THE EFFECT OF AUDITOR QUALITY ON CASH HOLDINGS: EMPIRICAL EVIDENCE FROM JORDAN

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Abstract

This research uses a generalized least squares (GLS) estimator and panel data analysis to analyse the association of audit quality with corporate cash-holding policies among a sample of 87 non-financial firms listed on the Amman Stock Exchange (ASE) from 2011 to 2017 in Jordan. The significance of corporate cash holdings has grown over recent years, especially since the global financial crisis (GFC) which restricted firms' access to external finance and accentuated the need for internal sources of liquidity. Our findings reveal a positive and significant relationship between audit firm size, audit fees, profitability and corporate cash holdings. These results imply that firms that are audited by larger audit firms, charge higher audit fees, and have higher profitability, tend to hold more cash. In general, the findings reveal the significance of audit quality and firm-specific financial factors in determining liquidity policies of Jordanian listed firms. Specifically, audit firm size and audit fees appear to play a central role in improving financial discipline and facilitating firms' cash management policies. The results highlight the role of audit quality-related characteristics in enhancing financial decision making in Jordan.

Keywords: audit firm size, audit fees, cash holding

1. Introduction

External auditing is fundamental to protecting the interest of the shareholders and increasing confidence in capital markets through credibility of financial reporting. External auditors offer regulators and investors confidence in the fairness of financial statements through standardized audit report, but the popular pass/fail reporting model does not provide much information on the quality of the audit process. The agency theory is the most influential factor that leads to the necessity of external auditing since it describes the conflict between ownership and control that occurs due to the agency problem (Jensen and Meckling, 1976). In such a situation, auditors serve as a powerful surveillance tool to minimise information asymmetry and increase the effectiveness and transparency of financial disclosures (Watts and Zimmerman, 1986; Knechel, 2016; Al-Zoubi, 2017). Audit quality is a multidimensional concept which includes both technical qualities, including independence, knowledge, experience and reputation, and service-oriented aspects, including responsiveness and client satisfaction (Duff, 2004). Although it is obvious that it is quite challenging to measure audit quality, the existing literature provides a number of proxies that can be used in empirical studies (Francis, 2004; Bailey and Gramling, 2005; Jensen and Payne, 2005). The issue of high audit quality is consequently critical in enhancing corporate governance mechanisms and enhancing the credibility of the information in the financial statements.

Corporate cash holding decision is a critical area of financial management especially in the setting where there is information asymmetry and poor governance frameworks. The existing literature suggests that companies have the problem of deciding between keeping cash as a precautionary measure and effectively using excess liquidity (Megginson et al., 2014; Alzoubi, 2016; Alghadi et al., 2021). These issues are compounded in emerging economies like Jordan by agency issues, inadequate shareholder protection and differences in corporate governance. With this background, the connection between audit quality and corporate governance and cash holdings has been the subject of growing interest. The empirical findings indicate that poor governance systems can cause the entrenchment of managers and inefficient cash management, which ultimately creates a low level of cash reserves (Dittmar et al., 2003; Harford et al., 2008; Nguyen and Rahman, 2018). On the other hand, good governance systems and excellent surveillance will motivate the companies to uphold the best cash balances thus improving financial flexibility and stability. The present research adds to the literature by analyzing this relationship within the framework of non-financial companies listed on the Amman Stock Exchange during the years 2011-2017, which is a significant gap in the literature.

2. Literature Review

2.1 Cash holdings

Much academic interest has been given to corporate cash holdings because of their consequences on firm value and financial decision making. There is empirical evidence that companies in various economies have large amounts of cash reserves, including 10% in European companies (Bigelli and Sánchez-Vidal, 2012), 18.5% in Japan (Pinkowitz and Williamson, 2001), and about 17% in the United States (Opler et al., 1999). In addition, large U.S. corporations have more than 13% of their total assets in cash and marketable securities (Dittmar and Mahrt-Smith, 2007), and cash ratios have been increasing steadily over time (Bates et al., 2009). In the emerging markets, the same pattern can be observed, with different levels of cash holdings across the countries, Vietnam being no exception (Do and Ha, 2016), Canada (Gill and Shah, 2012), Spain (Nigeria (Ogundipe et al., 2012).

The literature indicates that optimal level of cash is indispensable to maximization of firm value. Although a high level of cash reserves will increase the flexibility of operations and facilitate more investment opportunities, a high level of cash reserves can also increase agency conflicts between the managers and the shareholders (Jensen, 1986). The empirical studies have shown that the relationship between cash holdings and firm value is nonlinear in that firm value rises to an optimal level but falls when the firm reaches a deviation to this point (Martínez-Sola et al., 2013). Correspondingly, it is demonstrated that decrease in excess cash can positively influence the firm value, but inadequate cash holdings can adversely influence the firm performance and stock returns (Lee and Powell, 2011; Oler and Picconi, 2014).

Although there is a vast body of evidence in the developed economies, determinants of corporate cash holdings in developing markets have not been well studied especially in terms of corporate governance mechanisms. Most studies done by previous researchers have focused on internal firm attributes and little has been given on governance attributes like audit quality and audit committees. This loophole is particularly applicable to the emerging economies such as Jordan where the form of governance and institutional settings are quite different. Correspondingly, this research paper is relevant to the literature because it investigates the relationship between corporate governance, audit quality and cash holding levels, which fill a significant gap in the scenario of developing markets.

2.2 Audit Firm Size

The size of audit firms is well known to be a major factor influencing audit quality and independence of auditors. The bigger audit firms are also seen as offering better-quality of audits because of their reputation incentives, resources, and expertise (DeAngelo, 1981; Al-Ajmi and Saudagaran, 2011). Audit firm size is often used as a proxy variable of audit quality in empirical studies which have shown that large audit firms are more likely to be independent, utilize advanced technologies, and provide more accruing audit opinions (Becker et al., 1998; Krishnan, 2003; McLennan and Park, 2004). Also, there is a common stereotype about Big Four audit firms that they are more likely to produce qualified opinions, which is why they are better at identifying and reporting cases financial irregularities (Ireland, 2003; Farrugia & Baldacchino, 2005).

Regarding earnings management, the literature reveals that big audit firms are more effective in limiting discretionary accruals, and detect opportunistic managerial behavior (Francis et al., 1999; Nelson et al., 2002). Investors are also likely to attribute quality of financial reporting to the size of an audit firm, as seen through better valuations of firms audited by large auditors and better earnings response coefficients (Beatty, 1989; Teoh and Wong, 1993). Nevertheless, other studies have given conflicting evidence implying that the correlation between the size of audit firm and earnings management can be different in institutional settings (Piot and Janin, 2007).

In the Jordan emerging market, the size of an audit firm has been found to have profound effects on independence of auditors and financial reporting. Previous research has shown that there is a positive correlation between the size of an audit firm and the results of the audit process in terms of going concern opinion and quality of earnings (Siam, 2003; Al-Awaqleh, 2008; Alzoubi, 2016). Moreover, increasing numbers of firms in Jordan resort to big foreign audit firms to improve the credibility and leverage their experience (Alzoubi, 2017). In addition to audit quality, more recent studies also associate audit firm size with more general financial choices, such as earnings management and cash holding behavior (Aanu et al., 2014; Chang et al., 2009), which underlines the importance of audit firm size as a governance mechanism and incentive to further research on its connection with corporate cash holdings.

2.3 Audit Fee

Existing literature recommends that the agency cost that relates to cash resources of firms is significant in influencing audit fees. Although the two concepts are similar in that they both portray the liquidity of a firm, both the free cash flow and cash holdings are conceptually different as the former is a flow measure of annual profits, and the latter is a cumulative balance on the balance sheet. It has been shown that an increase in free cash flow leads to an increase in audit fees because of the increase in the agency costs (Gul and Tsui, 1997; Griffin et al., 2010). By implication, other agency-related issues associated with cash holdings would also be likely to affect audit pricing, albeit the direct correlation is understudied.

Although the relationship of audit fees and corporate cash holding as two distinct fields has been studied extensively, minimal focus has been directed to the relationship between the two (Hay et al., 2006; Bates et al., 2009). According to the theory of agency, the increased availability of cash can result in discretion and risk by the manager, and therefore more audit effort will have to be put in. Moreover, auditor economic dependence, unpaid fees, and risk profile of a client may be a source of threat to the audit independence and affect audit pricing (Al-Ajmi and Saudagaran, 2011; Alleyne et al., 2006; Stanley, 2011). Cash hoardings can also increase litigation and reputational risks to auditors, which also adds to an increase in audit fees.

Risk-wise, companies with a large amount of cash can become more vulnerable to lawsuits, which leads to the precautionary hoarding of cash and making the audit more complex (Arena and Julio, 2015). This increases the risk of audit and resulting audit effort which increases audit fees (Ettredge et al., 2014). Audit fees were revealed to affect audit quality and independence of an auditor and higher audit fees are mostly related to higher quality audit results in the Jordanian environment (Vantalaren, 2000; Siam, 2003; Clarkson and Simunic, 1994).

There is mixed empirical evidence on the links between cash holdings and audit fees. Some reports indicate no significant association (Duellman et al., 2015), but, other studies indicate a positive and significant relationship, showing that excess cash holdings are associated with higher audit fees

(Gleason et al., 2015; Benjamin et al., 2015; Mohammadi et al., 2018). Such ambivalent findings point to the necessity of additional research, especially in the emerging markets to gain a better insight into the impact of cash holdings on audit pricing.

3. Hypotheses Development

3.1 Audit firm size and cash holdings

The link between audit firm size and cash holdings can be justified from an agency perspective and reputation hypothesis. Early research (DeAngelo 1981a; Dye 1993) suggests that large audit firms, with their reputation at stake, have greater litigation and reputational risks, thus providing higher audit quality. This view is also supported by the deep pockets hypothesis, which argues that large audit firms have the financial capacity to withstand any potential litigation expenses, thus enhancing their monitoring. Likewise, Balachandran and Ramakrishnan (1987) argue that large audit firms play a more effective role in minimising agency costs through increased monitoring.

These theoretical claims are supported by recent empirical studies. The presence of high-quality auditors (often measured by Big 4 audit firms) is linked to higher financial reporting quality, lower information asymmetry and better monitoring of management (e.g., improved audit quality constrains opportunistic financial reporting and improves reporting transparency) (Alqatamin, 2021; Al-Okaily et al., 2022). Consistent with this evidence, more recent studies show that firms audited by Big 4 auditors have lower earnings management and higher financial reporting quality, especially in emerging markets (Salehi et al., 2020; Alhadab & Clacher, 2023). In Jordan, recent studies show that improved audit quality constrains earnings management and improves financial reporting discipline (Alzoubi, 2016; Altarawneh et al., 2022).

With regard to cash holdings, audit quality can impact firms' cash management policy by reducing agency problems between shareholders and managers. First, enhanced monitoring limits managers' ability to accumulate excessive cash for their personal use and second, it promotes better cash management practices (Jebran et al., 2021; Nguyen et al., 2022). On the other hand, in higher uncertainty and less investor protection settings, firms audited by large audit firms may hold more cash as a cushion against future cash needs because of their more stringent financial oversight and risk management (Habib et al., 2020; Dang et al., 2021). Given these considerations, the size of the audit firm is likely to have a profound impact on firms' cash holdings. As such, we put forth the following hypothesis:

H1: There is a positive relationship between audit firm size and cash holdings.

3.2 Audit fee and cash holdings

Audit fees are often considered to be a product of audit risk and audit effort, with higher audit risk calling for more audit procedures and hence higher audit fees (Ettredge et al., 2014). With respect to cash holdings, companies with large cash balances may be more prone to agency costs and audit risk, as cash is more likely to be used by managers for their own benefit. Consequently, auditors are likely to increase their effort and audit fees to cover for the costs of monitoring (Stanley, 2011). This view is supported by more recent findings that audit fees reflect audit complexity, governance risk, and managerial opportunism (e.g., audit fees include firm-specific risk factors and internal control) (Habib et al., 2021; Salehi et al., 2022).

From a precautionary point of view, firms with greater litigation risk or risk of financial distress may build cash reserves to buffer against future events, and this impacts audit fees. For example, firms facing litigation risk retain higher levels of cash to pay litigation settlements (Arena & Julio, 2015). But the linkage between audit pricing and cash is bi-directional. Banerjee and Humphery-Jenner (2016) propose an indirect link, with firms that pay higher audit fees having better governance practices (typically larger and more independent boards) that help firms avoid excess cash by enhancing monitoring and oversight. This perspective is consistent with recent research that finds that improved governance and audit quality work together to improve cash management and reduce cash hoarding (Al-Okaily et al., 2022; Dang et al., 2021).

The empirical evidence on the audit fees-cash holdings link is mixed. Some find a positive link, as higher audit fees (due to higher audit effort and risk) are associated with a higher level of cash holdings (Gleason et al., 2015; Jebran et al., 2021). Other research meanwhile reports no association, suggesting that the impact is contingent on firm-specific factors and institutional factors (Duellman et al., 2015; Nguyen et al., 2022). Recent evidence also shows that audit fee-cash holding relationship may differ between emerging markets owing to varying regulatory practices and governance standards (Altarawneh et al., 2022; Habib et al., 2020).

Based on the above theoretical reasoning and empirical evidence, we anticipate that audit fees affect corporate cash holdings. Therefore, we put forward the following hypothesis:

H2: There is a positive relationship between audit fee and cash holdings.

4. Methodology

4.1 Population and sampling

The present research examines the association between audit quality mechanisms and cash holdings of listed firms on the Amman Stock Exchange (ASE) from 2011 to 2017. The chosen period is relevant in the sense that it is post the reform of corporate governance in Jordan after 2009, thus offering a relevant institutional environment to investigate corporate financial practices. In particular, there has been a downward trend in corporate cash holdings since 2011, which justifies the main research question of studying firms' cash holding policies in the post-financial crisis period. The empirical study is conducted on an initial sample of 92 firms from the industrial and service sectors, which accounts for around 49% of the total number of listed firms on the ASE. The sample is reduced to 87 firms, after removing five firms with missing financial data. Financial firms, which represent about 51% of listed firms, are excluded from the sample because they have a different set of rules and corporate governance code that is applied to non-financial firms (ASE, 2017; Bawaneh, 2011).

4.2 Model Specification

To investigate the influence of audit quality on cash holding, the following regression model is employed.

◎◎◎◎◎◎ = ◎◎ + ◎1◎◎◎◎◎◎◎◎◎ + ◎2◎◎◎◎◎◎◎◎ + ◎◎◎◎◎ + +◎◎◎

4.3 Variable Measurements

The measurement of audit quality and control predictors is shown in the table below.

Variables	Operationalization
Independent variable Audit Firm Size (AUDFSIZE)	The audit firms as “1”if it is among big 4 and “0” if it’s small. (Hayyani’s 2008; Alzoubi 2016).
Independent variable AUDIT FEE (AUDFEE)	Natural log of fees paid for the services of audit (Basioudis, Geiger and Papanastasiou 2006; Alzoubi 2016)
Control variables Leverage (LEV)	Total debt divided by total assets (Osma, 2008; Anagnostopoulou & Tsekrekos, 2017).

5. Empirical Results

5.1 Descriptive Analysis

Table II represents the summary statistics of the series to investigate audit quality on cash holding in Jordan. The study employed AUDFEE is the Natural log of fees paid for the services of audit, AUDSIZE is the audit firms as "1"if it is among big 4 and "0" if it's small.

Table II

Descriptive Analysis

variable	Obs.	Min	Max	Mean	Std.D	Prob.	Skewness	Kurtos
Cashholding	609	0.0009	0.3833	0.06965	0.0986	0.0271	1.9843	6.2829
AUDFSIZE	609	0.0000	1.0000	0.3875	0.4876	0.0000	0.4618	1.2132
AUDFEE	609	7.7493	11.438	9.2531	0.6123	9.0711	1.2039	6.0403
PRO	609	-0.476	0.6834	0.0297	0.1054	0.0332	-0.0859	9.3808

In Table II, the mean for indicators in Jordan for indexes of Cash holding, AUDFSIZE, AUDFEE, and PRO are 0.06965, 0.3875, 9.2531, and 0.0297 respectively for firms' average in Jordan.

Meanwhile, the minimum amount of Cash holding, AUDFSIZE, AUDFEE, and PRO to 0.0009, 0.0000, 7.7493, and -0.476billion USD respectively. However, the highest values of Cash holding, AUDFSIZE, AUDFEE and PRO are 0.3833, 1.0000, 11.438, and 0.6834 billion USD for Jordanians' firms.

5.2 Correlation Analysis

Table III

Correlation Matrix

VARIABLES	Cash-holding	AUDFEE	AFSIZE	PRO
Cash-holding	1.0000			
AUDFEE	0.2163	1.0000		
AUDFSIZE	0.1662	0.4907	1.0000	
PRO	0.3508	0.0858	-0.0326	1.0000

The association between audit quality and corporate governance mechanisms, such as audit committees, and its effect on cash holdings has been widely studied in the theoretical and empirical literature in different settings. According to agency theory, enhanced monitoring mechanisms are expected to reduce agency problems and affect cash holdings.

The correlation matrix of the independent variables is reported in Table III. The findings show that there are correlations, but the coefficients are below the threshold. This implies the absence of serious multicollinearity problems, meaning the independent variables can be safely included in the regression models without jeopardizing the regressions' quality.

5.3 Univariate analyses

This table presents the univariate statistics of the variables in this research. All the variables are separated into two groups based on the cash holding level which is either below or above the sample median. The results in the Table IIII indicate that the firms with a high level of cash holding have a higher mean value of audit fee (AUDFEE) and audit firm size (AUDFSIZE) compared to firm with a low level of cash holding. Hence, this is consistent with our expectation that these variables significantly and positively related to cash holding.

Table IIII

Univariate Test for Cash Holdings Model

Sample	Obs.1	Obs.2	*Full*	*Low* Cash Holding	*High* Cash Holding	Dif. Value	T- Value	P-
AUDFEE	304	305	9.253	9.152	9.354	-0.200	-4.15	0.000
AUDFSIZ	304	305	0.404	0.309	0.466	-0.160	-4.00	0.000
PRO	304	305	0.030	0.002	0.058	-0.060	-6.85	0.000

In contrast, multivariate regression analysis allows for the simultaneous examination of multiple independent variables, thereby providing a more comprehensive and reliable assessment of the relationships under investigation. By controlling for confounding effects, multivariate models enhance the robustness and validity of empirical findings (Abdul Wahab and Abdul Rahman, 2009). Accordingly, this study relies primarily on multivariate analysis to obtain more accurate and generalizable results.

5.4 Co-efficient of Estimation

Table IIIII

	ROUND-EFFECT		FIXED-EFFECT		GLS	
VARIABLE	COEFFICIENT	PROB.	COEFFICIENT	PROB.	COEFFICIENT	PROB.
AUDFSIZE	.0230763	0.008	-.0149789	0.362	.0188538	0.000
AUDFEE	.0239719	0.001	.0235922	0.199	.0475954	0.000
PRO	.3110293	0.000	.1195456	0.001	.212242	0.000
VIF	1.18					
F – Stat	Prob-f	0.0000				
Hausman	chi2 =	0.0040				
Homo	No Hetero					

It is assumed that there is a positive correlation between the size of audit firms and cash holdings in this study. According to Table IIIII, the correlation between the size of audit firms and their cash holdings is positive and significant (=.018, p=0.000). The Univariate analysis, Table IIII, also indicates that the high audit firm size firms have high cash holdings firms. This finding is in line with the earlier research carried out on the going concern and financial decisions (Al-Awaqleh, 2008; Chang et al., 2009). The implication of this finding is as well that the size of the audit firm enhances auditor independence that has a significant and positive impact on cash holdings and hence, hypothesis three (H1) is accepted.

This result is in line with agency theory, which suggests that quality external auditing is an effective monitoring device to minimise agency conflicts and agency costs (Jensen and Meckling, 1976; Watts and Zimmerman, 1986). In this regard, large audit firms (especially Big Four auditors) are more likely to strengthen financial prudence through their superior expertise, independence and reputation. Large audit firms also have greater incentives to control and detect agency abuse, as audit failures can lead to reputational and financial losses (DeAngelo, 1981; Vander Bauwhede et al., 2003). As a result, companies with high-quality auditors are likely to have better financial reporting, and more conservative cash holdings. In addition, empirical evidence also indicates that audit firm size is typically associated with lower earnings management, reflecting the role of large audit firms in constraining discretionary accruals and improving transparency (Alzoubi, 2016; Almarayeh et al., 2020; Orazalin and Akhmetzhanov, 2019).

The aim of this study was to investigate if audit fees are positively associated with cash holdings. The evidence confirms this hypothesis and shows a positive and significant relationship ($\beta = 0.047$, $p < 0.01$) with cash holdings, as shown in Table III. The results of the univariate analysis also support the finding that firms with larger audit fees have greater cash holdings. This result is consistent with the agency theory perspective, as higher audit fees reflect higher audit effort and monitoring, as well as firm-specific risk, leading firms to hold more cash. In addition, audit fees may proxy for other governance and operational complexities that affect firms' cash-holding policies. These findings are in line with earlier empirical research demonstrating a positive link between audit fees and cash holdings (Benjamin et al., 2015; Mohammadi et al., 2018; Alghadi, 2019), and recent studies that highlight the importance of audit quality and monitoring in determining financial policies (DeFond and Zhang, 2014; Hassan et al., 2020). In Jordan, previous research indicates that audit fees are associated with audit quality and independence (Vanstraelen, 2000; Siam, 2003), which supports the proposition that higher audit fees reflect greater monitoring. Thus, Hypothesis (H2) is confirmed.

Our findings suggest audit firm size is positively and significantly related to corporate cash holdings. This suggests that large audit firms play a crucial role in corporate monitoring and can impact a firm's financial policy (such as cash holding) choices. In terms of agency theory, large audit firms are linked with reduced agency costs associated with their enhanced monitoring capability, independence and reputation (Balachandran and Ramakrishnan, 1987; Watts and Zimmerman, 1986). Large audit firms have greater technological expertise and superior staff, and are therefore better able to provide higher audit quality and monitoring (McLennan and Park, 2003) than smaller firms. This proposition is also supported by empirical evidence, which suggests that Big Four audit firms are more likely to offer higher audit quality than non-Big Four auditors, thereby increasing the credibility of financial reporting and corporate financial policies (Behn et al., 2008; DeFond and Zhang, 2014).

A positive and significant association is found between audit fees and cash holdings. This association is consistent with agency theory, where audit fees are an indicator of increased audit effort, monitoring and risk, which may lead to greater cash holdings. Moreover, Banerjee and Humphery-Jenner (2016) argue that firms with higher audit fees have better governance mechanisms (such as larger boards and more independent directors) that may lead to more conservative policies. This result is in line with previous research which finds a positive relationship between audit fees and cash holdings (Benjamin et al., 2015; Gleason et al., 2015; Mohammadi et al., 2018).

Flynn (2009) suggests that the existence of higher non-audit service fees may establish an economic relationship between auditors and their clients, which may compromise auditor independence and audit quality, which in turn may influence the reliability of earnings. He also argues that higher non-audit fees increase the auditors' economic dependency on the client, which may jeopardize auditor independence. On the other hand, higher audit fees are typically related to higher audit effort and higher audit quality, which may affect companies' financial policies, such as cash holdings.

This study also finds a positive association between audit firm size and cash holdings of Jordanian firms, implying that firms audited by large audit firms tend to hold more cash. Thus, appointing large audit firms as external auditors may contribute to better monitoring and financial decision-making. This is of particular interest to managers and investors interested in preserving firm value and enhancing financial stability.

Lastly, as corporate governance (audit) is vital for the economy to function effectively, the findings of this study should help policy makers and law makers to develop appropriate corporate governance policies in the developing economies. This would also help the regulatory bodies to understand that the regulatory, institutional and legal systems in developing economies are dissimilar to those in developed economies.

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