opinions. For example, prior study shows how interplay between informal and formal institutions affects financial reporting practices (e.g., Han, Kang, Salter, and Yoo 2010). We argue that investor protection has two competing effects on auditor opinion decision and thus its moderating effect is not clear. On the one hand, auditors are more conservative under strict investor protection regimes (Chen, Sun, and Wu 2010; Fung, Zhou, and Zhu 2016) and thus are more likely to issue modified audit opinions to reduce litigation and reputation loss risks (e.g. Francis and Krisnan 1999, 2002). On the other hand, strong formal institutions deter managers from adopting opaque disclosure policies and reporting poor quality financial statements, leading to lower misstatement risks (e.g. Leuz, Nanda, and Wysocki 2003; Fung, Su, and Gul 2013). This argument suggests insiders' tendency to withhold information in a secrecy culture is reduced under strong investor protection regimes and thus auditor's propensity of issuing modified opinions decreases. Extending the first research question, our second empirical question therefore is how investor protection moderates the relationship between secrecy culture and the propensity of issuing modified opinions.

We empirically examine the aforementioned research questions using an international

sample of Big N auditors[6] for three main reasons[7]. First, compared to non-Big N auditors, Big N

auditors are less likely to be affected by local culture (Soeters and Schreuder 1988) and thus are

more objective in viewing reporting risks inherent in that culture. Big N auditors therefore provide

a better setting to examine these issues than non-Big N auditors. Second, Big N auditors have

greater capacity and stronger incentives than non-Big N auditors to use various mechanisms to

ensure that their audits are of consistently high quality across different jurisdictions (Francis and

Wang 2008; Toffler 2003). Therefore, reliable inferences can be drawn from the analyses based on

data from Big N auditors because the quality of services rendered by these auditors worldwide is

consistent[8]. Last, Big N auditors are the dominant players in global audit markets (Francis, Michas,

and Seavey 2013) and they influence audit practices worldwide (Humphrey, Loft, and Woods

2009). As a result, findings based on Big N auditors also provide implications for other auditors.

Using a sample of audits conducted in 33 countries from 1994 to 2012, we show that

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[6] In our sample period 1994–2012, the Big N auditors mainly refer to the Big 4 auditors (PricewaterhouseCoopers, Deloitte Touche Tohmatsu, Ernst & Young, and KPMG). We also use Big 5 auditors (adding Arthur Andersen) to examine our research questions and yield similar results.

[7] Although we recognize the potential problems of including non-Big N auditors, we perform an analysis based on a sample consisting of both Big N and non-Big N auditors. Consistent with the findings shown in this paper, the results show that auditors (including Big N and non-Big N auditors) are more likely to issue modified audit opinions to clients located in a secrecy culture, and the results are more pronounced for Big N auditors. Due to the focus of our paper, we do not report the results here.

[8] Previous studies also use Big N auditor firms as testing sample to control for auditor capacity and brand name, two factors that significantly influence auditor behavior (see DeFond and Zhang 2014 for discussions).

auditors are more likely to issue modified audit opinions to clients domiciled in countries with a strong secrecy culture[9], confirming secrecy hypothesis (Gray 1988). Further analyses show that such association is less pronounced in countries with strong investor protection than in those with weak investor protection, suggesting that the misstatement risk in secrecy culture is mitigated by formal institutions pertaining to investor protection. We conduct additional tests by restricting our analyses to samples of financially distressed firms. This restriction is based on previous findings (e.g., DeFond, Raghunannda, and Subramanyam 2002) that financially distressed firms have high reporting risks and thus are more likely to receive modified audit opinions. Our results do not change with the use of financially distressed firm samples. Our analyses also reveal that the positive relationship between secrecy culture and auditors' propensity to issue modified audit opinions still exists in multinational firms, consistent with the home-country institution effect documented in previous studies (e.g., Shi, Magnan, and Kim 2012). We conduct some additional analyses to exclude some alternative explanations, e.g. manager's reporting incentives. We find that our results are not driven by managers' reporting incentives and thus further support the culture explanation of modified audit opinions. Complementing with prior studies linking secrecy culture and actual reporting quality (Braun and Rodriguez 2008; Gray and Vint 1995; Wingate 1997), our

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[9] In this study, we test our hypotheses mainly using Big 4 auditors to be consistent with the literature (e.g., Hope et al. 2008). However, our results are quantitatively similar using Big 5 auditors

result that controls for earnings quality also suggests that auditors *perceive* secrecy culture as one important risk factor (italic emphasis added). Finally, our findings stand up to a battery of robustness checks.

Our study contributes to the literature in the following ways. First, to the best of our knowledge, this study is the first to examine how auditors respond to misstatement risks that are inherent in culture based on large scale archival data. Our study thus extends the culture and accounting literature (e.g., Gray 1988; Gray and Vint 1995; Han et al. 2010; Hope 2003; Hope et al. 2008; Wingate 1997) and provides insights into the role of culture in audit practices. One implication is that a secrecy culture is an important audit risk factor that auditors should take into account. Because audit opinions are associated with economic consequences in financial markets, our research could be further extended to understand how culture affects the response of investors to audit opinions.

Second, our study suggests the joint effect of formal and informal institutions on audits. Previous studies (e.g., Choi, Kim, Liu, and Simunic 2008; Seetharaman, Gul, and Lynn 2002) document that auditors consider formal institutions, such as investor protection, as risk factors when they perform audits. Our study complements and extends previous studies by showing the joint effect of formal and informal institutions in affecting audits. One implication is that practitioners should consider both formal and informal institutions when perform audits.

Finally, the issue of whether and how auditors should respond to reporting risks that are inherent in secrecy culture is also of interest to regulators. For example, the Public Company Accounting Oversight Board (PCAOB) suggests that "local business practices and cultural norms in emerging markets may differ from those in more developed markets, and auditors should be alert to the effect of these differences on the risks of material misstatement" (PCAOB 2011). Our study sheds some light on this issue and thus has some implications for regulators.

The remainder of this paper is organized as follows. In Section 2, we review the literature and develop hypotheses. In Section 3, we outline the research design and describe the data collection. The empirical results are discussed in Section 4. We conclude the paper in Section 5.

II. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Secrecy Culture and Accounting/Auditing Practices

Culture distinguishes one group of people from another (Hofstede and Bond 1988). It shapes people's values, which consequently influence their attitudes and, ultimately, their behavior (Adler 1997). After surveying more than 30 countries, Hofstede (1980) empirically constructs four cultural indices, namely, collectivism/individualism, power distance, uncertainty avoidance, and masculinity, to measure cultural dimensions. Based on Hofstede (1980), a large number of subsequent studies examine the effect of culture on various business practices. Gray (1988) is one of the early works that introduced Hofstede (1980) into the accounting profession. Among four

accounting subcultures, Gray (1988) highlights the importance of the opposing dimensions of secrecy and transparency. He contends that secrecy is positively related to uncertainty avoidance and power distance and negatively related to individualism and, in secretive societies, people tend to restrict information within insiders. Gray and Vint (1995) use survey data to demonstrate that accounting disclosure is positively associated with individualism and negatively associated with power distance and uncertainty avoidance. Similarly, cross-country studies (e.g., Han et al. 2010; Hope 2003; Wingate 1997) report that individualism and uncertainty avoidance both contribute to explain the variations of disclosure levels of a firm. Using a sample from China, Chan, Lin, and Mo (2003) report that greater power distance is positively associated with larger accounting errors. Hope et al. (2008) develop a composite measure of secrecy culture and document that companies in countries with high secrecy indices are less likely to choose Big N auditors, although this effect is less pronounced for multinational firms which are less affected by local culture. Braun and Rodriguez (2008) find a significantly negative association between secrecy culture and earnings quality proxied by abnormal accruals. Taken together, the evidence shows that firms in a secrecy culture have great misstatement risks.

Secrecy Culture and Audit Opinions

The purpose of an audit is to express opinions on the fairness with which financial

statements "present, in all material respects, financial position, results of operations, and its cash flows in conformity with generally accepted accounting principles" (AICPA 1972). Unless financial statements are presented in accordance with GAAPs, clients are likely to receive the following different types of modified audit opinions: explanatory language added to the auditor's standard report, qualified opinions, adverse opinions, and disclaimers of opinion (AICPA 1988, SAS No. 58)[10]. PCAOB AU 508 adopted the existing reporting standards (including SAS No. 58) with some modifications and expansions (PCAOB 2003). In general, the standards require an auditor to issue qualified or adverse opinions when misstatements due to GAAP violations occur. In spirit with the standards, Francis and Krishnan (1999) show that Big 4 auditors in U.S. are more likely to issue modified audit opinions to clients with more within-GAAP manipulations proxied by abnormal accruals.

Drawn on prior literature, we argue that firms in a secrecy culture have greater misstatement risks and thus are more likely to receive modified audit opinions. Managers in a secrecy culture tend to restrict information within insiders by adopting opaque disclosure policies (Gray and Vint 1995; Wingate 1997), using discretionary accruals opportunistically (Braun and Rodriguez 2008), and hiring less competent auditors (Hope et al. 2008). As a result, a secrecy

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[10] International audit standards have similar classifications albeit with subtle differences (see International Standard on Auditing 705, IFAC 2009).

culture increases audit risks because there is a high possibility that material information will be

withheld (Hope et al. 2008). In response to the misstatement risks inherent in a secrecy culture, we

argue that auditors will follow auditing standards and issue modified audit opinions to clients

embedded in a secrecy culture. The risks of litigation and reputation loss also force auditors to

issue modified audit opinions to such clients. Carcello and Plamrose (1994) argue that issuing

modified audit opinions helps audit firms protect their reputation and reduces the likelihood of

being sued (and thus reduces litigation costs) if subsequent bankruptcy occurs. Other studies show

that auditors lower the threshold for issuing modified audit opinions to compensate for the

exposure to misstatement risks (Francis and Krisnan 1999, 2002; Geiger and Raghunannda 2002;

Geiger et al. 2005). In recognition of the reporting risks inherent in a secrecy culture, auditors are

more likely to issue modified audit opinions to reduce the risks of litigation and reputation loss.

Based on the above arguments, we formally state our first hypothesis as follows:

H1: Auditors are more likely to issue modified audit opinions to clients domiciled in a secrecy culture.

Although we primarily investigate the effect of secrecy culture on modified audit opinions,

we also recognize that social norms such as culture never exist in a vacuum. Previous studies find

a joint effect of formal and informal institutions on financial reporting practices (Han et al. 2010).

In a similar vein, we argue that the interplay between informal and formal institutions affects

auditors' behavior. On the one hand, strong investor protection regimes force auditors to be more conservative (Chen et al. 2010; Fung, et al. 2016) and thus they are more likely to issue modified audit opinions because auditors are exposed to high litigation and reputation loss risks when investors are well protected. On the other hand, investor protection affects managers' financial reporting practices. For example, prior studies (e.g., Leuz et al. 2003; Fung et al. 2013) show that companies in countries with strong formal institutions provide more transparent disclosures and have higher earnings quality than those in countries with weak formal institutions. This view predicts that clients' tendency to withhold information in a secrecy culture is reduced under strong investor protection regimes and thus the propensity of issuing modified opinions decreases. Therefore, the role of investor protection in moderating the relationship between secrecy culture and the probability of issuing modified opinions becomes an empirical question. We therefore state our second hypothesis (in a null form) as follows.

H2: The effect of secrecy culture on modified audit opinions does not vary with investor protection.

III. RESEARCH METHODOLOGY

Measurement of Key Variables

Modified audit opinion (MAO)

We use a dummy variable to indicate modified audit opinion (*MAO*), coded 0 for clean and

1 for modified audit opinion. We extract audit opinion data from COMPUSTAT Global, in which

modified audit opinions include qualified opinion, unqualified opinion with explanatory paragraph,

disclaimer of opinion (going-concern opinion), and adverse opinion[11]. Modified audit opinions are

issued based on many different grounds and the requirements to issue modified opinions vary

across jurisdictions[12]. The proportion of firms that receive modified audit opinions is surprisingly

high for some countries included in our test sample (for example, Indonesia, Israel, and Turkey,

see Table 1 for details). To assess the validity of *MAO* in international setting, we trace back to the

source documents of the audit reports[13]. We randomly select audit reports from at least three firms

in our sample countries. Based on a manual examination of the audit reports, we find that the

modified audit opinions included in our sample are reasonably good indications of auditors'

reservations about issuing a clean report. We believe that the issuance of modified audit opinions

generally alerts financial information users to auditors' concerns about their clients' compliance

issues despite the different rules for issuing modified audit opinions around the world. As a

robustness check, we repeat our analyses based on a reduced sample (excluding countries with

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[11] We note that the terminology of each audit opinion may differ in different jurisdictions due to different audit standards and practices.

[12] Modified audit opinions can be issued based on (but not limited to) the following grounds: a significant change in accounting policy, a justifiable deviation from local financial reporting practice, significant disagreement with the client on the choice of accounting policies or the methods of application, or a disclaimer of opinion.

[13] We obtain the audit reports from company website and morningstar.

extremely high average *MAO*) and obtain similar results.

Secrecy culture (SEC)

Gray (1988) defines secrecy culture as "a preference for confidentiality and the restriction of disclosure of information about the business only to those who are closely involved with its management and financing as opposed to a more transparent, open and publicly accountable approach." Despite the popularity of this definition, secrecy measurement remains challenging until recently. Gray (1988) conceptually proposes that cultural secrecy is positively related to uncertainty avoidance and power distance and negatively related to individualism. Hope et al. (2008) is the first study to provide a novel measure of secrecy culture that translates secrecy (Gray 1988) into an empirical construct using Hofstede (1980). In this study, we follow Hope et al. (2008) and measure secrecy[14] (*SEC*) as

$$SEC = UA + PDI - IDV$$

where *UA* is the uncertainty avoidance index, *PDI* is the power distance index, and *IDV* is the individualism index. These cultural indices are adopted from Hofstede (2001) to capture cultural traits in our sample period. Although we use this measure of secrecy in our main analyses, we also supplement the main results with other measures of secrecy suggested by Hope et al. (2008) in robustness tests.

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[14] Geiger and Van der Laan Smith (2010) also follow Hope et al. (2008) to measure cultural secrecy.

Empirical Model

Following the literature (Chen, et al. 2010; Chen, et al. 2013; DeFond, et al. 2002; Fung et al. 2016; Lennox and Li 2012; Reynolds and Francis 2000), we adopt the following specification to test our first hypothesis:

$$Prob(MAO = 1) = \alpha_0 + \alpha_1 SEC + \sum_{i=2}^{n} Control_i + \text{Industry Effects} + \text{Year Effects} + \varepsilon \quad (1)$$

MAO is an indicator variable that equals 1 if an auditor issues a modified audit opinion to the client and 0 otherwise. *SEC* is cultural secrecy as defined in the previous section. In addition to *SEC*, we control for other factors that capture the effect of client-level characteristics on an auditor's decision to issue an opinion. We control for lag modified audit opinions (*LMAO*) to correct time series correlation. We use the natural logarithm of the client's total assets to measure firm size. Large firms are more likely than small firms to avoid bankruptcy (Reynolds and Francis 2000) and thus are less likely to receive modified audit opinions. Operating risks are important factors that affect the propensity of auditors to issue modified audit opinions. Firms with high illiquid assets (low *QUICK* or high *ARINV*), low operation efficiency (*TURNOVER*), and high debt ratios (*LEV*) are associated with high financial risks, leading to greater likelihood of receiving modified audit opinions. Loss firms (*LOSS*) have large operating risks and thus are more likely to receive *MAO*. The stock market performance of firms also affects the propensity of auditors to issue modified audit opinions (DeFond et al. 2002). In our model, we also control for stock market performance and risk factors, such as stock market systematic risk (*BETA*), stock return over the fiscal year (*RET*), and unsystematic risk (*STDRET*). Greater risks (high *BETA* and *STDRET*, low

RET) are positively correlate with the issuance of modified audit opinions (Chen et al. 2010; DeFond et al. 2002). GDP is controlled to address the effect of the economic development of a given country. We also control for country-level formal institutions such as common law (*UKLAW*) and anti-director provisions (*ANTIDIR*). We further include year and industry fixed effects in our main empirical models. The standard errors are clustered by firm to account for the potential variations at firm-level.

Our second hypothesis concerns the joint effect of formal and informal institutions on audit opinion. In the present study, we consider different dimensions of investor protection (*GOV*) documented by previous studies, including law and/or provisions-related indices and resource-based measures. In particular, we consider anti-director provisions (*ANTIDIR*), auditors' liability (*LITSTD*), disclosure requirement (*DISREQ*), and the availability of enforcement team (*SECSTAFF*) as important measures of formal institutions that drive auditors to provide effective audits (Francis and Wang 2008; Gul et al. 2013; and Jackson and Roe 2009). These four indices include both regulations or provisions-based measures and resource-based measures and therefore capture investor protection from different perspectives. Table 2 shows that these four measures of investor protection are highly correlated. To identify the commonalities of various investor protection measures in this study, we use the factor analysis method (Bushman et al. 2004) to construct a composite measure of investor protection. We perform a principal factor analysis using maximum likelihood estimation (MLE) procedures on the four measures to generate a proxy for the unobserved investor protection construct. The procedure returns only one factor that has an Eigenvalue greater than 1. We then construct a composite index by combing the measures using the scoring coefficients and label the composite investor protection index *INVPRO*. We report the statistics of *INVPRO* in Table 1. Using *INVPRO* as one of our investor protection measures, we

test our second hypothesis using the following specification.

$$Prob(MAO = 1) = \alpha_0 + \alpha_1 SEC + \alpha_2 GOV + \alpha_3 SEC * GOV + \sum_{i=4}^{n} \alpha_i Control_i$$

$$+ \text{Industry Effects} + \text{Year Effects} + \varepsilon \qquad (2)$$

GOV includes the investor protection indices *ANTIDIR, LITSTD, DISREQ, SECSTAFF,* and *INVPRO*, and *SEC*GOV* is an array of interaction terms between *SEC* and *GOV.* All other variables are defined in Equation (1). A significantly negative (positive) coefficient of *SEC*GOV* suggests that the effect of *SEC* on *MAO* is weakened (strengthened) by investor protection.

In the above research designs, we examine our hypotheses based on a full sample for the sake of generalization. However, this approach may lead to sample bias because auditors' issuance of non-clean reports is conditional on clients' financial status. Following past studies (e.g., DeFond et al.2002; Geiger and Rama, 2003; Li, 2009; Reynolds and Francis, 2000), we also examine our hypotheses using a sample consisting of financially distressed firms (i.e., a sample of client firms with negative earnings) to further bolster our findings.

Sample and Descriptive Statistics

We obtain data from different sources. Auditor and financial data are obtained from the COMPUSTAT Global Industrial and Commercial file from 1994 to 2012. We extract cultural

indices data from Hofstede (2001) to construct secrecy culture measure. We obtain investor

protection data from La Porta et al. (1998), La Porta et al. (2006), and Jackson and Roe (2009).

Macro-economic data is sourced from World Development Indicators (WDI) provided by the

World Bank. Data are included in our sample based on the following criteria: (1) firm-year

observations without any missing values for dependent and independent variables that are

specified in the empirical models; (2) data from non-financial institutions and non-utility firms; (3)

firms audited by Big 4 auditing firms[15]; and (4) observations from countries other than Japan,

South Korea, India, and Pakistan, as suggested by Francis and Wang (2008)[16]. The above

procedures result in 49,697 observations in 33 countries from 1994 to 2012.

Table 1 presents the descriptive statistics for all country-level and firm-level variables used

in our study. Panel A displays the by-country mean value of each key variable. The U.K. has the

largest sample size among all of the countries in our sample[17]. The mean *MAO* is lower in Anglo-

Saxon countries such as Australia, New Zealand, and the U.K. than in other countries. The large

differences between countries can be explained by differences in their legal systems and

[15] We also use Heckman model to correct potential selection bias problem. The untabulated results show that our
results are unaffected by selection problems.

[16] Following Francis and Wang (2008), we exclude observations from Japan, South Korea, India, and Pakistan because
of the potential miscoding of the auditor identification variable for these countries.

[17] The over-representation of U.K. data in our sample may result in bias. In a robustness test, we remove the
observations from the U.K. and repeat our analyses. Our results are intact after this exclusion, suggesting that our
inference is not influenced by sample composition.

regulations. For example, auditors in Greece (a code law country) are required to assess whether financial reporting fairly presents economic realities in accordance with both accounting standards and commercial laws (including taxation law). In our sample, Portugal has the highest value of *SEC* and Denmark has the lowest value of *SEC*. In general, *SEC* is lower in Anglo-Saxon countries such as Australia, New Zealand, and the U.K. than in other countries, which is consistent with our expectation that firms in Anglo-Saxon countries are more transparent and thus less likely to receive modified audit opinions. We also show that common law jurisdictions such as Australia, Canada, Singapore, and the U.K. have stronger investor protection regimes, as indicated by our composite investor protection regime measure (*INVPRO*).

[Insert Table 1 here]

Panel B of Table 1 presents the descriptive statistics for the firm-level variables used in our analyses. The average *MAO* issued by Big 4 auditors is 0.172 (median = 0.000), suggesting that a considerable proportion of Big 4 clients receive modified audit opinions. The mean value and distribution of *LMAO* are similar to those of *MAO*. In our sample, Big 4 clients' average return on assets (*ROA*) and stock return (*RET*) are negative. On average, these firms finance half of their capital from debt (*LEV* = 0.485). The average *BETA* is 0.597 in the Big 4 clients' sample.

In Table 2, we present the correlations among the key variables in this study. Secrecy culture (*SEC*) is negatively associated with anti-director provisions (*ANTIDIR*), common law

(*UKLAW*), and auditors' litigation index (*LITSTD*). The correlation matrix also reveals that *SEC* is significantly positively associated with *MAO,* which is consistent with our first hypothesis. The table also shows that investor protection measures such as *ANTIDIR*, *DISREQ*, *LITSTD*, *SECSTAFF*, and *INVPRO* are negatively associated with *MAO*, suggesting that firms exposed to stronger investor protection regime and scrutinized by capable regulators have lower misstatement risks.

[Insert Table 2 here]

IV. EMPIRICAL RESULTS

Association between Secrecy Culture and Auditors' Propensity to Issue Modified Audit Opinions: Tests of Hypothesis H1

Table 3 presents the results of Hypothesis H1 testing. Columns (1) and (2) provide the estimation results of Model (1) without and with the term of *SEC* respectively, using a full sample. Column (1) shows that Big N auditors are less likely to issue modified audit opinions to clients in common law countries (*UKLAW*) or countries with strong investor protection (*ANTIDIR*). Consistent with previous studies (e.g., DeFond et al. 2002; Chen et al. 2010), we find that larger firms (*LNASSET*) and firms with higher risks (i.e., high *BETA*, *LOSS*, *LEV* or low *QUICK*, *TURNOVER*) are more likely to receive modified audit opinions. Column (2) of Table 3 shows that the coefficient of *SEC* is significantly positive (coefficient=0.008, P = 0.00). In terms of

economic significance, the result suggests that one standard deviation increase in *SEC* is associated

with around 0.48 (0.008* Std *SEC* (55)) increase in probability of issuance of *MAO*. This result

indicates that the likelihood of issuing a modified audit opinion is higher for clients domiciled in

high secrecy culture societies than for other clients. The pseudo R-squares are all above 0.300,

which are comparable to previous studies (e.g. Fung et al. 2016). The estimation results of control

variables are generally consistent with the literature. In summary, the results support H1 and

suggest that auditors are more likely to issue modified audit opinions to clients domiciled in high

secrecy culture societies than to other clients.

[Insert Table 3 here]

Joint Effect of Secrecy Culture and Investor Protection on Auditors' Propensity to Issue Modified Audit Opinions: Tests of Hypothesis H2

We test Hypothesis H2 by estimating Equation (2) with the inclusion of an interaction term

between secrecy culture and investor protection (*SEC* * *GOV*). The regression results are reported

in Table 4. We use various measures of investor protection, including anti-director provisions

(*ANTIDIR*), accountants' liability (*LITSTD*), disclosure requirement (*DISREQ*), monitoring

resources (*SECSTAFF*), and a composite measure of investor protection (*INVPRO*). Consistent

with the results in Table 3, secrecy (*SEC*) remains significantly positively associated with *MAO*

for all measures of investor protection in Table 4. The interaction term (*SEC*GOV*) is significantly

and negatively associated with *MAO,* rejecting our second hypothesis (a null hypothesis) and

suggesting a substitutional effect of *SEC* and *GOV* in driving *MAO*. To assess the overall effect of

GOV on MAO, we multiply α_3 (i.e., the coefficient of *SEC*GOV* which is -0.002 in Column 1) by

the mean of *SEC* (64) and then plus the coefficient of *GOV* (0.049)[18]. The net value of these two

terms remain negative (-0.002*64 + 0.049 = -0.079), suggesting that on average *GOV* is still

negatively associated with *MAO,* consistent with the results in Table 3. The pseudo R-squares are

all approximately 0.300. The results suggest that the association between secrecy culture and the

likelihood of issuing modified audit opinions is less pronounced in countries with strong investor

protection than in those with weak investor protection.

[Insert Table 4 here]

Country-level Analyses

 Similar to a number of previous studies, our results so far are based on firm-level analyses (e.g.

Lennox and Li 2012; Fung et al. 2016). The rationale for this approach is that *MAO* is engagement-

specific decision and thus should be analyzed based on firm level. Nevertheless, a potential bias

may exist because our independent variable of interest is a country-level variable. To address this

concern, we perform another set of analyses based on country-year level data[19]. For each country-

year, we obtain country-year *MAO* measure by taking average of *MAO* of all observations within

a particular country-year. This approach generates 554 country-year observations. We then include

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[18] $\frac{\partial Prob(MAO=1)}{\partial GOV} = \alpha_2 + \alpha_3 \times SEC$

[19] We thank the reviewer for this suggestion.

country-level variables in Model (1) in our country-level regression model. To account for time variation, we control for year-fixed effect. We report our results in Table 5.

[Insert Table 5 here]

The first column of the table presents the effect of secrecy culture on *MAO* based country-year data. Consistent with the results in Table 3, the association between *SEC* and *MAO* is significantly positive. The result of interaction effect (*SEC*ANTIDIR*) based on country-year level analyses (Column 2) is also consistent with that in Table 4. The R-squares in this table are comparable to those in previous tables. Taken together, the country-level results further strengthen our previous findings.

Financially-Distressed Firms

DeFond et al. (2002) argue that financially distressed firms are more likely to receive modified opinions than their counterparts and suggest that analyzing audit opinions should be based on a sample consisting of financially distressed firms. We address this issue by analyzing data from loss firms only. Based on this sample, we run regressions based on Model (1) and Model (2). The results are presented in Table 6.

Panel A presents the regression result for the effect of secrecy culture on modified audit opinions based on a sample that consists of financially distressed firms only (negative earnings). As shown in the panel, the coefficient of *SEC* is significantly positive (coefficient=0.004, P < 0.01). Consistent with the result in Table 3, this result indicates that the likelihood of issuing modified

audit opinions is higher for clients domiciled in societies with high secrecy culture than for other clients.

Panel B presents the regression results for the joint effect of secrecy culture and investor protection on audit opinions based on a sample that consists of financially distressed firms only. The results consistently show that secrecy culture and investor protection substitute each other in driving modified audit opinions, consistent with the findings in preceding sections. The results in this table together with those in Table 4 reject our second hypothesis and support the substitution effect of secrecy culture and investor protection in affecting audit opinions.

[Insert Table 6 here]

Multinational Firms

Multinational firms have several operations in different countries and thus are exposed to different cultures. As a result, these firms may be less likely to be affected by secrecy culture in their domiciled countries. Hope et al. (2008) show that the effect of secrecy on the choice of Big 4 auditors is weaker in multinational firms than in non-multinational firms. However, an opposing view suggests that home-country institutions, both formal and informal, may affect multinational firms' accounting practices (Shi et al. 2012). Thus, substantial reporting risks still exist in multinational firms domiciled in high secrecy cultures. Based on this argument, we expect that the effect of secrecy on audit opinions does not significantly vary between multinational firms and

non-multinational firms. We follow Hope et al. (2008) and define firms with more than 10% foreign tax to total tax as multinational firms (*MNC*). We run the regression based on an augmented specification of Model (1) by including an interaction item (*SEC*MNC*). We report the results in Table 7. In column (1), we report the results of a regression specification that includes multinationality (*MNC*). Result shows that *MNC* is negatively but not significantly associated with *MAO*, suggesting that multinational firms are less likely to receive modified audit opinions. In column (2), we report the results of a regression specification that includes a two-way interaction term (*SEC*MNC*). *SEC*MNC* is negative but not significant, suggesting that the relationship between *SEC* and *MAO* does not significantly vary with multinationality. Our results are consistent with the results of Shi et al. (2012), suggesting the power of culture in affecting mindsets in multinationals.

[Insert Table 7 here]

Addressing the Concurrent Effect of Managers' Misstatement Incentives

Because the issuance of *MAO* is jointly determined by financial reporting quality that is largely affected by managers' misstatement incentives and auditor judgment, one concern arising is whether our result could be driven by managers' incentives[20]. To disentangle these two

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[20] We thank the reviewer for this suggestion.

alternative explanations, we employ two approaches. One approach is to control for managers'

reporting incentives in our specifications. Prior studies show that managers use discretionary

accruals to manipulate earnings, suggesting that accruals quality is a viable *ex post* measure of

managers' reporting incentives[21]. Following Francis et al. (2013), we include signed accruals

quality (*ACCRUALS*) as an additional control variable in our regression and report the results in

Table 8.

[Insert Table 8 here]

Our results indicate that firms with high abnormal accruals are more likely to receive

modified audit opinions, consistent with Francis and Krishnan (1999). More importantly, it shows

that our results are unchanged after controlling for accruals quality. Our second approach is to use

two-stage analysis. At the first stage, we use accruals quality and other firm-level variables as

independent variables to predict *MAO* following Gul, Wu, and Yang (2013). The determinants in

the first stage regression represents factors affecting managers' earnings management incentives.

The residual value derived from the first-stage regression represents *MAO* that is not explained by

managerial incentives. We then use residual *MAO* as dependent variable and include *SEC* and other

variables as independent variables in the second stage regression. The results still remain

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[21] Francis and Krishnan (2002) find that auditors are likely to issue modified audit opinions to firms with high
abnormal accruals because of high reporting risks.

qualitatively unchanged. In sum, our results based on the above two approaches suggest that our findings are not driven by managers' reporting incentives.

Robustness Checks

Alternative measure of secrecy by inclusion of masculinity scores

Gray (1988) suggests a linkage between secrecy and masculinity. Based on this suggestion, Hope et al. (2008) construct an alternative measure of secrecy by including masculinity. This measure of secrecy is equal to the sum of uncertainty avoidance and power distance less individualism and plus masculinity (*UA+PDI-IDV+MAS*). We use the measure of secrecy as an alternative measure and find similar results.

Alternative measure of secrecy based on GLOBE

Our secrecy measure is based on Hofstede (2001). Despite the popularity of Hofstede's (2001) measures of culture in empirical studies, the validity of the measure has been controversial in recent years. One notable argument is that Hofstede's measure is outdated to some extent. To strengthen our results, we use culture measures based on the GLOBE (Global Leadership and Organizational Behavior Effectiveness) survey (House et al. 2004) to construct an alternative measure of secrecy. Our results remain unchanged using this measure, suggesting that our results are not sensitive to culture measurement problems.

Controlling for disclosure level

Previous studies show that secrecy culture is associated with lower corporate disclosure (Gray and Vint 1995; Wingate 1997). Higher transparency level is likely to affect *MAO* in two opposite ways. On the one hand, increased transparency facilitates more intensive monitoring from various parties, leading to higher risk exposures for the auditors. In response to greater risk exposures, auditors are likely to lower the threshold of issuing *MAO*. This view suggests a positive association between transparency and *MAO*. On the other hand, increased transparency indicates better reporting quality. Auditors thus are less likely to issue *MAO* to such clients. Because secrecy culture affects firms' disclosure policy, one may argue that our empirical results are likely to be driven by transparency rather than secrecy effect. To address this concern, we conduct an additional test by explicitly controlling for firms' disclosure level (LLSV 1997) and find that the results are unchanged.

Addressing omitted correlated variable problems and country-level clustering

We attempt to alleviate omitted correlated variable problems by controlling for several firm-specific characteristics in our analyses. Despite that, we cannot control for all the country-level factors in our model. We also attempt to alleviate potential clustering problems by clustering at country level. This method is arguably the most conservative method of drawing inferences in an international setting. We repeat our regression analyses (based on Equations (1) and (2)) using this method and the results are intact.

Sample composition

Our sample consists of 33 countries, of which 10,426 observations are from the U.K. and some countries have extraordinarily high modified audit opinion ratios. Countries with high modified audit opinion ratios may have unique auditing environments (i.e., greater scopes for audits or lower thresholds for issuing modified audit opinions as required by local auditing regulations or standards). The composition of our sample may jeopardize our statistical inferences because these countries can be viewed as outliers to some extent. To address this issue, we repeat our analyses using two reduced samples: (1) a sample excluding countries that have extraordinarily high average modified audit opinions (including Indonesia, Israel, and Turkey), and (2) a sample excluding the U.K., the largest country in terms of number of observations in our sample. The untabulated results show that our findings remain unchanged, suggesting that our results are not influenced by sample composition.

Limitations

Regardless of our efforts, our study still suffers from some limitations common to this type of study. First, our measures of firm-level variables (including *MAO*) may have errors because the definitions of accounting variables vary in different jurisdictions. Second, although we attempt to mitigate the omitted correlated variable problem, we acknowledge that this problem may still remain. This problem is rather common in international studies because it is not feasible to identify

and control all the potentially omitted correlated variables in one single study. Finally, our measure

of secrecy, which relies on time-invariant culture measures (Hofstede 2001), has limited variation

(DeFond et al. 2007). However, this problem is less likely to significantly affect our statistical

inference because the evolution of culture is slow.

V. CONCLUSION

This study attempts to examine whether auditors respond to the audit risks inherent in

secrecy cultures when giving opinions to clients domiciled in countries with secrecy cultures.

Given that client firms in secrecy cultures are more likely to have lower corporate transparency

and higher auditing risk, we predict that auditors are more likely to issue modified opinions to

protect their valuable reputation capital. Our empirical results based on sample of international Big

N auditors verify this prediction. We also explore the moderation effect of formal institutions

pertaining to investor protection on the association between secrecy culture and auditors'

propensity to issue modified opinions. Our results indicate that the positive association between

secrecy culture and auditors' propensity to issue modified opinions is less pronounced in countries

with strong investor protection than that in countries with weak protection. Consistent with the

home-country institution effect, our further analyses reveal that the positive relationship between

secrecy culture and auditors' propensity to issue modified audit opinions also exists in

multinational firms.

Our findings have many implications for research in both culture and auditing studies. Previous research reveals that firms in secrecy cultures are less likely to hire more competent auditors such as Big N auditors (Hope et al. 2008). Our study not only confirms secrecy hypothesis (Gray 1988) from auditors' perspective but also suggests that auditors are likely to issue modified opinions to attenuate culture-driven potential auditing risks. Our study also reveals the moderating effect of formal institutions on the association between culture and auditors' behaviors. Previous studies (e.g., Choi et al. 2008; Seetharaman et al. 2002) find that auditors consider formal institutions such as weak investor protection as risk factors. By showing the joint effect of formal and informal institutions, we complement and extend previous studies. Finally, the issue of whether and how auditors respond to reporting risks arising from international factors is also of interest to regulators (e.g., PCAOB 2011) and practitioners.

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Appendix 1: Variable definitions

Variables	Definitions
Dependent variable	
MAO	Audit opinion, a dummy variable coded as 1 for modified audit opinions and 0 otherwise.
Country-level independent variables	
SEC	Cultural secrecy, equals to *UA + PDI – IDV*
	Where *UA* is the uncertainty avoidance index, *PDI* is the power distance index, and *IDV* is the individualism index. All of these indices are from Hofstede (2001).
ANTIDIR	An assessment of anti-director rights, higher value indicating outside/minority shareholders are easier to exercise their rights against opportunistic behavior by managers and dominant owners. (LLSV 1997)
DISREQ	Index of disclosure requirement, measures the degree of information disclosure required form firms issuing securities through a prospectus (LLS2006)
GOV	Investor protection indices, including *ANTIDIR, LITSTD, DISREQ, SECSTAFF,* and *INVPRO*.
INVPRO	A composite investor protection index based on a factor analysis (principal components analysis) with varimax rotation of the variables *ANTIDIR, LITSTD, DISREQ,* and *SECSTAFF*.
LITSTD	Liability standard index measures the liability standard for investors to recover damages from issuers of securities, directors and auditors when there has been misleading disclosures in financial statements. (LLS2006)
LNGDP	The natural logarithm of GDP in a country in a given year.
SECSTAFF	The size of a country's securities regulators' staff based on data from year 2005, scaled by the country's population in millions. (Jackson and Roe 2009)
UKLAW	A dummy variable, coded as 1 if a country's legal origin is based on English common law, and 0 otherwise. (LLSV 1997)
Firm-level independent variables	
ACCRUALS	Abnormal accruals, calculated following Francis et al. (2013). *ABSACC* is absolute value of *ACCRUALS*.
ARINV	Accounts receivable and inventory divided by total assets.
BETA	Slope coefficient from the market model estimating using daily return data over the year.
LEV	Firm's leverage ratio, computed as total liabilities divided by total assets.
LMAO	Lagged audit opinions (*MAO*).
LNASSET	The natural logarithm of clients' total assets.
LOSS	A dummy variable, coded 1 for loss firm and 0 otherwise.
MNC	An indicator variable, equals to 1 if a firm has more than 10% foreign tax to total tax, and 0 otherwise.
QUICK	Quick assets, including cash, short-term investments, and accounts receivable, divided by current liabilities.
RET	Cumulative market-adjusted stock returns for one year.
ROA	Return on asset, calculated as earnings before extraordinary items divided by total assets.
STDRET	Standard deviation of the residuals from the market model estimated using daily return data over the year.
TURNOVER	Turnover ratio, equals to total sales divided by total assets.

Table 1: Summary Statistics

Panel A: Key variables mean value by country (N=49,697)

Country	N	MAO	SEC	UKLAW	ANTIDIR	LITSTD	SECSTAFF	DISREQ	INVPRO	LNGDP
Argentina	68	0.50	89	0	4	0.22	3.46	0.50	2.14	8.41
Australia	4,712	0.14	-3	1	4	0.66	34.44	0.75	8.31	10.44
Austria	361	0.09	26	0	2	0.11	9.97	0.25	2.66	10.55
Belgium	405	0.40	84	0	0	0.44	13.76	0.42	2.90	10.50
Brazil	1,326	0.47	107	0	3	0.33	2.68	0.25	1.62	8.53
Canada	1,776	0.17	7	1	5	1.00	38.93	0.92	9.62	10.44
Chile	437	0.25	126	0	5	0.33	9.93	0.58	3.75	8.99
Colombia	41	0.39	134	0	3	0.11	3.94	0.42	1.86	8.25
Denmark	658	0.06	-33	0	2	0.55	10.85	0.58	3.05	10.75
Finland	868	0.05	29	0	3	0.66	11.23	0.50	3.43	10.53
France	1,680	0.63	83	0	3	0.22	5.91	0.75	2.38	10.42
Germany	2,196	0.08	33	0	1	0.00	4.43	0.42	1.31	10.47
Greece	317	0.28	137	0	2	0.50	12.16	0.33	3.20	9.97
Hong Kong SAR	5,907	0.06	72	1	5	0.66	59.59	0.92	13.53	10.19
Indonesia	555	0.53	112	0	2	0.66	1.97	0.50	1.33	7.11
Ireland	558	0.27	-7	1	4	0.44	23.32	0.67	6.08	10.66
Israel	290	0.52	40	1	3	0.66	18.78	0.67	4.94	9.89
Italy	613	0.42	49	0	1	0.22	7.25	0.67	1.99	10.30
Malaysia	5,076	0.30	114	1	4	0.66	22.38	0.92	6.04	8.61
Mexico	392	0.31	133	0	1	0.11	5.19	0.58	1.54	8.98
Netherlands	842	0.08	11	0	2	0.89	23.53	0.50	5.55	10.58
New Zealand	391	0.04	-8	1	4	0.44	8.95	0.67	3.31	10.21
Norway	1,007	0.10	12	0	4	0.39	20.78	0.58	5.55	11.07
Peru	98	0.23	135	0	3	0.66	5.32	0.33	2.24	7.98
Philippines	251	0.25	106	0	3	1.00	4.29	0.83	2.29	7.09
Portugal	217	0.35	140	0	3	0.66	14.50	0.42	4.04	9.82
Singapore	3,243	0.09	62	1	4	0.66	77.74	1.00	16.75	10.24
Spain	358	0.38	92	0	4	0.66	8.50	0.50	3.22	10.15
Sweden	1,496	0.04	-11	0	3	0.28	7.19	0.58	2.59	10.61
Switzerland	1,586	0.08	24	0	2	0.44	8.87	0.67	2.67	10.88
Thailand	1,139	0.42	108	1	2	0.22	6.52	0.92	2.24	7.92
Turkey	407	0.57	114	0	2	0.22	6.17	0.50	2.04	8.86
United Kingdom	10,426	0.06	-19	1	5	0.66	19.04	0.83	5.67	10.47

Panel B: Full sample descriptive statistics (N=49,697)

Variable	Mean	STD	P25	Median	P75
MAO	0.172	0.377	0	0	0
LMAO	0.163	0.370	0	0	0
QUICK	1.945	2.981	0.756	1.098	1.773
ARINV	0.315	0.206	0.142	0.297	0.460
LEV	0.485	0.226	0.321	0.495	0.641
TURNOVER	0.949	0.731	0.427	0.818	1.278
ROA	-0.006	0.222	-0.007	0.037	0.077
LOSS	0.265	0.441	0.000	0.000	1.000
LNASSET	5.686	1.979	4.310	5.534	6.999
RET	-0.081	0.294	-0.288	-0.073	0.127
BETA	0.597	0.614	0.129	0.477	0.898
STDRET	0.023	0.009	0.017	0.022	0.029

Notes: The table presents summary statistics for the sample used in this study. The Appendix contains the definitions of all the variables. Panel A of this table presents the country-level summary statistics for key variables in our study. The mean values of each variable are calculated and reported for each sample country. Panel B of this table presents the summary statistics of firm-level variables for the full sample.

Table 2: Correlations of the Key Variables

	SEC	UKLAW	ANTIDIR	LITSTD	SECSTAFF	DISREQ	INVPRO	LNGDP
UKLAW	-0.171***							
	0.00							
ANTIDIR	-0.270***	0.764***						
	0.00	0.00						
LITSTD	-0.190***	0.630***	0.686***					
	0.00	0.00	0.00					
SECSTAFF	0.079***	0.582***	0.498***	0.505***				
	0.00	0.00	0.00	0.00				
DISREQ	0.003	0.829***	0.671***	0.580***	0.646***			
	0.55	0.00	0.00	0.00	0.00			
INVPRO	0.047***	0.633***	0.575***	0.555***	0.996***	0.687***		
	0.00	0.00	0.00	0.00	0.00	0.00		
LNGDP	-0.748***	-0.029***	0.153***	0.035***	0.182***	-0.034***	0.184***	
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
MAO	0.267***	-0.133***	-0.165***	-0.133***	-0.162***	-0.092***	-0.169***	-0.235***
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Notes: The table presents correlations of the key variable in our study. The Appendix 1 contains the definitions of all the variables.
***, **, * indicate significant level at the 1%, 5%, and 10% levels, respectively.

Table 3: The Effect of Secrecy Culture on Audit Opinion

Dep. Var. = Prob (*MAO*=1)	(1)		(2)	
	Coefficient	P-Value	Coefficient	P-Value
SEC			**0.008***	**0.00**
UKLAW	-0.248***	0.00	-0.083	0.10
ANTIDIR	-0.054***	0.00	-0.069***	0.00
LNGDP	-0.558***	0.00	-0.239***	0.00
LMAO	2.524***	0.00	2.473***	0.00
QUICK	-0.022***	0.00	-0.017**	0.02
ARINV	0.057	0.62	-0.162	0.15
LEV	1.051***	0.00	1.118***	0.00
TURNOVER	-0.247***	0.00	-0.178***	0.00
ROA	-1.039***	0.00	-1.098***	0.00
LOSS	0.326***	0.00	0.366***	0.00
LNASSET	0.029**	0.02	0.024*	0.06
RET	-0.061	0.27	-0.060	0.29
BETA	0.047*	0.05	-0.014	0.59
STDRET	8.326***	0.00	8.845***	0.00
YEAR	YES		YES	
INDUSTRY	YES		YES	
N	49,697		49,697	
Pseudo R²	0.3236		0.3300	

Notes: The table reports empirical results of the relationship between secrecy culture and modified audit opinion. The dependent variable (*MAO*) is probability of issuing modified opinions. *SEC* is a measure of cultural secrecy, which equals to *UA + PDI - IDV*. All the variables are defined in Appendix 1. Industry fixed effects are based on one-digit SIC codes. We also control for year fixed effect. The standard errors are clustered by firm to account for variations at firm-level. ***, **, * indicate significant level at the 1%, 5%, and 10% levels, respectively.

Table 4: The Joint Effect of Investor Protection and Culture on Audit Opinion

Dep. Var. = Prob(*MAO*=1)	(1)		(2)		(3)		(4)		(5)	
	GOV=ANTIDIR		*GOV=LITSTD*		*GOV=DISREQ*		*GOV=SECSTAFF*		*GOV=INVPRO*	
	Coefficient	P-Value	Coefficient	P-Value	Coefficient	P-Value	Coefficient	P-Value	Coefficient	P-Value
SEC	0.016***	0.00	0.018***	0.00	0.011***	0.00	0.024***	0.00	0.025***	0.00
LMAO	2.455***	0.00	2.437***	0.00	2.471***	0.00	2.363***	0.00	2.367***	0.00
UKLAW	-0.123**	0.02	-0.131***	0.00	-0.486***	0.00	0.528***	0.00	0.537***	0.00
GOV	0.049*	0.06	0.593***	0.00	1.101***	0.00	0.007**	0.01	0.017	0.20
SEC*GOV	**-0.002***	**0.00**	**-0.018***	**0.00**	**-0.005**	**0.02**	**-0.001***	**0.00**	**-0.002***	**0.00**
LNGDP	-0.195***	0.00	-0.243***	0.00	-0.295***	0.00	0.222***	0.00	0.200***	0.00
QUICK	-0.018**	0.01	-0.019**	0.01	-0.017**	0.02	-0.024***	0.00	-0.023***	0.00
ARINV	-0.125	0.27	-0.112	0.33	-0.178	0.12	-0.054	0.64	-0.063	0.59
LEV	1.095***	0.00	1.174***	0.00	1.130***	0.00	1.078***	0.00	1.069***	0.00
TURNOVER	-0.189***	0.00	-0.200***	0.00	-0.169***	0.00	-0.189***	0.00	-0.193***	0.00
ROA	-1.079***	0.00	-1.023***	0.00	-1.086***	0.00	-0.987***	0.00	-0.998***	0.00
LOSS	0.355***	0.00	0.348***	0.00	0.372***	0.00	0.322***	0.00	0.320***	0.00
LNASSET	0.015	0.25	-0.001	0.94	0.020	0.12	0.008	0.52	0.007	0.57
RET	-0.068	0.23	-0.067	0.23	-0.056	0.32	-0.119**	0.04	-0.118**	0.04
BETA	0.021	0.42	0.051**	0.04	-0.005	0.86	0.034	0.19	0.040	0.12
STDRET	8.558***	0.00	8.386***	0.00	8.974***	0.00	13.225***	0.00	13.161***	0.00
YEAR	YES		YES		YES		YES		YES	
INDUSTRY	YES		YES		YES		YES		YES	
N	49,697		49,697		49,697		49,697		49,697	
Pseudo R²	0.3312		0.3335		0.3303		0.3410		0.3403	

Notes: The table reports the results of the effect of secrecy culture and investor protection on modified audit opinion. The dependent variable is probability of issuing modified opinions. *GOV* measures strength of formal institutions, including *ANTIDIR*, *LITSTD*, *DISREQ*, *SECSTAFF* and *INVPRO*. High *ANTIDIR* indicates that outside/minority shareholders are easier to exercise their rights against opportunistic behavior by managers and dominant owners. *LITSTD* measures the liability standard for investors to recover damages from issuers of securities, directors and auditors when there has been misleading disclosures in financial statements. *DISREQ* is a measure of disclosure requirement from LLSV (2006). *SECSTAFF* is the size of a country's securities regulators' staff based on data from year 2005, scaled by a country's population in millions (Jackson and Roe 2009). *INVPRO* is a composite investor protection measure based on a factor analysis to extract the commonality among *ANTIDIR*, *LITSTD*, *DISREQ*, and *SECSTAFF*. Industry fixed effects are based on one-digit SIC codes. We also control for year fixed effect. All the variables are defined in Appendix 1. The standard errors are clustered by firm to account for variations at firm-level. ***, **, * indicate significant level at the 1%, 5%, and 10% levels, respectively.

Table 5: Regression Results based on Country-Years

Dep. Var. = *MAO*	(1)		(2)	
	Coefficient	P-Value	Coefficient	P-Value
SEC	0.000***	0.00	0.002***	0.00
UKLAW	0.031	0.16	0.012	0.61
ANTIDIR	-0.019**	0.02	0.003	0.83
*SEC*ANTIDIR*			-0.001**	0.04
LNGDP	-0.035***	0.00	-0.035***	0.00
YEAR	YES		YES	
N	554		554	
R²	0.3466		0.3520	

This table reports the regression results based on country-year data. The dependent variable is country-year mean *MAO*. Others are the same as those in Table 4. We account for year variation by controlling for year fixed effect in the regression. *, ** and *** indicate the coefficients are statistical significance at the 10%, 5% and 1% levels, respectively.

Table 6: Financially-Distressed Firms Subsample

Panel A: The Effect of Secrecy Culture on Audit Opinion

Dep. Var. = Prob (*MAO*=1)		
	Coefficient	P-Value
SEC	**0.004*****	**0.00**
LMAO	2.280***	0.00
UKLAW	0.147	0.14
ANTIDIR	-0.125***	0.00
LNGDP	-0.255***	0.00
QUICK	-0.029***	0.00
ARINV	-0.253	0.15
LEV	1.459***	0.00
TURNOVER	-0.232***	0.00
ROA	-0.815***	0.00
LNASSET	-0.027	0.17
RET	-0.487***	0.00
BETA	0.014	0.69
STDRET	11.831***	0.00
YEAR	YES	
INDUSTRY	YES	
N	13,177	
Pseudo R²	0.2800	

Panel B: The Joint Effect of Investor Protection and Secrecy Culture on Audit Opinion

Dev. Var.= Prob (*MAO=1*)	(1) GOV=ANTIDIR		(2) GOV=LITSTD		(3) GOV=DISREQ		(4) GOV=SECSTAFF		(5) GOV= INVPRO	
	Coefficient	P-Value	Coefficient	P-Value	Coefficient	P-Value	Coefficient	P-Value	Coefficient	P-Value
SEC	0.011***	0.00	0.012***	0.00	0.009***	0.00	0.016***	0.00	0.017***	0.00
LMAO	2.268***	0.00	2.262***	0.00	2.287***	0.00	2.230***	0.00	2.231***	0.00
UKLAW	0.128	0.20	-0.070	0.40	-0.119	0.36	0.231**	0.02	0.244**	0.03
GOV	-0.045	0.31	0.422*	0.06	0.496	0.25	0.012**	0.01	0.045**	0.03
SEC*GOV	**-0.002***	**0.00**	**-0.015***	**0.00**	**-0.008**	**0.03**	**-0.001***	**0.00**	**-0.002***	**0.00**
LNGDP	-0.210***	0.00	-0.284***	0.00	-0.284***	0.00	0.016	0.83	0.011	0.88
QUICK	-0.030***	0.00	-0.031***	0.00	-0.030***	0.00	-0.034***	0.00	-0.034***	0.00
ARINV	-0.236	0.18	-0.201	0.26	-0.220	0.21	-0.167	0.35	-0.178	0.32
LEV	1.443***	0.00	1.473***	0.00	1.451***	0.00	1.457***	0.00	1.451***	0.00
TURNOVER	-0.234***	0.00	-0.246***	0.00	-0.230***	0.00	-0.231***	0.00	-0.232***	0.00
ROA	-0.803***	0.00	-0.761***	0.00	-0.782***	0.00	-0.758***	0.00	-0.759***	0.00
LNASSET	-0.034*	0.08	-0.049**	0.01	-0.039*	0.05	-0.043**	0.03	-0.045**	0.02
RET	-0.491***	0.00	-0.483***	0.00	-0.488***	0.00	-0.497***	0.00	-0.498***	0.00
BETA	0.036	0.33	0.054	0.13	0.044	0.22	0.0349	0.33	0.0425	0.24
STDRET	12.506***	0.00	12.154***	0.00	11.590***	0.00	11.858***	0.00	12.348***	0.00
YEAR	YES		YES		YES		YES		YES	
INDUSTRY	YES		YES		YES		YES		YES	
N	13,177		13,177		13,177		13,177		13,177	
Pseudo R²	0.2828		0.2892		0.2874		0.2926		0.2924	

Notes: The table reports empirical results of testing H1 and H2 based on financial-distressed firms only. Industry fixed effects are based on one-digit SIC codes. We also control for year fixed effect. All variables are defined in Appendix 1. The standard errors are clustered by firm to account for variations at firm-level. ***, **, * indicate significant level at the 1%, 5%, and 10% levels, respectively.

Table 7: The Effect of Secrecy Culture on Audit Opinion: The Role of Multinationality

Dep. Var. = Prob (*MAO=1*)	(1)		(2)	
	Coefficient	P-Value	Coefficient	P-Value
SEC	**0.008***	**0.00**	**0.009***	**0.00**
LMAO	2.473***	0.00	2.472***	0.00
UKLAW	-0.079	0.10	-0.078	0.10
ANTIDIR	-0.067***	0.00	-0.068***	0.00
MNC	-0.056	0.25	-0.003	0.96
*SEC*MNC*			**-0.001**	**0.21**
LNGDP	-0.237***	0.00	-0.231***	0.00
QUICK	-0.017**	0.01	-0.017**	0.01
ARINV	-0.156	0.13	-0.160	0.12
LEV	1.119***	0.00	1.116***	0.00
TURNOVER	-0.178***	0.00	-0.178***	0.00
ROA	-1.097***	0.00	-1.100***	0.00
LOSS	0.366***	0.00	0.365***	0.00
LNASSET	0.027**	0.01	0.025**	0.02
RET	-0.060	0.27	-0.061	0.26
BETA	-0.014	0.57	-0.013	0.60
STDRET	8.910***	0.00	8.987***	0.00
YEAR	YES		YES	
INDUSTRY	YES		YES	
N	49,697		49,697	
Pseudo R^2	0.3300		0.3310	

Notes: The table presents empirical results testing the role of multinationality (*MNC*) on the relationship between cultural secrecy and audit opinion. In column (1), we report the results based on regression specification that includes multinationality (*MNC*). In column (2), we report the results based on regression specification that includes an interaction term (*SEC* MNC*). Industry fixed effects are based on one-digit SIC codes. We also control for year fixed effect. All variables are defined in Appendix 1. The standard errors are clustered by firm to account for variations at firm-level. ***, **, * indicate significant level at the 1%, 5%, and 10% levels, respectively.

Table 8: Addressing the Concurrent Effect of Managers' Misstatement Incentives

Panel A: Controlling for Accruals Quality

Dep. Var. = Prob (*MAO=1*)	(1)	
	Coefficient	P-Value
SEC	**0.008*****	**0.00**
LMAO	2.464***	0.00
UKLAW	-0.082	0.12
ANTIDIR	-0.079***	0.00
ACCRUALS	0.248*	0.05
LNGDP	-0.264***	0.00
QUICK	-0.016**	0.03
ARINV	-0.208*	0.08
LEV	1.183***	0.00
TURNOVER	-0.173***	0.00
ROA	-1.142***	0.00
LOSS	0.390***	0.00
LNASSET	0.028**	0.04
RET	-0.072	0.22
BETA	-0.003	0.91
STDRET	8.468**	0.00
YEAR	YES	
INDUSTRY	YES	
N	47,716	
R²	0.3336	

Panel B: Addressing the Effect of Managers' Misstatement Incentives using Two-stage Analysis

Dep. Var=	(1)			(2)	
	Prob (MAO=1)			*Abnormal MAO*	
	Coefficient	P-Value		Coefficient	P-Value
SEC				**0.001***	**0.00**
LMAO				0.462***	0.00
UKLAW				-0.025***	0.00
ANTIDIR				-0.003	0.23
LNGDP				-0.045***	0.00
QUICK	0.020***	0.00		-0.021***	0.00
ARINV	-0.088*	0.08		0.075***	0.00
LEV	-0.927***	0.00		1.059***	0.00
TURNOVER	0.264***	0.00		-0.278***	0.00
ROA	0.425***	0.00		-0.566***	0.00
LOSS	-0.153***	0.00		0.185***	0.00
LNASSET	0.017***	0.00		-0.016**	0.00
ABSACC	-0.035	0.64			
RET				-0.005	0.36
BETA				-0.004	0.17
STDRET				0.245	0.30
YEAR	YES			YES	
INDUSTRY	YES			YES	
N	47,716			47,716	
R²/ Pseudo R²	0.2067			0.3035	

Notes: Panel A of this table presents the result of the effect of secrecy culture on modified audit opinion after controlling for accruals quality. We measure accruals quality (*ACCRUALS*) following Francis et al. (2013). Panel B presents the results using two-stage analysis to address the effect of managerial incentives. In the first stage *MAO* prediction model, we include accruals quality (*ABSACC*) and other firm-level variables as independent variables following Gul et al. (2013). Column (1) reports the first stage regression result. The residual value derived from the first-stage regression result represents *MAO* that is not explained by managerial incentives. We then use residual *MAO* as dependent variable and include *SEC* and other independent variables in the second stage regression. Column (2) reports the result. *, ** and *** indicate the coefficients are statistical significance at the 10%, 5% and 1% levels.