Non-Audit Services and Corporate Cash Holdings

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This study investigates whether non-audit services provided by auditors to their clients affect the clients' cash policy. I hypothesize non-audit services are positively related to the level of corporate cash holding balances because they increase the cost of external funds and make firms rely more on internal funds for their funding needs. Consistent with my hypothesis, my findings show the positive relationship between non-audit service fees and corporate cash holdings. This study is important as it demonstrates non-audit services provided by auditors to their clients have effects beyond the clients' financial reporting quality by affecting their crucial corporate financial policy.

INTRODUCTION

The purpose of this study is to examine whether and how non-audit services (NAS) provided by auditors to their clients affect corporate cash policy. Regulators argue that auditor independence can be impaired by the economic tie between an auditor and its client firm created by the non-audit services provided to the client. They posit auditor independence can be damaged if audit firms receive significant fees from providing non-audit services. In such cases, auditors' interests might be more aligned with clients' and auditors' intention to report errors appropriately can be weakened. To mitigate such concerns, the U.S. Congress passed the Sarbanes-Oxley Act of 2002 that prohibits auditors from providing many non-audit services to their clients. However, it is also argued that auditor-provided non-audit services can have benefits such as knowledge spillovers that can improve audit quality.

Motivated by the controversy over auditor-provided non-audit services, many empirical studies examine whether non-audit services provided to auditors' clients influence audit quality and clients' financial reporting quality. The empirical studies show mixed findings. DeFond and Zhang (2014) indicate that whether non-audit services threaten auditor independence depends on the type of proxies used to measure audit quality. Studies that employ perception-based proxies find a negative relationship between NAS and auditor independence whereas those that employ actual audit outputs find no significant relationship between them (DeFond and Zhang, 2014).

Studies that use perception-based proxies to measure audit quality such as cost of equity, cost of debt, bond ratings, ERC, and audit litigation find the negative relationship between non-audit service fees and audit quality, concluding the high level of auditor-provided non-audit services is perceived unfavorably by financial statement users (Khurana and Ramna, 2006; Dhaliwal, Gleason, Heitzman, and Melendrez, 2008; Brandon, Crabtree, and Maher, 2004; Krishnan, Sami, and Zhange, 2005; Francis and Ke, 2006; Higgs and Skantz, 2006; Schmidt, 2012).

Financial reporting credibility reflects users' perception of accounting quality in addition to financial statement measures such as discretionary accruals (Khurana and Raman, 2004; Khurana et al., 2006).

Especially, the perception of investors about financial reporting is important because investors make up a large portion of financial statement users and their evaluation of audit quality influences the depth of the U.S. capital markets (Levitt, 2000; Khurana et al., 2006).

On the other hand, studies that use actual audit outputs show non-audit services do not affect the clients' financial reporting quality or even improve it(Callaghan, Parkash, and Singhal. 2009; Chung and Kallapur, 2003; Geiger and Rama, 2003; Huang, Mishra, and Raghunandan, 2007; Ruddock, Taylor, and Taylor, 2006; Ashbaugh, LaFond, and Mayhew, 2003). To measure audit quality, they use proxies such as abnormal accruals of auditor clients, earnings conservatism, earnings benchmark, and going-concern audit opinions.

I hypothesize that non-audit services provided by auditors to their client firms are likely to have a positive association with the level of corporate cash holdings because non-audit services tend to increase auditee's costs of external financing (Khurana and Ramna, 2006; Dhaliwal, Gleason, Heitzman, and Melendrez, 2008; Brandon, Crabtree, and Maher, 2004). When the cost of external financing is higher, firms increase their cash holdings because their internal funds are crucial for their operational and investment requirements (Sun, Yung, and Rahman, 2012). The SEC claims that non-audit service impairs auditor independence and financial statement credibility, thereby increasing auditees' cost of capital. Investors are likely to posit that the high level of non-audit services rendered by an auditor impairs auditor independence and financial reporting reliability. As a result, the perceived information risk is higher and the cost of monitoring the firm is increased. In such a case, investors are likely to require higher return. The SEC's claim is supported by the empirical evidence. That is, non-audit service fees are found to be positively related to the cost of external financing (Brandon et al., 2004; Khurana et al., 2006; Krishnamurthy et al., 2006; Dhaliwal, 2008). When firms face higher cost of external financing, they are likely to increase their cash reserves because their internal funds are crucial for their operational and investment requirements (Sun et al., 2012). In the model developed by Kim, Mauer and Sherman (1998), firms with high external financing costs are likely to hold high cash. Opler, Pinkowitz, Stulz and Williamson (1999) show that financially constrained firms tend to hold high cash reserves. In short, high NAS fees paid to auditors increase the cost of external funds and are likely to make firms rely more on internal funds for their funding needs. Therefore, I hypothesize and test whether non-audit services fee is positively related to the level of corporate cash holding.

Using AuditAnalytics and Compustat for the period of 2008-2012, I run the OLS regression to test the hypothesis. Consistent with my hypothesis, my findings show the positive relationship between non-audit service fees and corporate cash holdings. That is, firms with higher non-audit fees paid to their auditor tend to retain higher level of cash reserves. Additionally, several robustness tests are performed. First, to control for potential endogeneity, propensity score matching is used. Second, alternative measures of non-audit service fees are used. Third, components of non-audit service fees are tested separately. Lastly, an audit fee is included in the main regression as a control variable. All the robustness tests support the main findings.

The study contributes to the existing literature in several ways. First, it shows that non-audit services provided by auditors to their audit clients affect firm economic decisions. Although the relationship between NAS and financial reporting quality has been extensively studied, few studies have shown that NAS influence real corporate policies. This study improves our understanding of the perception of investors about non-audit services rendered by auditors by establishing the association between NAS and the level of corporate cash holdings. Second, it contributes to the stream of literature on corporate cash policy by showing NAS provided by auditors affect firms' cash reserves. Although the determinants of corporate cash holdings have been studied, few studies have examined the audit quality as a factor to influence the level of cash holdings.

Section 2 and 3 include literature review and hypothesis development, respectively. Section 4 discusses research design. Section 5 includes sample and descriptive statistics. Section 6 and 7 discuss results and supplemental analyses, respectively. Section 8 concludes the paper.

LITERATURE REVIEW

Non-Audit Service Fees and Financial Reporting Quality

Auditor independence is a significant factor for effective auditing. According to DeAngelo (1981) and Watts and Zimmerman (1986), auditor independence is the joint possibility of finding and reporting errors. Auditor independence is more directly related to the latter because detecting errors is more associated with auditors' technical ability (DeAngelo, 1981). Regulators argue that auditor independence can be impaired by the economic tie between an auditor and its client firm created by the non-audit services provided to the client. They posit auditor independence can be damaged if audit firms receive significant fees from providing non-audit services. In that case, auditors' interests might be more aligned with clients' and auditors' intention to report errors appropriately can be weakened. As higher non-audit fees are paid to incumbent auditors, client firms can affect auditor's decision-making more significantly and, thus, auditor independence can be damaged.

To mitigate such concerns, the U.S. Congress passed the Sarbanes-Oxley Act of 2002 that prohibits auditors from providing many non-audit services to their clients. However, it is also argued that auditor-provided non-audit services can have benefits such as knowledge spillovers that can improve audit quality. The audit industry claims that auditors learn better about client's business model in the process of performing non-audit services and better informed auditors can produce higher quality audit.

Motivated by the controversy over auditor-provided non-audit services, many empirical studies examine whether non-audit services provided to auditors' clients influence audit quality and clients' financial reporting quality. By investigation such an association, studies try to answer the questions of whether auditor independence is damaged because of economic bond between auditors and clients created by high non-audit service fees.

The empirical studies show mixed findings. DeFond and Zhang (2014) indicate that whether non-audit services threaten auditor independence depends on the type of proxies used to measure audit quality. Studies that employ perception-based proxies find a negative relationship between NAS and auditor independence whereas those that employ actual audit outputs find no significant relationship between them (DeFond and Zhang, 2014). That is, the outcome of studies that examine the relationship between non-audit services and audit quality varies by whether studies use actual or perceived audit quality.

Studies that employ perception-based proxies for audit quality exhibit evidence of impaired audit quality in the case of significant non-audit services provided to client firms (DeFond and Zhang, 2014). For example, Khurana and Raman (2006) argue that investors view NAS as a potential threat to impair financial reporting quality by showing the positive association between NAS and cost of equity. Non-audit fee is viewed as an implied threat to auditor independence by investors, thereby decreasing the perceived quality of audit (Khurana and Ramna, 2006). Thus, financial reporting credibility is weakened and perceived information risk are increased. As a result, the cost of equity capital is increased. (Khurana and Ramna, 2006).

Dhaliwal, Gleason, Heitzman, and Melendrez (2008) find that NAS are positively related to the cost of debt for investment-grade firms. Their reasoning is that investors view NAS as a threat to financial reporting reliability and, thus, require higher return because of higher cost incurred to monitor the firm. Brandon, Crabtree, and Maher (2004) show a negative association between NAS and bond ratings, concluding bond raters perceive auditor independence to be damaged by NAS.

Several studies show that higher NAS provided by auditors lead to lower ERCs (Krishnan, Sami, and Zhange, 2005; Francis and Ke, 2006; Higgs and Skantz, 2006). They conclude that investors perceive auditor independence to be impaired when non-audit services are provided to client firms by auditors. Because investors doubt auditor independence and financial reporting quality when the firm pays higher non-audit service fees to its auditor, their response to earnings surprise are likely to be smaller.

Krishnamurthy, Zhou, and Zhou (2006) examine stock market reaction to the client firms of Arthur Anderson around its criminal indictment date. They document the market reaction is more negative when clients have higher NAS provided by Anderson, concluding auditor independence affects perceived audit

quality. Investors adjust downward their estimate of firm value when the audit firm is indicted. This effect is stronger when auditor independence is perceived to be impaired by high level of NAS fees.

Raghunandan (2003) provides empirical evidence that shareholders' votes against ratification of an auditor selected by management increase as NAS increase. Their reasoning is that shareholders react unfavorably to the appointment of the auditor who earns large non-audit service fees because auditor independence might be impaired.

Restatement of 10K is more likely to result in audit litigation as NAS fees are higher (Schmidt, 2012). Audit litigants predict jurors will view high NAS fees as a factor to impair auditor independence and audit quality. Thus, they believe their case against auditors will be reinforced and are more likely to initiate the litigation in the case of 10K restatement.

Collectively, the SEC's concern that auditor independence is damaged by high auditor-provided non-audit services is supported by the studies that use perception-based proxies to measure audit quality. To measure audit quality, they use proxies such as cost of equity, cost of debt, bond ratings, ERC, and audit litigation. And they find the negative relationship between non-audit service fees and audit quality, concluding the high level of auditor-provided non-audit services is perceived unfavorably by financial statement users.

On the other hand, studies that use actual audit outputs show non-audit services do not affect the clients' financial reporting quality or even improve it (DeFond and Zhang, 2014). Callaghan, Parkash, and Singhal (2009) find no significant relationship between the likelihood of going-concern audit opinions and NAS fees for U.S. bankrupt companies. The key issue in the auditor independence controversy is that auditors are less likely to issue going-concern opinions when their independence is compromised (DeAngelo 1981; Callaghan et al., 2009). This audit failure is examined for the sample of U.S. bankrupt firms in Callaghan et al. (2009). If auditor independence is impaired by high NAS fees, the relationship between the likelihood of going-concern audit opinions and NAS fees is expected to be negative. However, they find no significant relationship between them.

Chung and Kallapur (2003) use abnormal accruals of auditor clients as a proxy for audit quality and find no significant association between NAS fees and abnormal accruals. They use NAS fees as a measure of client importance and find no evidence of auditor independence impairment in the case of high NAS fees.

Geiger and Rama (2003) examine a relationship between NAS fees and going-concern modified opinions for financially stressed manufacturing companies. They posit that economic incentive created by high NAS fees might affect auditor's judgments negatively because auditors want to retain clients. Going-concern modified audit opinion result in negative outcomes such as stock price declines and increase risk of business failure. Because of lucrative non-audit services, auditor's interests are more aligned with client's and auditor may be reluctant to issue going-concern modified opinions. However, they find no significant relationship between NAS fees and going-concern modified opinions.

Huang, Mishra, and Raghunandan (2007) find that NAS fees are not significantly related to clients' financial reporting quality measured by abnormal accruals and meeting earnings benchmarks. They separate non-audit fees for different types of non-audit services and fail to find high NAS fees lead to biased financial reporting.

Ruddock, Taylor, and Taylor (2006) investigate whether NAS influence earnings conservatism, which is defined as the degree to which bad news are reflected in earnings on a timely manner. They reason that reduced conservatism is plausible if high NAS fees compromise auditor independence. However, they fail to provide evidence that NAS adversely affect audit quality.

Ashbaugh, LaFond, and Mayhew (2003) perform two tests to examine whether the provision of non-audit services compromise auditor independence. By conducting discretionary accruals and earnings benchmark tests to measure biased financial reporting, they fail to find evidence that NAS impair auditor independence. Reynolds, Deis, and Francis (2004) also fail to find that NAS compromise auditor independence, using discretionary accruals as proxies for earnings quality.

Financial Reporting Quality and Information Asymmetry

Earning quality is found to be related to information asymmetry in capital markets. Frankel and Li (2004) examine the relationship between financial reporting quality and information asymmetry between managers and investors. They find the value relevance of financial statement information is negatively related to the frequency of insider purchases used to measure information asymmetry. Their reasoning is that financial statement provides information about a firm's future profitability and, thus, the value relevant statement is likely to reduce information asymmetry. In turn, reduced information asymmetry is likely to suppress managers' opportunity to trade profitably on private information. They use the R^2 from a regression of stock price on earnings and book value to measure financial statement informativeness and profitability and intensity of insider trades to measure the magnitude of information asymmetry.

Bhattacharya et al. (2013) study whether earnings quality is inversely related information asymmetry in capital markets. Their prediction is that, poor earning quality leads to information asymmetry among market participants if the participants have different ability to evaluate earnings information. They use an accruals-based measure as a proxy for earnings quality and market microstructure-based measure as a proxy for information asymmetry and find the negative relationship between earnings quality and information asymmetry.

Bushee and Leuz (2005) find that the increased disclosure as a result of SEC disclosure regulation leads to an increased market liquidity because of reduced information asymmetry in capital market. They examine a new enforcement requiring Over-The-Counter Bulletin Board (OTCBB) firms to comply with reporting requirements under the 1934 Securities Exchange Act. To measure market liquidity, they use three measures, bid-ask spread, monthly share turnover, and the percentage of days traded during the month.

Wittenberg-Moerman (2008) examines the association between borrower's financial reporting quality and information asymmetry in the secondary loan market. They use timely loss recognition and the bid-ask spread to proxy for financial reporting quality and information asymmetry, respectively. They propose that more conservative reporting is likely to decrease information asymmetry in loan trading because of two reasons. First, more conservative reporting enhances corporate governance of a borrower and, thus, reduces information asymmetry. Secondly, more conservative reporting increases the amount and quality of information available to secondary loam market participants. They find that conservative financial reporting reduces information asymmetry among investors in secondary loan trading.

Brown and Hillegeist (2007) use analysts' assessments of companies' disclosure activities complied by Association for Investment Management and Research (AIMR) as a proxy for disclosure quality and find it is negatively associated with information asymmetry among investors. They further find such a negative relationship is caused by the reduced probability that investors trade on private information.

Corporate Cash Holdings

Cash policy is one of the most important corporate financial policies. The determinants of cash holdings have been studied. A strand of research indicates that firms' financial constraints cause firms to hold higher level of cash reserve. The precautionary motive suggests that firms hold cash in order to better prepare for future adverse shock when access to capital markets becomes costly (Bates, Kahle, and Stulz, 2009). Bates, Kahle, and Stulz (2009) show that the precautionary motive is the main explanation for the increase in cash ratios for U.S industrial firms for the period of 1980 to 2006. In the model developed by Kim, Mauer and Sherman (1998), firms with high external financing costs are more likely to hold high cash. Opler, Pinkowitz, Stulz and Williamson (1999) show that the least financially constrained firms with the greatest access to capital markets are likely to hold lower cash reserve. Furthermore, financially constrained firms' level of cash is sensitive to cash flow while financially unconstrained firms' cash reserve is insensitive to cash holdings (Almeida, Campello and Weisbach, 2004.

Accounting quality is also found to affect the level of corporate cash holdings. For example, Sun, Yung, and Rahman (2012) examine the relationship between earning quality and the level of corporate cash holdings. By using accounting based measures such as accrual quality and earnings variability as

proxies for earning quality, they find that it is negatively related to the level of cash. Their reasoning is that poor earnings quality increases the cost of obtaining funds from outside sources because it increases information asymmetry between insiders and outsiders. Because companies with poor earnings quality face higher cost of external funds, they are likely to increase cash balances so that they can use their internal funds to satisfy their investment needs.

For a sample of firms listed in the Spanish stock exchange, García-Teruel, Martínez-Solano, and Sánchez-Ballesta (2009) also find the negative association between accruals quality and the level of cash. They posit that good accounting quality is likely to mitigate the unfavorable effect of information asymmetry and adverse selection cost, and, thus, permits firms to lower their cash reserves.

HYPOTHESIS DEVELOPMENT

The SEC claims that non-audit services impair auditor independence and financial statement credibility, thereby increasing auditees' cost of capital. Investors are likely to posit high non-audit services rendered by an auditor impair auditor independence and financial reporting reliability. As a result, the perceived information risk is higher and the cost of monitoring the firm is increased. In such a case, investors are likely to require higher return. The SEC's claim is supported by the empirical evidence. That is, non-audit service fees are found to be positively related to the cost of external financing (Brandon et al., 2004; Khurana et al., 2006; Krishnamurthy et al., 2006; Dhaliwal et al., 2008).

Khurana et al. (2006) document the positive relationship between non-audit service fees and the cost of equity capital, concluding non-audit services are perceived to damage audit quality and financial reporting credibility by investors. Dhaliwal et al. (2008) find the positive relationship between NAS and the cost of debt, suggesting investors believe financial reporting reliability is reduced as a result of high NAS. Bandon et al. (2004) find the negative association between non-audit service fees and bond ratings, concluding non-audit services affect bond raters' perceptions of auditor independence. Krishnamurthy et al. (2006) examine the market reaction to Andersen clients around Andersen's indictment period. Andersen's clients that paid higher non-audit fees experienced more negative abnormal return because auditor independence was perceived to be damaged by the market participants.

Cash holdings help firms to invest in profitable investments or satisfy debt obligations without raising capital from capital markets. When firms have higher cost of external financing, they are likely to increase their cash reserves because their internal funds are crucial for their operational and investment requirements (Sun et al., 2012). In the model developed by Kim, Mauer and Sherman (1998), firms with high external financing costs are more likely to hold high cash. Opler, Pinkowitz, Stulz and Williamson (1999) show that financially constrained firms tend to hold high cash reserve. Taken together, other things being equal, non-audit services are likely to be positively related to the level of cash balances because they increase the cost of external funds and make firms rely more on internal funds for their funding needs. Thus, my hypothesis is as follows:

H: Non-audit services fees are positively related to the level of corporate cash holdings.

RESEARCH DESIGN

The main regression used to test the hypothesis is the OLS regression as follows:

$$CASH = \beta_0 + \beta_1 LnNAF + \beta_2 LnTA + \beta_3 LEVERAGE + \beta_4 DivDummy + \beta_5 R\&D + \beta_6 CapExp + \beta_7 ACQUISITION + \beta_8 NWC + \beta_9 RE + \beta_{10} TobinQ + e \qquad (1)$$

where:
  CASH = (cash + marketable securities) / total assets
  LnNAF = natural logarithm of (1+non audit fees)
  LnTA = natural logarithm of total assets

LEVERAGE = total debt/total assets
DivDummy = 1 if firm pays dividend, =0 otherwise
R&D = R&D/total assets
CapExp = capital expenditures / total assets
ACQUISITION = acquisition expenditures / total assets
NWC = (current assets-cash-current liabilities)/total assets
RE = retained earnings / total assets
TobinQ = (price*common shares+liabilities) / total assets

Following prior studies (Bates, Kahle, and Stulz, 2009), I use the sum of cash and marketable securities divided by total assets in order to measure the level of cash holdings. To measure non-audit services fees, I use natural logarithm of one plus non-audit fees. I use the level of non-audit fees rather than the fee ratio (i.e., non-audit fees divided by total fees) because prior studies suggest that the fee ratio fails to reflect the economic significance of audit firms' economic bonding with their client, suggesting the utilization of the level of fees to reflect economic bonding (Ashbaugh et al., 2003; Lai and Krishnan, 2009).[1] Control variables that are known to influence cash balances are firm size (LnTA), leverage, dividends, investments (R&D, capital expenditures, and acquisition expenditures), net working capital, retained earnings, and Tobin Q (Harford et al., 2008; Bates et al., 2009; Kusnadi, 2011).

The coefficient on firm size is expected to be negative because larger firms have better access to capital markets and, thus, they have less necessity to hold high cash reserves. R&D is a proxy for growth opportunities and expected to be positively related to cash holdings. A negative relation between leverage and cash is expected since firms use cash to decrease debt. Because capital expenditures create assets that can be used as collateral, they can increase debt and reduce cash. Dividend is predicted to be entered with a negative coefficient since firms use cash to pay dividends. Tobin Q reflects the growth prospects of the firm and is expected to show a positive coefficient.

In an attempt to mitigate the effect of outliers, I winsorize the continuous variables at the 1% and 99% level. Industry and year dummy variables are included because of the omitted variable problems. I cluster standard errors at the firm level so that error terms can be heteroskedastic and correlated within firms.

SAMPLE AND DESCRIPTIVE STATISTICS

I use AuditAnalytics and Compustat for audit fees and firm variables, respectively for the period of 2008-2012. For 3,605 unique firms, the number of firm-year observation is 18,022. Descriptive statistics of regression variables are displayed in Table 1. Table 1 shows number of observations, mean, standard deviation, first quartile, median, and third quartile. Mean non-audit services fee is about $561,300. Table 2 shows Pearson correlation among variables.

TABLE 1
DESCRIPTIVE STATISTICS OF REGRESSION VARIABLES

Variable	Obs.	Mean	Std Dev	First quartile	Median	Third quartile
Cash	18022	0.182	0.217	0.033	0.097	0.247
LnNAF	18022	9.762	4.619	9.21	11.112	12.678
LnTA	18022	6.086	2.946	4.241	6.454	8.097
Leverage	18022	0.177	0.233	0.00007	0.095	0.269
RD	18022	0.057	0.167	0	0	0.03
DivDummy	17736	0.462	0.499	0	0	1
Cap	18022	0.039	0.054	0.004	0.021	0.05
ACQ	18022	0.013	0.042	0	0	0.001
NWC	18022	-0.264	2.084	-0.046	0.003	0.156
RE	18017	-5.736	30.203	-0.474	0.047	0.296
TobinQ	18022	95.155	607.226	0.787	1.115	2.871

TABLE 2
PEARSON CORRELATION AMONG VARIABLES

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1)Cash	1										
(2)LnNAF	**(0.12)**	1									
(3)LnTA	**(0.39)**	**0.41**	1								
(4)Leverage	**(0.23)**	**0.07**	**0.15**	1							
(5)RD	**0.36**	**(0.10)**	**(0.36)**	0.00	1						
(6)DivDummy	**(0.30)**	**0.21**	**0.50**	**0.04**	**(0.24)**	1					
(7)Cap	**(0.14)**	(0.01)	**0.03**	**0.11**	**(0.05)**	**(0.04)**	1				
(8)ACQ	**(0.07)**	**0.08**	**0.07**	**0.04**	**(0.03)**	**(0.03)**	**(0.03)**	1			
(9)NWC	**(0.09)**	**0.15**	**0.42**	**(0.02)**	**(0.25)**	**0.13**	0.02	**0.05**	1		
(10)RE	**(0.19)**	**0.17**	**0.51**	**(0.03)**	**(0.31)**	**0.17**	**0.04**	**0.05**	**0.83**	1	
(11)TobinQ	**0.11**	**(0.15)**	**(0.41)**	0.01	**0.19**	**(0.14)**	(0.02)	**(0.04)**	**(0.61)**	**(0.68)**	1

Correlation coefficients in bold are significant at 5% level.

RESULTS

In Table 3, I use the OLS regression to test the hypothesis that non-audit services fee is positively related to corporate cash holdings. The dependent variable is the level of cash holdings. Consistent with my prediction, the variable of interest, non-audit fee (LnNAF), is significantly positive at the 1 percent level, suggesting that higher non-audit fees are likely to cause higher level of cash. This result suggests that investors view non-audit services provided by auditors as a factor to damage auditor independence and financial reporting reliability. As a result, they are likely to require higher return on their investment, which, in turn, can motivate firms to accumulate more cash. Because of higher cost of external capital, firms are more likely to hold cash in order to satisfy their future capital needs.

In general, control variables in the regressions are signed as expected. The coefficient on firm size is negative, indicating larger firms have less necessity to hold high cash reserves. The coefficient on R&D is

positive, suggesting firms with better growth opportunities hold higher cash. LEVERAGE is entered with an expected negative sign, implying firms use cash to pay debt. Dividend is entered with a negative coefficient because firms use cash to pay dividends.

TABLE 3
NON-AUDIT FEES AND CASH HOLDINGS
DEPENDENT VARIABLE: THE LEVEL OF CASH RESERVES

	coeff.	p-value
LnNAF	0.002	0.001
LnTA	-0.017	0.000
Leverage	-0.166	0.000
RD	0.316	0.000
DivDummy	-0.056	0.000
Cap	-0.422	0.000
ACQ	-0.275	0.000
NWC	0.020	0.000
RE	-0.001	0.000
TobinQ	0.000	0.039
N		17736
R^2		0.287

SUPPLEMENTAL ANALYSES

Potential Endogeneity

There is a potential endogeneity problem because management influences decisions about setting cash policy as well as purchasing non-audit services. To control for such a problem, I use propensity score matching as a robustness test. Armstrong, Jagolinzer, and Larcker (2010) suggest using propensity-score methods when the explanatory variable is an endogenous decision by mangers. The primary benefit of propensity-score method is that it requires neither specific functional form nor exogenous instrumental variable (Lennox, Francis, and Wang, 2012). In the matching procedure performed to control for relevant sample differences other than non-audit fees, I use a capiler of 0.001 so that maximum difference in propensity score between treatment sample firm and control sample firm can be 0.1%. This way, the sufficient similarity of control firms to treatment firms can be achieved. Results are reported in Table 4. The variable of interest, LnNAF, is significantly positive. The propensity score matching test supports the results found in the main OLS regression.

Alternative Measures of Non-Audit Service Fees

Following prior studies(Frankel, Johnson, and Nelson, 2002; Defond, Raghunandan, and Subramanyam, 2002; Chung and Kallapur, 2003; Lim and Tan, 2008), I use two alternative measures for non-audit services fees. They are (i) the fee ratio (non-audit services fees divided by total fees) and (ii) total fees. I use a rank variable for the fee ratio (Frankel et.al, 2002; Lim and Tan 2007). For a given audit firm, the fee ratio of each client firm is ranked. Total fee is the sum of audit fee and non-audit fee and used in the natural log form. Total fee measures economic bonding between auditor and client created by

the provision of both audit and non-audit services(Lim and Tan, 2008). I reanalyze the main regression separately for each of the two measures and the results are similar (Table 5).

TABLE 4
MATCHED PROPENSITY SCORES
DEPENDENT VARIABLE: THE LEVEL OF CASH RESERVES

	coeff.	p-value
LnNAF	0.005	0.000
LnTA	-0.016	0.000
Leverage	-0.171	0.000
RD	0.384	0.000
DivDummy	-0.056	0.000
Cap	-0.371	0.000
ACQ	-0.274	0.000
NWC	0.019	0.000
RE	-0.001	0.029
TobinQ	0.000	0.554

TABLE 5
ALTERNATIVE MEASURES OF NON-AUDIT FEES
DEPENDENT VARIABLE: THE LEVEL OF CASH RESERVES

	coeff.	p-value	coeff.	p-value
FeeRatio	0.0001	0.000		
TotalFee			0.010	0.000
LnTA	-0.018	0.000	-0.020	0.000
Leverage	-0.168	0.000	-0.167	0.000
RD	0.314	0.000	0.310	0.000
DivDummy	-0.055	0.000	-0.054	0.000
Cap	-0.426	0.000	-0.427	0.000
ACQ	-0.291	0.000	-0.288	0.000
NWC	0.020	0.000	0.020	0.000
RE	-0.001	0.000	-0.001	0.000
TobinQ	0.000	0.035	0.000	0.033
N	17736		17736	
R^2	0.289		0.289	

Components of Non-Audit Service Fees

I rerun the main regression, using the components of non-audit service fees. They are tax, audit-related, and other fees. Instead of including them together in the regression, I run separate regressions, including each measure because of possible muticollinearity between tax and other fees (Knechel and Sharma, 2012). As shown in Table 6, tax and other fees are significantly positive, but audit-related fees

are not significant. This result is consistent with Mishra, Raghunandan, and Rama (2005) who argue investors view tax and other fees negatively but not audit-related fees.

TABLE 6
COMPONENTS OF NON-AUDIT FEES AND CASH HOLDINGS
DEPENDENT VARIABLE: THE LEVEL OF CASH RESERVES

	coeff.	p-value	coeff.	p-value	coeff.	p-value
LnTax	0.001	0.000				
LnAuditRelated			0.000	0.301		
LnOther					0.001	0.047
LnTA	-0.016	0.000	-0.016	0.000	-0.016	0.000
Leverage	-0.166	0.000	-0.166	0.000	-0.166	0.000
RD	0.316	0.000	0.318	0.000	0.317	0.000
DivDummy	-0.056	0.000	-0.056	0.000	-0.056	0.000
Cap	-0.421	0.000	-0.425	0.000	-0.425	0.000
ACQ	-0.274	0.000	-0.267	0.000	-0.267	0.000
NWC	0.020	0.000	0.020	0.000	0.020	0.000
RE	-0.001	0.000	-0.001	0.000	-0.001	0.000
TobinQ	0.000	0.039	0.000	0.038	0.000	0.038
N	17736		17736		17736	
R^2	0.287		0.286		0.286	

TABLE 7
AUDIT FEE AS A CONTROL VARIABLE
DEPENDENT VARIABLE: THE LEVEL OF CASH RESERVES

	coeff.	p-value
LnNAF	0.001	0.065
LnAF	0.006	0.000
LnTA	-0.019	0.000
Leverage	-0.167	0.000
RD	0.311	0.000
DivDummy	-0.055	0.000
Cap	-0.425	0.000
ACQ	-0.284	0.000
NWC	0.020	0.000
RE	-0.001	0.000
TobinQ	0.000	0.034
N	17736	
R^2	0.288	

Audit Fee as a Control Variable

Following prior studies (Lim and Tan, 2008), I include an audit fee as a control variable. Whisenant, Sankaraguruswamy, and Raghunandan (2003) suggest audit and non-audit fees are jointly determined. After controlling for the effect of audit fees on cash reserve, non-audit fees are significantly positive (Table 7).

CONCLUSION

This study examines whether auditor-provided non-audit services affect firm financial policy. In particular, I examine whether the practice of providing non-audit services has impact on corporate cash policy. The U.S. Congress passed the Sarbanes-Oxley Act of 2002 that prohibits auditors from providing many non-audit services to their clients in order to mitigate concerns that auditor independence can be impaired by the economic tie between an auditor and its client firm created by the non-audit services provided to the client. In this study, I posit that NAS are likely to be positively related to the level of cash balances because they increase the cost of external funds and make firms rely more on internal funds for their future funding needs.

Consistent with my hypothesis, I find that higher non-audit services fees paid to an incumbent auditor are positively related to the level of corporate cash holding. Supplemental tests support the main findings. Propensity score matching is employed to control for potential endogeneity. Alternative measures of non-audit service fees are also used. Components of non-audit fees are tested separately. Lastly, an audit fee is included in the main regression as a control variable. This study is important as it demonstrates that non-audit services provided by auditors to their clients result in economic outcomes by affecting clients' important financial policy.

ENDNOTES

1. The fee ratio is used to measure non-audit services fees as a robustness test and produces similar results.

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